
Appendix I:

Transportation Supporting Information

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TECHNICAL MEMORANDUM

DATE: November 3, 2025
TO: Vanessa Scheidel, Meritage Homes
FROM: Charlene So, Urban Crossroads, Inc.
JOB NO: 16075-03 TG Memo



SUBJECT: FREEDOM RESIDENTIAL TRIP GENERATION ASSESSMENT

Urban Crossroads, Inc. has prepared the following Trip Generation Assessment for the Freedom Residential (Project), which is located at 400-700 Freedom Lane on the southeastern terminus of Freedom Lane, east of Liberty in the City of Downey. This letter describes the proposed Project trip generation methodology and compares the trip generation to the existing uses in order to determine whether any traffic operations analysis is required based on the City's Transportation Impact Guidelines for CEQA and General Plan Consistency (City Guidelines) dated May 2020.

PROJECT DESCRIPTION

It is our understanding that the Project is to consist of 68 three-story market-rate multifamily residential units and 4 very-low affordable units for a total of 72 dwelling units. The Project is proposing one point of access at the easterly terminus of Freedom Lane and one point of entry on Liberty. The preliminary site plan is provided in Exhibit 1.

TABLE 1: PROJECT TRIP GENERATION

Land Use ¹	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Single Family Attached	DU	215	0.12	0.35	0.47	0.29	0.22	0.51	6.57
Affordable Housing	DU	223	0.10	0.26	0.36	0.27	0.19	0.46	4.81

Proposed Project	Quantity	Units ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Freedom Residential									
Single Family Attached	68	DU	8	24	32	20	15	35	448
Affordable Housing	4	DU	0	1	1	1	1	2	20
Total	72	DU	8	25	33	21	16	37	468

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 12th Edition (2025).

² DU = Dwelling Units

FINDINGS

The City Guidelines indicate that any development project which meets any of the following criteria may require additional level of service (LOS) based traffic operations analysis:

- When either the AM or PM peak hour trip generation is expected to exceed 100 vehicle trips from the proposed development.
- Projects on the Arterial System which generate 1,600 Average Daily Trips (ADT).
- Projects that will add 51 or more trips during either the AM or PM peak hours to any intersection.
- Any project where variations from the standards and guidelines provided in this manual are being proposed.

The Project is anticipated to generate fewer than 1,600 daily trips with fewer than 50 peak hour trips (see Table 1). As such, additional LOS-based peak hour intersection operations analysis beyond this trip generation assessment are not required per the City Guidelines.

If you have any questions, please contact me directly at cso@urbanxroads.com.

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TECHNICAL MEMORANDUM

DATE: July 9, 2026
TO: Vanessa Scheidel, Meritage Homes
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 16075-07 VMT

SUBJECT: FREEDOM LANE VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. has completed the following Vehicle Miles Traveled (VMT) Analysis for the Freedom Lane residential development (Project) located on the located at 400-700 Freedom Lane on the southeastern terminus of Freedom Lane, east of Liberty in the City of Aliso Viejo.

PROJECT OVERVIEW

It is our understanding that the Project is to consist of 68 three-story market-rate multifamily residential units and 4 very-low affordable units for a total of 72 dwelling units. A site plan for the proposed Project is shown in Attachment A.

BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to adopt VMT as the measure for identifying transportation impacts for land use projects. The VMT analysis presented in this report has been developed based on the adopted City of Aliso Viejo Transportation Impact Guidelines for CEQA and General Plan Consistency (May 2020) (1) (City Guidelines).

VMT SCREENING

City Guidelines state that a land use project may be determined to have a non-significant transportation impact if it meets one or more VMT screening steps. Each of the screening steps listed in the City Guidelines are described in Table 1 along with a determination of the Project's eligibility to meet each criterion.

TABLE 1: SCREENING FOR LAND USE PROJECTS EXEMPT FROM VMT CALCULATIONS

Screening Step	Description	Result
Step 1: Transit Priority Area (TPA) Screening	Projects located within a TPA (i.e., within a half mile of an existing major transit stop or an existing stop along a high-quality transit corridor) are presumed to have a less-than-significant impact on VMT.	Does not meet.
Step 2: Low VMT Area Screening	Projects located within a low VMT-generating zone that can reasonably be expected to generate VMT per service population that is similar to the existing land uses in the low VMT area are presumed to have a less than significant impact on VMT. A low VMT area is defined as an individual traffic analysis zone (TAZ) where total daily Origin/Destination VMT per service population is lower than 15% of the City average total daily Origin/Destination VMT per service population.	Does not meet.
Step 3: Project Type Screening	Local-Serving Retail under 50,000 square feet, Local Essential Services, and projects generating less than 110 daily vehicle trips are presumed to have a less-than-significant impact on VMT.	Does not meet.

Consistent with the City Guidelines, the Project was not found to meet any of the applicable screening steps and a project-level VMT analysis has been prepared.

TRAFFIC MODELING METHODOLOGY

City Guidelines identifies the Orange County Transportation Analysis Model (OCTAM) as the appropriate tool for conducting VMT forecasts and analysis for land use projects in the City of Aliso Viejo, as it considers interaction between different land uses based on socio-economic data, such as population, households, and employment. The current 5.1 version of OCTAM was last updated in November 2025 and represents the most current sub-regional transportation model for Orange County.

VMT ANALYSIS METHODOLOGY

Consistent with City Guidelines, VMT has been estimated using the Origin/Destination method and Boundary method. For both methods, VMT is presented as total VMT and VMT per Service Population. Total VMT is an estimate of total vehicle travel and considers all vehicle trips and trip purposes; whereas VMT per service population is an efficiency metric that represents VMT generated on a typical weekday per person who lives and/or works in the City of Aliso Viejo or in the case of the Project, per person who works within the Project. Total VMT provides an estimate of the total vehicle travel, while VMT per service population measures the efficiency of travel. As described in the City Guidelines, the efficiency metric VMT per service population has been adopted by the City of Aliso Viejo for VMT impact analysis.

Origin/Destination VMT

The Origin/Destination (OD) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area (i.e., Project boundary) and tracks those trips to their estimated origins/destinations. Origins are all vehicle trips that start in a specific traffic analysis zone (TAZ) and destinations are all trips that end in a specific TAZ.

Boundary VMT

City Guidelines states that any VMT analysis should also contain an evaluation of a project's effect on VMT, which can be performed using the boundary method of calculating VMT. The boundary method is the sum of all weekday VMT on the roadway network within a designated boundary (i.e., City boundary). The boundary method estimates VMT by multiplying vehicle trips on each roadway segment within the boundary by that segment's length. This approach consists of all trips, including those trips that do not begin or end in the designated boundary. Consistent with the City Guidelines, the City of Aliso Viejo's boundary was used as the boundary for this assessment.

VMT METRIC AND SIGNIFICANCE THRESHOLD

As stated in the City Guidelines, the appropriate VMT metric is VMT per service population. A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

1. The baseline project-generated VMT per service population exceeds the City of Aliso Viejo General Plan Buildout VMT per service population, or

2. The cumulative project-generated VMT per service population exceeds the City of Aliso Viejo General Plan Buildout VMT per service population.

The project's effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:

1. The baseline link-level Citywide VMT per service population increases under the plus project condition compared to the no project condition, or
2. The cumulative link-level Citywide VMT per service population increases under the plus project condition compared to the no project condition.

To establish the City's adopted impact threshold for this analysis, the City of Aliso Viejo's General Plan Buildout VMT per service population has been calculated utilizing the OCTAM future year (2050) traffic model. To calculate the City's General Plan Buildout VMT per service population, all TAZs located within the City of Aliso Viejo were selected and a total VMT value within the City's boundary was calculated using the cumulative year model. Total VMT for the City of Aliso Viejo was then divided by the City's service population (i.e., population plus employment) as contained in the model. Table 1 presents the resulting City's General Plan Buildout VMT per service population of 26.2.

TABLE 2: CITY OF ALISO VIEJO VMT PER SERVICE POPULATION

	General Plan Buildout
City Service Population	73,056
City VMT	1,914,152
City Threshold VMT per Service Population	26.2

PROJECT VMT ESTIMATES

To estimate project-generated VMT, standard land use information such as building square footage and dwelling units must first be converted into a OCTAM-compatible dataset. The OCTAM Model utilizes socio-economic data (SED) (e.g., households and employment) as key inputs for the purposes of vehicle trip estimation. Table 3 summarizes the SED inputs used to represent the Project. This SED information was then added to the Project's TAZ to obtain project-generated VMT.

TABLE 3: PROJECT POPULATION ESTIMATES

Land Use	Dwelling Units	Conversion Factor ¹	Population
Residential	72	3.12 people per household	225

¹Person per household was maintained using data contained in OCTAM.

Project-generated VMT and a comparison to the City's impact thresholds are presented in Table 4. OCTAM output data can be found in Attachment B. The Project is estimated to generate VMT per service population below the City of Aliso Viejo's VMT impact threshold.

TABLE 4: PROJECT'S VMT PER SERVICE POPULATION

	Baseline	Cumulative
City Threshold	26.2	26.2
Project Population	225	225
Project VMT	4,327	4,400
Project VMT per Service Population	19.2	19.6
Does Project Exceeds City VMT Threshold?	No	No

PROJECT'S CUMULATIVE EFFECT ON VMT

The Project's cumulative effect on VMT has been calculated using the boundary method. Table 5 summarizes the boundary VMT under the No Project and With Project scenarios for both baseline and cumulative conditions and any increase to VMT per service population would be considered to have a significant cumulative VMT impact.

TABLE 5: CUMULATIVE BOUNDARY VMT

	Service Population	Boundary VMT	VMT per Service Population	Exceeds Threshold?
Baseline No Project	73,869	525,347	7.1	-
Baseline With Project	74,094	516,828	7.0	No
Cumulative No Project	73,056	514,823	7.1	-
Cumulative With Project	73,281	516,783	7.1	No

Boundary VMT nominally decreases under the With Project scenario for baseline and nominally increases cumulative conditions when evaluated at the Citywide boundary. To assess the efficiency of a land use project, boundary VMT is divided by the boundary's service population, resulting in a VMT per service population metric. Using that efficiency metric, VMT per service population does not change in the With Project scenario under either condition. As such, the cumulative With Project VMT per service population is below the City's cumulative significance threshold.

CONCLUSION

Based on the results of this analysis, the following findings are made:

- The Project was evaluated using methodology and thresholds as outlined in the City Guidelines.
- Project-generated VMT estimates were calculated from the OCTAM Model and compared to the City of Aliso Viejo's impact thresholds.
- Project-generated VMT per service population was found to be below the City's adopted VMT impact thresholds.
- The Project's cumulative effect on VMT per service population was found to remain unchanged or be reduced in the With Project scenario compared to the No Project scenario, which is below the City's cumulative impact threshold.

If you have any questions, please contact me directly at aso@urbanxroads.com.

REFERENCES

1. **City of Aliso Viejo.** *Transportation Impact Guidelines for CEQA and General Plan Consistency.* May 2020.

ATTACHMENT A: PROJECT SITE PLAN



ATTACHMENT B: OCTAM OUTPUT DATA

	2019	2050
Zone ID	1552	1552
Time Period	Daily	Daily
Home-Based VMT (PA)	131942	124607
Home-Based Work VMT (PA)	15213.6	16278.2
Other VMT (PA)	25235.3	27274.1
Total VMT (OD)	204169	201554
Home-Based VMT (OD)	156264	149353
Home-Based Work VMT (OD)	18018	19510.9
Other VMT (OD)	29887.1	32690.4
Total Intrazonal VMT (OD)	992.584	978.037
Total Vehicle Trips	27781.1	27378.2
Total Intrazonal Trips	1392.09	1371.67
Average Trip Length	7.69927	7.71252
Population	8528	8047
Employment	1073	1150
Enrollment	1060	1110
Service Population	10661	10307
HBVMT_per_Pop (PA)	15.4717	15.4849
HBWVMT_per_Emp (PA)	14.1785	14.155
TOTVMT_per_SerPop (OD)	19.151	19.555
HBVMT_per_Pop (OD)	18.3236	18.56
HBWVMT_per_Emp (OD)	16.7921	16.966

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