

VEHICLE MILES TRAVELED STUDY

OCEAN KAMP PROJECT

Oceanside, California
July 14, 2021

LLG Ref. 3-19-3145

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EXECUTIVE SUMMARY

Linscott, Law & Greenspan, Engineers (LLG) has prepared the following Vehicle Miles Traveled (VMT) study to determine the potential VMT impacts of the proposed Ocean Kamp project, consistent with the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020.

The Ocean Kamp Project proposes a mix of commercial and residential uses. Commercial uses would be located within the central/southwestern portion of the site, and are proposed to include a 300-room resort hotel; approximately 126,000 SF of retail / commercial uses; and a wave lagoon. Multi-family residential uses are proposed to include approximately 700 units within the northern and eastern portions of the Project site. Access to the site is proposed primarily via Fousat Road at SR 76 and via Ocean Pointe at Mission Avenue.

The City’s *Traffic Impact Analysis Guidelines* provide guidance on the preparation of VMT studies including the City’s significance thresholds, screening criteria, and analysis methodology for a variety of land uses, including residential, employment, retail, and others. The Project proposes residential, retail/commercial and hotel uses. The analysis methodology used to identify potential VMT impacts is different for each of the Project’s proposed land uses, as summarized in **Table A**. The Project’s individual uses were therefore analyzed independently of each other, per the City’s *Traffic Impact Analysis Guidelines*.

TABLE A
CITY OF OCEANSIDE PROJECT THRESHOLD

Project Type	Metric	Significance Threshold
Residential	Resident VMT/Capita	15% below regional average
Retail / Commercial	Net increase in the regional VMT	Net increase in regional VMT
Hotel ^a	Employee VMT / Employee	15% below regional average

Footnotes:

- a. The City’s *Traffic Impact Analysis Guidelines* do not provide specific guidance pertaining to the analysis of regionally serving hotels. Therefore, the City of San Diego’s guidelines were assumed, which direct hotel land uses to be analyzed under the “Commercial” land use methodology.

Source:

City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020, Table 5.

Based on the VMT analyses conducted for the Project, the VMT per employee for the proposed hotel use is less than 85% of the regional average and the proposed retail / commercial uses do not result in a net increase in the total Regional VMT. Therefore, these land use components of the Project would have a less-than-significant transportation impact and no mitigation measures are needed.

The VMT per capita for the proposed residential use is greater than 85% of the regional average, with the Project exceeding the significance threshold by 6.68%. Therefore, a significant

transportation impact is calculated for the residential component of the Project. This significant transportation impact requires the implementation of mitigation measures to reduce the Project's residential VMT per capita by 6.68% or more.

The CAPCOA measure *LUT-9: Improve Design of Development*, was identified as a measure that would reduce the Project's residential VMT as calculated using the SANDAG Series 13 Year 2020 Travel Demand Model. The Project's VMT reduction associated with LUT-9 is calculated to be 11.7%. This mitigation exceeds the Project's 6.68% VMT impact and is therefore considered sufficient to reduce the Project's residential VMT impact to less than significant.

In addition, the Project will coordinate with the City of Oceanside to provide a pedestrian crosswalk across Benet Road at Airport Road. This measure will help address the lack of pedestrian facilities on the eastern side of Benet Road between Airport Road and the San Luis River Trail, and will improve pedestrian and bicycle connectivity to the San Luis River Trail. The provision of continuous pedestrian and bicycle facilities encourages alternate modes of travel and may reduce the Project's VMT.

The Project will also implement the following trip reduction strategies as Project features and conditions of approval, with implementation required at 50% occupancy. These strategies will further reduce the number of automobile trips generated by residents of the Project and the distance that the residents drive:

- Provide Ride Share coordination services thru the Project's Home Owner's Association to match residents interested in carpooling.
- Coordinate with near-by schools and / or the Project's Home Owner's Association to match residents interested in carpooling to / from schools.
- Provide on-site transit opportunities information.
- Encourage bicycling by providing on-site bicycle infrastructure such as bike racks.

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1.0 INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has prepared the following Vehicle Miles Traveled (VMT) study to determine the potential VMT impacts of the proposed Ocean Kamp project, consistent with the City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020.

This study includes the following:

- Project Description
- Vehicle Miles Traveled: Overview and Background
- Analysis Methodology & Significance Criteria
- VMT Analysis
- Significant Impacts and Mitigation Measures
- Conclusions

2.0 PROJECT DESCRIPTION

2.1 Project Location

The approximately 92-acre project site is located north of Mission Avenue and State Route 76 (SR 76), immediately east of Foussat Road and west of Fireside Street in the City of Oceanside. Surrounding land uses include the San Luis Rey River located north and west of the property, the Oceanside Municipal Airport to the west, Oceanside Fire Department Station No. 7 to the south (between SR 76 and Mission Avenue), the City of Oceanside's Mission Basin Groundwater Purification Facility located to the northeast, and a combination of single-family residential and commercial development and open space located to the east and south. A portion of the San Diego Gas & Electric (SDG&E) transmission line easement traverses the center of site in a north-south trend. The site has previously been used as a drive-in movie theater and swap meet.

Figure 2-1 shows the vicinity map. *Figure 2-2* shows a more detailed Project area map.

2.2 Project Background

An Environmental Impact Report (EIR) addressing development of the site was certified by the City of Oceanside in 2008 (State Clearinghouse No. 2006111033). The Pavilion at Oceanside project described in the EIR consisted of a 950,000-square foot (SF) shopping center with a variety of retail uses. The project application included a Tentative Parcel Map, Development Plan, five Conditional Use Permits (movie theater, health club, and three drive-through uses), and an Underground Waiver request for the existing high-voltage electrical transmission lines located on the site. The Tentative Parcel Map proposed to divide the project site into 10 parcels for leasing purposes, where each commercial parcel included building, hardscape/landscape, and parking areas. The Ocean Kamp project is updating the 2008 EIR with a Supplemental EIR.

A Traffic Impact Analysis Report dated March 2008 was prepared by RBF Consulting in conjunction with the certified EIR in which the Pavilion at Oceanside project was calculated to generate 32,175 Average Daily Trips (ADT). Mitigation measures were identified to address potential impacts to the surrounding street system.

The site is currently being graded pursuant to the conditions of the previously approved Pavilion at Oceanside project. Since this traffic study is tiering off the approved EIR for the site, the significance criteria utilized in that study was also utilized in this study.

2.3 Project Description

The Ocean Kamp Project proposes a mix of commercial and residential uses. Commercial uses would be located within the central/southwestern portion of the site, and are proposed to include a 300-room resort hotel; approximately 126,000 SF of retail / commercial uses; and a wave lagoon. Multi-family residential uses are proposed to include approximately 700 units within the northern and eastern portions of the project site.

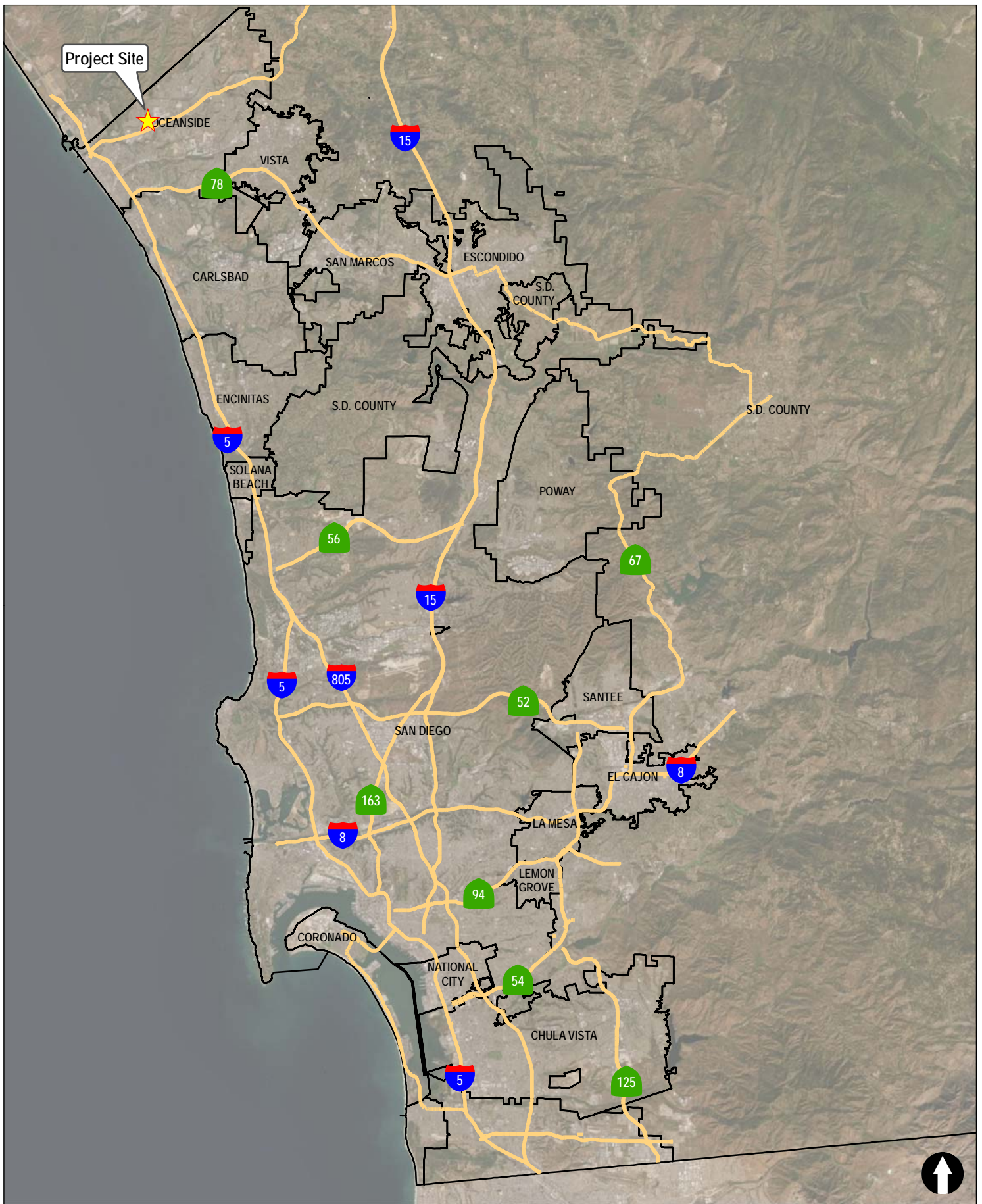
A comprehensive network of trails throughout the Project area proposed to connect residential neighborhoods with easy access to the local shops, dining, recreational, and fitness facilities at the projects commercial center, while also providing additional recreational opportunity with access to the regional San Luis Rey River Trail. Paseos are proposed to create a finer pedestrian network between homes, neighborhoods and parks.

The Project proposes a number of parks linked by a series of trails to create an open space network of play areas. The intent is to offer recreational opportunities for all ages while creating places for people. Approximately 20 acres of the 92-acre project site will be dedicated open space, offering opportunities for walking, hiking, running and biking.

Access to the site is proposed primarily via Foussat Road at SR 76 and via Ocean Pointe at Mission Avenue.

Figure 2–3 shows the conceptual site plan.

The Project proposes a reduced density of commercial uses compared to the 950,000 SF of commercial uses proposed under the approved Pavilion at Oceanside project and will generate significantly fewer ADT (and associated VMT) than the approved Pavilion project. However, in order to provide a comprehensive assessment of the Project in relation to Existing conditions, the following transportation study has been prepared.



Project Site

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Figure 2-1
Vicinity Map

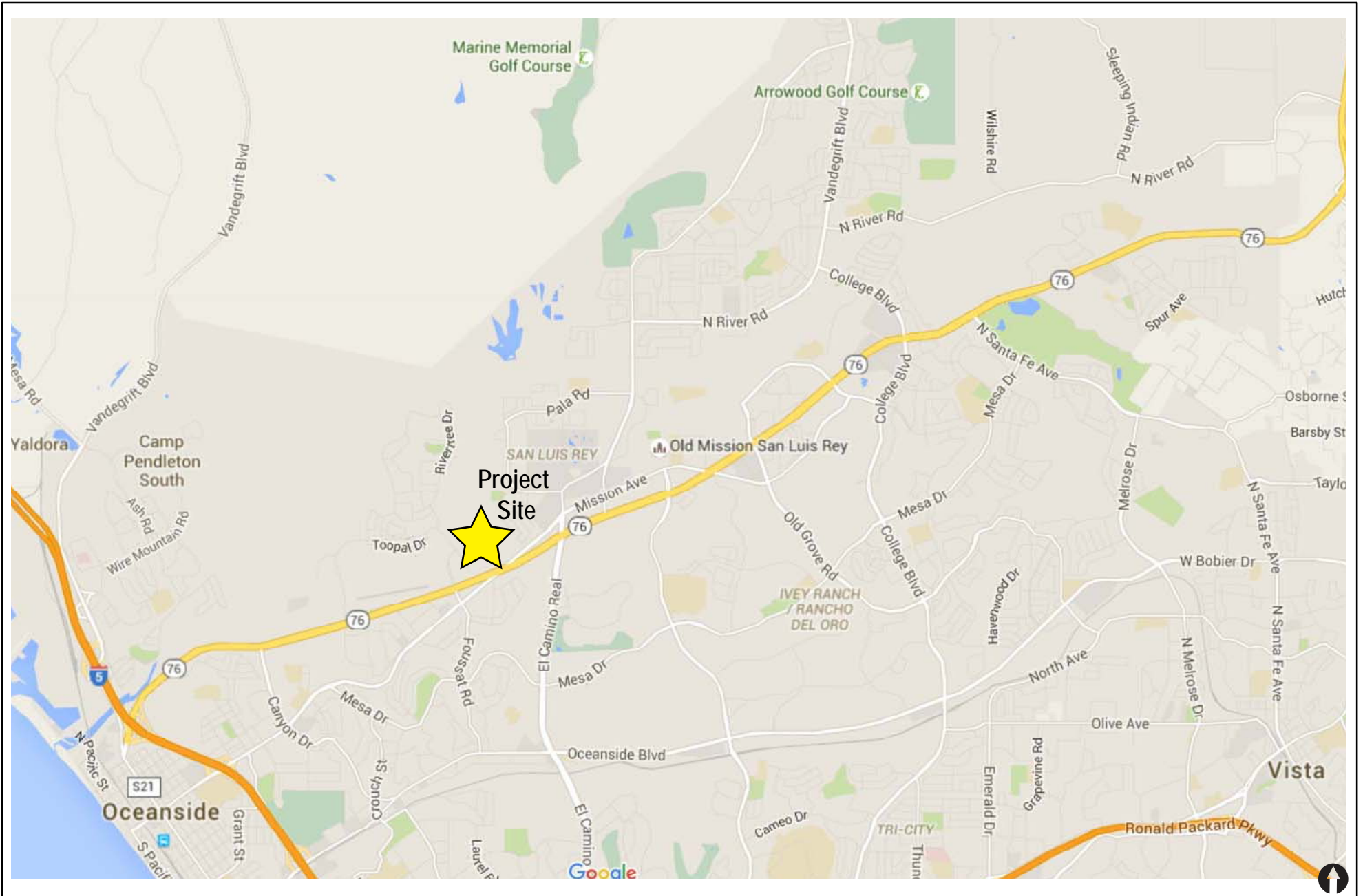


Figure 2-2

Project Area Map

OCEAN KAMP



3.0 VEHICLE MILES TRAVELED: OVERVIEW AND BACKGROUND

This section presents an evaluation of potential transportation impacts of the Project as proposed by the California Governor's Office of Planning and Research (OPR) to implement California State Law Senate Bill (S.B.) 743.

3.1 VMT Background

VMT is a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT measures the efficiency of the transportation network and is 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 to measure transportation impacts.

3.2 Senate Bill 743

In September 2013, the Governor signed SB 743 into law, starting a process that fundamentally changes the way transportation impact analyses are conducted under CEQA. 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 impacts. The guidance identifies VMT as the most appropriate CEQA transportation metric, along with the elimination of auto delay/LOS for CEQA purposes statewide. The rationale for this paradigm shift is that auto delay/LOS impacts lead to improvements that increase roadway capacity, and therefore induce more traffic and associated greenhouse gas emissions.

In December 2018, after over five years of stakeholder-driven development, the California Natural Resource Agency certified and adopted the CEQA Statute. As of July 1, 2020, the VMT guidelines apply to all jurisdictions statewide.

4.0 VMT ANALYSIS METHODOLOGY & SIGNIFICANCE CRITERIA

4.1 Local / Regional Agency Transition to SB743

San Diego's local Institute of Transportation Engineers (ITE) SB 743 Subcommittee published *Guidelines for Transportation Impact Studies in the San Diego Region* in May 2020. The City of Oceanside published the *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment* in August 2020 that provides significance determination thresholds for VMT and VMT analysis methodologies. The City's *Traffic Impact Analysis Guidelines* was utilized as the basis for the VMT analysis.

4.2 Analysis Methodology

4.2.1 Screened Out Projects

SB 743 eliminates the need for some projects that support VMT reduction to be analyzed for CEQA purposes. These projects are considered screened out from VMT analysis. "Screened out" is defined as projects not needed to be analyzed for CEQA purposes that already support VMT reduction.

The projects listed below in **Table 4-1** (Table 2 of the City's *Traffic Impact Analysis Guidelines*) are presumed to be considered VMT-reducing projects. The projects listed are either locally serving or are based on substantial evidence provided by the OPR Technical Advisory Committee supporting SB 743 implementation.

The proposed Ocean Kamp project does not fall within any of the categories listed in *Table 4-1*, and the Project is therefore not presumed to have a less than significant VMT impact due to project characteristics and/or location. Therefore, a transportation VMT analysis using the SANDAG Regional Travel Demand Model was conducted, consistent with the City's *Traffic Impact Analysis Guidelines*.

4.2.2 SANDAG Regional Travel Demand Model

Projects that are not presumed to have a less than significant VMT impact due to project characteristics and/or location (i.e., projects that are not screened out), and that are calculated to generate more than 2,400 ADT require use of the SANDAG model to determine VMT, per the City's *Traffic Impact Analysis Guidelines*. The SANDAG transportation model provides a systematic analytical platform so that different alternatives and inputs can be evaluated in an iterative and controlled environment. The proposed Ocean Kamp project is calculated to generate 19,040 weekday ADT and therefore uses the SANDAG model to determine VMT.

In order to calculate the Project's VMT, a custom SANDAG Series 13 Year 2020 Travel Demand Model was developed to include the proposed land uses. The following land uses were manually included in the model:

- 700 multi-family residential dwelling units
- 126,000 SF of retail / commercial uses
- 300-room resort hotel

It should be noted that the Series 14 model platform is the most recent SANDAG model available. However, this model is not currently not capable of running custom land use scenarios and it is not possible to input the Project's land uses in the Series 14 model. Therefore, Series 13 was used.

4.3 VMT CEQA Significance Determination Thresholds

The City's *Traffic Impact Analysis Guidelines* provide guidance on the preparation of VMT studies including the City's significance thresholds, screening criteria, and analysis methodology for a variety of land uses, including residential, employment, retail, and others. The Project proposes residential, retail/commercial and hotel uses. The analysis methodology used to identify potential VMT impacts is different for each of the Project's proposed land uses, as summarized below in **Table 4-2**. The Project's individual uses were therefore analyzed independently of each other, per the City's *Traffic Impact Analysis Guidelines*.

Table 4-2 identifies the significance thresholds for proposed land uses, per the City's *Traffic Impact Analysis Guidelines*. Projects that exceed the significance thresholds are considered significant and will require VMT analysis and mitigation.

A discussion of the land use classification for each of the proposed Project components is summarized below.

4.3.1 Residential Uses

The Project includes the development of 700 multi-family residential units. This portion of the Project is evaluated as a "Residential" use. The threshold for the determination of a significant transportation VMT impact for Residential uses is 15% below the average Regional VMT per capita, which is considered the "baseline" condition.

4.3.2 Retail / Commercial Uses

The Project includes the development of approximately 126,000 SF of retail / commercial uses. This portion of the Project is evaluated as a "Retail" use. Per the City's *Traffic Impact Analysis Guidelines*, locally serving retail uses are presumed to decrease VMT. However, retail projects over 50,000 SF are considered regionally serving and require the preparation of a VMT analysis. The threshold for the determination of a significant transportation VMT impact for Retail uses is any net increase in total Regional VMT.

4.3.3 Hotel Uses

The Project includes the development of a 300-room resort hotel. The City's *Traffic Impact Analysis Guidelines* do not provide specific guidance pertaining to the analysis of regionally serving hotels. Therefore, the City of San Diego's guidelines were assumed, which direct hotel land uses to be analyzed under the "Commercial" land use methodology. The threshold for the determination of a significant transportation VMT impact for Commercial uses is 15% below the average Regional VMT per employee, which is considered the "baseline" condition.

**TABLE 4-1
SCREENED OUT PROJECTS**

Project Type
Projects located in a Transit Priority Areas (TPA) or Smart Growth Opportunity Area as identified in the most recent SANDAG San Diego Forward Regional Plan and is consistent with the General Plan at the time of project application. ^{a, b}
Projects located in a low-VMT generating area identified on the most recent SANDAG SB 743 VMT Screening map
Locally serving K-12 schools
Day care centers
Local Parks
Locally Serving retail uses less than 50,000 square feet, including: gas stations, banks, restaurants, grocery stores, and shopping centers
Community institutions (Public libraries, fire stations, local government)
Locally serving hotels (e.g., non-destination hotels, non-regionally serving
Student housing projects on or adjunct to college campuses
Local serving community colleges that are consistent with the assumptions noted in the most recent SANDAG Regional Transportation Plan/Sustainable Communities Strategy
Affordable housing projects ^c
Assisted living facilities
Senior housing (as defined by HUD)
Transit Project
Bike Projects
Pedestrian projects
Safety improvement projects (e.g., RRFBs and high visibility crosswalks at uncontrolled locations, pedestrian count down timers, additionally projects identified through the Highway Safety Improvement Program)
Safe Routes to School
Projects generating less than 500 daily vehicle trips (if inconsistent with adopted General Plan)
Projects generating less than 1,000 daily vehicle trips (if consistent with adopted General Pan)

Footnotes:

Source: City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020; *Table 2*

- a. Projects located in a TPA must be able to access the transit station within a ½ mile walking distance or 6-minute walk continuously without discontinuity of sidewalk or obstructions to the route. Qualifying transit stops means a site containing an existing rail transit station 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 (OPR, 2017). A high-quality transit corridor may also be considered if a corridor with fixed route bus service has service intervals no longer than 15 minutes during peak commute hours (OPR, 2017).
- b. Smart Growth Opportunity Area Map is provided in Appendix B of the City’s Traffic Impact Analysis Guidelines. The most recent version available shall be used.
- c. If a project is a mix of affordable housing and market rate housing or unscreened use, only the affordable housing component would qualify as screened out. Additionally, any removal of affordable housing automatically requires CEQA VMT analysis.

TABLE 4-2
CITY OF OCEANSIDE PROJECT THRESHOLD

Project Type	Metric	Significance Threshold
Residential	Resident VMT/Capita	15% below regional average
Retail / Commercial	Net increase in the regional VMT	Net increase in regional VMT
Hotel ^a	Employee VMT / Employee	15% below regional average

Footnotes:

- a. The City's *Traffic Impact Analysis Guidelines* do not provide specific guidance pertaining to the analysis of regionally serving hotels. Therefore, the City of San Diego's guidelines were assumed, which direct hotel land uses to be analyzed under the "Commercial" land use methodology.

Source:

City of Oceanside *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment*, August 2020, Table 5.

5.0 VMT ANALYSIS

The Project was evaluated to identify potential significant VMT impacts based on the significance determination thresholds and methodology described above in *Section 4*. The analysis methodology used to identify potential VMT impacts is different for each of the Project's proposed land uses, and therefore the Project's individual uses are analyzed independently of each other, per the City's *Traffic Impact Analysis Guidelines*.

5.1 Residential Uses

The Project includes the development of 700 multi-family residential units. The threshold for the determination of a significant transportation VMT impact for Residential uses is 15% below the average Regional VMT per capita (baseline). None of the project types listed in *Table 4-1* are applicable to this component of the Project and the Project is therefore not presumed to have a less than significant VMT impact due to project characteristics and/or location (i.e., is not screened out). Therefore, a transportation VMT analysis using the SANDAG Regional Travel Demand Model was conducted per the City's *Traffic Impact Analysis Guidelines*.

In order to calculate the VMT for the Regional average baseline and for the Project, the SANDAG Series 13 Travel Demand Model was used. The model generates a land use-specific average trip length as well as an average daily volume, which ultimately calculates the total residential VMT per capita, both regionwide and for the Project. The SANDAG Series 13 Year 2020 Travel Demand Model results are included in *Appendix A*.

Table 5-1 summarizes the Regional average baseline VMT results provided by SANDAG using the Series 13 model. As seen in *Table 5-1*, the Regional average baseline VMT per capita is 17.6 miles per resident. For the purpose of determining the significance of VMT impacts, the Project VMT per capita would need to be 85% below the Regional average, which equates to 14.96 VMT per capita.

Similar to the Regional average baseline calculations, the Project VMT per capita was determined based on the VMT results for the Project specific Traffic Analysis Zone (TAZ) provided by SANDAG using the Series 13 model. The Project site is located in TAZ 361. As shown in *Table 5-1*, the average VMT per capita for TAZ 361 is calculated at 16.0 VMT per capita (or 90.91% of the Regional baseline average).

Since the Project VMT per capita is greater than 85% of the Regional average, **the residential component of the Project is calculated to result in a significant transportation impact.**

The results of the Project VMT comparison indicate that the Project would exceed the significance threshold by 6.68%. This would require a reduction of 6.68% or more to reduce the VMT to below the significance threshold.

TABLE 5-1
VMT PER CAPITA ANALYSIS

Project Type	Metric	Average Regional Baseline VMT/Capita ^a	Significance Threshold (85% of Regional Baseline)	Project VMT/ Capita (TAZ 361) ^b	Transportation Impact? (Over Threshold?)
Residential	Resident VMT/Capita	17.6	14.96	16.0	Yes

Footnotes:

- a. SANDAG Year 2012 Series 13 Regional Average VMT per capita.
- b. Custom SANDAG Year 2020 Series 13 traffic model processed February, 2020

5.2 Retail / Commercial Uses

The Project includes the development of approximately 126,000 SF of retail / commercial uses. This portion of the Project is evaluated as a “Retail” use. The threshold for the determination of a significant transportation VMT impact for Retail uses is any net increase in total Regional VMT.

None of the project types listed in *Table 4-1* are applicable to this component of the Project and the Project is therefore not presumed to have a less than significant VMT impact due to project characteristics and/or location (i.e., is not screened out). Therefore, a transportation VMT analysis using the SANDAG Regional Travel Demand Model was conducted per the City’s *Traffic Impact Analysis Guidelines*.

In order to calculate the Project induced change to regional VMT, LLG coordinated with SANDAG to input the Project into the SANDAG Series 13 Year 2020 Travel Demand Model. The model generates a land use-specific average trip length as well as an average daily volume.

The Project site is located in TAZ 361. Two models were obtained: a total gross regionwide VMT report for baseline (without Project) conditions, and a total gross regionwide VMT report including the proposed Project. The SANDAG Series 13 Year 2020 Travel Demand Model results are included in *Appendix A*.

Table 5-2 summarizes the gross regionwide VMT under baseline (without Project) and “with Project” conditions. As seen in *Table 5-1*, the total gross regionwide VMT without the Project is 84,682,067. The total gross regionwide VMT with the Project is 83,764,311. Therefore, the Project is expected to reduce regional VMT by 917,756 (a reduction of 0.011% of the regional VMT).

Since the Project does not result in a net increase in the total regional VMT, the retail/commercial component of the Project is calculated to result in a less-than-significant transportation impact.

TABLE 5-2
TOTAL REGIONAL VMT ANALYSIS

Project Type	Total Gross Regionwide VMT (without Project)	Total Gross Regionwide VMT (with Project)	Increase / (Decrease) in VMT	Transportation Impact? (Over Threshold?)
Retail / Commercial	84,682,067	83,764,311	(917,756)	No

Source: SANDAG, February 2020

5.3 Hotel Uses

The Project includes the development of a 300-room resort hotel. The threshold for the determination of a significant transportation VMT impact for this type of use is 15% below the average Regional VMT per employee (baseline). None of the project types listed in *Table 4-1* are applicable to this component of the Project and the Project is therefore not presumed to have a less than significant VMT impact due to project characteristics and/or location (i.e., is not screened out). Therefore, a transportation VMT analysis using the SANDAG Regional Travel Demand Model was conducted per the City’s *Traffic Impact Analysis Guidelines*.

In order to calculate the VMT for the Regional average baseline and for the Project, the SANDAG Series 13 Travel Demand Model was used. The model generates a land use-specific average trip length as well as an average daily volume, which ultimately calculates the total employee VMT per employee, both regionwide and for the Project. The SANDAG Series 13 Year 2020 Travel Demand Model results are included in *Appendix A*.

Table 5-3 summarizes the Regional average baseline VMT results provided by SANDAG using the Series 13 model. As seen in *Table 5-1*, the Regional average baseline VMT per employee is 25.9 miles per employee. For the purpose of determining the significance of VMT impacts, the Project VMT per employee would need to be 85% below the Regional average, which equates to 22.02 VMT per employee.

Similar to the Regional average baseline calculations, the Project VMT per employee was determined based on the VMT results for the Project specific TAZ provided by SANDAG using the Series 13 model. The Project site is located in TAZ 361. As shown in *Table 5-3*, the average VMT per employee for TAZ 361 is calculated at 19.2 VMT per employee (or 74.13% of the Regional baseline average).

Since the Project VMT per employee is less than 85% of the Regional average, the hotel component of the Project is calculated to result in a less-than-significant transportation impact.

**TABLE 5-3
VMT PER EMPLOYEE ANALYSIS**

Project Type	Metric	Average Regional Baseline VMT/Employee^a	Significance Threshold (85% of Regional Baseline)	Project VMT/ Employee (TAZ 361)^b	Transportation Impact? (Over Threshold?)
Hotel ^a	Employee VMT / Employee	25.9	22.02	19.2	No

Footnotes:

- a. SANDAG Year 2012 Series 13 Regional Average VMT per employee.
- b. Custom SANDAG Year 2020 Series 13 traffic model processed February, 2020

6.0 VMT IMPACTS SUMMARY & MITIGATION MEASURES

Based on the VMT analyses conducted for the Project, the VMT per employee for the proposed hotel use is less than 85% of the regional average and the proposed retail / commercial uses do not result in a net increase in the total Regional VMT. Therefore, these land use components of the Project would have a less-than-significant transportation impact and no mitigation measures are needed.

The VMT per capita for the proposed residential use is greater than 85% of the regional average, with the Project exceeding the significance threshold by 6.68%. Therefore, a significant transportation impact is calculated for the residential component of the Project. This significant transportation impact requires the implementation of mitigation measures to reduce the Project's residential VMT per capita by 6.68% or more.

The City's *Traffic Impact Analysis Guidelines* recommend the *SANDAG Mobility Management Guidebook*, 2019, and the California Air Pollution Control Officers Association's (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, August 2010 be consulted to determine applicable mitigation measures and to calculate the associated percent reduction in VMT.

The CAPCOA measure *LUT-9: Improve Design of Development*, was identified as a measure that would reduce the Project's residential VMT as calculated using the SANDAG Series 13 Year 2020 Travel Demand Model, thereby mitigating the Project's significant transportation impact. This measure was selected since the Project's features meet the measure's description and applicability criteria. A brief description of CAPCOA measure LUT-9 is provided below.

- **LUT-9 Improve Design of Development:** Includes improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments. This measure is applicable for residential projects in an urban or suburban area.

The VMT reductions for this strategy are based on changes in intersection density versus the standard suburban intersection density in North America, which is 36 intersection per square mile, per the CAPCOA document. This standard density is used as a baseline to mirror the density reflected in the ITE Trip Generation Manual, which is generally the baseline method for determining VMT.

To calculate the VMT reduction for this measure, the number of intersections per square mile within the Project site were estimated and compared to the number of intersections in a typical ITE suburban development.

The Project site is located on approximately 92-acres, which equates to approximately 0.14 square miles. The conservative estimate of ten intersections within the Project site equals 71 intersections per square mile. Based on this information, the corresponding VMT reduction was calculated using the CAPCOA methodology for LUT-9.

The Project’s VMT reduction associated with LUT-9 is calculated to be 11.7%. This mitigation exceeds the Project’s 6.68% VMT impact and is therefore considered sufficient to reduce the Project’s residential VMT impact to less than significant. *Table 6–1* summarizes the VMT mitigation results.

Appendix B contains the CAPCOA VMT calculations and excerpts from the CAPCOA report.

**TABLE 6–1
RESIDENTIAL VMT MITIGATION RESULTS**

Mitigation Measure	Range of Effectiveness	Intersections / Square Mile	Resulting VMT Reduction	Project VMT to be Reduced	Impact Fully Mitigated?
LUT-9: Improve Design of Development	3.0-21.3% VMT	71	11.7%	6.68%	Yes

General Notes:

1. Results based on methodology from *Quantifying Green House Gas Mitigation Measures* (CAPCOA – 2010)

In addition, the Project will coordinate with the City of Oceanside to provide a pedestrian crosswalk across Benet Road at Airport Road. This measure will help address the lack of pedestrian facilities on the eastern side of Benet Road between Airport Road and the San Luis River Trail, and will improve pedestrian and bicycle connectivity to the San Luis River Trail. The provision of continuous pedestrian and bicycle facilities encourages alternate modes of travel and may reduce the Project’s VMT.

The Project will also implement the following trip reduction strategies as Project features and conditions of approval, with implementation required at 50% occupancy. These strategies will further reduce the number of automobile trips generated by residents of the Project and the distance that the residents drive:

- Provide Ride Share coordination services thru the Project’s Home Owner’s Association to match residents interested in carpooling.
- Coordinate with near-by schools and / or the Project’s Home Owner’s Association to match residents interested in carpooling to / from schools.
- Provide on-site transit opportunities information.
- Encourage bicycling by providing on-site bicycle infrastructure such as bike racks.