APPENDIX 11

VMT ANALYSIS

MEMORANDUM

URBAN CROSSROADS

DATE: May 29, 2024
TO: Kaitlyn Dodson-Hamilton, Tom Dodson & Associates
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 15935-03 VMT

INLAND VALLEY INFRASTRUCTURE CORRIDOR TRANSPORTATION IMPACT ASSESSMENT

Urban Crossroads, Inc. has completed the following Transportation Impact Assessment for the Inland Valley Infrastructure Corridor (IVIC) Project (**Project**). The Project is located approximately 60 miles east of Los Angeles just south of the foothills of the San Bernardino Mountains. It is centrally located between three major freeways (State Route (SR)-210 to the north and east, the I-215 to the west, and the I-10 to the south) and regional attractions including the Loma Linda University and Medical Center (5 miles southwest of Project area), University of Redlands (8 miles southeast of Project area), the San Bernardino International Airport (SBIA), and commercial shopping destinations in Downtown San Bernardino and the Highland Town Center, both within 5 miles of the Project area.

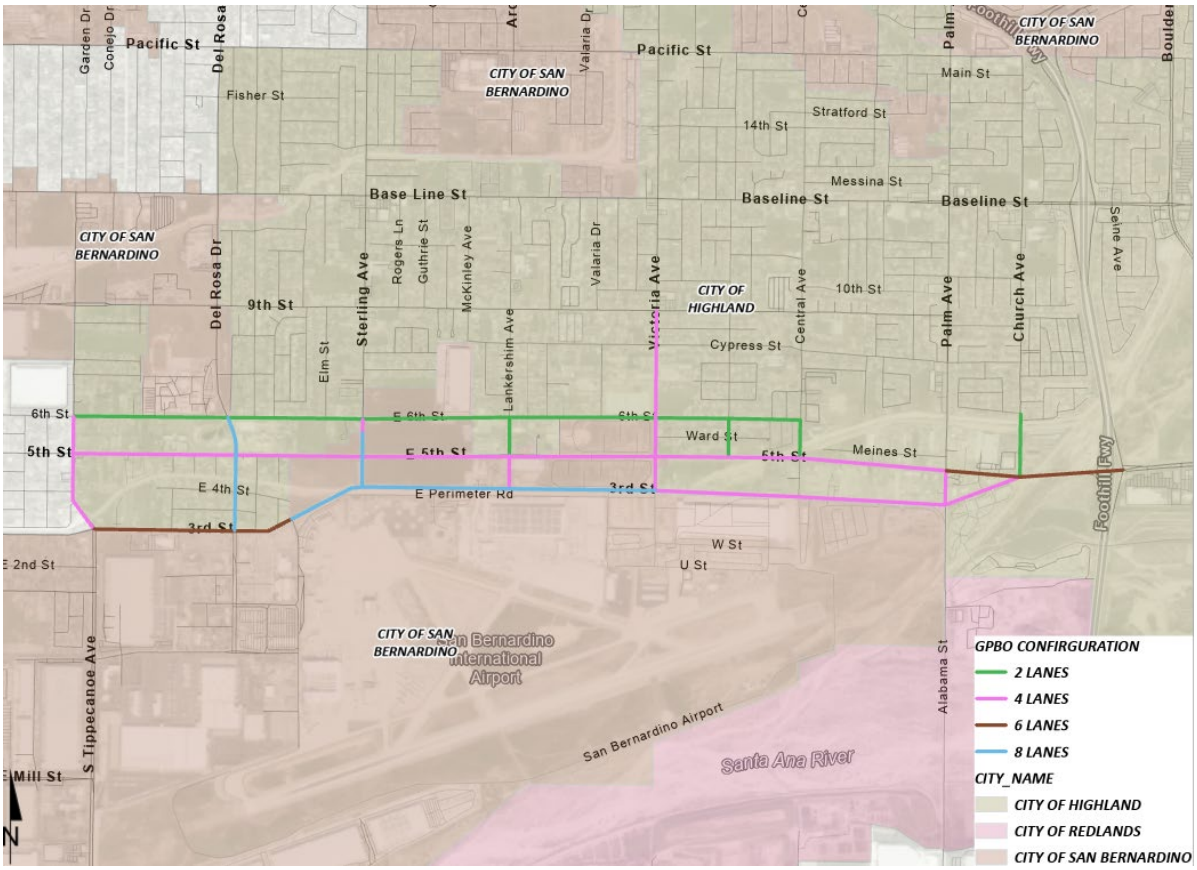
The IVIC Project area is located immediately north of the SBIA and the Project area extends to the north side of 9th Street. The western boundary extends to the terminus of the City Creek Bypass Channel, where it joins with Twin Creek, which is about a quarter of a mile to the east of Waterman Avenue. The IVIC Project area is bounded to the east by the SR-210 freeway. Third Street in both cities and Fifth Street in the City of Highland serve as the southern boundary of the Project area.

PROJECT OVERVIEW

The primary goal of the Project is to provide infrastructure improvements within the Project area through a collaborative effort with Inland Valley Development Agency (IVDA) partners to benefit the entire Project area, and greater area surrounding the Project utilizing the IVIC. More specifically, the Project intends to provide a comprehensive set of infrastructure improvements related to water, sewer, circulation system, and stormwater drainage that resolves longstanding flooding and hydrology issues. Circulation system enhancements are to include the addition of a single travel lane in each direction along designated Project area roadways as illustrated in Figure 1. The roadway improvements are anticipated to be constructed over approximately 10 lineal miles of roadway for a total of 20 new miles of lane additions within the Project area. Lane additions are anticipated to occur over a 20-year period and would include other related roadway improvements such as new curb and gutter. About 5,280 linear feet of roadway

(one mile) are anticipated to be constructed each year over the Project's 20-year period.

FIGURE 1: PROJECT ROADWAY IMPROVEMENTS



BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to adopt VMT as the measure for identifying transportation impacts for transportation projects. The State of California Governor's Office of Planning and Research (OPR) has provided guidance through their Technical Advisory on Evaluating Transportation Impacts in CEQA (1) (**Technical Advisory**). This VMT analysis has been developed based on OPR's Technical Advisory. The Technical Advisory notes that "if a project would likely lead to a measurable and substantial increase in vehicle travel, the lead agency should conduct an analysis assessing the amount of vehicle travel the project will induce." Project types that would likely lead to a measurable and substantial increase in vehicle travel generally include:

- Addition of through lanes on existing or new highways, including general purpose lanes, HOV lanes, peak period lanes, auxiliary lanes or lanes through grade separated interchanges.

Consistent with the Technical Advisory, as the Project includes roadway widening through the addition of a single travel lane in each direction along certain designated highways over approximately 10 linear lane miles within the Project area (see Figure 1), an assessment is

required to determine if the Project leads to additional vehicle travel on the roadway network, commonly referred to as "induced vehicle travel".

ANALYSIS METHODOLOGY

While CEQA does not require perfection, it is important to make a reasonably accurate estimate of transportations projects' effects on vehicle travel in order to make a reasonably accurate estimates of greenhouse gas emissions, air quality emissions, energy impacts and noise impacts[1]. Because a roadway expansion project can induce VMT, incorporating quantitative estimates of induced VMT is critical to calculating both transportation and other impacts of these projects[2]. The effect of a transportation project on vehicle travel should be estimated using the "change in total VMT" method as described in the Technical Advisory in Appendix 1[2]. As described in the Technical Advisory, "This means that an assessment of total VMT without the project and an assessment of total VMT with the project should be made; the difference between the two is the amount of VMT attributable to the project. The assessment should cover the full area in which driving patterns are expected to change. As with other types of projects, the VMT estimation should not be truncated at a modeling or jurisdictional boundary for convenience of analysis when travel behavior is substantially affected beyond the boundary."

TRAFFIC MODELING METHODOLOGY

The Technical Advisory states that travel demand models, sketch models, spreadsheet models, research, and data can all be used to calculate and estimate VMT. To the extent possible, lead agencies should choose models that have sensitivity to features of the project that affect VMT. Those tools and resources can also assist in establishing thresholds of significance and estimating VMT reduction attributable to mitigation measures and project alternatives. When using models and tools for those various purposes, agencies should use comparable data and methods, in order to set up an "apples-to-apples" comparison between thresholds, VMT estimates, and VMT mitigation estimates.

The San Bernardino County Transportation Authority (SBCTA) has identified for projects within San Bernardino County, that the San Bernardino Transportation Analysis Model (**SBTAM**) as the appropriate tool for conducting VMT analysis for transportation projects in their respective jurisdictions. SBTAM 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 and roadway network topography. SBTAM is a travel forecasting model that represents a sub-area (San Bernardino County) of the Southern California Association of Governments (SCAG) regional traffic model. SBTAM was designed to provide a greater level of detail and sensitivity in the San Bernardino County area as compared to the regional SCAG model.

[1] Technical Advisory; Page 20
[2] Technical Advisory; Page 23

VMT ANALYSIS METHODOLOGY

For this analysis, total VMT within the study area (i.e., Project area or other designated boundary) has been estimated using the Boundary Method. The boundary method is the sum of all weekday VMT on the roadway network within a designated boundary. The boundary method estimates VMT by multiplying vehicle trips on each roadway segment within the boundary by that segment's length. This approach consists of all trips, including those trips that do not begin or end in the designated boundary. This method also captures the effect of cut-through and/or displaced traffic. For the purposes of this assessment, boundary method calculations have been prepared for both the Project Area (see Figure 1) and a ten-mile radius surrounding the Project area has also been selected to provide a thorough accounting of the changes in travel patterns resulting from the additional roadway capacity provided by the Project.

VMT ESTIMATES

The Project's proposed lane additions were coded to the SBTAM model network to represent "With Project" conditions and the model was run inclusive of the new lane additions. Additionally, the SBTAM model was run without the proposed lane additions to represent the "No Project" condition. Table 1 presents VMT estimates within the study area boundary and a 10-mile boundary for both No Project and With Project conditions, along with the 'net change' in total VMT between No Project and With Project conditions. As presented in Table 1, the With Project condition results in a net increase in total VMT of 0.04%. The 10-Mile boundary is found to increase by 0.03%.

TABLE 1: BOUNDARY VMT

	Project Area		10-Mile Boundary	
Scenario	No Project	With Project	No Project	With Project
Boundary VMT	4,994,138	4,996,358	19,858,864	19,865,737
Change in Boundary VMT	2,220		6,873	
Significant?	Yes		Yes	

Total daily VMT within the study area was found to increase under 'with project' conditions for the Project Area and 10-Mile boundary. The Project is considered to have a significant VMT impact.

VMT REDUCTION STRATEGIES

The draft CalTrans SB 743 Program Mitigation Playbook (July 2022) (**Playbook**) (2) has been utilized to determine trip reduction measures that may be applicable to the Project. The Playbook describes methods to quantify reductions of transportation measures and the associated reductions to VMT for a transportation type project.

ACTIVE TRANSPORTATION

Providing complete streets or dedicated active transportation facilities is an integral part of reducing VMT. Safe and convenient walking and biking environments should be provided

regardless of the need for VMT mitigation. When mitigation funds are used for active transportation, the active transportation improvement must reduce motor vehicle use. For example, a new or improved AT facility that garners only recreational use would not serve as mitigation (though it may be worthwhile for other reasons).

The Project will be constructing roadway improvements consistent with the jurisdictional agencies' General Plans and Active Transportation Plans. VMT reductions associated with these improvements will reduce VMT of the Project.

The localities surrounding the Project area can assist in reduction to the Projects VMT by:

- Promoting increased residential density and affordability to the surrounding land uses.
- Promoting increased employment density to assist in shortening trips and reducing VMT.
- Implementing a Transportation Demand Management (TDM) program.
- Transit service improvements to replace auto trips, but over time it can foster transit-oriented development (TOD), which provides low-VMT housing, employment, retail, and other land uses. TOD may be developed intentionally around transit service, or it may occur organically as land uses adapt with features such as higher densities (accomplished in part by parking reductions), walkability and public-area amenities, and a mixture of land uses in proximity.
- Reduce available parking applied at multifamily residential or employment land uses, in the form of parking charges or capacity limitations to discourage driving.

CONCLUSION

The Project proposes to construct approximately 20-lane miles of lane addition. Consistent with the Technical Advisory, potential induced vehicle travel was evaluated to determine if the roadway capacity enhancements would result in an increase in total VMT. Consistent with guidance provided by the Technical Advisory, the proposed Project would result in a potential VMT impact if the "With Project" condition would result in a net increase in total VMT as compared to the "No Project" condition. As such, the Project is found to result in a net increase in total VMT and would therefore result in a significant and unavoidable VMT impact.

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

REFERENCES

1. **Governor's Office of Planning and Research.** *Technical Advisory On Evaluating Transporation Impacts In CEQA.* December 2018.

2. **Caltrans.** *Mitigation Playbook.* Draft July 2022.