

VEHICLE MILES TRAVELED ANALYSIS

W. AVENUE G WAREHOUSE

City of Lancaster, California
July 21, 2022

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LLG Ref. 1-22-0589-1



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1.0 INTRODUCTION

This Vehicle Miles Traveled (VMT) analysis has been conducted to identify and evaluate the potential traffic impact of the proposed W. Avenue G Warehouse project (the “Project”) located south of W. Avenue G and west of the State Route 14 (SR-14) Freeway in the City of Lancaster, California (the “Project Site”). The Project proposes to develop and construct a facility consisting of 1,240,630 square feet of warehouse floor area and 20,000 square feet of office floor area. The Project Site is generally bounded by W. Avenue G to the north, the Antelope Valley Fairgrounds to the south, the SR-14 Freeway to the east, and vacant land to the west. The Project Site location and general vicinity are shown in *Figure 1-1*.

This transportation analysis follows the City of Lancaster (the “City”) *Local Transportation Assessment Guidelines*¹ (LTAG). In compliance with the California Environmental Quality Act (CEQA), the City’s LTAG identifies VMT as the primary metric for evaluating a project’s transportation impacts. Therefore, this transportation analysis provides an assessment of the Project’s VMT transportation impact.

¹ *Local Transportation Assessment Guidelines*, City of Lancaster Department of Public Works, January 2021.



FIGURE 1-1
VICINITY MAP

MAP SOURCE: GOOGLE MAPS
★ PROJECT SITE

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W. AVENUE G WAREHOUSE

1.1 Study Area

The VMT assessment criteria for this transportation analysis were identified in consultation with City of Lancaster staff. The analysis criteria were determined based on the City's LTAG, the proposed Project description and location, and the characteristics of the surrounding transportation system. The general location of the Project in relation to the surrounding street system is presented in *Figure 1-1*.

2.0 PROJECT DESCRIPTION

2.1 Site Location

The proposed Project Site is located south of W. Avenue G and west of the SR-14 Freeway in the City of Lancaster. The Project Site is generally bounded by W. Avenue G to the north, the Antelope Valley Fairgrounds to the south, the SR-14 Freeway to the east, and vacant land to the west. The Project Site location and general vicinity are shown in *Figure 1-1*.

2.2 Existing Project Site

The Project Site comprises approximately 68.50 acres and is currently vacant. Vehicular access to the existing Project Site is currently not provided from W. Avenue G.

2.3 Proposed Project Description

The Project proposes the development and construction of a facility consisting of 1,240,630 square feet of warehouse floor area and 20,000 square feet of office floor area. The Project proposes to provide parking spaces for 732 automobiles and 365 trailers within on-site surface parking lots. Construction of the proposed Project is planned to be completed by the year 2023. The site plan for the proposed Project is illustrated in *Figure 2-1*.

Vehicular access to the Project Site will be provided via Avenue G8, which will be extended to the east as part of the Project and border the Project Site to the south, as well as a new 25th Street W., which will extend from W. Avenue G to the future Avenue G8 and border the Project Site to the west. Further discussion on the Project Site access and circulation schemes is provided in Section 3.0.

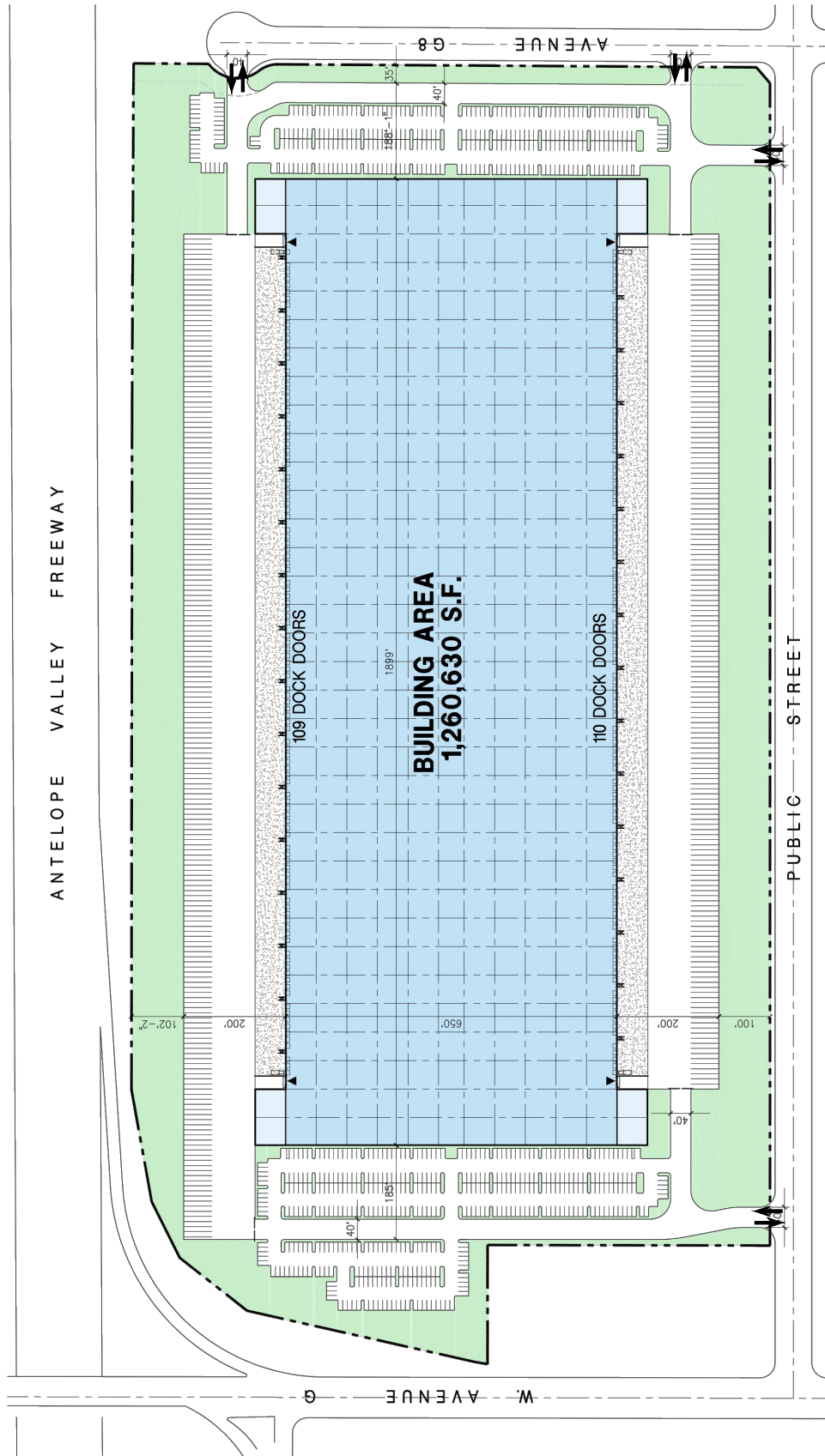


FIGURE 2-1
PROJECT SITE PLAN

W. AVENUE G WAREHOUSE

SOURCE: HPA ARCHITECTURE



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3.0 SITE ACCESS AND CIRCULATION

The proposed site access scheme for the Project is displayed in *Figure 2-1*. A description of the proposed site access and circulation scheme is provided in the following subsections.

3.1 Existing Vehicular Site Access

Vehicular access to the existing Project Site is currently unavailable, as Avenue G8 currently terminates west of the Project Site, 25th Street W. currently terminates north and south of the Project Site, and there are no existing driveways along the south side of W. Avenue G (i.e., along the Project Site's northerly frontage).

3.2 Vehicular Project Site Access

Vehicular access to the Project Site will be provided via two driveways along the east side of the future 25th Street W., which will extend from W. Avenue G to the future Avenue G8 and will border the Project Site to the west, as well as two driveways along the north side of the future Avenue G8, which will be extended to the east as part of the Project and will border the Project Site to the south. The driveways will provide access to the Project's on-site surface parking lots. The northerly driveway on 25th Street W. will accommodate full vehicular access (i.e., left-turn and right-turn ingress and egress turning movements). The southerly driveway on 25th Street W. and westerly driveway on Avenue G8 will accommodate right-turn ingress and egress movements only (i.e., left-turn ingress and egress movements will not be permitted). The easterly driveway on Avenue G8 will accommodate left-turn ingress movements and right-turn egress movements as it is located at the end of the Avenue G8 extension.

4.0 EXISTING STREET SYSTEM

4.1 Regional Highway System

Regional access to the Project Site is provided by the SR-14 (Antelope Valley) Freeway. A brief description of the SR-14 Freeway is provided in the following paragraph.

SR-14 (Antelope Valley) Freeway is a north-south freeway that extends from the northern Mojave Desert to Los Angeles. In the Project vicinity, two mixed-flow freeway lanes are provided in each direction on the SR-14 Freeway. Northbound and southbound on- and off-ramps are provided at W. Avenue G and are located northeast of the Project Site. Northbound and southbound on- and off-ramps are also provided at W. Avenue H and are located approximately 0.50 miles southeast from the edge of the Project Site.

4.2 Local Roadway System and Roadway Descriptions

Immediate access to the Project Site will be provided via the future 25th Street W. and future Avenue G8. A brief description of the roadways in the Project vicinity is provided in the following paragraphs.

30th Street W. is a north-south oriented roadway located west of the Project Site. Within the Project study area, 30th Street W. is designated as a Major Arterial by the City. North of Avenue G8, one through travel lane is provided in each direction on 30th Street W. within the Project study area. South of Avenue G8, two through travel lanes are provided in each direction on 30th Street W. Separate exclusive left-turn and right-turn lanes are provided in the northbound and southbound directions on 30th Street W. at the W. Avenue G intersection and separate exclusive left-turn lanes are provided in the northbound and southbound directions on 30th Street W. at the W. Avenue H intersection. A separate exclusive left-turn lane is provided in the southbound direction and a separate exclusive right-turn lane is provided in the northbound direction on 30th Street W. at the Avenue G8 intersection. 30th Street W. is posted for a speed limit of 55 miles per hour within the Project study area.

25th Street W. is a north-south oriented roadway located north and south of the Project Site. Within the Project study area, 25th Street W. is designated as a Secondary Arterial by the City. North of W. Avenue H, 25th Street W. serves as the access road to the Antelope Valley Fairgrounds. South of W. Avenue H, one through travel lane is provided in each direction on 25th Street W. Separate exclusive left-turn and right-turn lanes are provided in the northbound and southbound directions on 25th Street W. at the W. Avenue H intersection. South of W. Avenue H, 25th Street W. is posted for a speed limit of 40 miles per hour. As previously noted, 25th Street W. will be constructed from W. Avenue G to Avenue G8 in conjunction with the Project.

W. Avenue G is an east-west oriented roadway that borders the Project Site to the north. Within the Project study area, W. Avenue G is designated as a Major Arterial by the City. Two through travel lanes are provided in the eastbound direction and two through travel lanes and a shared through/right-turn lane are provided in the westbound direction on W. Avenue G at the 30th

Street W. intersection within the Project study area. Shared through/right-turn lanes are provided in each direction on W. Avenue G at the SR-14 Freeway ramp intersections. Separate exclusive left-turn lanes are provided in the eastbound and westbound directions and a separate exclusive right-turn lane is provided in the eastbound direction on W. Avenue G at the 30th Street W. intersection. W. Avenue G is posted for a speed limit of 55 miles per hour within the Project study area.

Avenue G8 is an east-west oriented roadway located south of the Project Site. Within the Project study area, Avenue G8 is designated as a Collector by the City. One through travel lane is provided in each direction on Avenue G8 within the Project study area. Separate exclusive left-turn and right-turn lanes are provided in the westbound direction on Avenue G8 at the 30th Street W. intersection. Avenue G8 is posted for a speed limit of 45 miles per hour within the Project study area. As previously noted, Avenue G8 will be extended easterly and adjacent to the Project Site, with a cul-de-sac terminus constructed west of the SR-14 Freeway.

W. Avenue H is an east-west oriented roadway located south of the Project Site. Within the Project study area, W. Avenue H is designated as a Major Arterial by the City. One through travel lane and a shared through/right-turn lane are provided in the eastbound direction and two through travel lanes are provided in the westbound direction on W. Avenue H at the 30th Street W. intersection within the Project study area. Separate exclusive left-turn lanes are provided in each direction and a separate exclusive right-turn lane is provided in the westbound direction on W. Avenue H at the 30th Street W. intersection. W. Avenue H is posted for a speed limit of 55 miles per hour within the Project study area.

5.0 VEHICLE MILES TRAVELED ANALYSIS

5.1 Introduction

VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT is a measure of the use and efficiency of the transportation network. VMTs are calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round trip) travel and is often estimated for a typical weekday for the purpose of measuring transportation impacts.

In September 2013, the Governor's Office signed Senate Bill 743 (SB 743), starting a process that fundamentally changes the way transportation impact analysis is conducted under the California Environmental Quality Act. Within the State's CEQA Guidelines, these changes include the elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant traffic impacts. SB 743 identifies VMT as the most appropriate CEQA transportation metric, along with the elimination of auto delay/LOS for CEQA purposes statewide. The justification for this paradigm shift is that LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas emissions.

5.2 Screening Criteria

As previously noted, the City's LTAG identifies VMT as the primary metric for determining transportation impacts of development projects. The City's LTAG includes VMT screening criteria, guidelines, and thresholds for measuring transportation impacts under CEQA.

Page 2 of the City's LTAG states:

"A project only needs to satisfy one of the screening criteria to be exempt from requiring further VMT analysis:

- Project Size – A project that generates 110 or fewer daily trips.
- Locally Serving Retail – A project that has locally serving retail uses that are 50,000 square feet or less, including specialty retail, shopping center, grocery store, pharmacy, financial services/banks, fitness center or health club, restaurant, and café. If the project contains other land uses, those uses need to be considered under other applicable screening criteria.
- Project Located in a Low VMT Area – A residential or office project that is located in a Traffic Analysis Zone (TAZ) that is already 15% below the Antelope Valley Planning Area (AVPA) Baseline VMT.

- **Transit Proximity** – A multifamily residential project providing higher density housing or a commercial project in an area already zoned for commercial use that is located within a one-half mile of the Metrolink station or within a one-half mile of a bus stop with service frequency of 15 minutes or less during commute periods.
- **Affordable Housing** – A residential project that provides affordable housing units; if part of a larger development, only those units that meet the definition of affordable housing satisfy the screening criteria.
- **Transportation Facilities** – Transportation projects that promote non-auto travel, improve safety, or improve traffic operations at current bottlenecks, such as transit, bicycle and pedestrian facilities, intersection traffic control (e.g., traffic signals or roundabouts), or widening at intersections to provide new turn lanes.

For projects that do not meet any of the screening criteria above, a VMT analysis is required and should rely on the best available data to inform trip generation and trip length estimates for the project uses.”

5.2.1 Project Traffic Generation

Traffic volumes expected to be generated by the proposed Project during the weekday AM and PM peak hours, as well as on a daily basis, were estimated using rates published in the *ITE Trip Generation Manual*. The following trip generation rates were used to forecast the traffic volumes expected to be generated by the Project:

- **Warehouse:** ITE Land Use Code 156 (High-Cube Parcel Hub Warehouse) trip generation average rates were used to forecast the traffic volumes expected to be generated by the Project.

It is noted that the *ITE Trip Generation Manual* states that the amount of office space provided within a high-cube warehouse is typically an insignificant portion of the overall building square footage. The Project’s office component is 20,000 square feet, which is less than two percent of the Project’s total floor area of 1,260,630 square feet. Therefore, for trip generation purposes, the office floor area is included as part of the warehouse floor area.

As presented in **Table 5–1**, the proposed Project is expected to generate 882 net new vehicle trips (441 inbound trips and 441 outbound trips) during the AM peak hour. During the PM peak hour, the proposed Project is expected to generate 807 net new vehicle trips (549 inbound trips and 258 outbound trips). Over a 24-hour period, the proposed Project is forecast to generate 5,837 daily trip ends (approximately 2,919 inbound trips and 2,918 outbound trips) during a typical weekday.

As the Project is forecast to generate more than 110 daily vehicle trips, it does not meet the screening criteria regarding project size and therefore, a VMT analysis is required for the Project. Further, the Project is not classified as locally serving retail, is not located in a low VMT area, is not located within a one-half mile of a Metrolink station or bus stop, does not provide affordable

Table 5-1
PROJECT TRIP GENERATION [1]

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LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]		PM PEAK HOUR VOLUMES [2]	
			IN	OUT	IN	OUT
<i>Proposed Project</i> Warehouse [3]	1,260,630 GSF	5,837	441	441	549	258
NET INCREASE PROJECT TRIPS		5,837	441	441	549	807

[1] Source: ITE *Trip Generation Manual*, 11th Edition, 2021.

[2] Trips are one-way traffic movements, entering or leaving.

[3] ITE Land Use Code 156 (High-Cube Parcel Hub Warehouse) trip generation average rates.
 - Daily Trip Rate: 4.63 trips/1,000 SF of floor area; 50% inbound and 50% outbound
 - AM Peak Hour Trip Rate: 0.70 trips/1,000 SF of floor area; 50% inbound/50% outbound
 - PM Peak Hour Trip Rate: 0.64 trips/1,000 SF of floor area; 68% inbound/32% outbound

housing units, and is not a transportation project. Accordingly, a VMT analysis has been prepared of the Project's potential VMT impact based on the guidelines presented in the LTAG.

5.3 Impact Methodology and Criteria

Per Page 3 of the City's LTAG, the VMT analysis should be conducted using the Southern California Association of Governments (SCAG) regional travel demand model. The impact methodology set forth in the LTAG is as follows:

- Existing/Baseline Conditions: Project-generated VMT should be estimated for the proposed land uses under existing/baseline conditions. VMT can be estimated using the SCAG regional travel demand model and should be reported as Home-Based VMT per Capita (residential projects), Home-Based Work VMT per Employee (office or employment-generating projects), or Total VMT per Service Population (all other land uses). For land use plans, Total VMT per Service Population or Total VMT can be used to determine potential impacts.
- Cumulative Conditions: A less than significant impact under Existing/Baseline conditions would also result in a less than significant cumulative impact as long as the project is consistent with the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

Per Page 4 of the LTAG, a development project will have a potential VMT impact if the project meets the following:

- Other Land Use Types – The project exceeds 15% below the AVPA Baseline VMT. For land use types not listed above, the City can determine the appropriate VMT metric depending on the project characteristics. For projects that are generally producing job-related travel, the employment generating VMT (home-based work VMT per employee) can be compared to the baseline. For other projects, the total VMT per Service Population can be compared to the AVPA baseline, or the net change in Total VMT can be estimated.

In coordination with City staff, it was determined that the Total VMT per Service Population would be the appropriate metric to use in evaluating the potential VMT impacts of the proposed Project. The Project is not a residential or regional retail use, or a transportation project. In addition, the VMT per Service Population is a common metric used by jurisdictions throughout Southern California in evaluating the potential transportation impacts of development projects, including warehousing facilities. Within the SCAG model, the total VMT (all vehicles and all trip purposes) to and from all zones in the geographic area are divided by the total service population (employees and residents) to get the efficiency metric of VMT per Service Population.

5.4 Summary of Project VMT Analysis

The VMT expected to be generated by the Project for the 2012 Base Year was determined using the SCAG regional travel demand model. Based on the SCAG model, the Project Site is within TAZ 20299300. *Figure 5-1* presents the SCAG TAZ Map that shows the location of the Project Site within TAZ 20299300.

Table 5-2 provides the VMT analysis for the proposed Project. As shown in *Table 5-2*, the Project will reduce the Total VMT per Service Population within the AVPA from 40.44 to 40.40. As the proposed Project will reduce the Total VMT per Service Population within the AVPA, the proposed Project is deemed to have a less than significant VMT impact.

5.5 Summary of Cumulative VMT Analysis

As stated in the City's LTAG, analyses should consider both short-term and long-term project effects on VMT. Short-term effects are evaluated in the detailed project-level VMT analysis summarized above. Long-term, or cumulative, effects are determined through a consistency check with SCAG's RTP/SCS. The RTP/SCS is the regional plan that demonstrates compliance with air quality conformity requirements and greenhouse gas (GHG) reduction targets. As such, projects that are consistent with this plan in terms of development, location, density, and intensity, are part of the regional solution for meeting air pollution and GHG goals. As noted in the City's LTAG, for projects that do not demonstrate a project impact by applying an efficiency-based impact threshold (i.e., Total VMT per Service Population) in the analysis, a less than significant project impact conclusion and consistency with the RTP/SCS is sufficient in demonstrating a less than significant cumulative impact on VMT. Development in a location where the RTP/SCS does not specify any development may indicate a significant impact on transportation.

It is noted that the Project is consistent with the RTP/SCS. Further, based on the above project related VMT analysis and the conclusions reported (i.e., which conclude that the Project results in a net decrease in Total VMT per Service Population), a significant cumulative VMT impact is not anticipated.

As shown in *Table 5-2*, the Project will reduce the Total VMT per Service Population within the AVPA from 37.33 to 36.04 in the future 2040 horizon year. As the proposed Project will reduce the Total VMT per Service Population within the AVPA in the future 2040 horizon year, the proposed Project is expected to result in a less than significant cumulative VMT impact.



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MAP SOURCE: SCAG

PROJECT SITE

TAZ BOUNDARY

TAZ 20299300 BOUNDARY

FIGURE 5-1
SCAG TAZ MAP

Table 5-2
SUMMARY OF VMT ANALYSIS [1]

METRIC [2]	2012 BASELINE		2040 FUTURE	
	WITHOUT PROJECT	WITH PROJECT	WITHOUT PROJECT	WITH PROJECT
TAZ OD VMT	117,340.47	185,117.76	161,940.91	243,025.78
TAZ SP	1,685.00	2,811.00	3,116.00	4,242.00
AVPA OD VMT	76,424,877.60	76,745,403.63	91,775,326.98	89,384,195.98
AVPA SP	1,889,610.00	1,899,744.00	2,458,716.00	2,480,186.00
AVPA VMT/SP	40.44	40.40	37.33	36.04

[1] Source: SCAG Regional Travel Demand Model.

[2] TAZ = Traffic Analysis Zone

VMT = Vehicle Miles Traveled

SP = Service Population

AVPA = Antelope Valley Planning Area

OD = Origin/Destination

6.0 CONCLUSIONS

This VMT analysis has been prepared to evaluate the potential impact due to the proposed W. Avenue G Warehouse project located south of W. Avenue G and west of the SR-14 Freeway in the City of Lancaster. The City's current local transportation assessment guidelines require that a VMT analysis be performed for the purpose of identifying transportation impacts under CEQA. A VMT assessment has therefore been prepared in accordance with the City's guidelines. Based on the SCAG regional travel demand model and the thresholds outlined in the City's guidelines, the Project results in a net decrease in Total VMT per Service Population for the 2012 Base Year and 2040 Future Year analysis conditions within the AVPA. Therefore, the proposed Project is determined to have a less than significant VMT impact.