APPENDIX Q

Energy

Appendix Q-1

Energy Analysis Report, LSA, August 2017

APPENDIX Q

PARADISE VALLEY SPECIFIC PLAN
ENERGY ANALYSIS REPORT

RIVERSIDE COUNTY, CALIFORNIA

LSA

August 2017

PARADISE VALLEY SPECIFIC PLAN
ENERGY ANALYSIS REPORT

RIVERSIDE COUNTY, CALIFORNIA

Submitted to:

GLC LLC
75-410 Gerald Ford Drive, Suite 103
Palm Desert, California 92211

Prepared by:

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, California 92507
(951) 781-9310

Project No. GLC1601

LSA

August 2017

EXECUTIVE SUMMARY

This energy report assesses the potential for energy impacts to occur in conjunction with the type and scale of development associated with the proposed Paradise Valley Specific Plan (PVSP) project, herein referred to as the "proposed project." The proposed project would include two planning components:

- **Paradise Valley Specific Plan:** The PVSP contains a land use plan and development standards that would result in development of: 8,490 residential units, 1.38 million square feet of non-residential land uses (including commercial, retail, light industrial and public facilities) and a system of 110 acres of recreational trails and parks (all numbers herein are approximate). Development would occur on approximately 1,850 acres of a 5,000 acre site. The remaining 3,100 acres would be conserved in a natural state for habitat preservation, consistent with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). In addition to the land use and development standards, the PVSP contains sustainability strategies, a multi-modal mobility plan, and guidelines for lighting and community design.
- **Paradise Valley Climate Action Plan:** The Paradise Valley Climate Action Plan (CAP) was developed to fulfill the PVSP's sustainability strategy for reducing greenhouse gases associated with the project. The CAP contains greenhouse gas emission reduction measures; many of the greenhouse gas emission reduction measures also reduce criteria air pollutant emissions.

This report is intended to satisfy the California Environmental Quality Act (CEQA) and, as Lead Agency under CEQA, the County of Riverside's requirement for an energy analysis by examining the impacts of the proposed project and identifying mitigation measures where applicable to address significant impacts.

SUMMARY OF ANALYSIS RESULTS

Implementation of the proposed project would have less than significant impacts on regional electrical, natural gas, and petroleum consumption when compared to regional demand projections. Based on the energy demand and mitigation measures, the project does not conflict with energy standards or regulations. Furthermore, the project is not expected to exceed the local and regional energy supplies.

TABLE OF CONTENTS

FIGURES

TABLES

APPENDIX

LIST OF ABBREVIATIONS AND ACRONYMS

ARB	California Air Resources Board
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CEC	California Energy Commission
CHMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CO_2	carbon dioxide
EPS	emissions performance standard
EV	electric vehicle
GHG	greenhouse gas
GPA	General Plan Amendment
HID	high-intensity discharge
kBtu	thousand British thermal units
kWh	kilowatt hours
LED	light emitting diode
MT CO_2e	metric tons of carbon dioxide equivalent
MWh	megawatt hour
PV	photovoltaic
PVSP	Paradise Valley Specific Plan
USEPA	United States Environmental Protection Agency
ZEV	zero-emission vehicle
ZNE	zero net energy

PROJECT DESCRIPTION

The Paradise Valley Specific Plan area is located in unincorporated eastern Riverside County, east of the greater Coachella Valley, in an area known as Shavers Valley. The project site is located approximately eight (8) miles east of the City of Coachella and ten (10) miles west of Chiriaco Summit. The project would develop approximately 1,850 acres of a 5,000 acre site, providing for approximately: 8,490 residential units, 1.38 million square feet of non-residential land uses (including commercial, retail, light industrial and public facilities) and a system of 110 acres of recreational trails and parks (all numbers herein are approximate). The remaining 3,100 acres would be conserved in a natural state for habitat preservation, consistent with the CVMSHCP. Public services, utilities and other amenities are also planned for the community. Figure 1 (Project Vicinity) shows the project location and Figure 2 (Land Use Map) shows the Conceptual Site and Ground Plan for the project. The project is anticipated to be fully developed over a period of approximately 15 years, with buildout projected to occur in 2035. The analysis considers both 2035 and 2040 impacts, where applicable.

The project includes several potential options for the supply of electricity. Presently, each of these potential options is defined conceptually only, and project specific details are currently unknown. Two of the potential power options involve off-site alignments for transmission lines that would connect the site to the existing Imperial Irrigation District (IID) electrical substation located at 52nd Avenue and Pierce Street in Coachella, California, and would involve the construction of a new double-circuit 92 kV power line, poles, and associated access roads that would extend between the Coachella substation and the Paradise Valley project. One of the potential power transmission line alignment options would generally follow the Riverside County right-of-way associated with 52nd Avenue to the County's Buchanan Street right-of-way. From this point, the alignment would extend generally north in the Buchanan Street right-of-way to the Caltrans I-10 frontage road right-of-way, and then generally east along the south and north sides of the I-10 freeway within the frontage road right-of-way to the Paradise Valley project. This potential power line alignment option may require widening of the existing easements/rights-of-way and acquisition of additional easements / rights-of-way to accommodate the potential new power line. The other potential power line alignment option would generally follow the alignment of IID's existing 7.2 kV line that runs east from the Coachella substation through the Mecca Hills to the Paradise Valley Specific Plan project. This potential power line alignment option may also require widening of the existing easements/rights-of-way and acquisition of additional easements / rights-of-way to accommodate the potential new power line.

Additional options for electricity for the site consist of a potential on-site natural gas-powered electrical generator, a potential de-centralized fuel cell generation, and/or a potential intertie to the 500 kV SCE transmission lines that currently traverse the site.

The ultimate service design for any option would potentially include two new substations to be constructed within the Paradise Valley development footprint to accept power from the transmission line or power generation source. From the substations, a distribution system would be constructed to deliver electricity throughout the project site. All of the power options would involve a new on-site

electrical distribution system installed underground (along with gas, telephone, and cable television facilities, as discussed below). Generally, the selected electrical transmission and distribution facilities would be designed and constructed in accordance with IID's adopted guidelines, policies and procedures. To reduce the project's energy demands, homes within the project will employ passive and active energy efficiency design features and technologies including rooftop solar, where practicable.

New natural gas facilities will be extended to serve the project site by constructing new gas mains within or adjacent to public roadways. New distribution mains will be installed adjacent to (or within) roadways throughout the project. Prior to issuance of first building permit, the developer will coordinate gas branch line extension to serve the project with the Southern California Gas Company (SCGC).

Figure 1: Project Vicinity

Figure 2: Land Use Map

ENERGY DEMAND & GENERATION

The California Emissions Estimator Model (CalEEMod), Version 2016.3.1 was used to estimate electricity and natural gas consumption and renewable energy generation under two scenarios: Statewide EV ownership projection and PVSP CAP EV ownership goal. Based on California Department of Motor Vehicles registration statistics and projections based on EO B-16-12, approximately 13 percent of passenger vehicles in California will be EVs by 2040 (California Department of Motor Vehicles 2015a, 2015b). The project has incorporated project design features (i.e. implement Neighborhood Electric Vehicle (NEV) network and EV infrastructure) which are aimed at nearly tripling the EV ownership rate (approximately 37 percent). CalEEMod emission modeling output files for the operational phase of the proposed project are provided in Appendix A of this report.

ELECTRICITY

Implementation of the full buildout (including all energy reduction measures) of the proposed project would result in an annual electricity demand of approximately 30 to 34 million kilowatt hours (kWh), under the 13 percent and 37 percent EV scenarios, respectively. By 2040, the proposed project would generate approximately 45 to 51 million kWh of electricity per year from distributed photovoltaic (PV) solar electric generation on site, under the 13 percent and 37 percent EV scenarios, respectively.

NATURAL GAS

Implementation of the full buildout (including all energy reduction measures) of the project would result in an annual natural gas demand of approximately 180,042,800 thousand British thermal units (kBtu).

PETROLEUM

Implementation of the full buildout (including all energy reduction measures) of the project would result in an annual petroleum demand of approximately 900 million to one billion kBtu, under the 37 percent and 13 percent EV scenarios, respectively.

STATE REGULATORY MEASURES

The following are State measures that reduce energy consumption or increase renewable energy sources available to the proposed project.

CALIFORNIA ENERGY CODE

The California Energy Code (California Code of Regulations Title 24, Part 6), which is incorporated into the Building Energy Efficiency Standards, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The efficiency standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in Title 24 guidelines. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

The 2016 Title 24 standards, which will become effective on January 1, 2017, are estimated to result in new buildings that use 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than the previous 2013 Standards. The 2016 updates to Title 24 are focused on moving closer to zero net energy (ZNE) homes by getting energy loads down so remaining electricity demand can be met by solar photovoltaic (PV) panels. The 2016 Title 24 standards require “solar-ready roofs” to accommodate future installations of solar PV panels. Additionally, the 2016 Title 24 standards will save millions of gallons of water per year.

CALIFORNIA GREEN BUILDING STANDARDS CODE

The purpose of the California Green Building Standards Code (California Code of Regulations Title 24, Part 11) is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts that either reduce negative environmental impact or enhance positive environmental impact. The Green Building Standards code encourages sustainable construction practices in the following categories: 1) planning and design; 2) energy efficiency; 3) water efficiency and conservation; 4) material conservation and resource efficiency; and 5) environmental quality. The California Green Building Standards, which became effective on January 1, 2011, instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial, low-rise residential uses, and state-owned buildings, as well as schools and hospitals.

Specific to energy conservation, the mandatory standards require inspections of energy systems to ensure optimal working efficiency. The voluntary standards require the following:

- Tier I: 15-percent improvement in energy requirements
- Tier II: 30-percent improvement in energy requirements

CALIFORNIA RENEWABLES PORTFOLIO STANDARD

Senate Bill 1078 (SB 1078), which was enacted on September 12, 2002, established the Renewables Portfolio Standard program that requires retail sellers of electricity—including electrical corporations, community choice aggregators, and electric service providers—to purchase a specified minimum percentage of electricity generated by eligible renewable energy resources, such as wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Senate Bill 107 (SB 107), which was enacted on September 26, 2006, accelerated the Renewables Portfolio Standard to require that at least 20 percent of electricity retail sales be served by renewable energy resources by year 2010.

In response to Executive Order S-21-09 (described below), the Renewables Portfolio Standard was expanded in 2011 to require investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by the year 2020. The Renewables Portfolio Standard is included as a reduction measure in the ARB's Climate Change Scoping Plan. Increased use of renewable energy would decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. The ARB estimates that full achievement of the Renewables Portfolio Standard would decrease statewide GHG emissions by 21.3 million $MTCO_2e$.

EXECUTIVE ORDER B-16-12

Executive Order B-16-12 (issued March 23, 2012) directed state government to accelerate the market for zero-emission vehicles (ZEV) in California through fleet replacement and electric vehicle infrastructure. The Executive Order set the following targets:

- By 2015, all major cities in California will have adequate infrastructure and be "ZEV ready";
- By 2020, the state will have established adequate infrastructure to support 1 million ZEVs in California;
- By 2025, there will be 1.5 million ZEVs on the road in California; and
- By 2050, virtually all personal transportation in the State will be based on ZEVs, and greenhouse gas emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

EXECUTIVE ORDER S-14-08

Executive Order S-14-08 (issued November 17, 2008) directed several state agencies to expedite the process of creating renewable generation facilities and proposing to expand California's Renewables Portfolio Standard. The Governor's proposed Renewables Portfolio Standard of 33 percent renewable generation by 2020 would build on the SB 1078 target of producing 20 percent by 2010.

EXECUTIVE ORDER S-21-09

Executive Order S-21-09 (issued September 15, 2009) required that the ARB, under its AB 32 authority, adopt a regulation consistent with the 33-percent renewable energy target established in Executive Order S-14-08 by July 31, 2010. Under Executive Order S-21-09, the ARB is directed to work with the California Public Utilities Commission and California Energy Commission to encourage the creation and use of renewable energy sources. The ARB will consult with the Independent System Operator and other load-balancing authorities on, among other aspects, impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of Executive Order S-21-09. The ARB also will establish the highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health; that can be developed most quickly; and that support reliable, efficient, cost-effective electricity system operations.

SENATE BILL 350, CLEAN ENERGY AND POLLUTION REDUCTION ACT OF 2015

Senate Bill 350 (issued October 7, 2015) builds upon EO S-14-08 by increasing the renewable energy target to 50 percent by 2030. In addition, SB 350 increases the energy efficiency in buildings by 50 percent by 2030.

SENATE BILL 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to power plants that meet an emissions performance standard jointly established by the California Energy Commission (CEC) and the California Public Utilities Commission. The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds of carbon dioxide (CO2) per megawatt-hour (MWh). This will encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gases (GHGs);
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This will facilitate public awareness of utility efforts to meet customer needs for energy over the long-term while meeting the state's standards for environmental impact; and
- Establish a public process for determining the compliance of proposed investments with the EPS [emissions performance standard] (Perata, Chapter 598, Statutes of 2006).

ASSEMBLY BILL 1493

Adopted in 2002 by the state legislature, Assembly Bill 1493 ("Pavley" regulations) required that the California Air Resources Board (ARB) develop and adopt, no later than January 1, 2005, regulations

to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.

The first California request to implement GHG standards for passenger vehicles, known as a waiver request, was made in December 2005 and was denied by the United States Environmental Protection Agency (USEPA) in March 2008. That decision was based on a finding that California's request to reduce GHG emissions from passenger vehicles did not meet the Clean Air Act requirement of showing that the waiver was needed to meet "compelling and extraordinary conditions."

The USEPA granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On September 24, 2009, ARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. These amendments are part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. The California Air Resources Board's September 2009 amendments will allow for California's enforcement of the Pavley rule while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to harmonize its rules with the federal rules for passenger vehicles.

It is expected that the Pavley regulations will reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016, all while improving fuel efficiency and reducing motorists' costs. The California Air Resources Board has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plugin hybrids and zero-emission vehicles in California.

GREENHOUSE GAS AND ENERGY REDUCTION MEASURES

The proposed project has identified the following GHG reduction measures related to energy efficiency, renewable energy resources, land use policies, and transportation-related management that reduce electricity, natural gas, and fuel consumption, thereby reducing GHG emissions associated with energy. Mitigation Measures in Section 4.7 Greenhouse Gas Emissions that are relevant to energy use and fuel consumption are cross-referenced (i.e. MM GHG-1, -4, -5, -6, -7).

California Emissions Estimator Model (CalEEMod), Version 2016.3.1 was used to estimate these reduction measures under two scenarios: Statewide EV ownership projection and PVSP CAP EV ownership goal. Based on California Department of Motor Vehicles registration statistics and projections based on EO B-16-12, approximately 13 percent of passenger vehicles in California will be EVs by 2040 (California Department of Motor Vehicles 2015a, 2015b). The project has incorporated project design features (i.e. implement Neighborhood Electric Vehicle (NEV) network and EV infrastructure) which are aimed at nearly tripling the EV ownership rate (approximately 37 percent).

According to CalEEMod estimations, under the Statewide EV scenario, these reduction measures will reduce the project's buildout energy consumption by approximately 44 million kWh of electricity and 114 million kBtu of petroleum[1] per year. These energy savings will reduce over 24,500 metric tons of carbon dioxide equivalent (MT CO_2e) GHG emissions per year. Under the PVSP CAP EV scenario, these reduction measures will reduce the project's buildout energy consumption by approximately 40 million kWh of electricity and 99 million kBtu of petroleum per year. These energy savings will reduce over 23,000 metric tons of carbon dioxide equivalent (MT CO_2e) GHG emissions per year.

IMPLEMENT TRIP REDUCTION PROGRAM (MM GHG-1)

The proposed project will adopt a trip reduction program for new commercial and industrial development that promotes commuter choices, employer transportation management, guaranteed ride home programs, and commuter assistance and outreach-type programs intended to reduce commuter vehicle miles traveled. In accordance with SCAQMD Rule 2202, the operator of each business within the PVSP that employs 100 or more on-site employees will be required to develop and implement an Employee Trip Reduction Program that will reduce employee associated commute trip emission related vehicle miles traveled (VMT) at least 20% below the level of emissions producing VMT that would otherwise occur without the program. The following actions are recommended ways for business operators within the PVSP to achieve the VMT reduction goal:

[1] The estimated vehicle miles traveled were converted to BTU using a Pavley-adjusted weighted energy intensity of 4,683 BTU per vehicle mile (Oak Ridge National Laboratory 2013).

- Provide an employee telecommuting program for employees that can do their work remotely and provide a schedule of days per week that employees telecommute rather than drive to work.
- Provide a compressed work week for employees such that it reduces the number of days per week that employees need to commute to the worksite.
- Employees that commute in electric vehicles, neighborhood electric vehicles, or other Zero Emission Vehicles (ZEV) may be counted as arriving at the worksite with zero emission associated VMT .
- Provide Employee Ride Share Programs (i.e. carpools, vanpools).
- Provide Employee Transit/Shuttle Program.

EXCEED TITLE 24 STANDARDS (MM GHG-4)

California's energy efficiency standards for buildings, called the Title 24 Standards (further discussed in Chapter 1), were updated in 2016 and will become effective January 1, 2017. Title 24 Standards are scheduled for updates and improvements every three years with the ultimate goal of ZNE for new homes by 2020 and new commercial buildings by 2030. The proposed project is taking steps toward this advanced energy-efficiency goal by requiring all new buildings within the project area to exceed 2016 Title 24 standards by approximately 31 percent, enforced through Conditions of Approval on the project and verified through plan check and building inspection prior to Certificates of Occupancy being issued. This efficiency goal will also meet the future 2030 requirements of SB 350.[1]

INSTALL HIGH EFFICIENCY LIGHTING (MM GHG-5)

The proposed project will install high efficiency lighting throughout the project area, including light emitting diode (LED) streets, path, emergency, maintenance and building lighting. No fluorescent, incandescent, or high-intensity discharge (HID) light sources will be used. The proposed project plans to achieve a 25 percent reduction in energy use for lighting in comparison to Title 24 (2016) standards.

ON-SITE RENEWABLE ENERGY RESOURCES (MM GHG-6)

The proposed project will include rooftop photovoltaic (PV) solar energy panels on homes and carports, where practicable. At the neighborhood-scale, the proposed project will provide PV solar panels mounted on elevated racks in parking lots as a sustainability strategy that creates shade and reduces the urban heat island effect, while generating renewable energy for the project. In addition, ground-mounted PV solar panels will be installed at industrial facilities, such as the water and wastewater treatment plants, which will reduce the carbon intensity of electricity being used to treat and transport the project's water supplies. Furthermore, the feasibility of other renewable energy sources such as wastewater methane capture and fuel cell generation is also being considered for this project.

[1] The 2016 Title 24 standards are approximately 28 percent more efficient than the prior standards from 2014. Therefore, being 30.6 percent more efficient than 2016 standards is equivalent to being 50 percent more efficient than 2014 standards, as required by SB 350.

Overall, the proposed project shall supply 60 percent of the electricity needs of the entire project by buildout in 2035, as enforced by the County of Riverside through Conditions of Approval on the project and verified through building inspections prior to issuance of Certificates of Occupancy for the following phases of the project:

- At the time of the first 1,200 residential dwelling units (DUs) and/or 250,000 sq. ft. of non-residential floor area are built, the project shall include at least 20 percent of the power needs by onsite renewable energy sources.
- At the time that a total of 2,700 DUs and/or 500,000 sq. ft. of non-residential floor area are built, the project shall include at least 30 percent of the power needs by onsite renewable energy sources.
- At the time that a total of 4,500 DUs and/or 750,000 sq. ft. of non-residential floor area are built, the project shall include at least 40 percent of the power needs by onsite renewable energy sources.
- At the time that a total of 5,500 DUs and/or 1,000,000 sq. ft. of non-residential floor area are built, the project shall include at least 50 percent of the power needs by onsite renewable energy sources.
- At the time that a total of 7,000 DUs and/or 1,250,000 sq. ft. of non-residential floor area are built, the project shall include at least 55 percent of the power needs by onsite renewable energy sources.
- At Project buildout totaling approximately 8,490 DUs and 1,380,990 sq. feet of non-residential floor area, the project shall include at least 60 percent of the power needs by onsite renewable energy sources.

Inspection of the project during each phase of the project is needed to verify that that renewable energy has been installed and meets the interim conditions outlined in the bullet points above. Inspection of the last phase of the project needs to show that the project as a whole has 60 percent of its electricity needs supplied by renewable energy sources. This can be demonstrated by comparing the project's total electricity to the total amount of renewable energy being generated onsite.

INSTALL HIGH EFFICIENCY APPLIANCES (MM GHG-7)

The proposed project has established energy efficiency criteria for appliances installed at the project site. As shown in Table A, the required energy efficiency of an appliance ranges from 15 to 50 percent over the 2016 Title 24 requirements.

Table A: Summary of High Efficiency Appliances

Appliance	Land Use	% Improvement
Clothes Washer	Single-Family Housing	30
	Retirement Community	30
	Condo/Townhouse	30
Dishwasher	Single-Family Housing	15

Table A: Summary of High Efficiency Appliances

Appliance	Land Use	% Improvement
	Retirement Community	15
	Condo/Townhouse	15
Fan	Single-Family Housing	50
	Retirement Community	50
	Condo/Townhouse	50
Refrigerator	Single-Family Housing	15
	Retirement Community	15
	Condo/Townhouse	15

INCREASE ELECTRIC VEHICLE USE

Based on California Department of Motor Vehicles registration statistics, electric vehicles (EVs) accounted for 0.33 percent of passenger cars in California in 2014. In order to achieve California's goal of 1.5 million zero-emission vehicles by 2025 (EO B-16-12), the rate of EV ownership would need to increase by 0.48 percent each year. Assuming a linear growth rate to 2040, approximately 13 percent of passenger vehicles in California will be EVs. (California Department of Motor Vehicles 2015a, 2015b) The Paradise Valley Specific Plan has incorporated project design features which are expected to nearly triple EV the ownership rate in the project (i.e. implement Neighborhood Electric Vehicle (NEV) network and EV infrastructure). While it's the goal of the project's CAP to achieve 37 percent EV ownership, this level of EV ownership cannot be guaranteed. In addition, to help offset the increase in the project's electricity use resulting from charging these vehicles, the on-site renewable energy resources target was set at 60 percent, as discussed above. The use of EVs will improve air quality and significantly reduce GHGs associated with mobile emissions.

INCREASE LAND USE DIVERSITY

The proposed project will include mixes of land uses (e.g. residential and commercial units, schools, and parks) that complement one another in a way that reduces the need for vehicle trips and can greatly reduce GHG emissions.

IMPROVE WALKABILITY DESIGN

The proposed project will integrate walkability into the community design to encourage people out of their cars and onto the sidewalks; thereby reducing vehicle miles traveled (VMT) and GHG emissions and benefitting the health of the community. Walkable communities provide safe and appealing public spaces for people. Key streets are speed controlled and main streets are interconnected to promote walking as a safe and convenient alternative to driving.

IMPROVE DESTINATION ACCESSIBILITY

The proposed project will have residential developments within walking and biking distance of local retail to help reduce vehicle trips and/or VMT. The three commercial retail districts in PVSP are well

scattered within the planning area and are close to residential units. As the distance from the commercial complexes to residences is close, residents would rather walk or bike to local retail than drive, which helps reduce VMT and GHG emissions.

IMPROVE PEDESTRIAN NETWORK

The proposed project will have a comprehensive trail system that connects residents throughout the community in a variety of contexts: via the Paradise Valley perimeter trail, the Paradise Valley Linear Park, and within community trails. These trails link pedestrians and bicyclists to all areas of the community. Trails are anticipated to range from 40 feet to 65 feet in width and may contain meandering segments with shaded rest stops.

INTEGRATE BELOW-MARKET-RATE HOUSING

The proposed project is a mixed-use development plan that will provide a range of housing options. By integrating below-market-rate housing into the plan, employees of local businesses with varying incomes will have more opportunities to afford nearby housing. The closer employees live to work, the more likely they are to walk or bike instead of commuting by car. This reduction in trips and/or VMT will reduce GHG emissions.

PROVIDE TRAFFIC-CALMING MEASURES

The proposed project will install roundabouts as traffic-calming feature at several key points within the planning area. Roundabouts can have a traffic flow smoothing effect, leading to reduced fuel use by vehicles and reducing GHG emissions.

IMPLEMENT NEIGHBORHOOD ELECTRIC VEHICLE NETWORK

The proposed project will have a multi-modal circulation plan that accommodates and encourages Neighborhood Electric Vehicle (NEV) use throughout the community. The resulting benefits will be significantly lower emissions, less traffic noise, and enhanced mobility. PVSP's backbone roadways are intended to have posted speeds of 35 miles per hour (mph) or less, which will allow the use of NEVs. In the event a street is warranted to have a posted speed of greater than 35 mph, an eight- or 10-foot-wide striped NEV/Bicycle Lane has been provided on each side of the larger backbone roadways to permit NEVs and bicycles to share the road.

IMPLEMENT ELECTRIC VEHICLE INFRASTRUCTURE

The proposed project will have a multi-modal circulation plan that includes EV charging systems for on-road electric vehicles capable of freeway system vehicle speeds. The use of EVs will significantly reduce GHG emissions associated with the longer commute trips outside of the PVSP. The charging systems will be within the garages of each of the residential units and within the parking areas of the hotel (at least five chargers), office buildings (at least one charger per 20 employees at land uses that

employ one hundred or more employees), and other commercial and public parking areas within the Specific Plan (MM Air-2).

INCREASE PUBLIC TRANSIT

The County of Riverside shall require the PVSP to provide shuttle services between the PVSP Community Center and the SunLine Transit hub in Indio. The County of Riverside shall also require the project applicant to coordinate with regional transit authorities to include bus turnouts and other transit accommodations within the PVSP. This will encourage the use of transit and therefore reduce VMT.[1] The measure will support MM GHG-1 and MM AIR-3.

REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2013. California Emission Estimator Model (CalEEMod) Version 2016.3.1 User's Guide Appendix A: Calculation Details for CalEEMod.

California Department of Motor Vehicles. 2015a. DMV Speechmaker Card No. 3: California DMV Statistics.

California Department of Motor Vehicles. 2015b. DMV Speechmaker Card No. 7: Top 10 DMV Facts.

Oak Ridge National Laboratory. 2013. Transportation Energy Data Book. Edition 32, Chapter 2, Energy.

APPENDIX A:

CALEEMOD OPERATIONAL EMISSIONS OUTPUT

Paradise Valley Operational 2035 Mitigated

Salton Sea Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	450.32	1000sqft	10.34	450,320.00	4712
Office Park	1.00	1000sqft	1.00	1.00	0
Elementary School	2,893.00	Student	5.55	241,864.55	0
High School	1,341.00	Student	4.08	177,898.37	0
Junior High School	735.00	Student	1.98	86,407.84	0
General Light Industry	106.38	1000sqft	2.44	106,380.00	0
Health Club	55.00	1000sqft	1.26	55,000.00	0
Hotel	400.00	Room	13.33	580,800.00	0
Condo/Townhouse	2,476.00	Dwelling Unit	154.75	2,476,000.00	0
Retirement Community	2,041.00	Dwelling Unit	408.20	2,041,000.00	0
Single Family Housing	3,973.00	Dwelling Unit	1,289.94	7,151,400.00	25212
Regional Shopping Center	441.69	1000sqft	10.14	441,687.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	20
Climate Zone	15			**Operational Year**	2035
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	676.01	**CH4 Intensity (lb/MWhr)**	0.15	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Imperial Irrigation District, SSAB, 50% RPS Standard

Land Use - Paradise Valley land Use. Office Park = EVs

Construction Phase - NO CONSTRUCTION INCLUDED

Off-road Equipment -

Vehicle Trips - Paradise Valley Land Use. Office Park = EVs (no gas VMT). Resiential trip type breakdown is adjusted to match total VMT in traffic study. Mitigated Daily VMT = 678,725

Road Dust - 100 percent paved roads

Woodstoves - No wood burning hearths

Energy Use - office park = EVs (37%)

Water And Wastewater - office park = EVs

Solid Waste - office park = EVs

Construction Off-road Equipment Mitigation - NO CONSTRUCTION

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation - No Hearth, Electric Landscape Equipment. Low VOC

Energy Mitigation - CalEEMod defaults reflect Title 24 standards from 2013; however, the 2016 standards are 28% more efficient. Data affected by Title 24 have been updated to reflect this increase in efficiency. SB350 = 50% more efficient than 2013 Title 24.

Water Mitigation -

Waste Mitigation - Provide recycling programs that fulfills an on-site goal of 80% diversion of solid waste

Table Name	Column Name	Default Value	New Value
tblApplianceMitigation	PercentImprovement	30.00	49.60
tblApplianceMitigation	PercentImprovement	30.00	49.60
tblApplianceMitigation	PercentImprovement	30.00	49.60
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	50.00	64.00
tblApplianceMitigation	PercentImprovement	50.00	64.00
tblApplianceMitigation	PercentImprovement	50.00	64.00
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblAreaCoating	Area_EF_Parking	150	0

tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	50
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	0
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	6,000.00	0.00
tblEnergyUse	LightingElect	4.35	0.00
tblEnergyUse	NT24E	2.60	17,034,227.93
tblEnergyUse	T24E	3.22	0.00
tblEnergyUse	T24NG	2.93	0.00
tblLandUse	BuildingSpaceSquareFeet	1,000.00	1.00
tblLandUse	BuildingSpaceSquareFeet	441,690.00	441,687.00
tblLandUse	LandUseSquareFeet	1,000.00	1.00
tblLandUse	LandUseSquareFeet	441,690.00	441,687.00
tblLandUse	LotAcreage	0.02	1.00
tblLandUse	Population	0.00	4,712.00
tblLandUse	Population	7,997.00	0.00
tblLandUse	Population	6,592.00	0.00
tblLandUse	Population	12,833.00	25,212.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.15
tblProjectCharacteristics	CO2IntensityFactor	1270.9	676.01
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2018	2035
tblRoadDust	RoadPercentPave	50	100
tblSolidWaste	SolidWasteGenerationRate	0.93	0.00
tblSolidWaste	SolidWasteGenerationRate	10,336.92	4,853.99
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70

tblVehicleTrips	CC_TL	4.20	0.00
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	0.00
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	0.00
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	HO_TL	4.50	10.40
tblVehicleTrips	HO_TL	4.50	10.40
tblVehicleTrips	HO_TL	4.50	10.40
tblVehicleTrips	HO_TTP	40.60	38.10
tblVehicleTrips	HO_TTP	40.60	38.10
tblVehicleTrips	HO_TTP	40.60	38.10
tblVehicleTrips	HS_TL	3.50	12.10
tblVehicleTrips	HS_TL	3.50	12.10
tblVehicleTrips	HS_TL	3.50	12.10
tblVehicleTrips	HW_TL	11.00	34.30
tblVehicleTrips	HW_TL	11.00	34.30
tblVehicleTrips	HW_TL	11.00	34.30

tblVehicleTrips	HW_TTP	40.20	42.70
tblVehicleTrips	HW_TTP	40.20	42.70
tblVehicleTrips	HW_TTP	40.20	42.70
tblVehicleTrips	ST_TR	5.67	1.99
tblVehicleTrips	ST_TR	0.00	0.59
tblVehicleTrips	ST_TR	1.32	0.01
tblVehicleTrips	ST_TR	2.46	0.01
tblVehicleTrips	ST_TR	20.87	0.03
tblVehicleTrips	ST_TR	0.61	0.77
tblVehicleTrips	ST_TR	8.19	7.35
tblVehicleTrips	ST_TR	0.00	0.73
tblVehicleTrips	ST_TR	1.64	0.00
tblVehicleTrips	ST_TR	49.97	0.04
tblVehicleTrips	ST_TR	2.03	5.63
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	4.84	1.99
tblVehicleTrips	SU_TR	0.00	0.59
tblVehicleTrips	SU_TR	0.68	0.01
tblVehicleTrips	SU_TR	1.05	0.01
tblVehicleTrips	SU_TR	26.73	0.03
tblVehicleTrips	SU_TR	0.25	0.77
tblVehicleTrips	SU_TR	5.95	7.35
tblVehicleTrips	SU_TR	0.00	0.73
tblVehicleTrips	SU_TR	0.76	0.00
tblVehicleTrips	SU_TR	25.24	0.04
tblVehicleTrips	SU_TR	1.95	5.63
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	5.81	1.99
tblVehicleTrips	WD_TR	1.29	0.59
tblVehicleTrips	WD_TR	6.97	0.01
tblVehicleTrips	WD_TR	11.03	0.01
tblVehicleTrips	WD_TR	32.93	0.03

tblVehicleTrips	WD_TR	1.71	0.77
tblVehicleTrips	WD_TR	8.17	7.35
tblVehicleTrips	WD_TR	1.62	0.73
tblVehicleTrips	WD_TR	11.42	0.00
tblVehicleTrips	WD_TR	42.70	0.04
tblVehicleTrips	WD_TR	2.40	5.63
tblVehicleTrips	WD_TR	9.52	4.27
tblWater	IndoorWaterUseRate	177,733.75	0.00
tblWater	OutdoorWaterUseRate	108,933.59	0.00

2.0 Emissions Summary

2.2 Overall Operational

Mitigated Operational

Note: In order to account for the reduction in gas VMT (and associated mobile emissions) due to EV use, out-of-model calculations have been conducted. Emissions have been updated (highlighted) and are reflected below.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	60.9800	0.5769	47.7594	2.1600e-003		0.2609	0.2609		0.2609	0.2609	0.0000	72.1178	72.1178	0.0515	0.0000	73.4044
Energy	0.9708	8.3754	4.1116	0.0530		0.6708	0.6708		0.6708	0.6708	0.0000	20,080.8547	20,080.8547	2.5080	0.2226	20,209.8960
Mobile	14.9219	115.1659	219.1823	1.0649	91.1924	0.3991	91.5915	24.4798	0.3737	24.8535	0.0000	99,273.9867	99,273.9867	3.8919	0.0000	########
Waste						0.0000	0.0000		0.0000	0.0000	381.0396	0.0000	381.0396	22.5188	0.0000	944.0095
Water						0.0000	0.0000		0.0000	0.0000	182.3865	3,858.2174	4,040.6038	19.5889	0.4594	4,667.2419
Total	**76.8727**	**124.1182**	**271.0533**	**1.1200**	**91.1924**	**1.3307**	**92.5231**	**24.4798**	**1.3054**	**25.7852**	**563.4261**	**123,285.1766**	**123,848.6026**	**48.5591**	**0.6821**	**104,769**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**5.30**	**4.61**	**6.23**	**3.29**	**0.00**	**29.50**	**0.60**	**0.00**	**29.90**	**2.11**	**73.59**	**19.36**	**20.10**	**67.31**	**32.93**	**18.12**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Note: In order to account for the reduction in gas VMT (and associated mobile emissions) due to EV use, out-of-model calculations have been conducted. Emissions have been updated (highlighted) and are reflected below.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	14.9219	115.1659	219.1823	1.0649	91.1924	0.3991	91.5915	24.4798	0.3737	24.8535	0.0000	99,273.9867	99,273.9867	3.8919	0.0000	########

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	4,927.24	4,927.24	4927.24	33,323,307	33,323,307
Elementary School	1,706.87	1,706.87	1706.87	2,752,455	2,752,455
General Light Industry	1.06	1.06	1.06	2,503	2,503
General Office Building	4.50	4.50	4.50	8,861	8,861
Health Club	1.65	1.65	1.65	2,253	2,253
High School	1,032.57	1,032.57	1032.57	2,045,076	2,045,076
Hotel	2,940.00	2,940.00	2940.00	4,443,604	4,443,604
Junior High School	536.55	536.55	536.55	901,095	901,095
Office Park	0.00	0.00	0.00		
Regional Shopping Center	17.67	17.67	17.67	24,446	24,446
Retirement Community	11,490.83	11,490.83	11490.83	77,713,376	77,713,376
Single Family Housing	16,964.71	16,964.71	16964.71	114,733,652	114,733,652
Total	39,623.65	39,623.65	39,623.65	235,950,627	235,950,627

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	34.30	12.10	10.40	42.70	19.20	38.10	86	11	3
Elementary School	7.10	3.70	13.10	65.00	30.00	5.00	63	25	12
General Light Industry	7.10	3.70	13.10	59.00	28.00	13.00	92	5	3
General Office Building	7.10	3.70	13.10	33.00	48.00	19.00	77	19	4
Health Club	7.10	3.70	13.10	16.90	64.10	19.00	52	39	9
High School	7.10	3.70	13.10	77.80	17.20	5.00	75	19	6

Hotel	7.10	3.70	13.10	19.40	61.60	19.00	58	38	4
Junior High School	7.10	3.70	13.10	72.80	22.20	5.00	63	25	12
Office Park	0.00	0.00	0.00	33.00	48.00	19.00	82	15	3
Regional Shopping Center	7.10	3.70	13.10	16.30	64.70	19.00	54	35	11
Retirement Community	34.30	12.10	10.40	42.70	19.20	38.10	86	11	3
Single Family Housing	34.30	12.10	10.40	42.70	19.20	38.10	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Office Park	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Elementary School	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
High School	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Junior High School	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
General Light Industry	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Health Club	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Hotel	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Condo/Townhouse	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Retirement Community	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Single Family Housing	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Regional Shopping Center	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10,473.0886	10,473.0886	2.3239	0.0465	10,545.0358
NaturalGas Mitigated	0.9708	8.3754	4.1116	0.0530		0.6708	0.6708		0.6708	0.6708	0.0000	9,607.7660	9,607.7660	0.1842	0.1761	9,664.8602

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	4.09965e+007	0.2211	1.8891	0.8039	0.0121		0.1527	0.1527		0.1527	0.1527	0.0000	2,187.7290	2,187.7290	0.0419	0.0401	2,200.7296
Elementary School	1.28067e+006	6.9100e-003	0.0628	0.0527	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3416	68.3416	1.3100e-003	1.2500e-003	68.7477
General Light Industry	2.64301e+006	0.0143	0.1296	0.1088	7.8000e-004		9.8500e-003	9.8500e-003		9.8500e-003	9.8500e-003	0.0000	141.0411	141.0411	2.7000e-003	2.5900e-003	141.8793
General Office Building	785808	4.2400e-003	0.0385	0.0324	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9337	41.9337	8.0000e-004	7.7000e-004	42.1829
Health Club	1.36648e+006	7.3700e-003	0.0670	0.0563	4.0000e-004		5.0900e-003	5.0900e-003		5.0900e-003	5.0900e-003	0.0000	72.9203	72.9203	1.4000e-003	1.3400e-003	73.3536
High School	941972	5.0800e-003	0.0462	0.0388	2.8000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	50.2672	50.2672	9.6000e-004	9.2000e-004	50.5659
Hotel	1.89196e+007	0.1020	0.9274	0.7790	5.5600e-003		0.0705	0.0705		0.0705	0.0705	0.0000	1,009.6198	1,009.6198	0.0194	0.0185	1,015.6194
Junior High School	457530	2.4700e-003	0.0224	0.0188	1.3000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	24.4155	24.4155	4.7000e-004	4.5000e-004	24.5606
Office Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	558734	3.0100e-003	0.0274	0.0230	1.6000e-004		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	29.8162	29.8162	5.7000e-004	5.5000e-004	29.9934
Retirement Community	2.63623e+007	0.1422	1.2147	0.5169	7.7500e-003		0.0982	0.0982		0.0982	0.0982	0.0000	1,406.7922	1,406.7922	0.0270	0.0258	1,415.1521
Single Family Housing	8.57302e+007	0.4623	3.9503	1.6810	0.0252		0.3194	0.3194		0.3194	0.3194	0.0000	4,574.8893	4,574.8893	0.0877	0.0839	4,602.0756

Total		**0.9708**	**8.3754**	**4.1116**	**0.0529**		**0.6707**	**0.6707**		**0.6707**	**0.6707**	**0.0000**	**9,607.7660**	**9,607.7660**	**0.1841**	**0.1762**	**9,664.8602**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	4.75724e+006	1,458.7280	0.3237	6.4700e-003	1,468.7490
Elementary School	447875	137.3333	0.0305	6.1000e-004	138.2767
General Light Industry	331923	101.7784	0.0226	4.5000e-004	102.4776
General Office Building	1.15732e+006	354.8732	0.0787	1.5700e-003	357.3111
Health Club	171609	52.6209	0.0117	2.3000e-004	52.9824
High School	329425	101.0126	0.0224	4.5000e-004	101.7065
Hotel	2.93611e+006	900.3071	0.1998	4.0000e-003	906.4920
Junior High School	160007	49.0633	0.0109	2.2000e-004	49.4004
Office Park	6.81369e+006	2,089.3024	0.4636	9.2700e-003	2,103.6553
Regional Shopping Center	1.40559e+006	431.0001	0.0956	1.9100e-003	433.9609
Retirement Community	3.43015e+006	1,051.7965	0.2334	4.6700e-003	1,059.0221
Single Family Housing	1.22142e+007	3,745.2728	0.8310	0.0166	3,771.0018
Total		**10,473.0886**	**2.3239**	**0.0465**	**10,545.0358**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	60.9800	0.5769	47.7594	2.1600e-003		0.2609	0.2609		0.2609	0.2609	0.0000	72.1178	72.1178	0.0515	0.0000	73.4044

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.0513					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	53.9301					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.9985	0.5769	47.7594	2.1600e-003		0.2609	0.2609		0.2609	0.2609	0.0000	72.1178	72.1178	0.0515	0.0000	73.4044
Total	**60.9800**	**0.5769**	**47.7594**	**2.1600e-003**		**0.2609**	**0.2609**		**0.2609**	**0.2609**	**0.0000**	**72.1178**	**72.1178**	**0.0515**	**0.0000**	**73.4044**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4,040.6038	19.5889	0.4594	4,667.2419

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	129.057 / 101.703	902.6955	4.3965	0.1031	1,043.3391
Elementary School	5.61066 / 18.0343	85.6187	0.2014	4.6900e-003	92.0517
General Light Industry	19.6803 / 0	84.8206	0.6587	0.0155	105.9048
General Office Building	64.0296 / 49.055	443.0780	2.1802	0.0511	512.8233
Health Club	2.6023 / 1.9937	18.0076	0.0886	2.0800e-003	20.8422
High School	4.72564 / 15.1896	72.1133	0.1697	3.9500e-003	77.5315
Hotel	8.11737 / 1.12741	38.8260	0.2726	6.4100e-003	47.5488
Junior High School	1.42545 / 4.58181	21.7524	0.0512	1.1900e-003	23.3868
Office Park	0 / 0	0.0000	0.0000	0.0000	0.0000

Regional Shopping Center	26.1737 / 20.0524	181.1189	0.8912	0.0209	209.6290
Retirement Community	106.383 / 83.8348	744.1040	3.6241	0.0850	860.0384
Single Family Housing	207.086 / 163.192	1,448.4689	7.0547	0.1655	1,674.1463
Total		**4,040.6038**	**19.5889**	**0.4595**	**4,667.2419**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	381.0396	22.5188	0.0000	944.0095

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	227.792	46.2397	2.7327	0.0000	114.5569
Elementary School	105.594	21.4346	1.2668	0.0000	53.1034
General Light Industry	26.382	5.3553	0.3165	0.0000	13.2676

Paradise Valley Operational 2035 Mitigated

Salton Sea Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	450.32	1000sqft	10.34	450,320.00	4712
Office Park	1.00	1000sqft	1.00	1.00	0
Elementary School	2,893.00	Student	5.55	241,864.55	0
High School	1,341.00	Student	4.08	177,898.37	0
Junior High School	735.00	Student	1.98	86,407.84	0
General Light Industry	106.38	1000sqft	2.44	106,380.00	0
Health Club	55.00	1000sqft	1.26	55,000.00	0
Hotel	400.00	Room	13.33	580,800.00	0
Condo/Townhouse	2,476.00	Dwelling Unit	154.75	2,476,000.00	0
Retirement Community	2,041.00	Dwelling Unit	408.20	2,041,000.00	0
Single Family Housing	3,973.00	Dwelling Unit	1,289.94	7,151,400.00	25212
Regional Shopping Center	441.69	1000sqft	10.14	441,687.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	20
Climate Zone	15			**Operational Year**	2035
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	676.01	**CH4 Intensity (lb/MWhr)**	0.15	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Imperial Irrigation District, SSAB, 50% RPS Standard

Land Use - Paradise Valley land Use. Office Park = EVs

Construction Phase - NO CONSTRUCTION INCLUDED

Off-road Equipment -

Vehicle Trips - Paradise Valley Land Use. Office Park = EVs (no gas VMT). Resiential trip type breakdown is adjusted to match total VMT in traffic study. Mitigated Daily VMT = 678,725

Road Dust - 100 percent paved roads

Woodstoves - No wood burning hearths

Energy Use - office park = EVs

Water And Wastewater - office park = EVs

Solid Waste - office park = EVs

Construction Off-road Equipment Mitigation - NO CONSTRUCTION

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation - No Hearth, Electric Landscape Equipment. Low VOC

Energy Mitigation - CalEEMod defaults reflect Title 24 standards from 2013; however, the 2016 standards are 28% more efficient. Data affected by Title 24 have been updated to reflect this increase in efficiency. SB350 = 50% more efficient than 2013 Title 24.

Water Mitigation -

Waste Mitigation - Provide recycling programs that fulfills an on-site goal of 80% diversion of solid waste

Table Name	Column Name	Default Value	New Value
tblApplianceMitigation	PercentImprovement	30.00	49.60
tblApplianceMitigation	PercentImprovement	30.00	49.60
tblApplianceMitigation	PercentImprovement	30.00	49.60
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	50.00	64.00
tblApplianceMitigation	PercentImprovement	50.00	64.00
tblApplianceMitigation	PercentImprovement	50.00	64.00
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblApplianceMitigation	PercentImprovement	15.00	38.80
tblAreaCoating	Area_EF_Parking	150	0

tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	50
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	0
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	6,000.00	0.00
tblEnergyUse	LightingElect	4.35	0.00
tblEnergyUse	NT24E	2.60	5,848,402.77
tblEnergyUse	T24E	3.22	0.00
tblEnergyUse	T24NG	2.93	0.00
tblLandUse	BuildingSpaceSquareFeet	1,000.00	1.00
tblLandUse	BuildingSpaceSquareFeet	441,690.00	441,687.00
tblLandUse	LandUseSquareFeet	1,000.00	1.00
tblLandUse	LandUseSquareFeet	441,690.00	441,687.00
tblLandUse	LotAcreage	0.02	1.00
tblLandUse	Population	0.00	4,712.00
tblLandUse	Population	7,997.00	0.00
tblLandUse	Population	6,592.00	0.00
tblLandUse	Population	12,833.00	25,212.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.15
tblProjectCharacteristics	CO2IntensityFactor	1270.9	676.01
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2018	2035
tblRoadDust	RoadPercentPave	50	100
tblSolidWaste	SolidWasteGenerationRate	0.93	0.00
tblSolidWaste	SolidWasteGenerationRate	10,336.92	4,853.99
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CC_TL	4.20	3.70

tblVehicleTrips	CC_TL	4.20	0.00
tblVehicleTrips	CC_TL	4.20	3.70
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CNW_TL	5.40	0.00
tblVehicleTrips	CNW_TL	5.40	13.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	CW_TL	12.50	0.00
tblVehicleTrips	CW_TL	12.50	7.10
tblVehicleTrips	HO_TL	4.50	10.40
tblVehicleTrips	HO_TL	4.50	10.40
tblVehicleTrips	HO_TL	4.50	10.40
tblVehicleTrips	HO_TTP	40.60	38.10
tblVehicleTrips	HO_TTP	40.60	38.10
tblVehicleTrips	HO_TTP	40.60	38.10
tblVehicleTrips	HS_TL	3.50	12.10
tblVehicleTrips	HS_TL	3.50	12.10
tblVehicleTrips	HS_TL	3.50	12.10
tblVehicleTrips	HW_TL	11.00	34.30
tblVehicleTrips	HW_TL	11.00	34.30
tblVehicleTrips	HW_TL	11.00	34.30

tblVehicleTrips	HW_TTP	40.20	42.70
tblVehicleTrips	HW_TTP	40.20	42.70
tblVehicleTrips	HW_TTP	40.20	42.70
tblVehicleTrips	ST_TR	5.67	1.99
tblVehicleTrips	ST_TR	0.00	0.59
tblVehicleTrips	ST_TR	1.32	0.01
tblVehicleTrips	ST_TR	2.46	0.01
tblVehicleTrips	ST_TR	20.87	0.03
tblVehicleTrips	ST_TR	0.61	0.77
tblVehicleTrips	ST_TR	8.19	7.35
tblVehicleTrips	ST_TR	0.00	0.73
tblVehicleTrips	ST_TR	1.64	0.00
tblVehicleTrips	ST_TR	49.97	0.04
tblVehicleTrips	ST_TR	2.03	5.63
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	4.84	1.99
tblVehicleTrips	SU_TR	0.00	0.59
tblVehicleTrips	SU_TR	0.68	0.01
tblVehicleTrips	SU_TR	1.05	0.01
tblVehicleTrips	SU_TR	26.73	0.03
tblVehicleTrips	SU_TR	0.25	0.77
tblVehicleTrips	SU_TR	5.95	7.35
tblVehicleTrips	SU_TR	0.00	0.73
tblVehicleTrips	SU_TR	0.76	0.00
tblVehicleTrips	SU_TR	25.24	0.04
tblVehicleTrips	SU_TR	1.95	5.63
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	5.81	1.99
tblVehicleTrips	WD_TR	1.29	0.59
tblVehicleTrips	WD_TR	6.97	0.01
tblVehicleTrips	WD_TR	11.03	0.01
tblVehicleTrips	WD_TR	32.93	0.03

tblVehicleTrips	WD_TR	1.71	0.77
tblVehicleTrips	WD_TR	8.17	7.35
tblVehicleTrips	WD_TR	1.62	0.73
tblVehicleTrips	WD_TR	11.42	0.00
tblVehicleTrips	WD_TR	42.70	0.04
tblVehicleTrips	WD_TR	2.40	5.63
tblVehicleTrips	WD_TR	9.52	4.27
tblWater	IndoorWaterUseRate	177,733.75	0.00
tblWater	OutdoorWaterUseRate	108,933.59	0.00

2.0 Emissions Summary

2.2 Overall Operational

Mitigated Operational

Note: In order to account for the reduction in gas VMT (and associated mobile emissions) due to EV use, out-of-model calculations have been conducted. Emissions have been updated (highlighted) and are reflected below.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	60.9800	0.5769	47.7594	2.1600e-003		0.2609	0.2609		0.2609	0.2609	0.0000	72.1178	72.1178	0.0515	0.0000	73.4044
Energy	0.9708	8.3754	4.1116	0.0530		0.6708	0.6708		0.6708	0.6708	0.0000	18,708.8775	18,708.8775	2.2036	0.2165	18,828.4938
Mobile	14.9219	115.1659	219.1823	1.0649	91.1924	0.3991	91.5915	24.4798	0.3737	24.8535	0.0000	99,273.9867	99,273.9867	3.8919	0.0000	########
Waste						0.0000	0.0000		0.0000	0.0000	381.0396	0.0000	381.0396	22.5188	0.0000	944.0095
Water						0.0000	0.0000		0.0000	0.0000	182.3865	3,858.2174	4,040.6038	19.5889	0.4594	4,667.2419
Total	**76.8727**	**124.1182**	**271.0533**	**1.1200**	**91.1924**	**1.3307**	**92.5231**	**24.4798**	**1.3054**	**25.7852**	**563.4261**	**121,913.1994**	**122,476.6255**	**48.2547**	**0.6760**	**116,847**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**5.30**	**4.61**	**6.23**	**3.29**	**0.00**	**29.50**	**0.60**	**0.00**	**29.90**	**2.11**	**73.59**	**18.42**	**19.20**	**67.35**	**32.52**	**17.40**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Note: In order to account for the reduction in gas VMT (and associated mobile emissions) due to EV use, out-of-model calculations have been conducted. Emissions have been updated (highlighted) and are reflected below.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	14.9219	115.1659	219.1823	1.0649	91.1924	0.3991	91.5915	24.4798	0.3737	24.8535	0.0000	99,273.9867	99,273.9867	3.8919	0.0000	########

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	4,927.24	4,927.24	4927.24	33,323,307	33,323,307
Elementary School	1,706.87	1,706.87	1706.87	2,752,455	2,752,455
General Light Industry	1.06	1.06	1.06	2,503	2,503
General Office Building	4.50	4.50	4.50	8,861	8,861
Health Club	1.65	1.65	1.65	2,253	2,253
High School	1,032.57	1,032.57	1032.57	2,045,076	2,045,076
Hotel	2,940.00	2,940.00	2940.00	4,443,604	4,443,604
Junior High School	536.55	536.55	536.55	901,095	901,095
Office Park	0.00	0.00	0.00		
Regional Shopping Center	17.67	17.67	17.67	24,446	24,446
Retirement Community	11,490.83	11,490.83	11490.83	77,713,376	77,713,376
Single Family Housing	16,964.71	16,964.71	16964.71	114,733,652	114,733,652
Total	39,623.65	39,623.65	39,623.65	235,950,627	235,950,627

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	34.30	12.10	10.40	42.70	19.20	38.10	86	11	3
Elementary School	7.10	3.70	13.10	65.00	30.00	5.00	63	25	12
General Light Industry	7.10	3.70	13.10	59.00	28.00	13.00	92	5	3
General Office Building	7.10	3.70	13.10	33.00	48.00	19.00	77	19	4
Health Club	7.10	3.70	13.10	16.90	64.10	19.00	52	39	9
High School	7.10	3.70	13.10	77.80	17.20	5.00	75	19	6
Hotel	7.10	3.70	13.10	19.40	61.60	19.00	58	38	4

Junior High School	7.10	3.70	13.10	72.80	22.20	5.00	63	25	12
Office Park	0.00	0.00	0.00	33.00	48.00	19.00	82	15	3
Regional Shopping Center	7.10	3.70	13.10	16.30	64.70	19.00	54	35	11
Retirement Community	34.30	12.10	10.40	42.70	19.20	38.10	86	11	3
Single Family Housing	34.30	12.10	10.40	42.70	19.20	38.10	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Office Park	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Elementary School	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
High School	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Junior High School	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
General Light Industry	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Health Club	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Hotel	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Condo/Townhouse	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Retirement Community	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Single Family Housing	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581
Regional Shopping Center	0.506699	0.034015	0.192654	0.107530	0.010238	0.004563	0.022787	0.108690	0.003302	0.001790	0.006411	0.000739	0.000581

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9,101.1115	9,101.1115	2.0195	0.0404	9,163.6336
NaturalGas Mitigated	0.9708	8.3754	4.1116	0.0530		0.6708	0.6708		0.6708	0.6708	0.0000	9,607.7660	9,607.7660	0.1842	0.1761	9,664.8602

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	4.09965e+007	0.2211	1.8891	0.8039	0.0121		0.1527	0.1527		0.1527	0.1527	0.0000	2,187.7290	2,187.7290	0.0419	0.0401	2,200.7296
Elementary School	1.28067e+006	6.9100e-003	0.0628	0.0527	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3416	68.3416	1.3100e-003	1.2500e-003	68.7477
General Light Industry	2.64301e+006	0.0143	0.1296	0.1088	7.8000e-004		9.8500e-003	9.8500e-003		9.8500e-003	9.8500e-003	0.0000	141.0411	141.0411	2.7000e-003	2.5900e-003	141.8793
General Office Building	785808	4.2400e-003	0.0385	0.0324	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9337	41.9337	8.0000e-004	7.7000e-004	42.1829
Health Club	1.36648e+006	7.3700e-003	0.0670	0.0563	4.0000e-004		5.0900e-003	5.0900e-003		5.0900e-003	5.0900e-003	0.0000	72.9203	72.9203	1.4000e-003	1.3400e-003	73.3536
High School	941972	5.0800e-003	0.0462	0.0388	2.8000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	50.2672	50.2672	9.6000e-004	9.2000e-004	50.5659
Hotel	1.89196e+007	0.1020	0.9274	0.7790	5.5600e-003		0.0705	0.0705		0.0705	0.0705	0.0000	1,009.6198	1,009.6198	0.0194	0.0185	1,015.6194
Junior High School	457530	2.4700e-003	0.0224	0.0188	1.3000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003	0.0000	24.4155	24.4155	4.7000e-004	4.5000e-004	24.5606
Office Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	558734	3.0100e-003	0.0274	0.0230	1.6000e-004		2.0800e-003	2.0800e-003		2.0800e-003	2.0800e-003	0.0000	29.8162	29.8162	5.7000e-004	5.5000e-004	29.9934
Retirement Community	2.63623e+007	0.1422	1.2147	0.5169	7.7500e-003		0.0982	0.0982		0.0982	0.0982	0.0000	1,406.7922	1,406.7922	0.0270	0.0258	1,415.1521
Single Family Housing	8.57302e+007	0.4623	3.9503	1.6810	0.0252		0.3194	0.3194		0.3194	0.3194	0.0000	4,574.8893	4,574.8893	0.0877	0.0839	4,602.0756

Total		**0.9708**	**8.3754**	**4.1116**	**0.0529**		**0.6707**	**0.6707**		**0.6707**	**0.6707**	**0.0000**	**9,607.7660**	**9,607.7660**	**0.1841**	**0.1762**	**9,664.8602**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	4.75724e+006	1,458.7280	0.3237	6.4700e-003	1,468.7490
Elementary School	447875	137.3333	0.0305	6.1000e-004	138.2767
General Light Industry	331923	101.7784	0.0226	4.5000e-004	102.4776
General Office Building	1.15732e+006	354.8732	0.0787	1.5700e-003	357.3111
Health Club	171609	52.6209	0.0117	2.3000e-004	52.9824
High School	329425	101.0126	0.0224	4.5000e-004	101.7065
Hotel	2.93611e+006	900.3071	0.1998	4.0000e-003	906.4920
Junior High School	160007	49.0633	0.0109	2.2000e-004	49.4004
Office Park	2.33936e+006	717.3253	0.1592	3.1800e-003	722.2531
Regional Shopping Center	1.40559e+006	431.0001	0.0956	1.9100e-003	433.9609
Retirement Community	3.43015e+006	1,051.7965	0.2334	4.6700e-003	1,059.0221
Single Family Housing	1.22142e+007	3,745.2728	0.8310	0.0166	3,771.0018
Total		**9,101.1115**	**2.0194**	**0.0404**	**9,163.6336**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	60.9800	0.5769	47.7594	2.1600e-003		0.2609	0.2609		0.2609	0.2609	0.0000	72.1178	72.1178	0.0515	0.0000	73.4044

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.0513					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	53.9301					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.9985	0.5769	47.7594	2.1600e-003		0.2609	0.2609		0.2609	0.2609	0.0000	72.1178	72.1178	0.0515	0.0000	73.4044
Total	**60.9800**	**0.5769**	**47.7594**	**2.1600e-003**		**0.2609**	**0.2609**		**0.2609**	**0.2609**	**0.0000**	**72.1178**	**72.1178**	**0.0515**	**0.0000**	**73.4044**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4,040.6038	19.5889	0.4594	4,667.2419

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	129.057 / 101.703	902.6955	4.3965	0.1031	1,043.3391
Elementary School	5.61066 / 18.0343	85.6187	0.2014	4.6900e-003	92.0517
General Light Industry	19.6803 / 0	84.8206	0.6587	0.0155	105.9048
General Office Building	64.0296 / 49.055	443.0780	2.1802	0.0511	512.8233
Health Club	2.6023 / 1.9937	18.0076	0.0886	2.0800e-003	20.8422
High School	4.72564 / 15.1896	72.1133	0.1697	3.9500e-003	77.5315
Hotel	8.11737 / 1.12741	38.8260	0.2726	6.4100e-003	47.5488
Junior High School	1.42545 / 4.58181	21.7524	0.0512	1.1900e-003	23.3868
Office Park	0 / 0	0.0000	0.0000	0.0000	0.0000

Regional Shopping Center	26.1737 / 20.0524	181.1189	0.8912	0.0209	209.6290
Retirement Community	106.383 / 83.8348	744.1040	3.6241	0.0850	860.0384
Single Family Housing	207.086 / 163.192	1,448.4689	7.0547	0.1655	1,674.1463
Total		**4,040.6038**	**19.5889**	**0.4595**	**4,667.2419**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	381.0396	22.5188	0.0000	944.0095

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	227.792	46.2397	2.7327	0.0000	114.5569
Elementary School	105.594	21.4346	1.2668	0.0000	53.1034
General Light Industry	26.382	5.3553	0.3165	0.0000	13.2676

General Office Building	83.76	17.0025	1.0048	0.0000	42.1230
Health Club	62.7	12.7275	0.7522	0.0000	31.5319
High School	48.946	9.9356	0.5872	0.0000	24.6150
Hotel	43.8	8.8910	0.5254	0.0000	22.0271
Junior High School	26.828	5.4458	0.3218	0.0000	13.4918
Office Park	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	92.754	18.8282	1.1127	0.0000	46.6461
Retirement Community	187.772	38.1160	2.2526	0.0000	94.4308
Single Family Housing	970.798	197.0632	11.6461	0.0000	488.2158
Total		**381.0396**	**22.5188**	**0.0000**	**944.0095**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

General Office Building	83.76	17.0025	1.0048	0.0000	42.1230
Health Club	62.7	12.7275	0.7522	0.0000	31.5319
High School	48.946	9.9356	0.5872	0.0000	24.6150
Hotel	43.8	8.8910	0.5254	0.0000	22.0271
Junior High School	26.828	5.4458	0.3218	0.0000	13.4918
Office Park	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	92.754	18.8282	1.1127	0.0000	46.6461
Retirement Community	187.772	38.1160	2.2526	0.0000	94.4308
Single Family Housing	970.798	197.0632	11.6461	0.0000	488.2158
Total		**381.0396**	**22.5188**	**0.0000**	**944.0095**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation