Appendix D:
Vehicle Miles Traveled Analysis Memorandum

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MEMORANDUM

TO: Brandon Miles, City of Carlsbad

.

FROM: Erik Ruehr, VRPA Technologies

DATE: June 16, 2021

RE: El Camino Real Roadway Improvement Plans, Capital Improvement Project No. 6072
Poinsettia Lane to Camino Vida Roble
Vehicle Miles Traveled Analysis

This memorandum provides an analysis of Vehicle Miles Traveled (VMT) for the widening of El Camino Real between Poinsettia Lane and Camino Vida Roble in the City of Carlsbad (Capital Improvement Project No. 6072). This project proposes to add an additional northbound lane from Poinsettia Lane to Camino Vida Roble, provide missing sidewalk, and enhanced bike lanes for operational improvements consistent with the city's General Plan Mobility Element and meet the level of service performance standard required by the city's Growth Management Plan.

The project proposes to widen the roadway and on the east side of El Camino Real from Camino Vida Roble to Cinnabar Way to accommodate an additional northbound travel lane and new sidewalk. The bike lane will be retained on the east side of the street. The project will build El Camino Real, between Cinnabar Way to Camino Vida Roble to its ultimate General Plan Mobility Element roadway classification as an Arterial street. The project will fill the gap for pedestrian travel mode that currently exists on the east side of the street, between Cinnabar Way and Camino Vida Roble. The project will also restripe El Camino Real between Poinsettia Lane and Cinnabar Way in the northbound direction to add a third northbound travel lane.

The total length of the project is approximately 5,000 feet and it includes the following improvements:

- Physically widen the northbound portion of El Camino Real from two lanes to three lanes and install sidewalk between Cinnabar Way and Camino Vida Roble (a distance of approximately 1,500 feet).

- Provide signing and pavement striping improvements along the entire length of the project (from Poinsettia Lane to Camino Vida Roble)

The remainder of the memorandum includes background information, a description of the project, VMT screening analysis, selection of a methodology for conducting the VMT analysis, and the VMT analysis.

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BACKGROUND INFORMATION

Senate Bill 743 (SB 743) was implemented throughout California on July 1, 2020. This legislation requires that transportation analysis conducted under the California Environmental Quality Act (CEQA) be conducted using VMT or other similar performance measures rather than vehicle level of service and delay which was the traditional performance measure. SB 743 applies to both land development and transportation projects. In addition, it applies to projects initiated by public agencies as well as projects that are initiated by private companies and individuals.

In response to SB 743, the City of Carlsbad prepared VMT Analysis Guidelines (City of Carlsbad 2020) for conducting VMT studies. The thresholds of significance and screening criteria included in the guidelines were approved by City Council in June 2020. The City's guidelines were used in consideration of VMT for this project.

DESCRIPTION OF PROJECT

El Camino Real currently exists as a six-lane roadway through much of its length in the City of Carlsbad. The proposed project would improve the segment of El Camino Real between Poinsettia Lane and Camino Vida Roble, a distance of approximately 5,000 feet, by enhancing bicycle facilities, pedestrian facilities, signing, and pavement striping. In addition, within the project length is a segment of El Camino Real between Poinsettia Lane and Camino Vida Roble that currently has only five lanes, three southbound lanes and two northbound lanes. Through a combination of roadway widening and pavement restriping, the project will widen the segment to provide for three northbound through lanes from Poinsettia Lane to Camino Vida Roble.

As described above, pedestrian and bicycle improvements will be provided throughout the length of the project. In the southbound direction, the existing pedestrian and bicycle facilities include a sidewalk and a striped bicycle lane. In the northbound direction, bicycle lanes exist but they include vary in width. A sidewalk exists in the northbound direction between Poinsettia Lane and Cinnabar Way, but there is no sidewalk between Cinnabar Way and Camino Vida Roble. The project will provide a new sidewalk between Cinnabar Way and Camino Vida Roble and will also include improvements to the bicycle lane in the northbound direction.

VMT SCREENING ANALYSIS

The first step in the VMT analysis of a transportation project is to conduct a screening analysis to determine whether the project would be screened out of requiring a VMT evaluation. As outlined in Section 4.1 on page 11, the City of Carlsbad's VMT Analysis Guidelines includes a list of project types that would have a less than significant CEQA impact based on their characteristics. This list is based on statewide guidelines for VMT analysis that include a similar list. Since the project adds a through lane approximately 5,000 feet in length, it does not match any of the project types that would be screened out of doing a VMT analysis.

SELECTION OF VMT ANALYSIS METHODOLOGY

The following methodologies were considered for conducting the VMT analysis:

- Quantitative analysis using the SANDAG regional travel demand model
- Quantitative analysis using the National Centers for Sustainable Transportation's (NCST) Induced Travel Calculator
- Use of existing studies as suggested by the California Governor's Office of Planning and Research (OPR) suggests in its December 2018 Technical Advisory (Technical Advisory on Evaluating Transportation Impacts in CEQA, OPR, 2018)
- Use of a manual analysis as suggested in the City of Carlsbad's VMT Analysis Guidelines
- Qualitative analysis

Considerations for use of each of these methodologies are described below.

The use of the SANDAG regional travel model for VMT analysis of roadway projects is mentioned in Section 4.2 on page 12 of the City of Carlsbad's VMT Analysis Guidelines. The guidelines state that the SANDAG model would be a typical method to conduct VMT analysis for roadway projects, but also acknowledges that some projects so small that they would be inappropriate that for inclusion in the model. The proposed project with an added through lane of 5,000 feet is considered to fall into the category of projects that are too small to be analyzed using the regional travel model. The small increases or decreases in VMT due to implementation of the project would be indistinguishable in a model that includes a population of over three million people that includes thousands of miles of roadways.

Another quantitative model is currently available for VMT analysis of roadway projects is the NCST Induced Travel Calculator. The NCST calculator and related documentation are available through a website maintained by the University of California, Davis (https://ncst.ucdavis.edu/research-product/induced-travel-calculator), This calculator is recommended for use by Caltrans for VMT analysis on state highway facilities for certain types of roadway improvements, as described in the Transportation Analysis Framework or TAF (Caltrans 2020). The TAF does not specifically recommend the use of the NCST calculator on non-state highway facilities, but in the guidance documents provided with the calculator it is stated that it is appropriate for use on Principal Arterials (class 3 facilities) such as El Camino Real.

The key consideration for use of the NCST calculator on this project is whether the model and the underlying data apply to very small projects. In the model documentation, The Induced Travel Calculator and Its Applications (University of California, Davis, February 2021), it is stated that the key elasticity value used in the calculator for class 2 and 3 facilities (expressways and principal arterials) is derived from three sources:

- The Fundamental Law of Road Congestion: Evidence from US Cities (American Economic Review, Duranton and Turner, 2011): This study analyzed VMT increases in Metropolitan Statistical Areas (MSA's) throughout the United States. MSA's are urban areas surrounding a major city that can include one or more counties. For example, the San Diego region is an MSA.

- Induced Travel Demand and Induced Road Investment: A Simultaneous Equation Analysis, Journal of Transport Economics and Policy, Cervero and Hansen (2002): This study analyzed VMT increases on California roadways at the County-wide level.

- Induced Travel in the Environmental Review Process (Transportation Research Board, Volker, Lee, and Handy, 2020): This study evaluated induced travel for five roadway widening projects on California state highways ranging in length from 7 to 32 miles.

All of the studies that were used in the development of the NCST calculator used geographic areas that were out of scale of the size of the proposed project. For this reason, the NCST calculator was not considered to be an appropriate tool for quantitative analysis of VMT related to the project.

The California Governor's Office of Planning and Research (OPR) suggests in its December 2018 Technical Advisory (Technical Advisory on Evaluating Transportation Impacts in CEQA, OPR, 2018) that lead agencies can conduct a VMT analysis of roadway projects using the results of existing studies. According to OPR. "lead agencies can evaluate induced travel quantitatively by applying the results of existing studies that examine the magnitude of the increase of VMT resulting from a given increase in lane miles". The implementation of SB 743 is relatively recent and there do not appear to be any completed studies that would be of the size and scale of the proposed project.

The city's VMT Analysis Guidelines suggest that it may be possible to manually conduct a VMT analysis. Although the guidelines are open to the possibility of using a quantitative manual VMT analysis, no methodologies are currently available for this type of analysis. Therefore, a manual analysis was not considered to be appropriate.

Use of qualitative VMT analysis for roadway projects is supported by Section 15064.3 of the CEQA Guidelines (Association of Environmental Professionals, 2021). The guidance includes the following "If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc."

Since the quantitative VMT methodologies described above are not considered appropriate for use on this project, a qualitative analysis was used, as described below.

VMT ANALYSIS

As stated above, the project's transportation impacts based on VMT were analyzed qualitatively. The project is multimodal in the sense that it has components that support travel by auto and truck, transit,

bicycle, and walking. With respect to the different transportation modes, the project can be evaluated as follows:

- As described above, it supports automobile and truck traffic by removing a gap in the northbound lanes of El Camino Real where the roadway narrows from three lanes to two. This would tend to cause a slight increase in VMT since it would facilitate travel by the automobile mode.

- With respect to transit, the benefits described above for roadway traffic would also apply to transit vehicles. This would tend to cause a slight decrease in VMT since it would facilitate travel by transit. The project area is currently served by North County Transit District's Route 309 which provides service along El Camino Real.

- The project supports bicycle travel by improving pavement striping for bicycle facilities in the northbound direction between Poinsettia Lane and Camino Vida Roble and by providing a sidewalk which would tend to decrease usage of the existing bicycle lane by pedestrians. This would tend to cause a slight decrease in VMT since it would facilitate bicycle travel.

- For pedestrian traffic, the project adds new sidewalk where no sidewalk exists in the northbound direction between Cinnabar Way and Camino Vida Roble. This would tend to cause a slight decrease in VMT since it would facilitate pedestrian travel.

Based on the city's VMT Analysis Guidelines, the significance threshold for transportation projects is the following:

- A significant transportation impact occurs if the project results in a net increase in VMT

In a quantitative analysis, the determination of whether the threshold for significance is met would be determined based on the numerical increase or decrease in VMT associated with the project. In a qualitative analysis, the determination of whether the threshold is met would be based on whether the project would be expected to result in an increase in VMT without establishing a numerical value to the VMT increase or decrease. In the case of the proposed project, the analysis indicates a qualitative increase in VMT with respect to the automobile mode and a qualitative decrease in VMT with respect to the transit, bicycle, and pedestrian modes. The VMT analysis indicates both increases and decreases in VMT. On a qualitative basis, this indicates that the project would not result in a net increase in VMT. Therefore, the project does not meet the significance threshold and the project has a less than significant impact.

Please contact me if you have any questions. I can be reached by email at eruehr@vrpatechnologies.com or by phone at 858/361-7151.

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