



MEMORANDUM

Date:	May 08, 2023	GTS: 230219
To:	City of Lancaster Traffic Engineer	
From:	Rawad Hani, GTS	
Subject:	Vehicle Miles Traveled (VMT) Analysis – Desert Meadows Apartments and Townhouses, City of Lancaster, CA	

This memorandum describes the development of vehicle miles traveled (VMT) analysis for the proposed residential development at the northeast corner of W. Lancaster Blvd and 30th St. W, in the City of Lancaster, Los Angeles County, CA (City). The project consists of 105 townhomes and 324 apartments for a total of 429 dwelling units on approximately 12.73 acres. The VMT analysis evaluated the project using 2016 Southern California Association of Governments' (SCAG) Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) travel demand model. Project VMT has been estimated using SCAG RTP/SCS 2020 model year.

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 removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT).

Methodology

GTS used "Transportation Analysis Updates in Lancaster - dated May 27, 2020" (guidelines) as a guide for the VMT analysis of this project.

The guidelines provide multiple screening criteria for land use development projects. This project was compared with the screening criteria established in the guidelines to check if the project can be screened out of a detailed VMT analysis. Evaluation of the screening criteria is described below:

Project Type Screening: The project has 429 dwelling units and daily trip generation of the project is greater than 110 trips. Therefore, the project doesn't meet this screening criteria.

Low VMT Area Screening: Based on the "Low VMT Area Screening – Residential", the project TAZ doesn't have any population, therefore the project doesn't meet this screening criteria.

Transit Priority Area (TPA) Screening: The project is outside of the potential TPA identified in the guidelines. The project doesn't meet this screening criteria.

Affordable Housing Screening: The project doesn't include any affordable housing and therefore doesn't meet this screening criteria.

As described above, the project doesn't meet any of the screening criteria identified in the guidelines and therefore a detailed VMT analysis was conducted to evaluate the project using the "SCAG RTP/SCS Travel Demand Forecast Model" as suggested in the guidelines.

The SCAG RTP model uses a two tier TAZ system – Tier 1 zones and Tier 2 zones. Two or more Tier 2 zones make up a Tier 1 zone. The model utilizes Tier 2 zone system for modeling steps such as trip generation, trip distribution, and mode choice while it uses Tier 1 zone system for assignment purposes.

The project area is contained inside 1 Tier 2 zone. Given the inability to perform zone splits in the SCAG RTP model, GTS modified the socioeconomic data for Tier 2 zones to isolate the project from all other uses within the project zone. One Tier 2 zone was used to isolate the project and so existing socioeconomic data from the project zone was shifted to an adjacent zone for this purpose. Data for project location Tier1 zone was updated accordingly as well. The project is located in Tier2 TAZ 20305100 and non-project related socioeconomic data from TAZ 20305100 was moved to 20305200.

VMT Analysis

The guidelines suggest use of VMT per capita as the metric to evaluate residential land uses (Table 6: VMT Thresholds of Significance on page24). The project VMT metric should be less than the appropriate regional baseline metric to show no significant impact. The “Antelope Valley Planning Area (AVPA)” is identified as the region for the City of Lancaster and the 15% is identified as the threshold. The project will have a significant VMT impact if the project VMT per capita is greater than 85% of baseline AVPA VMT per capita. The baseline AVPA VMT per capita was obtained from the guidelines (Table 4A: SCAG Model Outputs for Antelope Planning Area and City of Lancaster (Home Based VMT) – page 15). According to the guidelines the numerical value of the regional (AVPA) baseline VMT per capita is 20.2 and the threshold would be 17.2 (85% of 20.2)

Model socioeconomic database for base scenario was updated with the project land use to calculate project VMT. Household characteristics from the project location TAZ were used for the project. Project VMT for base scenario was estimated using the model run. No project specific network modifications were conducted for the model scenarios. Full model runs with 5 feedback loops were conducted for the project scenario.

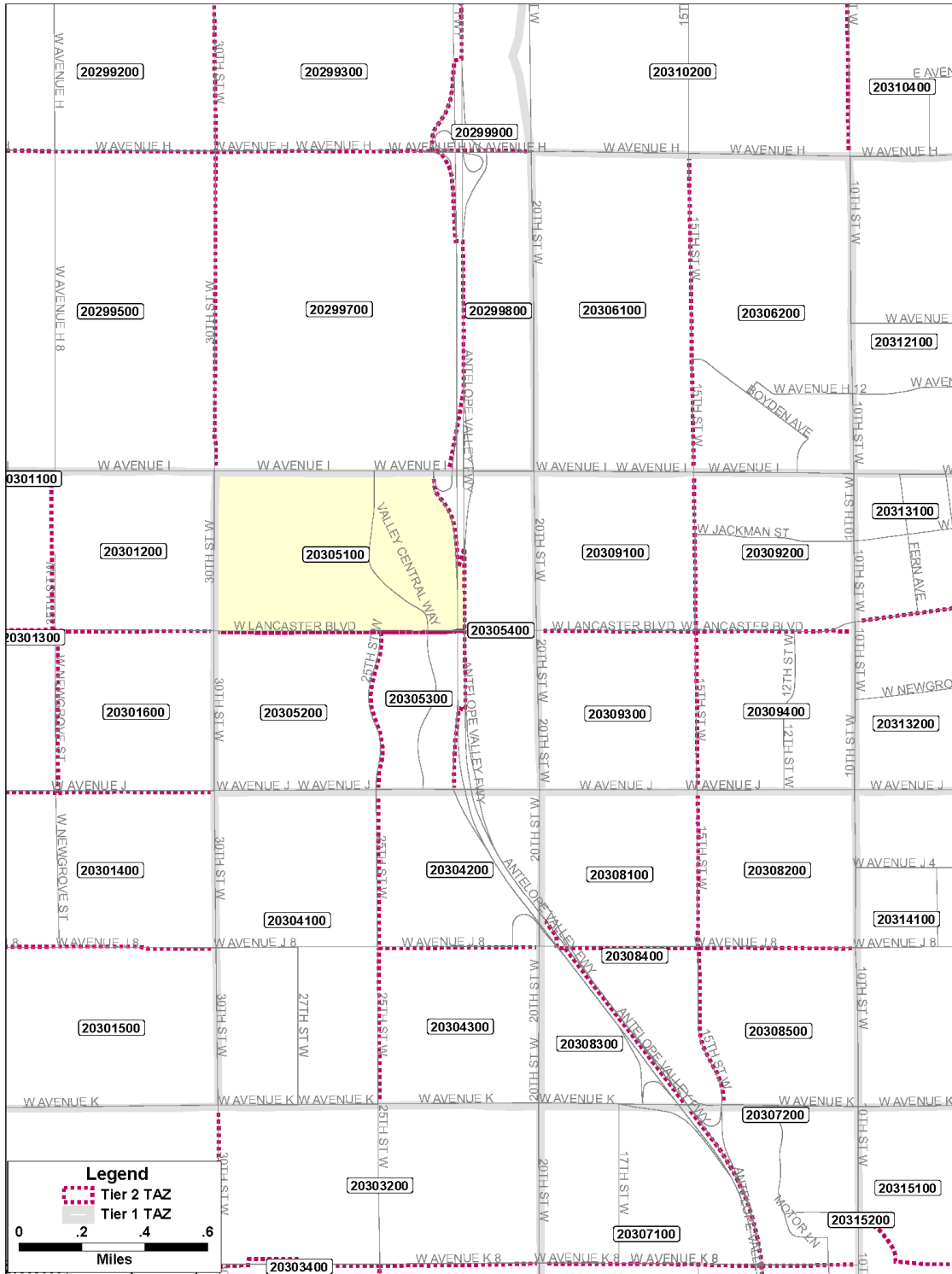
The travel model doesn't retain trip purposes during the final step (traffic assignment) of the model that produces traffic volumes. In order to estimate VMT by trip purpose, outputs from mode choice step were used as trips and the trip lengths were derived from the skimming step.

Mode choice outputs include person trips by trip purpose and mode. Only auto modes were considered for VMT estimation purposes. The person trip tables were appropriately converted to vehicle trips by using average auto occupancy factors from the model.

The trip length or distance was obtained using the model outputs from the “Skimming” step. The model skim outputs include peak and off peak skim matrices by mode, similar to trip outputs from the model.

Different trip purposes in the model are used in the estimation of different VMT metrics. VMT per capita estimates include all home based trip purposes. VMT per capita for the project was estimated using the Tier 2 zone system. Homebased VMT for the project zone was divided by the total project population to derive the VMT per capita for the project.

Figure 1: Tier 1 and Tier 2 TAZs in the project area



The following Table 1 summarizes the project VMT and compares it to the thresholds identified in the guidelines and Table 2 shows the detailed VMT calculations for the project. As illustrated in Table 1, the project does not have a significant impact for the baseline scenario (2020).

Table 1: Comparison of Project and Regional VMT per Capita

2020	Desert Meadows (project)	City of Lancaster Threshold *	Difference	% Difference
VMT per capita	10.4	17.2	-6.8	-39.6%

** City of Lancaster Threshold is 85% of 2020 Antelope Valley Planning Area (AVPA) average VMT per capita (20.2)
 Obtained from "Transportation Analysis Updates in Lancaster, May 27, 2020"*

Table 2: 2020 Project VMT Calculations

2020	Desert Meadows (project)	City of Lancaster Threshold *
Households (a)	429	
Population (b)	1,349	
Homebased (HB) VMT (c)	13,990	
HB VMT per capita (d = c/b)	10.4	17.2

** City of Lancaster Threshold is 85% of 2020 Antelope Valley Planning Area (AVPA) VMT per capita (20.2)
 Obtained from Transportation Analysis Updates in Lancaster, May 27, 2020*

Conclusion

Based on the VMT analysis as shown in above tables 1 and 2, the project doesn't constitute a significant impact for "project generated VMT".