

MEMORANDUM

DATE: February 6, 2024

To: Joseph Lambert, Director of Development Services, City of Placentia

FROM: Ken Wilhelm, Principal, LSA

SUBJECT: Packing House District Transit-Oriented Development Expansion Project – Vehicle Miles Traveled (VMT) Analysis

LSA has prepared this memorandum documenting the methodology and findings of a vehicle miles traveled (VMT) analysis for the Packing House District Transit-Oriented Development Expansion Project (project) in Placentia, California.

BACKGROUND

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was the removal of vehicle delay and level of service (LOS) from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project’s effect on VMT.

PROJECT DESCRIPTION

The City of Placentia (City) proposes to expand the City’s existing Transit-Oriented Development (TOD) zoning district and land use designation to include several properties adjacent to the Original TOD Area identified in the City’s recently adopted Housing Element. The area proposed for rezoning (the TOD Expansion Area) consists of approximately 14.5 acres of land (containing 317,866 square feet [sf] of existing industrial-use buildings) near a proposed Metrolink station. The proposed project would facilitate development of 1,378 new residential units within the TOD Expansion Area by rezoning the 14.5-acre project site to allow residential uses at the maximum allowable density of 95 units per acre, as specified in applicable Packing House District Development Standards designated by the City.

ANALYSIS METRICS

The City adopted its “City of Placentia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment, January 2021” (guidelines) to provide guidance for land use and transportation project VMT analyses.

As indicated above, the proposed project includes development of residential land uses. The City’s guidelines require land use projects to summarize two types of VMT – project-generated VMT and a project’s effect on VMT.

For project-generated VMT, the City's guidelines recommend the use of VMT per service population (population + employment) as the VMT metric to evaluate land use projects. Also, the City's guidelines recommend using Orange County as the region and the Orange County General Plan Buildout VMT per service population as the threshold for evaluating land use projects. A project's effect on VMT is estimated by comparing how the project changes VMT on the Citywide roadway network. Therefore, the project will constitute a significant VMT impact:

- if the project generated VMT per service population is greater than the Orange County General Plan Buildout VMT per service population or;
- the link-level boundary Citywide VMT per service population increases under the plus project condition compared to the no project condition.

METHODOLOGY

The City's guidelines provide multiple screening criteria for land use projects to screen out of a detailed VMT analysis. A screening analysis was previously conducted for the project. The memo "Trip Generation and Vehicle Miles Traveled Analysis for the Packing House District Transit-Oriented Development Expansion Project for the City of Placentia," dated November 10, 2023, describes the screening methodology and its conclusions. The screening analysis concluded that the project can be screened out of a detailed VMT analysis. However, to present a conservative scenario, a detailed VMT analysis was conducted for the project. The Orange County Transportation Analysis Model (OCTAM) was used to determine the VMT impact of the project. Following is a brief description of VMT analysis methodology.

Project Traffic Analysis Zone Update

The first step in the preparation of this analysis was to update the Traffic Analysis Zone (TAZ) in the model that includes the TOD Expansion Area. The TOD Expansion Area needs to be isolated in its own TAZ to estimate/determine the project VMT. OCTAM does not include the capability to split/add new TAZs. Therefore, the following steps were conducted to isolate the TOD Expansion Area in its own TAZ:

- The TOD Expansion Area currently contains 317,866 sf of existing industrial use, which may be demolished for the development of 1,378 new residential units. OCTAM is a socioeconomic data-based model. Therefore, existing square footage of industrial uses was converted into employment for modeling purposes. The Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition, was used to develop the conversion factors. The ITE *Trip Generation Manual* includes trip rates for different types of land uses by multiple unit types that were used to develop land use square footage-to-employee conversion factors (i.e., employees per thousand square feet). The conversion factor yielded approximately 550 employees.
- The guidelines recommend analysis of both a baseline and a forecast scenario to evaluate land use projects:
 - For the baseline (2016) scenario, 550 employees were removed from the parent TAZ where the TOD Expansion Area is located and the remainder of the socioeconomic data from that

TAZ were moved to an adjacent zone. The proposed project (1,378 new residential units) was included in the project TAZ for modeling.

- OCTAM included a growth of 962 households between baseline (2016) and forecast (2045) scenarios in the parent TAZ. An aerial review using a Google satellite image shows that the TAZ is almost completely built out, with no vacant land except for redevelopment. Since the parent TAZ is almost built out, the dwelling unit growth from OCTAM was attributed to the project. Therefore, similar to existing (2016) scenario, 550 employees and 962 households (the growth between 2016 and 2045 from the parent TAZ were removed and the remainder socio-economic data were moved to the adjacent zone. A total of 1,378 households were included in the project TAZ for modeling.

VMT Analysis

As recommended in the guidelines, model runs were conducted for both baseline and forecast/horizon year scenarios. No circulation/network modifications were identified for inclusion in the model network. The outputs from these updated model runs were used to calculate both project-generated VMT and the project’s effect on VMT.

The proposed project would constitute a significant impact for project-generated VMT if the project VMT per service population were to be greater than the Orange County General Plan Buildout VMT per service population. As shown in Table A, the project’s VMT per service population would be lower than the Orange County regional threshold for project-generated VMT in both the baseline (2016) and horizon year (2045) scenarios.

Table A: Project and Regional VMT Per Service Population Comparison

Year of Analysis	VMT Per Service Population			% Difference	Significant Impact
	Packing House District TOD Expansion (Project)	2045 Orange County Buildout ¹	Threshold ²		
2016	15.8	26.1	26.1	-39%	No
2045	16.2	26.1	26.1	-38%	No

Source: Compiled by LSA (2024).

¹ Obtained using 2045 “No project” LSA model run.

² 100% of the Orange County General Plan Buildout Average (26.1*1=26.1).

OCTAM = Orange County Transportation Analysis Model

TOD = Transit-Oriented Development

VMT = vehicle miles traveled

The proposed project would constitute a significant impact related to the project’s effect on VMT if the Citywide boundary link-level VMT per service population were to increase under the plus project condition compared to the no project condition. As shown in Table B, the Citywide link-level VMT per service population would be lower under the “with project” scenario compared to the “without project” conditions for both the baseline (2016) and horizon year (2045) scenarios.

**Table B: City of Placentia Roadway Link-Level VMT Per Service Population
(With and Without Project)**

2016	With Project	Without Project
Roadway VMT	839,801	839,349
Service Population	98,003	95,215
VMT per Service Population	8.6	8.8
2045	With Project	Without Project
Roadway VMT	912,655	914,420
Service Population	105,914	103,126
VMT per Service Population	8.6	8.9

CONCLUSIONS

Based on the recommendations in the City’s guidelines, the project was evaluated for two types of VMT: project-generated VMT and the project’s effect on VMT. Project-generated VMT was evaluated based on the VMT per service population whereas the project’s effect on VMT was evaluated using roadway VMT within the City of Placentia. As indicated previously, the project was screened out of a detailed VMT analysis; however, to present a conservative scenario, a full VMT analysis was conducted using the regional travel demand model, OCTAM. Based on the significance threshold criteria established within the guidelines, and as shown above, both project-generated VMT and the project’s effect on VMT do not exceed the threshold; therefore, the project would have a less than significant transportation impact.

Attachment: Vehicle Miles Traveled (VMT) Analysis Worksheet



Attachment - VMT Calculation Worksheet
Packing House District TOD Expansion, City of Placentia - VMT Analysis

2016	Packing House District TOD Expansion (project)	2045 Orange County Buildout (Threshold)*
Population	2,788	3,534,620
Employment	-	1,980,433
Enrollment	-	827,746
Total Service Population	2,788	6,342,799
<hr/>		
Total OD VMT	44,187	165,852,595
OD VMT per service population	15.8	26.1

2045	Packing House District TOD Expansion (project)	2045 Orange County Buildout (Threshold)*
Population	2,788	3,534,620
Employment	-	1,980,433
Enrollment	-	827,746
Total Service Population	2,788	6,342,799
<hr/>		
Total OD VMT	45,105	165,852,595
OD VMT per service population	16.2	26.1

**: Obtained from 2045 "No project" LSA model run*