January 12, 2023

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4665 LAMPSON AVENUE VEHICLE MILES TRAVELED (VMT) ANALYSIS

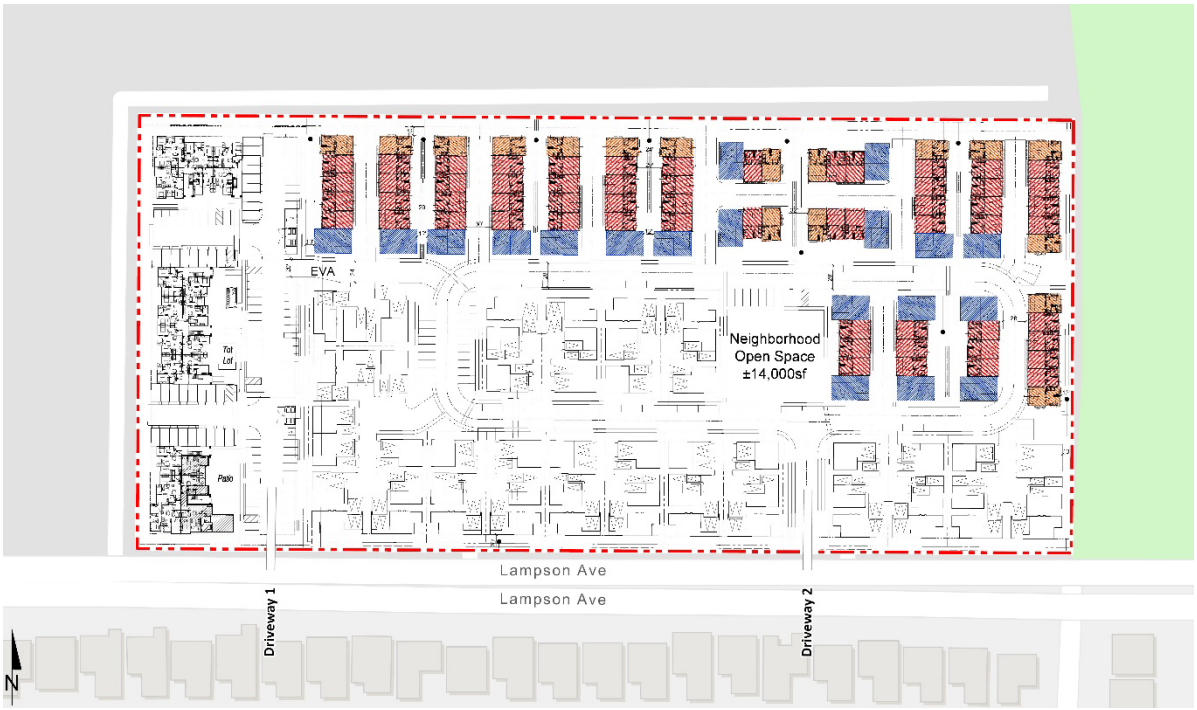
Ms. Nicole Morse,

Urban Crossroads, Inc. has completed the following Vehicle Miles Traveled (VMT) Analysis for the 4665 Lampson Avenue (**Project**), which is located in the City of Los Alamitos.

PROJECT OVERVIEW

The Project consists of the development of 55 single-family detached residential dwelling units (cluster homes), 114 multi-family (low-rise) residential dwelling units, and 77 affordable apartment dwelling units (total of 246 dwelling units). A preliminary site plan for the proposed Project is shown in Exhibit 1.

EXHIBIT 1: PRELIMINARY SITE PLAN



BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) (**Technical Advisory**) (1). On December 19, 2022, the City adopted VMT thresholds of significance for purposes of analyzing transportation impacts under CEQA, consistent with OPR's Technical Advisory.

VMT SCREENING

As part of the Technical Advisory, a project may be determined to have a less than significant impact and may be screened out of requiring a detailed VMT analysis if either the daily vehicle trips generated by the project criteria, or the land use type criteria are met.

The following screening criteria are described within the Technical Advisory:

- Small Project Screening
- Map Based Screening
- Transit Priority Area (TPA) Screening
- Affordable Residential Development Screening
- Local Community Serving Project Type Screening

A land use project need only meet one of the above screening criteria to result in a less than significant impact.

SMALL PROJECT SCREENING

The Technical Advisory indicates that projects generating fewer than 110 daily vehicle trips may be presumed to have a less than significant impact. Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, 2021 (2). The proposed Project is anticipated to generate 1,658 vehicle trip-ends per day, which exceeds the 110 vehicle trips per day threshold. (See Attachment A.)

Small Project screening criteria is not met.

MAP BASED SCREENING

As noted in the Technical Advisory, "residential and office projects that locate in areas with low VMT and that incorporate similar features (density, mix of uses, and transit accessibility) will tend to exhibit similarly low VMT." It is our understanding that the City of Los Alamitos has not established screening maps to depict areas of low VMT within the City. Alternatively, the Orange County Transportation Model (**OCTAM**) was utilized to obtain the Project's transportation analysis zone (TAZ) existing VMT information. The Project was located in the OCTAM model, and the

Project was found to be located in TAZ 634. Project TAZ 634 was identified to have an existing VMT per capita of 22.71. The OCTAM model was then used to calculate the County of Orange regional average VMT per capita of 17.42. The Project is not located in a low VMT area.

Map Based screening criteria is not met.

TPA SCREENING

The Technical Advisory states that projects located within a TPA, ½ mile of an existing "major transit stop,"[1] or an existing stop along a "high-quality transit corridor"[2] will have a less than significant impact on VMT.

Once a project is determined to be within a TPA, the Technical Advisory also recommends consideration of secondary screening checks. For example, a proposed land use project is **not** eligible for TPA screening if the project meets any of the following sub-criteria:

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.

Utilizing Graphical Information System (GIS) data obtained from Southern California Council of Governments (SCAG), the Project's location relative to its proximity to TPA area was mapped. The mapped results identify the Project is not located within a TPA. (See Attachment B.)

TPA screening criteria is not met.

AFFORDABLE RESIDENTIAL DEVELOPMENT SCREENING

The Technical Advisory states "Adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT." Furthermore, "low-wage workers in particular would be more likely to choose a residential location close to their workplace, if one is available." In areas where existing jobs-housing match is closer to optimal, low-income housing nevertheless generates less VMT than market-rate housing. Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. The Project is proposing 77 affordable housing units, or 31% of the total 246 dwelling units. As previously discussed, since the City of Los Alamitos

[1] 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.").
[2] 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.").

has not formally adopted thresholds to determine the amount of affordable housing applicable to screening within the City, an affordable housing screening qualification cannot be made.

Affordable Residential Development screening criteria is not met.

LOCAL COMMUNITY SERVING RETAIL SCREENING

The Technical Advisory indicates local serving retail uses are presumed to have a less than significant impact absent substantial evidence to the contrary. By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. The Project does not intend to develop any local serving retail uses.

Local Community Serving Project Type screening criteria is not met.

The Project does not meet any of the Screening Criteria for land use projects which would allow a determination of a less than significant impact on VMT. Therefore, a project-specific VMT assessment is required.

VMT ANALYSIS

VMT MODELING

The Technical Advisory indicates the correct tool to perform a VMT analysis should be consistent with the tool that was used to generate the jurisdictional averages for which a project resides, for an apples-to-apples comparison. The OCTAM sub-regional model is the appropriate tool for conducting VMT analysis for land use projects in Orange County, as it considers interaction between different land uses based on socio-economic data, such as population, households, and employment. The calculation of VMT for land use projects is based on the total number of trips generated and the average trip length of each vehicle. Therefore, the vehicle trips and average daily trip length for project-related vehicle trips are model derived from the OCTAM model.

VMT METRIC AND SIGNIFICANCE THRESHOLD

The Technical Advisory includes the following threshold recommendations for assessment of residential projects:

> "Recommended threshold for residential projects: A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the [Sustainable Communities Strategy] SCS for that city, and should be consistent with the SCS.
>
> Residential development that would generate vehicle travel that is 15 or more percent below the existing residential VMT per capita, measured against the region or city, may indicate a less-than-significant transportation impact. In MPO areas, development measured against city VMT per capita (rather than regional VMT per capita) should not

cumulatively exceed the population or number of units specified in the SCS for that city because greater-than-planned amounts of development in areas above the region-based threshold would undermine the VMT containment needed to achieve regional targets under SB 375."

Based on the State-recommended threshold for residential projects and the existing regional VMT, as discussed below, a VMT impact is considered significant if a residential project generates more than 15% below the existing regional residential VMT per capita.

The existing regional average VMT per capita was calculated using the OCTAM model for the regional area, in this case Orange County. Table 1 identifies a summary for Orange County's county-wide average VMT per capita.

TABLE 1: COUNTY-WIDE VMT PER SERVICE POPULATION

Orange County	County-wide Average
Population	3,177,628
Home-Based VMT	55,361,825
VMT per capita	17.42

For Orange County, the VMT significance threshold for VMT impacts will be **14.8 VMT per capita**, which is 15% below the 17.42 VMT per capita regional average**.**

A significant cumulative impact would occur if the Project increased the total regional VMT compared to the cumulative no project condition. Furthermore, for all land use and transportation projects a significant impact would occur if the project were inconsistent with the RTP/SCS.

PROJECT LAND USE CONVERSION

In order to evaluate VMT, standard land use information must first be converted into an OCTAM compatible dataset. The OCTAM model utilizes socio-economic data (**SED**) (e.g., population, households, employment, etc.) instead of land use information for the purposes of vehicle trip estimation. The Project's land use information, such as dwelling units, must first be converted to SED for input into the OCTAM model. Adjustments in SED have been made to the appropriate Project TAZ within the OCTAM model to reflect the Project's proposed land use information. The population conversion factors were obtained from the State of California Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark (3). Table 2 summarizes the SED inputs used to reflect the proposed Project.

TABLE 2: POPULATION ESTIMATES

	Project
Households	246
Population	647

PROJECT-GENERATED VMT

PRODUCTION/ATTRACTION VMT METHOD

Consistent with the Technical Advisory, project-level VMT analysis should evaluate home-based (HB) VMT divided by a project's population. HB VMT is calculated from OCTAM's Production/Attraction (**PA**) trip matrices and then divided by a project's population to derive the VMT efficiency metric VMT per capita. The method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area (Project's TAZ) by trip purpose. The PA method tracks trips with at least one trip end in the analysis area to/from their ultimate destination unless that destination is outside of the model boundary area. Productions are land use types that generate trips (residences) and attractions are land use types that attract trips (employment). Productions and attractions are converted from person trips to vehicle trips for the purposes of calculating VMT. Table 3 presents the project-generated HB VMT utilizing the OCTAM model.

TABLE 3: MODEL-BASED PROJECT- GENERATED VMT

	Baseline (2022)	Long Range (2045)
HB VMT	13,824	13,439

VMT REDUCTION STRATEGIES

The California Air Pollution Control Officers Association (**CAPCOA**) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (December 2021) (**Handbook**) (4) has been utilized to determine trip reduction measures that may be applicable to the Project. The Handbook describes methods to quantify reductions in greenhouse gas emissions and in the case of Transportation measures, the associated reductions to VMT. This evaluation will focus on a review of the Handbook's Transportation measures that are determined to be applicable to the Project.

SELECTING MEASURES

To determine which Transportation measures should be considered from the Handbook, land use type, scale and locational context are each identified as key factors for determining an individual measure's applicability to a project. The Handbook contains a factsheet for each measure that describes the measure, locational context, scale of application, implementation requirements, and other considerations that should be reviewed to determine a measure's applicability.

PROJECT TYPE

Project type is an important consideration when determining which measures are applicable for consideration. For example, measures associated with neighborhood design are not applicable

to an office project, whereas trip reduction programs intended to reduce employee commute VMT would not be applicable to a residential project.

SCALE

The Handbook identifies that measures can be applied at different scales or geographic levels, however, "some measures may only be applicable at the project-level, whereas others may be more appropriate within a broader planning context such as for a general plan or climate action plan." The geographic levels considered in the Handbook include Project/Site and Plan/Community. Project/Site applies to measures that can reduce VMT at the scale of an individual development project or employer. Plan/Community refers to measures that reduce VMT at the scale of a specific plan, general plan or climate action plan. Transportation measures can be quantified at either the Project/Site scale or the Plan/Community scale, but never both.[3]

LOCATIONAL CONTEXT

The Handbook describes locational context as "used to identify trip reduction measures within the transportation sector that are appropriate in certain types of neighborhoods differentiated by transportation characteristics and level of development (e.g., rural, suburban, and urban)." More specifically, rural, suburban, and urban are defined as follows:

Rural: An area characterized by little development. Compared to urban and suburban areas, rural areas have a lower density of residences, higher numbers of single-family residences, and higher numbers of vehicle-dependent land use patterns. Where applicable, the Handbook provides three land use distinctions within the rural locational context category—R_a, R_b, and R_c. R_a refers to rural areas within a master-planned community. These rural areas often include a broad offering of amenities and services, which may be accessed by walking or other alternative forms of transportation. R_b refers to rural areas adjacent to a commuter rail station with convenient rail service to a major employment center. As the name implies, these rural areas have greater access to commuter rail as an alternative mode of transportation. R_c refers to rural areas with transit service and that are near jobs/services.

Suburban: An area characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city. Also known as a suburb.

Urban: An area located within the central city with higher density land uses than in the suburbs. Often characterized by multi-family housing, tall office buildings and dense retail.

The City of Los Alamitos is often considered suburban due to its surroundings and borderline urban as the City contains a diverse mix of land uses and abundant amount of multi-family housing, dense retail, and employment-related uses. VMT reduction measures will herein evaluate the Project's locational context as urban. Attachment C provides a matrix of VMT mitigation measures available to an urban residential project.

[3] Handbook, Page 37

PROJECT DESIGN FEATURES - VMT REDUCTIONS

As the reduction in trips and associated VMT could not be accurately accounted for by the calculations conducted using the OCTAM model, these adjustments are made through the following calculations as described in the 2021 Handbook.

T-1 Increase Residential Density

This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of dwelling units compared to the average residential density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing residential density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in VMT.

As the land use information that represents the Project was input into the OCTAM model, any increased density over the National average that would reduce VMT is included in the VMT estimates in Table 3 and no additional VMT reduction credit is assumed.

T-4 Affordable Housing

Specifically, "Land Use – T-4. Integrate Affordable and Below Market Rate Housing" requires multi-family residential units to be permanently dedicated as affordable for lower income families. The California Department of Housing and Community Development (2021) defines lower-income as 80 percent of area median income or below, and affordable housing as costing 30 percent of gross household income or less.[4] Table 4 provides the calculation variables and formula used to calculate VMT reduction.

TABLE 4: T-4. AFFORDABLE HOUSING CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from Project/Site VMT for multifamily residential developments	0-28.6	%	calculated
User Inputs				
B	Percent of multifamily units permanently dedicated as affordable	0-100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in VMT for qualified units compared to market rate units	-28.6	%	ITE 2021

$$A = B \times C$$

$$-8.87\% = 31\% \times -28.6\%$$

[4] 2021 Handbook; Page 80

The Project is proposing 77 affordable housing units, or 31% of the total 246 dwelling units. As shown, the Project would reduce its project-generated VMT by 8.87% or 1,226 VMT.

T-15 Limit Residential Parking Supply

Limiting residential parking supply will reduce the total parking supply available at a residential project or site. Limiting the amount of parking available creates scarcity and adds additional time and inconvenience to trips made by private autos, thus disincentivizing driving as a mode of travel. Reducing the convenience of driving results in a shift to other modes and decreased VMT. Table 5 provides the calculation variables and formula used to calculate VMT reduction.

TABLE 5: T-15. LIMIT RESIDENTIAL PARKING SUPLY CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
A	Percent reduction in GHG emissions from VMT	0-13.7	%	calculated
User Inputs				
B	Residential parking demand	589	Parking Spaces	user input
C	Project residential parking supply	577	Parking Spaces	user input
D	Percentage of project VMT generated by residents	100	%	user input
Constants, Assumptions, and Available Defaults				
E	Percent of household VMT that is commute based	37	%	Caltrans 2012
F	Percent reduction in commute mode share by driving among households in areas with scarce parking	37	%	Chatman 2013

$$A = \frac{B - C}{B} \times D \times E \times F$$

$$-0.28\% = \frac{589 - 587}{589} \times 37\% \times 37\% \times 100\%$$

As proposed, the Project's parking supply will be limited to 577 parking spaces, which is 12 parking spaces below the 589 parking spaces required by the lead agency. As shown, the Project would reduce its project- generated VMT by 0.28% or 39 VMT.

PROJECT-GENERATED VMT COMPARISON WITH CITY THRESHOLD

The Project is estimated to reduce VMT by 1,265 VMT (1,226+39 VMT) with the inclusion of VMT-reducing project design features, as previously discussed. Table 5 shows the results of the project-generated HB VMT with the inclusion of VMT-reducing project design features, subsequent HB VMT per capita, and comparison to the City's adopted thresholds.

TABLE 5: PROJECT GENERATED VMT RESULTS

	Baseline (2022)	Long Range (2045)
Population	647	647
HB VMT	12,559	12,174
VMT per capita	19.4	18.8
Threshold	14.8	14.8
Percent Above Threshold	+30.1%	+27.0%
Potentially Significant?	Yes	Yes

As shown in Table 5, the Project would generate VMT per capita exceeding the City's adopted VMT impact threshold by 30.1% in the baseline condition and 27.0% in the cumulative condition. The Project is considered to have a significant VMT impact.

CUMULATIVE EFFECT ON VMT

The Project is not proposing a general plan amendment nor a change of zone. As the Project is consistent with the underlaying land use assumptions of the General Plan and Zoning the cumulative no project would the same as the cumulative with project. Therefore, the cumulative impact would be less than significant.

SUMMARY

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

- The Project was evaluated against screening criteria as outlined in the Technical Advisory. The Project was not found to meet any available screening criteria, and a VMT analysis was performed.
- The Project's VMT analysis found the Project to exceed the regional (Orange County) VMT per capita threshold by 30.1% for baseline (2022) conditions and 27.0% for buildout (2045) conditions. Therefore, the Project is found to have a **significant and unavoidable VMT impact**.
- The Project is consistent with the City's General Plan underlaying land use assumptions and the cumulative no project would be the same as the cumulative with project. The Projects cumulative effect is found to be **less than significant cumulative impact on VMT.**

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

Respectfully submitted,

URBAN CROSSROADS, INC.

Alexander So
Senior Associate

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
3. **State of California Department of Finance.** *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark.* May 2021.
4. **CAPCOA.** *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity .* December 2021.

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ATTACHMENT A
PROJECT TRIP GENERATION

TABLE A-1: TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
Single Family Detached	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Multifamily Housing (Low-Rise) (2-3 Floors)	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Affordable Housing	DU	223	0.10	0.26	0.36	0.27	0.19	0.46	4.81

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] DU = Dwelling Units

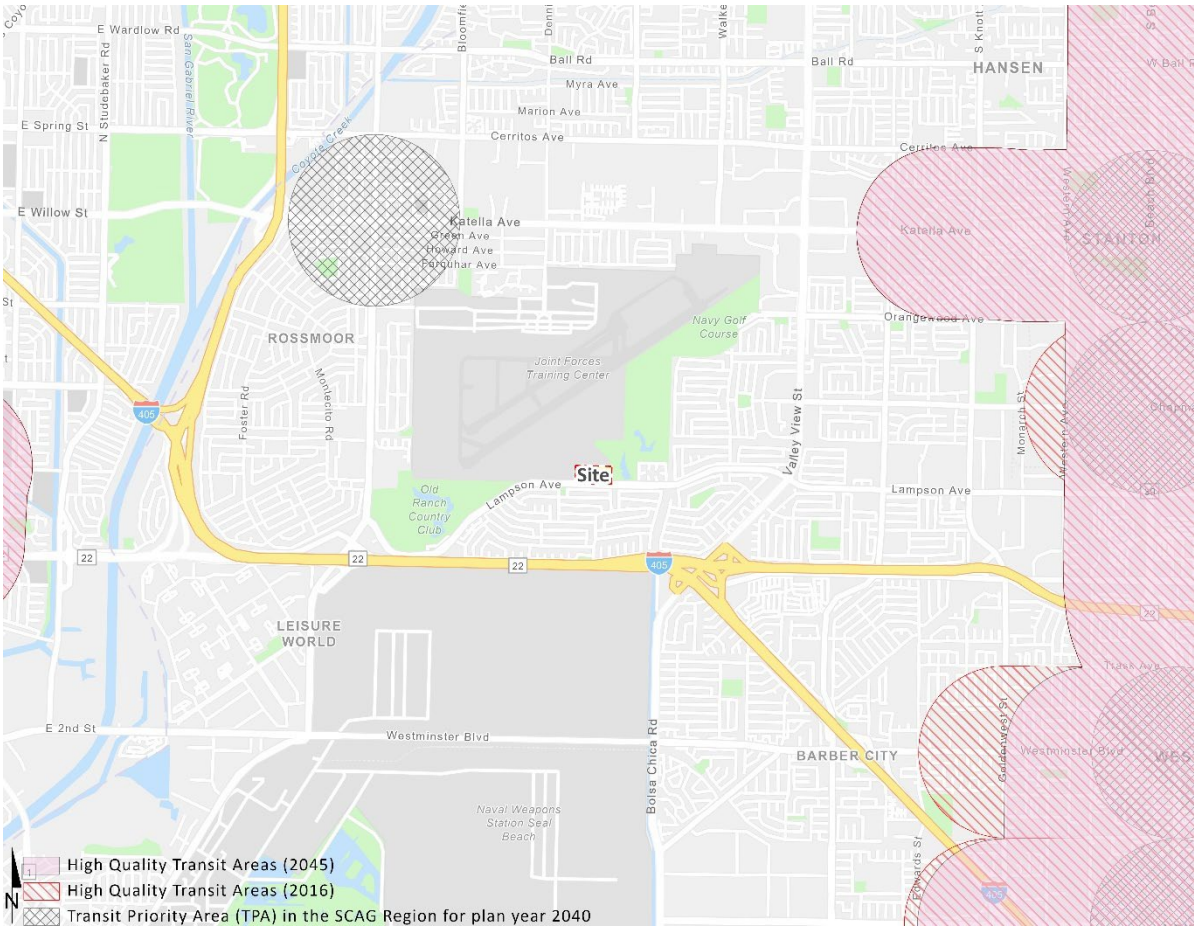
TABLE A-2: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Single Family Detached	55	DU	10	28	38	33	19	52	520
Mulifamily Housing	114	DU	11	35	46	37	22	59	768
Affordable Housing	77	DU	8	20	28	21	15	36	370
Project Total Trips			**29**	**83**	**112**	**91**	**56**	**147**	**1,658**

[1] DU = Dwelling Units

ATTACHMENT B

TPA MAP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N Studebaker Rd
E Spring St
E Willow St
Ball Rd
Myra Ave
Marion Ave
Cerritos Ave
Katella Ave
Green Ave
Howard Ave
Farquhar Ave
ROSSMOOR
Navy Golf Course
Joint Forces Training Center
Foster Rd
Montecito Rd
Old Ranch Country Club
Site
Lampson Ave
Valley View St
Monarch St
HANSEN
STANTON
LEISURE WORLD
E 2nd St
Westminster Blvd
Naval Weapons Station Seal Beach
Bolsa Chica Rd
BARBER CITY
405
22
High Quality Transit Areas (2045)
High Quality Transit Areas (2016)
Transit Priority Area (TPA) in the SCAG Region for plan year 2040
N

ATTACHMENT C
VMT REDUCTION MATRIX

Subsector	Measure	Scale of Application	Applicable Locational Context	Applicability to Project
Land Use	**T-1 Increase Residential Density** This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of dwelling units (du) compared to the average residential density in the U.S.	Project/Site	Urban, Suburban	Applicable.
	T-2 Increase Job Density This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of jobs compared to the average job density in the U.S.	Project/Site	Urban, Suburban	Not Applicable, Project is not employment related.
	T-3 Provide Transit-Oriented Development This measure would reduce project VMT in the study area relative to the same project sited in a non-transit-oriented development (TOD) location.	Project/Site	Urban, Suburban	Not Applicable due to the Project's location to available transit.
	T-4 Integrate Affordable and Below Market Rate Housing This measure requires below market rate (BMR) housing.	Project/Site	Urban, Suburban	Applicable.
	T-17 Improve Street Connectivity This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of vehicle intersections compared to the average intersection density in the U.S.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
Parking or Road Pricing Management	**T-14 Provide Electric Vehicle Charging Infrastructure** Install onsite electric vehicle chargers in an amount beyond what is required by the 2019 California Green Building Standards (CALGreen) at buildings with designated parking areas (e.g., commercial, educational, retail, multifamily).	Project/Site	Urban, Suburban, Rural	Not Applicable, no reduction to VMT.
	T-15 Limit Residential Parking Supply This measure will reduce the total parking supply available at a residential project or site.	Project/Site	Urban, Suburban	Applicable.
	T-16 Unbundle Residential Parking Costs from Property Cost This measure will unbundle, or separate, a residential project's parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost.	Project/Site	Urban, Suburban	Applicable, but not feasible as increases in housing costs would not be consistent with State housing affordability goals.
	T-24 Implement Market Price Public Parking (On-Street) This measure will price all on-street parking in a given community, with a focus on parking near central business districts, employment centers, and retail centers.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
Neighborhood Design	**T-18 Provide Pedestrian Network Improvement** This measure will increase the sidewalk coverage to improve pedestrian access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive.	Plan/Community	Urban, Suburban, Rural	Not Applicable in at the Project level.
	T-19A Construct or Improve Bike Facility This measure will construct or improve a single bicycle lane facility (only Class I, II, or IV) that connects to a larger existing bikeway network.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-19B Construct or Improve Bike Boulevard Construct or improve a single bicycle boulevard that connects to a larger existing bikeway network. Bicycle boulevards are a designation within Class III Bikeway that create safe, low-stress connections for people biking and walking on streets.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-20 Expend Bikeway Network This measure will increase the length of a city or community bikeway network. A bicycle network is an interconnected system of bike lanes, bike paths, bike routes, and cycle tracks. Providing bicycle infrastructure with markings and signage on appropriately sized roads with vehicle traffic traveling at safe speeds helps to improve biking conditions (e.g., safety and convenience). In addition, expanded bikeway networks can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-21A Implement Conventional Carshare Program This measure will increase carshare access in the user's community by deploying conventional carshare vehicles. Carsharing offers people convenient access to a vehicle for personal or commuting purposes.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-21B Implement Electric Carshare Program This measure will increase carshare access in the user's community by deploying electric carshare vehicles. Carsharing offers people convenient access to a vehicle for personal or commuting purposes.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-22A Implement Pedal (Non-Electric) Bikeshare Program This measure will establish a bikeshare program. Bikeshare programs provide users with on-demand access to bikes for short-term rentals.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-22B Implement Electric Bikeshare Program This measure will establish an electric bikeshare program. Electric bikeshare programs provide users with on-demand access to electric pedal assist bikes for short-term rentals.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-22C Implement Scootershare Program This measure will establish a scootershare program. Scootershare programs provide users with on-demand access to electric scooters for short-term rentals.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
Transit	**T-25 Extend Transit Network Coverage** This measure will expand the local transit network by either adding or modifying existing transit service or extending the operation hours to enhance the service near the project site.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-26 Increase Transit Service Frequency This measure will increase transit frequency on one or more transit lines serving the plan/community.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-27 Implement Transit-Supportive Roadway Treatments This measure will implement transit-supportive treatments on the transit routes serving the plan/community. Transit-supportive treatments incorporate a mix of roadway infrastructure improvements and/or traffic signal modifications to improve transit travel times and reliability.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-28 Provide Bus Rapid Transit This measure will convert an existing bus route to a bus rapid transit (BRT) system. BRT includes the following additional components, compared to traditional bus service: exclusive right-of-way (e.g., busways, queue jumping lanes) at congested intersections, increased limited-stop service (e.g., express service), intelligent transportation technology (e.g., transit signal priority, automatic vehicle location systems), advanced technology vehicles (e.g., articulated buses, low-floor buses), enhanced station design, efficient fare-payment smart cards or smartphone apps, branding of the system, and use of vehicle guidance systems	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
	T-29 Reduce Transit Fares This measure will reduce transit fares on the transit lines serving the plan/community.	Plan/Community	Urban, Suburban	Not Applicable in at the Project level.
Clean Vehicles and Fuels	**T-30 Use Cleaner-Fuel Vehicles**	Plan/Community	N/A	Not Applicable in at the Project level.