

VEHICLE MILES TRAVELED ANALYSIS

FEDEx LANCASTER

City of Lancaster, California
October 26, 2021

Prepared for:

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LLG Ref. 5-21-0558-1



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VEHICLE MILES TRAVELED ANALYSIS

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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 FedEx Lancaster project (the “Project”) located at the northeast corner of the 30th Street W. / W. Avenue G intersection in the City of Lancaster, California (the “Project Site”). The Project proposes to develop and construct a new FedEx Ground warehousing/distribution facility totaling 250,944 square feet of building floor area. The Project Site is generally bounded by vacant land to the north and east, W. Avenue G to the south, and 30th Street W. 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.

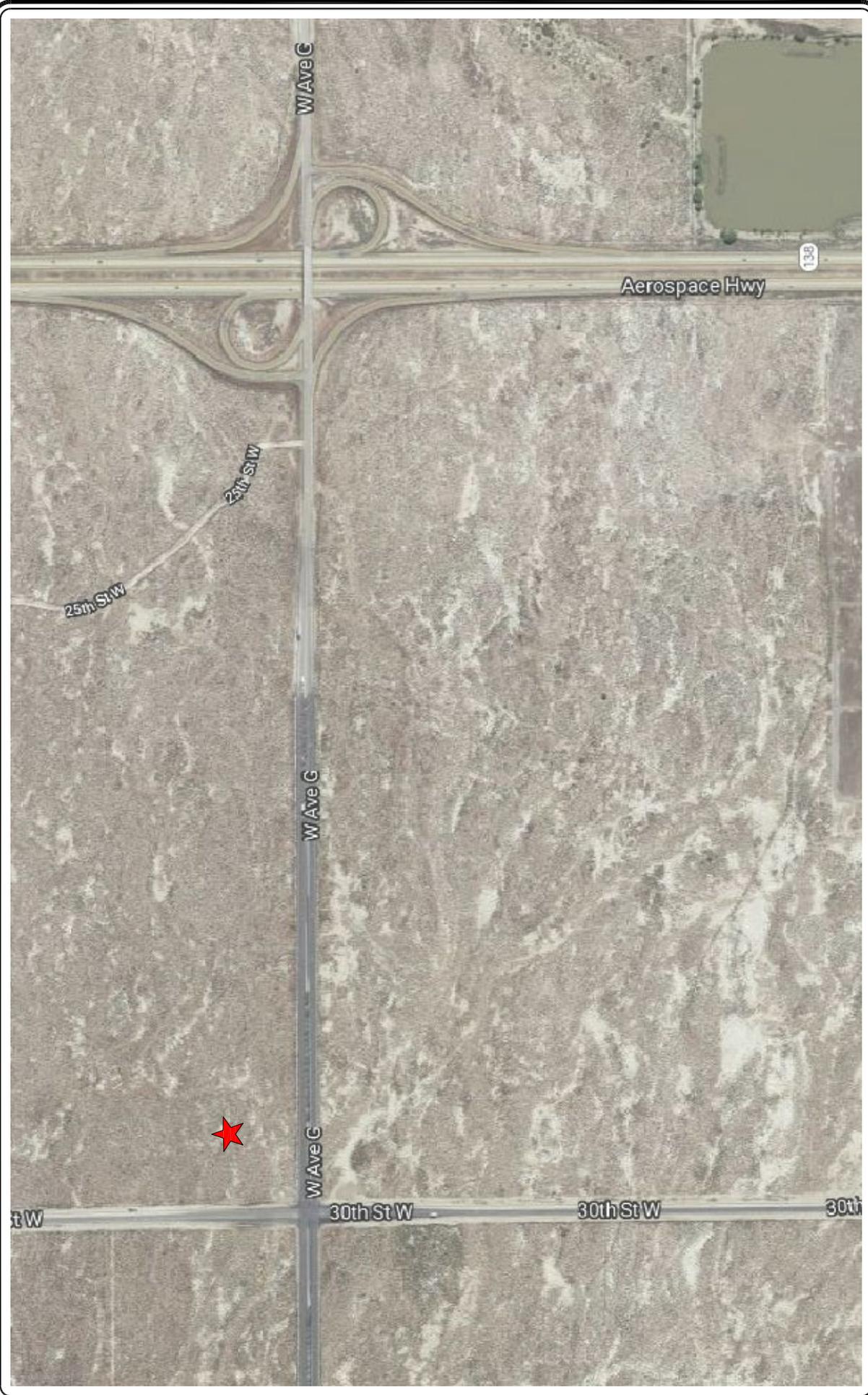


FIGURE 1-1 VICINITY MAP

FEDEX LANCASTER

MAP SOURCE: GOOGLE MAPS
PROJECT SITE



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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 at the northeast corner of the 30th Street W. / W. Avenue G intersection in the City of Lancaster. The Project Site is generally bounded by vacant land to the north and east, W. Avenue G to the south, and 30th Street W. to the west. The Project Site location and general vicinity are shown in *Figure 1-1*.

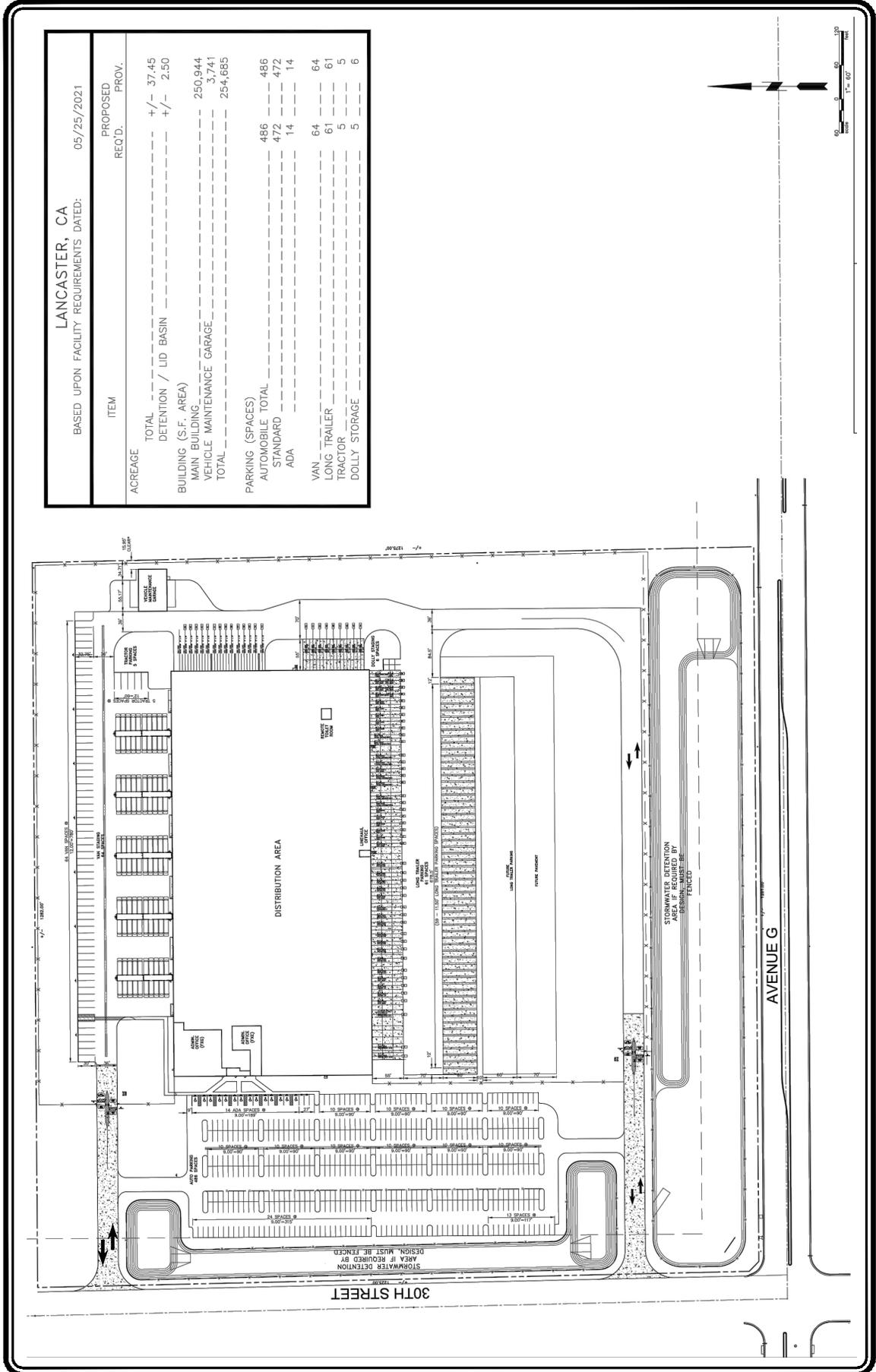
2.2 Existing Project Site

The Project Site comprises approximately 37.45 acres and is currently vacant. Vehicular access to the existing Project Site is currently not provided from 30th Street W. and W. Avenue G.

2.3 Proposed Project Description

The Project proposes the development and construction of a new FedEx Ground warehousing/distribution facility totaling 250,944 square feet of building floor area. The Project proposes to provide parking spaces for 486 automobiles, 64 vans, and 61 trailers within an on-site surface parking lot. Construction of the proposed Project is planned to be completed by the year 2023. It is noted that full utilization of the Project is expected by Year 10 (2033) of operations. The site plan for the proposed Project is illustrated in *Figure 2-1*.

Vehicular access to the Project Site will be provided via two driveways along the east side of 30th Street W. (i.e., along the Project Site's westerly frontage). Further discussion on the Project Site access and circulation schemes is provided in Section 3.0.



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 BASED UPON FACILITY REQUIREMENTS DATED: 05/25/2021

ITEM	REQ'D.	PROV.
ACREAGE		
TOTAL		+/- 37.45
DETECTION / LID BASIN		+/- 2.50
BUILDING (S.F. AREA)		
MAIN BUILDING		250,944
VEHICLE MAINTENANCE GARAGE		3,741
TOTAL		294,685
PARKING (SPACES)		
AUTOMOBILE TOTAL	486	486
STANDARD	472	472
ADA	14	14
VAN	64	64
LONG TRAILER	61	61
TRACTOR	5	5
DOLLY STORAGE	5	5
		6

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SOURCE: D & D ENGINEERING, INC.

FIGURE 2-1 PROJECT SITE PLAN

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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 there are no existing driveways along the east side of 30th Street W. and the north side of W. Avenue G (i.e., along the Project Site's westerly and southerly frontages).

3.2 Vehicular Project Site Access

Vehicular access to the Project Site will be provided via two driveways along the east side of 30th Street W. The driveways will provide access to the Project's on-site surface parking lot.

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 approximately 0.75 miles east of the Project Site.

4.2 Local Roadway System and Roadway Descriptions

Immediate access to the Project Site will be provided via 30th Street W. 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 that borders the Project Site to the west. Within the Project study area, 30th Street W. is designated as a Major Arterial by the City. One through travel lane is provided in each direction on 30th Street W. within the Project study area. Separate exclusive left-turn and right-turn lanes are provided in each direction on 30th Street W. at the W. Avenue G intersection. 30th Street W. is posted for a speed limit of 55 miles per hour within the Project study area.

W. Avenue G is an east-west oriented roadway that borders the Project Site to the south. 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 within the Project study area. Separate exclusive left-turn lanes are provided in each 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.

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

FedEx Ground has provided its forecast of hourly traffic count data at Year 10 (i.e., 2033) of the Project. The hourly forecast is based on traffic data and experience collected by FedEx at its existing facilities. Thus, rather than using trip generation average rates published in the ITE *Trip Generation Manual*, the Year 10 (2033) traffic forecast provided by the Applicant was used to forecast the traffic volumes expected to be generated by the Project during the weekday AM and PM peak hours, as well as on a daily basis.

The traffic forecasts provided by FedEx Ground are contained within *Appendix A*. As shown in *Appendix A*, the forecasts are provided for each hour of the day and include vehicle trips generated by trucks, employees (commuting to and from the site), as well as package & delivery (P&D) automobiles and vans.

Table 5–1 provides the forecast of vehicle traffic to be generated by the proposed Project, prepared based on the FedEx Ground traffic data provided in *Appendix A*. During the weekday morning commuter peak hour (assumed to be 9:00 – 10:00 AM based on the data in *Appendix A*), the proposed Project is expected to generate 357 net new vehicle trips (36 inbound trips and 321 outbound trips). During the weekday afternoon commuter peak hour (assumed to be 5:00 – 6:00 PM based on the data in *Appendix A*), the proposed Project is expected to generate 132 net new vehicle trips (66 inbound trips and 66 outbound trips). Over a 24-hour period, the proposed Project is forecast to generate 1,532 daily trips ends (approximately 766 inbound trips and 766 outbound trips) during a typical weekday.

**Table 5-1
PROJECT TRIP GENERATION [1]**

07-Oct-21

LAND USE	SIZE	DAILY TRIP ENDS [2]	AM PEAK HOUR VOLUMES [2]		PM PEAK HOUR VOLUMES [2]	
			IN	OUT	IN	OUT
<i>Proposed Project</i>						
Warehousing/Distribution Center	250,944 GSF	126	2	3	0	0
Truck Trips						
Employee Trips		394	0	151	0	0
P&D Automobile Trips		506	34	0	0	66
P&D Van Trips		506	0	167	66	66
Subtotal		1,532	36	321	66	132
NET INCREASE PROJECT TRIPS		1,532	36	321	66	132

[1] Daily and peak hour trip generation projections provided by FedEx based on data collected at existing distribution facilities.

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

It is noted that no inbound employee and P&D van trips are expected to arrive at the Project Site during the 9:00 AM peak hour, and no truck, employee, and P&D automobile trips are expected to arrive at the Project Site during the 5:00 PM peak hour, as identified in *Appendix A*. As shown in *Appendix A*, inbound employee trips are expected to arrive at the Project Site in the 2:00 AM hour, while inbound P&D van trips are expected to arrive at the Project Site from 10:00 AM to 9:00 PM. Inbound truck trips are expected to arrive at the Project Site from 1:00 AM to 1:00 PM and from 9:00 PM to 12:00 AM, while P&D automobile trips are expected to arrive at the Project Site from 6:00 AM to 12:00 PM.

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 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, while the Project will be staffed by employees, the relative contribution of vehicle trips generated by employees is only approximately 25% of the total daily vehicle trips (i.e., 394 of 1,532 total trips) forecast to be generated by Project as shown in *Table 5-1*. 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 package delivery 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

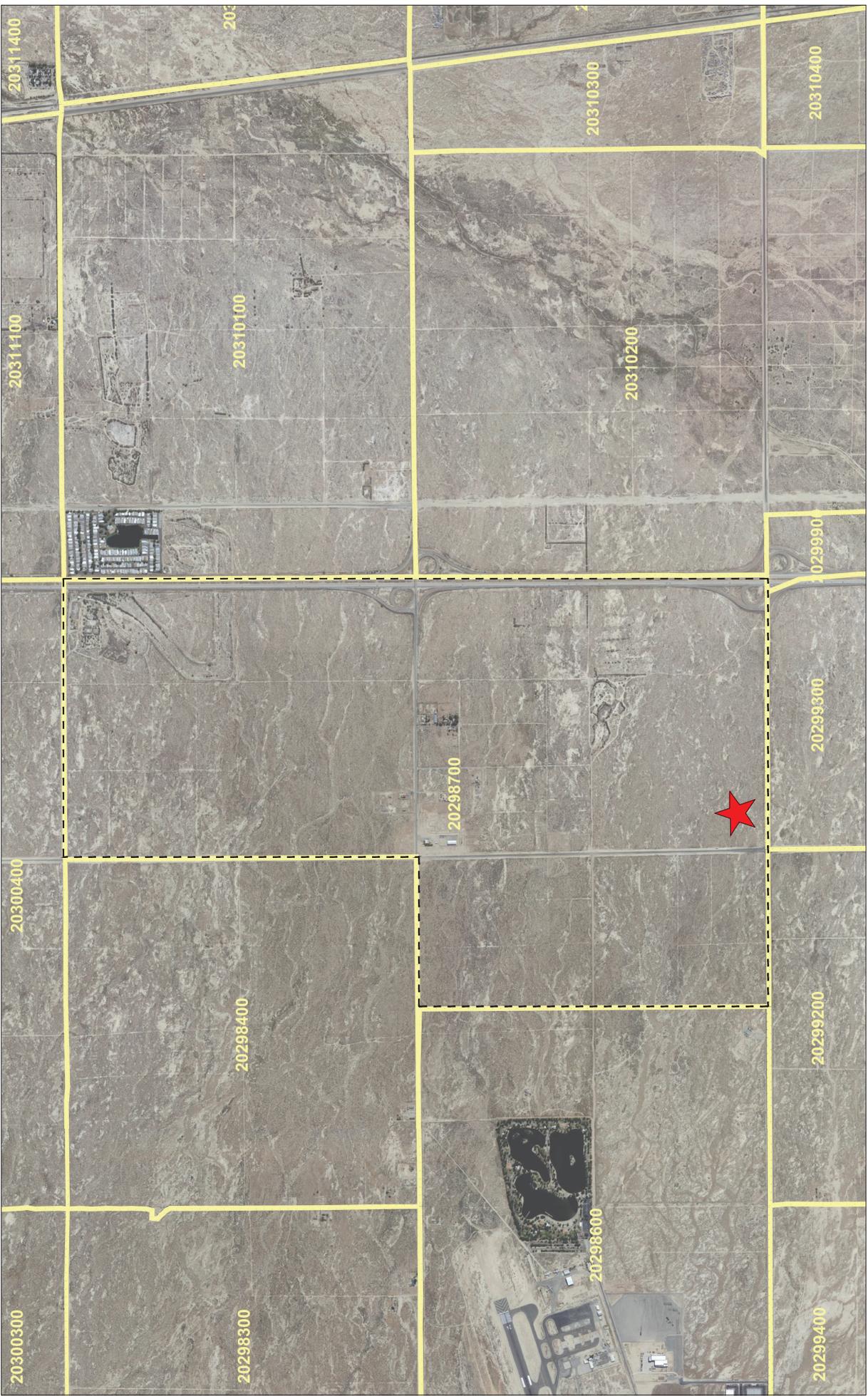
The VMT expected to be generated by the Project for the 2012 Base Year was determined using the SCAG regional travel demand model. Based on the SCAG model, the Project Site is within TAZ 20298700. *Figure 5-1* presents the SCAG TAZ Map that shows the location of the Project Site within TAZ 20298700.

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 its TAZ from 196.28 to 91.04 in the 2012 baseline year. In addition, the proposed Project will reduce the Total VMT per Service Population within the AVPA from 40.44 to 40.41. 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



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- MAP SOURCE: SCAG
- PROJECT SITE 
- TAZ BOUNDARY 
- TAZ 20298700 BOUNDARY 

FIGURE 5-1 SCAG TAZ MAP

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**Table 5-2
SUMMARY OF VMT ANALYSIS [1]**

METRIC [2]	2012 BASELINE		2040 FUTURE	
	WITHOUT PROJECT	WITH PROJECT	WITHOUT PROJECT	WITH PROJECT
TAZ VMT	12,758.39	50,162.52	114,154.22	156,667.96
TAZ SP	65.00	551.00	377.00	863.00
TAZ VMT/SP	196.28	91.04	302.80	181.54
AVPA OD VMT	76,424,877.60	76,489,595.38	91,775,326.98	88,672,566.49
AVPA SP	1,889,610.00	1,893,012.00	2,458,716.00	2,462,118.00
AVPA VMT/SP	40.44	40.41	37.33	36.01

[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

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 its TAZ from 302.80 to 181.54 in the future 2040 horizon year. In addition, the proposed Project will reduce the Total VMT per Service Population within the AVPA from 37.33 to 36.01. 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.

6.0 CONCLUSIONS

This VMT analysis has been prepared to evaluate the potential impact due to the proposed FedEx Lancaster project located at the northeast corner of the 30th Street W. / W. Avenue G intersection 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.

APPENDIX A
FEDEx HOURLY TRIP GENERATION PROJECTIONS

