FEHR PEERS

Memorandum

Date: February 11, 2021

To: Dean Flores and Manuel Muñoz, City of Azusa

From: Miguel Núñez, Fatemeh Ranaiefar, Jeremy Klop & Vivian Lee

Subject: Azusa Rexford Industrial Project: Vehicle Miles Traveled Analysis

LA20-3236

This technical memorandum documents the Vehicle Miles Traveled (VMT) analysis for the Azusa Rexford Industrial Project located at 415-435 Motor Avenue in Azusa, California. The proposed project includes the development of 97,734 square feet of warehouse in one building with associated loading docks, surface parking, and landscaping.

This VMT analysis is part of an environmental impact analysis being prepared for the proposed Project and follows the California Environmental Quality Act (CEQA) guidance for determining transportation impacts in accordance with Senate Bill (SB) 743. The San Gabriel Valley Council of Governments (SGVCOG) worked with member agencies to analyze existing traffic conditions in the region to develop a baseline standard that determines CEQA significance thresholds for future land use and transportation projects. Member agencies, including the City of Azusa, have now adopted these criteria in compliance with SB 743.

The following information describes the VMT thresholds developed for the Project along with the VMT analysis findings.

Baseline VMT

On September 27, 2013, Governor Jerry Brown signed SB 743 into law, which initiated a process to change transportation impact analyses completed in support of CEQA documentation. SB 743 eliminates level of service (LOS) as a basis for determining significant transportation impacts under CEQA and provides a new performance metric, VMT. As a result, the State is shifting from measuring a project's impact to drivers (LOS) to measuring the impact of driving (VMT) as it relates to achieving State goals of reducing greenhouse gas (GHG) emissions, encouraging infill development, and improving public health through active transportation.

The SGVCOG VMT Evaluation Tool was used to estimate the baseline VMT for the City of Azusa. This evaluation tool is based on the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) trip-based model. The current SCAG model has a 2012 base year, a 2016 scenario and 2040 as the forecast year. The VMT analysis for this project is based on year 2016 results.

This baseline VMT methodology reflects vehicle trips within the SCAG model to generate the home-based work VMT per employee metric. Under this approach vehicle trips between home and work are counted, and then divided by the number of employees within the geographic area. This metric is used to estimate employee VMT for uses such as manufacturing, warehousing, and areas associated with offices or administrative functions.

The City's baseline VMT for each metric is shown in **Table 1** below. From this point forward the memo will focus exclusively on the work VMT as there are no residential components to the project.

Table 1: VMT for the City of Azusa

VMT Metrics	Baseline VMT
Home Based Work VMT (VMT per employee)	20.5

VMT Impact Thresholds

The City of Azusa identified a threshold of 15% reduction from baseline VMT as the threshold that would be appropriate to apply to the Project. If the Project would generate VMT higher than the threshold, then it would be expected to have a significant VMT impact, and if the Project would generate VMT lower than the threshold, then it would not be expected to have a significant VMT impact. The City's baseline VMT and VMT impact thresholds are summarized in **Table 2**.

Table 2: City of Azusa Baseline VMT and VMT Impact Thresholds for Home Based Work VMT

VMT Metrics	Baseline VMT	VMT Impact Threshold*
Home Based Work VMT (VMT per employee)	20.5	17.4

* The VMT Impact Threshold for each VMT metric is 15% below the respective Baseline VMT.

VMT Screening

The first step of a VMT analysis is to determine what type of analysis, if any, is needed. The project was evaluated against three different screening criteria to assess if a VMT analysis would be applicable per the City of Azusa's Transportation Guidelines. The screening criteria are detailed below and applied for the Project to determine whether further VMT analysis is warranted.

Screening Criteria 1: Transit Priority Areas (TPA) Screening

Projects located within a TPA[1] may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may not be appropriate if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Based on existing transit service in Azusa, the Project is not located in an area that qualifies as a TPA or HQTC, so the Project is not screened out from further VMT analysis under this screening criteria. The TPA map included in the SGVCOG VMT Evaluation Tool was also reviewed and the project was determined not to be in a TPA.

Screening Criteria 2: Low VMT Area Screening

Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area. In the City of Azusa, a low

[1] A TPA is defined as a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor per the definitions below. Public Resources Code § 21099(a)(7)
Pub. Resources Code, § 21064.3 - 'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.
Pub. Resources Code, § 21155 - For purposes of this section, a 'high-quality transit corridor' means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

VMT area for employment projects generates no more than 17.4 VMT per employee as shown above in **Table 2**.

According to the SGVCOG Evaluation Tool, the TAZ the Project is located in is estimated to generate VMT per employment greater than 15% below the City's baseline VMT. Therefore, the Project is not in an area with low employment VMT, which means the Project cannot be presumed to have a less than significant VMT impact and may require further VMT analysis. The results of the Evaluation Tool are shown in **Attachment A**.

Step 3: Project Type Screening

Some project types have been identified as having the presumption of a less than significant impact. The following uses can be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:
    - Gas stations
    - Banks
    - Restaurants
    - Shopping Center
- Local-serving hotels (e.g. non-destination hotels)
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (public libraries, fire stations, local government)
- Affordable, supportive, or transitional housing
- Assisted living facilities
- Senior housing (as defined by HUD)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Student housing projects on or adjacent to a college campus
- Other local-serving uses as approved by the City Traffic Engineer[2]

[2] Substantial evidence should be provided in support of screening from VMT analysis any land use not designated within Step 3 "Project Type Screening" of these guidelines.

- Projects generating less than 110 daily vehicle trips[3,4]

Local serving retail projects with a total square footage less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel. Any project that uses the designation of "local-serving" should be able to demonstrate that its users (employees, customers, visitors) would be existing within the community. The project would not generate new "demand" for the project land uses but would meet the existing demand that would shorten the distance existing residents, employees, customers, or visitors would need to travel.

The Project's estimated trip generation is greater than 110 daily trips and is not of local-serving nature; therefore, is not screened out from VMT analysis under this screening criteria.

VMT Methodology

This section presents the methodology for calculating VMT for the proposed Project. The SCAG 2016 RTP/SCS model was used as the basis for the information and analysis. Given that the Project is not screened out from further VMT analysis, the Project's impact is to be assessed against the VMT per employee threshold described in **Table 2**. In order to estimate VMT per employee this analysis prepared an estimate of the number of employees (additional information from the applicant was not available). The Project is estimated to include approximately 49 employees. The number of employees was calculated based on a rate of 0.5 employees per thousand square feet.[5]

The following steps were undertaken to develop the Project generated VMT.

[3] Note that a redevelopment project replacing an existing use would estimate the net increase in trips above trips that already exists.

[4] This threshold ties directly to the OPR technical advisory and notes that CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

[5] *City of Los Angeles VMT Calculator Documentation,* Los Angeles Department of Transportation and Los Angeles Department of City Planning, May 2020.

Step 1 – Determine Average Person Trip Rates from the SCAG Model

Analysis was performed using the SCAG travel model to estimate an average trip rate for warehouse use. The trip generation rates at each TAZ were averaged to obtain a home-based work attraction trip per employee. **Table 3** presents these results

Table 3: Person trip rates for the City of Azusa

Metrics	Trip Rate
Home Based Work Attractions per Employee for Warehouse Use (includes employee commute trips between home and their work place)	1.75

Step 2 – Average Person Trip Rate to Vehicle Trips Conversion

Before conducting the VMT calculations, person trips need to be converted to vehicle trips. Average mode splits or the City of Azusa were obtained from the SCAG model and used to obtain the vehicle trips for the Project.

Warehouse Employee Trips

For warehouse employees, 80% of total trips were assumed to occur in vehicles occupied by one person and 14% in vehicles occupied by an average of 2.0 people. The remaining 6% of trips would take place using alternative modes such as walking, biking, or transit, and are not included in the VMT calculation.

Based on the above trip rates and mode split information, the Project is estimated to generate 86 daily person trips (product of number of employees and trip rate above) and 76 daily vehicle trips for employees' commute trips (product of person trips, mode split, and vehicle occupancy rounded to 76).

Step 3 – Estimate Trip Length

The trip lengths were estimated using data from the 2016 SCAG model. The travel model has the ability to produce average trip lengths for each TAZ in the City of Azusa. For the TAZ where the Project is located, the average trip length for home-based work attractions was 17.9 miles.

Step 4 – VMT Calculation

The final step to calculate VMT is to multiply the number of vehicle trips by the average trip length of those trips.

The warehouse VMT was divided by the estimated 49 employees to obtain a work VMT per employee of 27.8. Total commute VMT of the warehouse employees at the Project is projected to be 1,360.

These results are presented in **Table 4** below and compared against the citywide VMT thresholds.

Table 4: VMT per Employee Calculation

Land Use	Mode Split (SOV)	Mode Split (HOV)	Average Vehicle Occupancy	Trip Length (mi)	Person Trip Rate	VMT per Employee
Warehouse	80%	14%	2.0	17.9	1.84	27.8

Step 5 – Truck VMT Calculation

The truck trip generation and truck weight class distribution assumptions are generally consistent with the Project's peak hour and daily trip generation estimates presented in **Attachment B**. These trip generation estimates were calculated using the Institute of Transportation Engineers (ITE) *Trip Generational Manual, 10th Edition*, a resource typically used to calculate trip generation. With the shift to a VMT-based analysis, travel demand model was incorporated into the process of estimating daily trips.

Truck trip length for light, medium and heavy-duty trucks are for the specific TAZ related to the Project from the SCAG model. This information is provided for the purposes of greenhouse gas (GHG) and air quality that reflect heavy vehicle types. Neither OPR guidance nor the City of Azusa have a VMT threshold for truck activity and this information in **Table 5** is provided for informational purposes.

Table 5: Truck VMT Calculation

Land Use	Size (KSF)	Truck Trip Rate			Truck Trip Length (mi)			Truck Trips	VMT
		Light	Medium	Heavy	Light	Medium	Heavy		
Warehouse	97.734	0.32	0.36	0.64	12.0	11.6	24.7	65	1,169

VMT Impacts

As shown in **Table 4** above, the proposed Project would exceed the Citywide VMT/Employee threshold of 17.4 VMT per employee for the home-based work VMT and this is considered to be a significant transportation impact under CEQA.

Mitigation Options

In order to mitigate the VMT/Employee impacts of the warehouse land use to less than significant, employee VMT would need to be reduced by approximately 36%. In order to achieve this reduction, a range of travel demand management (TDM) measures and infrastructure options were considered for the Project. These included the following options:

1. Changes to infrastructure: Measures that would provide pedestrian and bicycle facilities that connect the site to the local street network and other transportation networks
2. Commute Trip Reduction: Commuter incentives, transit subsidies, parking cashout, commute marketing program, carpool/vanpool incentives
3. Transit: Providing transit passes to employees

The aforementioned TDM measures were tested individually and in combination with each other. Most combinations of TDM measures would result in a reduction of VMT for the warehouse employees. However, no individual or combined mitigation options were found to be sufficient to mitigate the VMT impact to less than significant. In order to mitigate the VMT impact below a level of significance, the mitigation program would require significant improvements to regional multimodal infrastructure, such as inclusion of a free shuttle connecting employees to the train station or their residence, or upgrades to the surrounding transit and bicycle network through a dedicated bike facility and transit stop within four hundred feet of the site. The provision of a shuttle and enhancements to the regional transportation network are beyond the purview of this individual development and are part of regional strategies that are being implemented over time by local agencies. Transit providers typically do not modify routes and stops in response to individual developments, particularly one of this nature and scale. The implementation of a

dedicated bicycle lane, for example, may require the conversion of travel or parking lanes to bicycle facilities. While this strategy may be pursued by the City of Azusa, it will require additional planning and stakeholder outreach to determine the preferred design option and route that best meets local goals such as reducing VMT. Therefore, the transportation impact is considered significant and unavoidable as no combination of feasible mitigation measures reduces the impact below the City's threshold of significance.

Summary

This technical memorandum documents the process to determine the potential VMT impacts of the Azusa Rexford Industrial Project located at 415-435 Motor Avenue in the City of Azusa. The following summarizes the results of this analysis:

- The Project proposes 97,734 square feet of warehouse
- The Project does not meet the TPA, low VMT area, or project type screening options provided in the City's Transportation Guidelines, hence the Project was evaluated using employment VMT methodologies consistent with guidance from said guidelines.
- Based on the results of the VMT methodologies outlined in this memorandum, the Project will result in a significant impact for the VMT per employee metric.
- The VMT thresholds and screening criteria applied in this study are based on the City of Azusa's Transportation Study Guidelines.
- Based on the study of applicable mitigation measures, the Project was determined to have a significant impact that could not be mitigated below a level of significance; therefore the impact is considered significant and unavoidable.

ATTACHMENT A – SVGCOG VMT TOOL SCREENING OUTPUT

SGVCOG VMT Evaluation Tool Report

Project Details

Timestamp of Analysis: December 17, 2020, 03:09:55 PM

Project Name: Azusa Industrial Warehouse

Project Description: 97 ksf of Industrial Warehouse in Azusa, 415-435 Motor Avenue

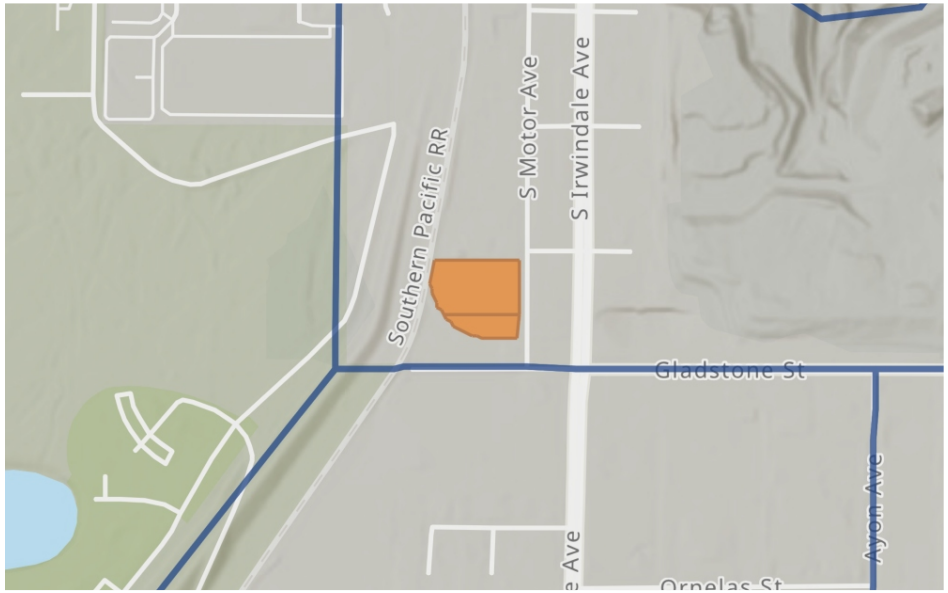
Project Location

Jurisdiction: Azusa

APN	TAZ
8615-002-019	22317300
8615-002-020	22317300

Inside a TPA?

No (Fail)



Analysis Details

Data Version: SCAG Regional Travel Demand Model 2016 RTP Base Year 2012

Analysis Methodology: TAZ

Baseline Year: 2019

Project Land Use

Residential:

Single Family DU:

Multifamily DU:

Total DUs: 0

Non-Residential:

Office KSF:

Local Serving Retail KSF:

Industrial KSF: 97734

Residential Affordability (percent of all units):

Extremely Low Income: 0 %

Very Low Income: 0 %

Low Income: 0 %

Parking:

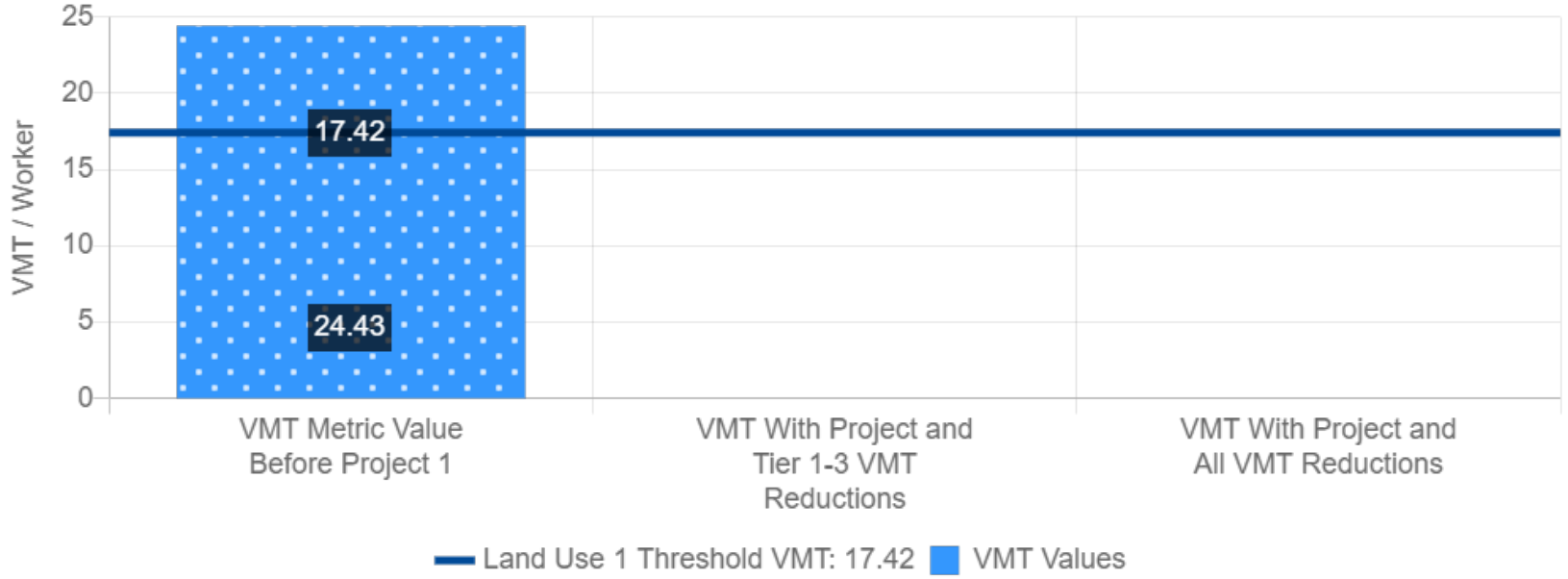
Motor Vehicle Parking:

Bicycle Parking:

Industrial Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Industrial
VMT Without Project 1:	Home-based Work VMT per Worker
VMT Baseline Description 1:	Subarea Average
VMT Baseline Value 1:	20.5
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

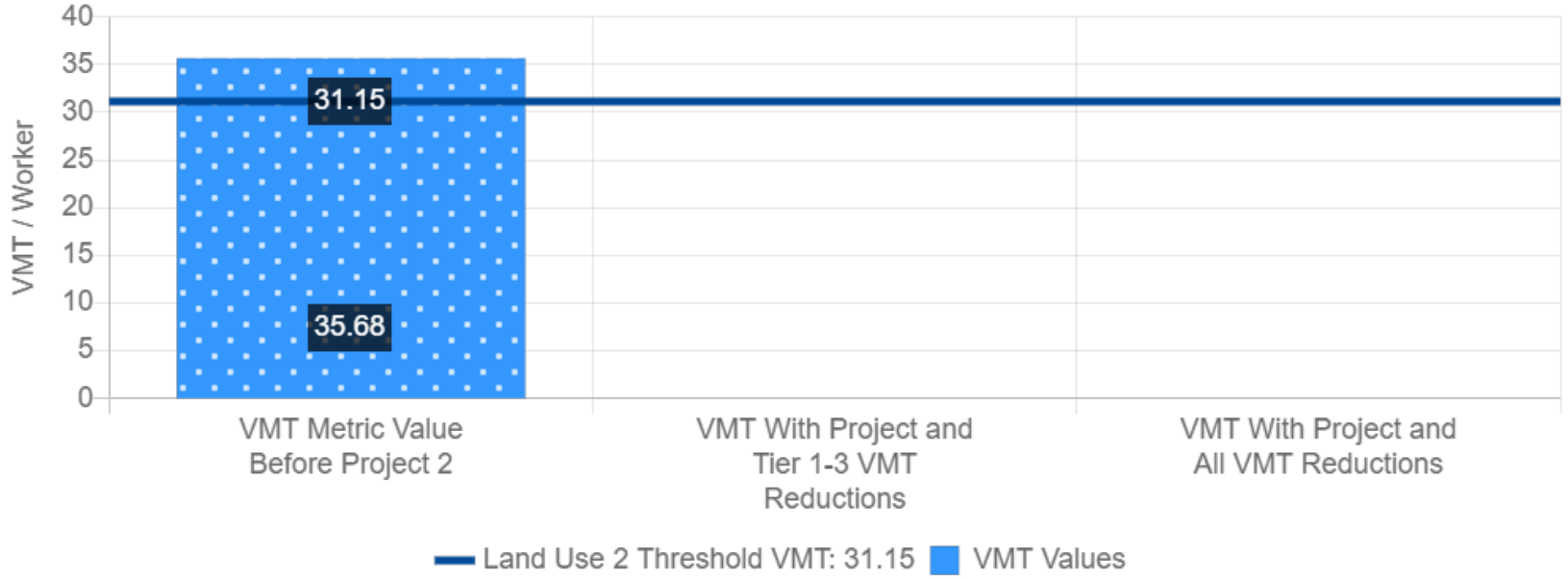
	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	24.43	null	null
Low VMT Screening Analysis	No (Fail)	null	null



Industrial Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 2:	Industrial
VMT Without Project 2:	Total VMT per Service Population
VMT Baseline Description 2:	Subarea Average
VMT Baseline Value 2:	36.65
VMT Threshold Description 2:	-15%
Land Use 2 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	35.68	null	null
Low VMT Screening Analysis	No (Fail)	null	null



ATTACHMENT B – AZUSA INDUSTRIAL PROJECT TRIP GENERATION TABLE

Attachment B: Project Trip Generation

Land Use / Vehicle Type	Source	Trip Generation Rates per Employee						
		AM Peak Hour			PM Peak Hour			Daily
		% In	% Out	Total	% In	% Out	Total	
Warehouse	ITE 150 [a]	72%	28%	0.61	36%	64%	0.66	5.05
Percent Cars	[b]	-	-	62.86%	-	-	64.38%	79.57%
Percent Trucks	[b]	-	-	37.14%	-	-	35.62%	20.43%
Car Trips per Emp		0.276	0.107	0.383	0.153	0.272	0.425	4.018
Truck Trips per Emp		0.163	0.063	0.227	0.085	0.150	0.235	1.032

Vehicle Trips Generated								
Land Use / Vehicle Type	Size (Employee)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Warehouse								
Cars	49	14	5	19	8	13	21	197
Trucks		9	3	12	5	7	12	51
TOTAL VEHICLE TRIPS GENERATED		**23**	**8**	**31**	**13**	**20**	**33**	**247**

Passenger Car Equivalent (PCE) Trips Generated									
Land Use / Vehicle Type	Size (Emp)	Truck Percent	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Warehouse	49								
Cars			14	5	19	8	13	21	197
Trucks	PCE Factor								
2-Axle Trucks	1.5	23.92%	4	2	6	2	3	5	18
3-Axle Trucks	2.0	27.51%	5	2	7	3	4	7	28
4+ Axle Trucks	3.0	48.58%	14	5	19	8	11	19	74
Subtotal Trucks			23	9	32	13	18	31	120
Subtotal Cars			14	5	19	8	13	21	197
Subtotal Trucks			23	9	32	13	18	31	120
TOTAL PCE TRIPS GENERATED			**37**	**14**	**51**	**21**	**31**	**52**	**317**

Notes:

[a] Institute of Transportation Engineers, *Trip Generation Manual, 10th Edition* , 2017.

[b] City of Fontana, Truck Trip Generation Study, August 2003. Heavy warehouse values used for car to truck and truck by axle percentages.

Passenger Car Equivalent (PCE) factors have been obtained from the County of San Bernardino Congestion Management Program.

PCE factor of 1.0 is used for passenger cars (such as employee vehicles); light duty trucks use a PCE factor of 1.5; medium duty trucks with 3 axles use a PCE factor of 2.0; and heavy duty trucks with 4 or more axles use a PCE factor of 3.0