Appendix H:
Transportation Supporting Information

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December 20, 2022

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SUBJECT: RIVERSIDE COUNTY HIGHWAY 74 BUSINESS CORRIDOR VEHICLE MILES TRAVELLED (VMT) ANALYSIS

Dear Ms. Tsui Li:

The following Vehicle Miles Travelled (VMT) Analysis has been prepared for the proposed Riverside County Highway 74 Business Corridor (**Project**). The Project is located along a 6.8-mile-long section of Highway 74 between the Cities of Lake Elsinore and Perris, in Western Riverside County.

PROJECT OVERVIEW

The Project proposes land use changes and a Zone Consistency Program to create a vibrant and economically successful corridor that will facilitate attractive and well-planned communities while preserving the rural nature of the community. General Plan Amendment (GPA) No. 1205 proposes to modify the existing General Plan Land Use Designations, Rural Village Land Use Overlay, Policy Area, and policies to progress opportunities for residential, commercial, public facility, mixed-use areas, light industrial, and business park developments. The Zone Consistency Program will recommend parcel specific zone classifications that are consistent with the proposed GPA.

BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which requires all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the new measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**). (1) Based on OPR's Technical Advisory, the County of Riverside in December of 2020 adopted a comprehensive update to their own transportation analysis guidelines titled Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled (**County Guidelines**). (2) This analysis has been prepared based on the current County Guidelines.

VMT THRESHOLDS

As outlined in the County Guidelines, mixed-use projects should evaluate each land use component of the project separately and apply the relevant significance threshold for each land use type (i.e., residential, office, retail, etc.). Thresholds of significance based on the adopted County Guidelines are provided in Table 1.

TABLE 1: VMT THRESHOLDS OF SIGNIFICANCE

Land Use	VMT Threshold[1]	Basis
Residential	15.19 VMT/capita	Existing county-wide average VMT per capita
Office	14.24 VMT/employee	Existing county-wide average Work VMT per employee
Retail	Net Regional Change	Using the County as the basis or other area determined appropriate by the Transportation Department
Other Employment	14.24 VMT/employee	Existing county-wide average Work VMT per employee
Other Customer	Net Regional Change	Using the County as the basis

ANALYSIS SCENARIOS

RIVTAM is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, and employment. RIVTAM is a travel demand forecasting model for a sub-area (Riverside County) of the Southern California Association of Governments (SCAG) regional traffic model. RIVTAM was designed to provide a greater level of detail and sensitivity in the Riverside County area as compared to the regional SCAG model. County Guidelines currently identifies RIVTAM as the appropriate tool for conducting VMT modeling for land use projects within the County of Riverside.

Project VMT has been calculated using the most current version of RIVTAM. Adjustments in socio-economic data (SED) (i.e., population, households, and employment) have been made to multiple traffic analysis zones (TAZs) within the RIVTAM model to reflect the Project's proposed land uses. Consistent with County Guidelines the VMT analysis was conducted for the following existing and cumulative scenarios:

- **Existing Conditions** – RIVTAM base year (2012) traffic model conditions.
- **Existing Plus Project Conditions** – RIVTAM base year (2012) traffic model plus GPA 1205 proposed land use forecasts..

[1] County Guidelines; Page 22

- **Cumulative No Project Conditions** – RIVTAM cumulative model (2040) without the proposed Project land use changes (i.e., adopted land use assumptions).
- **Cumulative Plus Project Conditions** - RIVTAM cumulative model (2040) plus GPA 1205 proposed land use forecasts.

PROJECT LAND USE CONVERSION

Land use information for the Project has been provided by Riverside County. The land use acreages were then converted to socioeconomic data using conversion factors developed by Urban Crossroads, Inc. staff. The assumptions utilized to convert acreages into RIVTAM compatible socioeconomic data are consistent with the conversion factors used in the Riverside County Housing Element Update - GPA 1122 along with the Elsinore and Mead Valley Area Plans.

For non-residential land uses such as the commercial retail, land use information in terms of building square footage is converted into employees, which is the non-residential input for the travel demand model. The conversion factors used by County of Riverside's most recent General Plan Update (2015), which are contained in *Appendix E-2: Socioeconomic Build-Out Assumptions and Methodology* of the County's General Plan were used to convert building square footage to employees.[2]

For residential land uses, a conversion from dwelling units to population was used for each residential land use type. The County's General Plan Update data was used consistent with the source used for residential development. Population for each of the residential land use types was assumed to be between 2.7 and 3.17 people per unit depending on the location within the study area. Where applicable, existing socio-economic distributions were maintained.

VMT ANALYSIS

VMT IMPACT EVALUATION

As described in the County Guidelines, VMT significance thresholds are based on land use type, which for purposes of the analysis are separated into efficiency or net change metrics. Efficiency metrics include either VMT per capita (residential based VMT) and VMT per employee (employee based VMT). "Net Change" refers to the net change in regional VMT. Net change is used for elements that include a significant customer base such as retail uses.

The calculation of VMT efficiency metrics such as VMT per capita has two components – the total number of trips generated and the average trip length of each vehicle. As the proposed Project has both residential and non-residential trips, vehicle trip productions and attractions were used from the home-based trip purposes and home-based-work trip purpose matrices. Using the peak and off-peak person

[2] Source: County of Riverside General Plan Appendix E-2: Socioeconomic Build-Out Assumptions and Methodology.

trip matrices, skim (distances) matrices and appropriate occupancy rates, VMT was calculated for the Project TAZs.

Table 3 presents the VMT calculations for the Project's residential and employment-based component as compared to the County's adopted impact threshold for each respective land use.

TABLE 3: PROJECT VMT IMPACT EVALUATION

	Residential VMT per Capita	Threshold Performance	Employment-based VMT per Employee	Threshold Performance
Regional Average	15.19		14.24	
Existing				
Highway 74 Plan Area	22.04	45.1%	16.71	17.3%
Riverside County	15.19	0.0%	14.24	0.0%
Existing Plus Project				
Highway 74 Plan Area	16.25	7.0%	16.74	17.6%
Riverside County	15.03	-1.1%	14.22	-0.0%
Cumulative No Project				
Highway 74 Plan Area	22.71	49.5%	17.68	24.1%
Riverside County	16.63	9.5%	15.72	10.4%
Cumulative Plus Project				
Highway 74 Plan Area	20.88	37.5%	17.40	22.2%
Riverside County	16.55	9.0%	15.76	10.7%

Based on the results of this VMT analysis the following findings are made:

- The proposed Project's residential land uses would exceed the County's adopted impact threshold under all Existing Plus Project scenarios. **For Existing Plus Project, approximately 7.0% mitigation** is required to reduce Project generated VMT per capita to a level of less than significant. For Cumulative Plus Project, the Project was found to reduce VMT per capita as compared to the Cumulative No Project scenario.
- The Project's employment-based land uses (not including retail) was found to exceed the threshold under all scenarios. **For Existing Plus Project, approximately 17.6% mitigation is required.** For Cumulative Plus Project, the Project was found to reduce VMT per employee as compared to the Cumulative No Project scenario.
- Local-serving retail under 50,000 square feet per store, per adopted County traffic analysis guidelines is **presumed to not have a significant impact**.
- Regional-serving retail will need to be evaluated as detailed development proposals become available in the future. Retail buildings greater than 50,000 square feet may result in a significant VMT impact.

TOTAL VMT EVALUATION (FOR INFORMATIONAL PURPOSES ONLY)

Appendix E of the County Guidelines states the following, "for Specific Plans and Community Plans, Riverside County requires that Cumulative analysis be completed irrespective of the findings of Baseline Plus Project conditions. Additionally, No Project and Plus Project conditions under both the Baseline and

Cumulative must provide total Regional VMT values. Note that the Regional VMT values are for informational purposes and are not used as the basis for the determination of a significant impact."

As shown in Table 4, there is an increase in total regional VMT for both Existing and Cumulative scenarios. This finding would seem intuitive as the RivTAM Existing and Cumulative includes sparse levels of development in the Project's vicinity, which results in an influx of trips to and from the Project area.

TABLE 4: TOTAL VMT EVALUATION

	Total Project VMT
Existing	53,806,185
Existing Plus Project	54,451,354
Cumulative No Project	92,508,071
Cumulative Plus Project	93,066,136

POTENTIAL VMT REDUCTION STRATEGIES

Projects that exceed VMT threshold(s) are required to mitigate to the extent feasible its transportation impact. VMT reduction strategies for large projects and community plans/specific plans may include altering a project's density, land use mix, site design, and availability of transit, bicycle, and pedestrian facilities. For further explanation from the County's Guidelines of specific VMT mitigation transportation demand management (TDM) strategies see Attachment A for additional information. [3]

The Project's VMT reduction strategies at the community plan level should impose to the following measures at the project level once a development plan is available:

- Provide more options for shorter trips by locating residential uses within walking distance to retail, office and service orientated uses.
- Provide pedestrian and bicycle network improvements within the development connecting complementary uses (i.e., residential, employment and retail) internally and to existing off-site facilities.
- Where applicable ensure design of key intersections and roadways encourage the use of walking, biking and transit.
- Collaborate with the Riverside Transit Authority (RTA) to determine the feasibility of providing new or re-route existing transit services to the Project.

In addition, the following TDM strategies may be applicable at the implementing project level:

- Reduce Parking Supply for Retail Uses
- Transit Rerouting and Transit Stops
- Implementation of Local Shuttle Service
- Mandatory Travel Behavior Change Program, Promotions & Marketing

[3] County Guidelines; page 25.

- Promotions & Marketing
- Emergency Ride Home (ERH) Program
- School Carpool Program
- Bike Share
- Implement/Improve On-street Bicycle Facility
- Traffic Calming Improvements
- Pedestrian Network Improvements Additional TDM measures and their potential effectiveness within the suburban context of Riverside County are further defined in Appendix F of the County Guidelines.

As individual development proposals are not currently available at the community plan level, it is not possible to fully account for the effect of specific design elements, policies and improvements that will reduce VMT as part of this analysis. Although many of the aforementioned VMT reduction strategies may fully mitigate or reduce the VMT impacts identified in this analysis, necessary details to assure implementation and to accurately evaluate their effect are not available at the land planning stage.

CONCLUSION

Based on the results of this VMT analysis the following findings are made:

- The proposed Project's residential land uses would exceed the County's adopted impact threshold under all Existing Plus Project scenarios. **For Existing Plus Project, approximately 7.0% mitigation** is required to reduce Project generated VMT per capita to a level of less than significant. For Cumulative Plus Project, the Project was found to reduce VMT per capita as compared to the Cumulative No Project scenario.
- The Project's employment-based land uses (not including retail) was found to exceed the threshold under all scenarios. **For Existing Plus Project, approximately 17.6% mitigation is required.** For Cumulative Plus Project, the Project was found to reduce VMT per employee as compared to the Cumulative No Project scenario.
- Local-serving retail under 50,000 square feet per store, per adopted County traffic analysis guidelines is **presumed to not have a significant impact**.
- Regional-serving retail will need to be evaluated as detailed development proposals become available in the future. Retail buildings greater than 50,000 square feet may result in a significant VMT impact.

It is also important to note that in the future individual development projects have the potential to perform better than the overall impacts that have been presented in this programmatic level analysis. This is primarily due to the fact that at the programmatic level, the effects of VMT reducing design strategies and/or targeted TDM measures implemented at the implementing project level are not fully reflected in the analysis calculations.

If you have any questions, please contact me directly at cso@urbanxroads.com.

Respectfully submitted,

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Transportation Engineer

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **County of Riverside.** *Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled.* County of Riverside : s.n., December 2020.

ATTACHMENT A:
POTENTIAL PROGRAMMATIC TDM MEASURES

#	Transportation Demand Management Measure	Description	TDM Type	Riverside County Max VMT Reduction
Parking Strategies				
6	Parking Management Strategies	Strategies to encourage efficiency in parking facilities and improve the quality of service to parking users	--	3.0%
Transit Strategies				
5	Transit Rerouting	Coordinate with local transit agency to provide or reroute existing transit services near the site	Infrastructure	1.0%
6	Transit Stops	Coordinate with local transit agency to provide bus stop near the site	Infrastructure	1.0%
8	Implement Neighborhood Shuttle	Implement project-operated or project-sponsored neighborhood shuttle serving residents, employees, and visitors of the project site	Incentive	3.0%
Communication & Information Strategies				
5	Mandatory Travel Behavior Change Program, Promotions & Marketing	Involves the development of a travel behavior change program that targets individuals attitudes, goals, and travel behaviors, educating participants on the impacts of their travel choices and the opportunities to alter their habits. Provide a web site that allows employees to research other modes of transportation for commuting. Involves the use of marketing and promotional tools to educate and inform travelers about site-specific transportation options and the effects of their travel choices with passive educational and promotional materials.	Incentive	1.0%
	Promotions & Marketing	Involves the use of marketing and promotional tools to educate and inform travelers about site-specific transportation options and the effects of their travel choices with passive educational and promotional materials.	Incentive	1.0%
Commuting Strategies				
5	Emergency Ride Home (ERH) Program	Provides an occasional subsidized ride to commuters who use alternative modes. Guaranteed ride home for people if they need to go home in the middle of the day due to an emergency or stay late and need a ride at a time when transit service is not available.	Incentive	3.0%
Shared Mobility Strategies				
21	School Carpool Program	Implements a school carpool program to encourage ride-sharing for students.	Incentive	15.0%
Bicycle Infrastructure Strategies				
22	Bike Share	Implement bike share to allow people to have on-demand access to a bicycle, as-needed.	Incentive / Infrastructure	0.25%
23	Implement/Improve On-street Bicycle Facility	Implements or provides funding for improvements to corridors and crossings for bike networks identified within a one-half mile buffer area of the project boundary, to support safe and comfortable bicycle travel.	Infrastructure	0.625%
Neighborhood Enhancement Strategies				
26	Traffic Calming Improvements	Implements traffic calming measures throughout and around the perimeter of the project site that encourage people to walk, bike, or take transit within the development and to the development from other locations.	Infrastructure	1.0%
27	Pedestrian Network Improvements	Implements pedestrian network improvements throughout and around the project site that encourages people to walk.	Infrastructure	2.0%