Rio Urbana Project

Initial Study-Mitigated Negative Declaration No. 2017-04

prepared by

City of Oxnard
Community Development Department
Planning Division
214 South C Street
Oxnard, California 93030
Contact: Chris Williamson, AICP

prepared with the assistance of

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November 2019

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Table of Contents

Tables

Figures

Attachments

CITY OF OXNARD CEQA INITIAL STUDY CHECKLIST

This FINAL Initial Study-Mitigated Negative Declaration includes clarifications that were made in response to questions from the Planning Commission on October 3, 2019. The DRAFT MND, Responses to Comments, and Technical Appendices are available at the City of Oxnard Planning Division CEQA documents webpage: https://www.oxnard.org/city-department/community-development/planning/environmental-documents/

Project Title: Rio Urbana Project (Tentative Subdivision Map for Tract No. 5998)

Lead Agency Name and Address:
City of Oxnard
Community Development Department
Planning Division
214 S. C Street
Oxnard, California 93030

City of Oxnard Contact Person and Phone Number:
Chris Williamson, AICP, Contract Planner
(805) 385-8156

Project Location:
2714 East Vineyard Avenue and Rio School Lane
Assessor's Parcel Number (APN) 145-0-232-01

Co-Applicants:
El Rio School District
2500 East Vineyard Avenue
Oxnard, California 93036

The Pacific Companies
430 East State Street, Suite #100
Eagle, Idaho 83616

Project Contacts:
Tony Talamante, P.E.
Caleb Roope

Oxnard General Plan Designation: SCH – School

Oxnard Zoning: N/A – Unincorporated (County of Ventura)

Project Description: The proposed project includes demolition of the existing school buildings onsite (formerly El Rio Elementary School) and subdivision of the approximately 10.5 acre parcel into two parcels. The project would develop 167 condominium units in eight, three-story buildings that include a fitness center and 17 low income and 3 moderate income deed-restricted units on the 9.12-acre parcel, as well as a two-story, 15,100 square foot office building on the 1.12-acre parcel. This office development may be used to relocate the Rio School District administrative offices. The project would also include widening of Vineyard Avenue, associated parking, open space, landscaping, and amenities for on-site residents. The residential units would be made up of one- to three-bedroom attached units. The residential and office structures would have a maximum height of 38 feet. The residential portion of the project would include 431 parking spaces consisting of 169 resident garages, 163 parking spaces, and 99 guest parking spaces. The office portion of the project would include 60 standard parking spaces. Resident amenities include a 1,068 square foot recreation pavilion, four refuse structures, six play areas and a tot lot, and a dog run.

Rio School Lane would be vacated by the County of Ventura with current access and parking for adjoining properties, maintained. This roadway will be included as a private street within the annexation to the City of Oxnard, and will include a 7-foot wide sidewalk to connect existing access points from the adjacent residential area to Vineyard Avenue and its sidewalk. The project site would be accessed by three driveways from Vineyard Avenue. Internal circulation would accommodate fire and emergency access, and solid waste collection vehicles.

The project would require the following entitlements:

1. Annexation to the City of Oxnard (PZ 17-610-01)
2. Oxnard General Plan Amendment (PZ 17-620-01) to change the land use designation from School to Commercial General
3. Pre-Zoning to C-2-PD (PZ 17-560-01)
4. Tentative Subdivision Map that creates two parcels (Parcel 1 on 1.12 acres and Parcel 2 on 9.12 acres; PZ 17-300-03) and 167 condominium parcels and a common area parcel.
5. Special Use Permit (PZ 17-500-05) for development of an office building on Parcel 1
6. Special Use Permit (PZ 17-500-13) for three-story (38 feet high(residential use on Parcel 2
7. Issuance of a Density Bonus (PZ 17-535-02) for provision of three additional units (a 2% density bonus, out of the 20% that is allowable) and reduction in interior yard space from 30 percent to 24 percent

Surrounding Land Uses and Setting: The project site is location within the El Rio community in unincorporated County of Ventura north of the City of Oxnard. The site is bordered by the following land uses:

- North – CG- Commercial General, RL-Low Residential
- East – RL-Low Residential; eight-acre greenhouse and agriculture use which is designated in the Ventura County 2014-2021 Housing Element for affordable housing at 20 units per acre
- South – CG- Commercial General
- West – CG-Commercial General, RL-Low Residential

The project site is a 10.49 acre parcel developed with Rio School Lane and vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that were formerly the El Rio Elementary School campus, closed since 2008. Portions of the site are currently utilized as parking and dispatch for school buses and storage.

The project site is shown in the context of the City's planning area boundaries on Figure 1. Figure 2 shows the project site boundary as well as the City's 2030 General Plan land use designations for the site and surrounding properties. Figure 3 shows the project site boundary as well as the existing County of Ventura zoning designations. Figure 4 shows the proposed site plan for the project.

Other Public Agencies Whose Approval is Required:

- *Ventura Local Agency Formation Commission* – Annexation to the City of Oxnard and Annexation to the Calleguas Municipal Water District;~~,~~ Detachment from the Ventura County Resource Conservation District, Ventura County Fire Protection District, and Ventura County Service Area No. 32.
- *California Department of Transportation* – Approval of Vineyard Avenue (State Route 232) improvements.
- *County of Ventura* – Vacation of Rio School Lane, Detachment from County of Ventura service areas and districts.
- *Calleguas Municipal Water District and Metropolitan Water District of Southern California*– Annexation.
- *Fox Canyon Groundwater Management Agency* – Transfer of allocations for groundwater use.
- *Ventura County Watershed Protection District* – Stormwater runoff compliance and permitting

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code 21080.3.1?

[Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.]

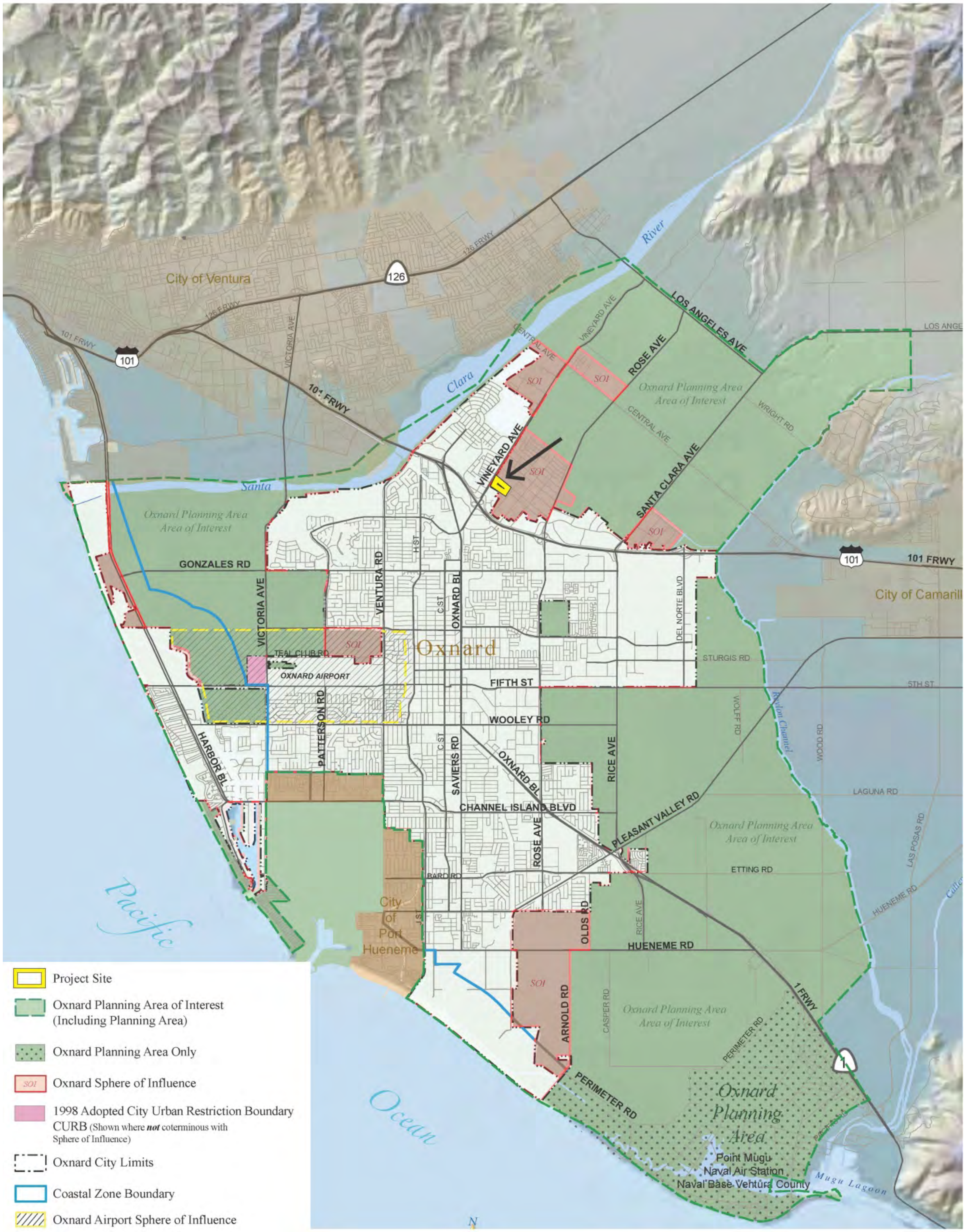
Project Plans:

Tentative Subdivision Map for Tract No. 5998
Civil Site Plan
Architectural Site Plan
Project Plans
Landscape Plan

Appendices:

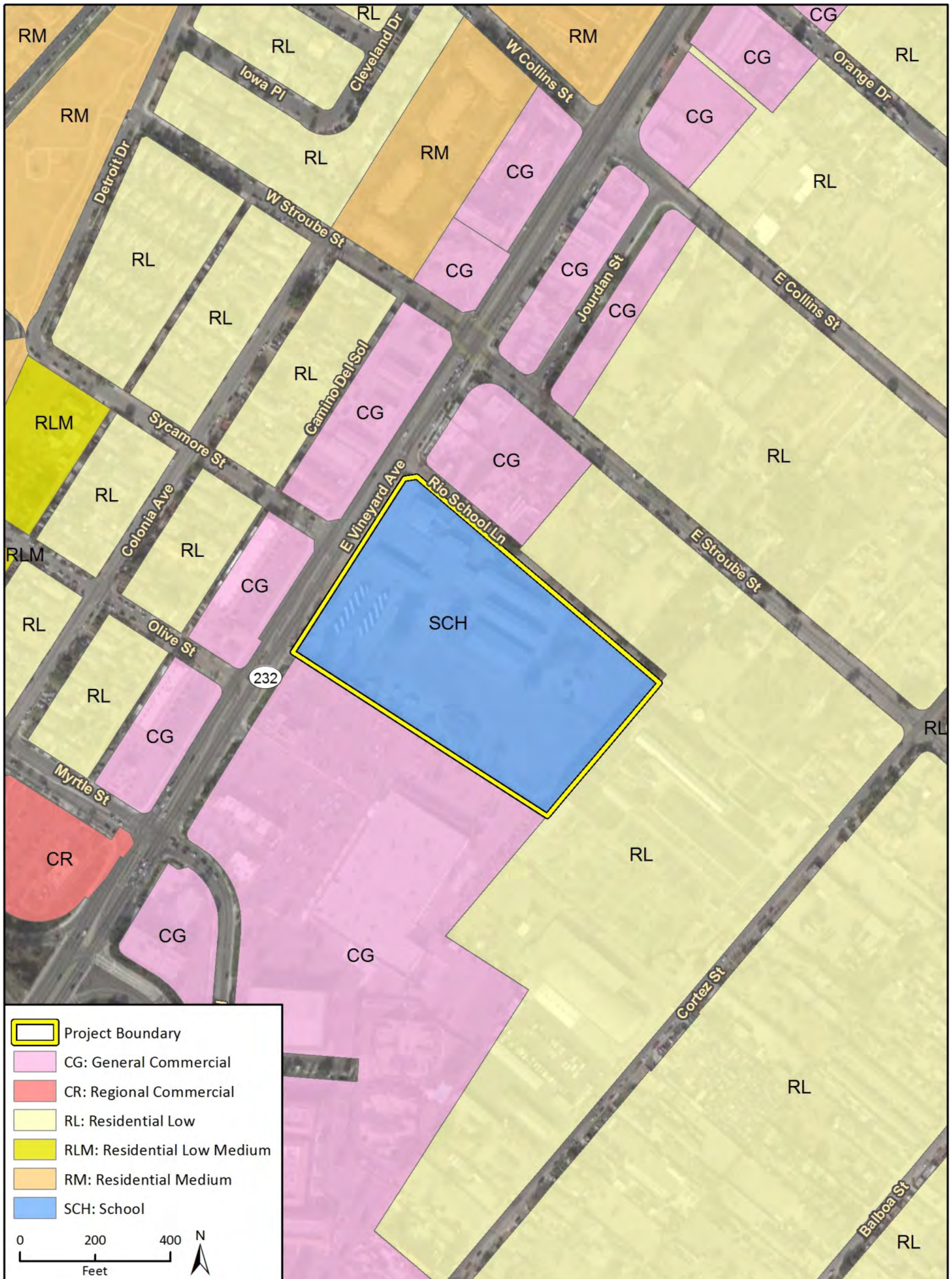
Appendix A – Air Quality Study
Appendix B – Health Risk Assessment of Diesel Emissions
Appendix C – Biological Assessment Report
Appendix D – Climate Change and Greenhouse Gas Study
Appendix E – Phase I Cultural Resource Assessment and Paleontological Resources Assessment
Appendix F – MS4 Compliance and Onsite Drainage Letter
Appendix G – Noise Study
Appendix H – Revised Traffic and Circulation Study
Appendix I – Wet Utility Preliminary Investigation and Domestic Water Supply and Demand Memorandum

Figure 1 Project Location and Planning Area Boundaries



Source: City of Oxnard, 2010.

Figure 2 Project Site and City Land Use Designations



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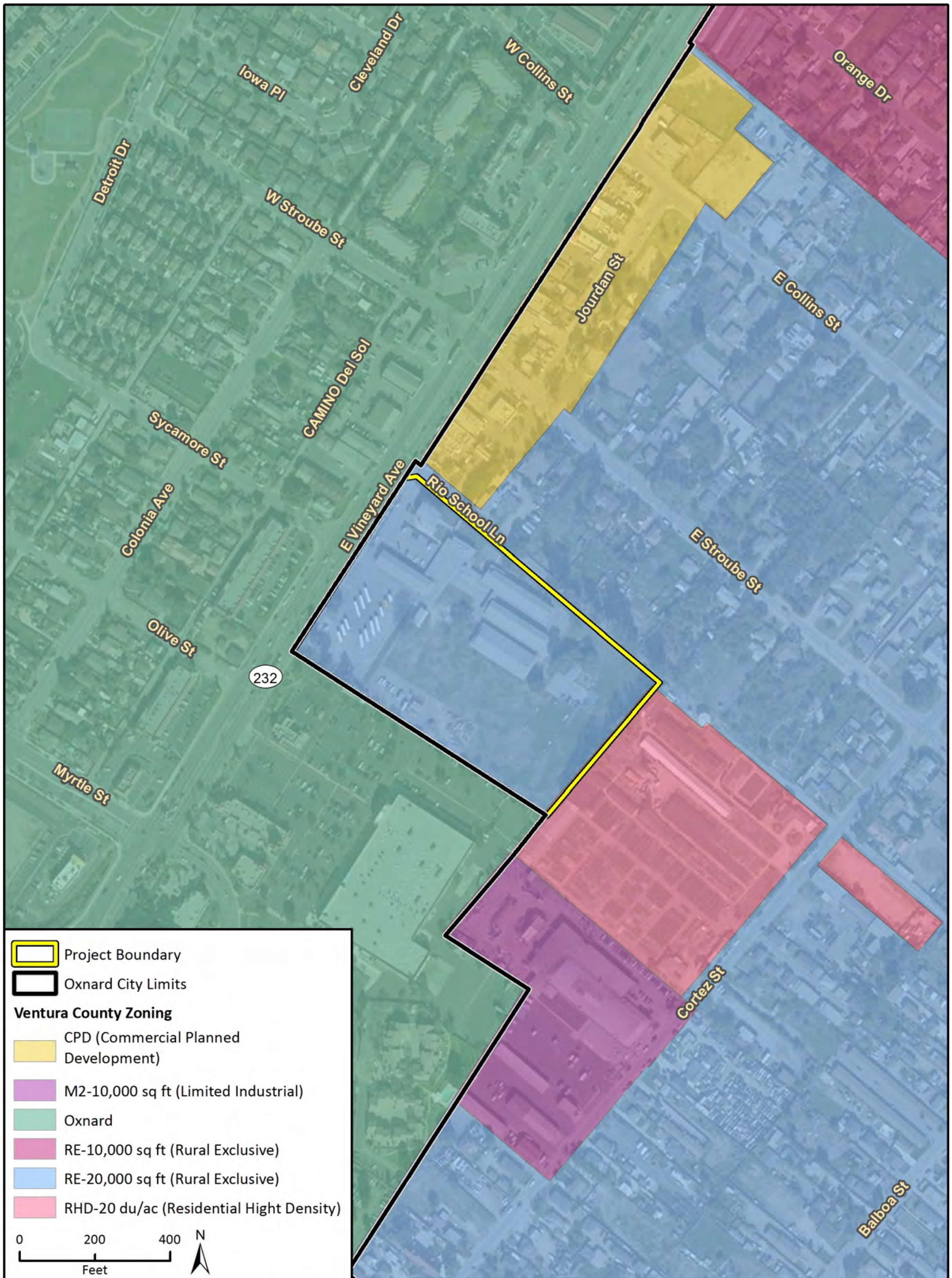
Additional data provided by City of Oxnard, 2011.

Figure 3 Project Site and Existing County Zoning



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Additional data provided by Ventura County, 2018.

Fig 3 Existing Ventura County Zoning

Figure 4 Proposed Site Plan

Source: ktgy Architecture + Planning 2019

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Environmental Factors Potentially Affected

☐ Aesthetics and Urban Design	☐ Climate Change and Greenhouse Gas Emissions	■ Hydrology and Water Quality	☐ Population, Education, and Housing
☐ Agricultural Resources	■ Cultural Resources and Tribal Cultural Resources	☐ Land Use and Planning	☐ Public Services and Recreation
☐ Air Quality	☐ Geology and Soils	☐ Mineral Resources	☐ Transportation and Circulation
■ Biological Resources	☐ Hazards and Hazardous Materials	■ Noise	■ Utilities and Energy

DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature ______________________ **Date** 7.18.19

Printed Name Isidro Figueroa **For** ______________________

EVALUATION OF ENVIRONMENTAL IMPACTS

1. When the answer to a checklist question is “yes”, either the “Potentially Significant Impact” or “Less than Significant Impact with Mitigation Incorporated” box will typically be checked. When the answer to a checklist question is “no,” either the “Less than Significant Impact” or “No Impact” box will typically be checked.

2. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

3. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

4. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is typically required.

5. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

6. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a. Earlier Analysis Used. Identify and state where they are available for review.

   b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

7. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

8. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

9. The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question; and

   b. The mitigation measure identified, if any, to reduce the impact to less than significance

Issue Topics

I. Aesthetics and Urban Design	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project have a substantial adverse effect on a scenic vista such as an ocean or mountain view from an important view corridor or location as identified in the 2030 General Plan or other City planning documents?	☐	☐	■	☐
2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway, or route identified as scenic by the County of Ventura or City of Oxnard?	☐	☐	■	☐
3. Would the project substantially degrade the existing visual character or quality of the site or its surroundings such as by creating new development or other physical changes that are visually incompatible with surrounding areas or that conflict with visual resource policies contained in the 2030 General Plan or other City planning documents?	☐	☐	■	☐
4. Would the project add to or compound an existing negative visual character associated with the project site?	☐	☐	■	☐
5. Would the project create a source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	■	☐

1. The project site is currently developed with Rio School Lane and vacant buildings that were formerly the El Rio Elementary School campus. The existing school development does not constitute the type of urban landscape considered an important aesthetic resource in the City's 2030 General Plan. Therefore, changes to the appearance of the site from surrounding viewpoints due to the project would not result in an adverse effect on a scenic vista. No ocean, mountain, or other identified scenic views are provided from or through the site due to the existing development on the site. Therefore, redevelopment of the project site resulting in greater development density and intensity

than the existing condition would not have a substantial adverse effect on any identified scenic vistas. This impact would be less than significant.

2. According to the California Department of Transportation (Caltrans) Designated Scenic Highway Route Map for Ventura County, the nearest Eligible State Scenic Highway to the project site is United States Highway 101 (U.S. 101). However, U.S. 101 is not officially designated as a State Scenic Highway and does not provide views of the project site due to intervening development and vegetation. According to Section 5.3.2 of the Background Report for the 2030 General Plan, Vineyard Avenue between Los Angeles Avenue and Patterson Road, from which the project site is visible, is included in the City's designated Scenic Highway/Roadway System. According to 2030 General Plan Goal CD-9.4, View Corridor Preservations, a landscaped buffer corridor of at least 30 feet deep is required along designated scenic corridors and other major transportation corridors. Views of the site from Vineyard Avenue are dominated by the existing development of the former El Rio Elementary School campus and current utilization for school bus parking and storage. No scenic resources are prominently visible onsite from Vineyard Avenue. Additionally, in compliance with 2030 General Plan Goal CD-9.4, the project has been designed with a 30-foot landscaped setback from the public right-of-way on Vineyard Avenue. With this design provision, the project would not result in substantial damage to scenic resources within a state or local scenic route. This impact would be less than significant.

3,4. The project site currently possesses a generally urban character due to the existing one- and two-story buildings comprising the former El Rio Elementary School campus onsite. The site is located in a developed portion of the County of Ventura's unincorporated El Rio community along East Vineyard Avenue and adjacent to the City of Oxnard, with surrounding uses consisting of various residential and general commercial uses that are similar in character. The proposed condominium residential units and amenities would be a maximum of three stories or 38 feet in height and would provide front, rear, and side setbacks, consistent with the proposed City of Oxnard C-2 zoning designation and R-3 development standards for residential development in the C-2 zone. The office building would be two stories and 35 feet in height. The proposed buildings would be designed to complement the urban character of surrounding uses. The proposed development would also include open space and landscaping features around new buildings to enhance the visual character, pursuant to 2030 General Plan Goal CD-9.4, and is subject to the City's design review process to ensure consistency with the City's goals, policies, and design guidelines. Therefore, as proposed, the project would be visually compatible with the character and quality of the surrounding urban development and consistent with City visual resource policies. This impact would be less than significant.

5. The project site currently contains facilities of a former elementary school that provide lighting and potential sources of glare on the site. Nighttime lighting sources also exist along East Vineyard Avenue in the vicinity of the site. New sources of lighting associated with the project would include security and street lighting typical of the surrounding residential and commercial development and would comply with Section 16-320 of the Oxnard Municipal Code, which specifies on-site lighting requirements that are applicable in all zones of the City. Exterior building materials would consist of non-reflective, textured surfaces and non-reflective, glazed glass on the building. The project would not include any sources of high-intensity lighting. As a standard condition of approval, all proposed

lighting would be subject to the City's review and approval process, which would include the preparation of a photometric plan for the project. Due to the existing ambient light conditions in the surrounding area as well on the project site, the proposed use of non-reflective building materials, and compliance with the City's lighting requirements and review processes, the project would not create a source of substantial light or glare that would adversely affect day or nighttime views in the area. This impact would be less than significant.

Cumulative Impact Analysis: The project would establish new residential and office uses on a previously developed site in an urban area resulting in no direct or indirect adverse project-level impacts, or contribution to cumulative impacts to aesthetic and visual resources. With incorporation of standard conditions of approval for compliance with City lighting requirements, impacts of the project with respect to glare and lighting would not be cumulatively considerable.

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II. AGRICULTURAL RESOURCES	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use?	☐	☐	☐	■
2. Would the project conflict with existing zoning for agricultural use or an existing Williamson Act contract?	☐	☐	☐	■
3. Would the project involve other changes in the existing environment that, due to their location or nature, could result in conversion of off-site farmland to non-agricultural use?	☐	☐	☐	■

1,2. According to the California Department of Conservation (DOC) Ventura County Important Farmland 2016 and Ventura County Williamson Act FY 2015-2016 maps, the project site and surrounding properties consist entirely of Urban and Built-up Land. The project would not covert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use or conflict with land placed under an existing Williamson Act contract. There would be no impacts associated with conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, or conflicts with existing zoning for agricultural use or an existing Williamson Act contract.

3. The project would result in new urban development on an infill site that is already developed with urban uses. The site and surrounding properties do not contain any farmland or other agricultural uses. The project would not involve changes that could result in the conversion of off-site farmland to non-agricultural use. There would be no impact.

Cumulative Impact Analysis: In 1998, the Save Open Space and Agricultural Resources (SOAR) initiative was adopted establishing the City Urban Restriction Boundary (CURB), which defines the urban development boundary for the City of Oxnard until December 31, 2020, and re-designating all land designated "Agricultural Planning Reserve (AG/PR)" as "Agriculture (AG)". The SOAR initiative also established a City Buffer Boundary (CBB) which lies outside of the CURB line and is coterminous with the Oxnard Area of Interest. Change to the CURB line or an agricultural land use designation within the CBB generally requires majority approval of Oxnard voters, with some exceptions (City of Oxnard 2011). In compliance with 2030 General Plan Policy CD-6.2, which supports the preservation of the SOAR requirements, the project would preserve agricultural land and uses within the City's Planning Area by providing for housing on a previously developed site and relieving development pressure beyond the CURB line or on Agriculture-designated lands. As such, the project would not contribute to cumulative impacts to agricultural resources.

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III. Air Quality	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project conflict with or obstruct implementation of the Ventura County AQMP?	☐	☐	■	☐
2. Would the project violate any federal or state air quality standard or contribute substantially to an existing or projected air quality standard violation?	☐	☐	■	☐
3. Would the project result in a cumulatively considerable net increase of any criteria in excess of quantitative thresholds recommended by the VCAPCD)?	☐	☐	■	☐
4. Would the project expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for toxic air contaminants?	☐	☐	■	☐
5. Would the project create objectionable odors affecting a substantial number of people?	☐	☐	■	☐

Setting

An Air Quality Study was completed for the project by Meridian Consultants, LLC in August 2017 and is included as Appendix A. The Air Quality Study assesses and discusses the potential air quality impacts that may occur with the implementation of the project. The analysis estimates future emission levels resulting from construction and operation of the project, and identifies the potential for significant impacts based on adopted thresholds. An evaluation of the project's contribution to potential cumulative air quality impacts is also provided in the study. A Health Risk Assessment (HRA) of Diesel Emissions was also completed by Meridian Consultants, LLC in July 2017 and is included as Appendix B. The HRA assesses potential health risk impacts on future residents at the project site from exposure to diesel emissions generated by vehicles on U.S. 101. The AERMOD dispersion model was used to determine concentrations of diesel particulate matter (DPM) on the project site generated on U.S. 101 located approximately 1,000 feet to the south of the project site. The following discussion of air quality setting and impacts is based on the assessment and findings included in the Air Quality Study and HRA.

Federal and State standards have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulates less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$). California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Local air pollution control districts are required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards.

The project site is located in the County of Ventura, adjacent to the City of Oxnard, in the South Central Coast Air Basin (SCCAB). The South Central Coast Air Basin comprises Ventura County, Santa Barbara County, and San Luis Obispo County. The project site is also located in the Ventura County Air Pollution Control District (VCAPCD) boundaries. Air basins in which air pollutant standards are exceeded are referred to as "non-attainment areas." Ventura County is a non-attainment area for federal eight-hour ozone standard. The County is as also a non-attainment area for the State one-hour and eight-hour ozone standards (Final 2016 Ventura County Air Quality Management Plan [2016 AQMP], 2017).

Ventura County Air Pollution Control District is responsible for comprehensive air pollution control in the SCCAB including reducing emissions from stationary, area, and mobile sources. The Ventura County Air Pollution Control Board adopted the 2016 AQMP on February 14, 2017. The 2016 AQMP presents the County's strategy to attain the 2008 federal eight-hour ozone standard by 2020, as required by the federal Clean Air Act Amendments of 1990 and applicable U.S. EPA clean air regulations. Table 1 includes the current federal and State air quality standards and the attainment status of pollutants.

Table 1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	Federal Attainment (Y/N)	California Standard	State Attainment (Y/N)
Ozone	8-Hour	0.070 ppm	N	0.070 ppm	N
	1-Hour	-	-	0.09 ppm	N
Carbon Monoxide	8-Hour	9.0 ppm	Y	9.0 ppm	Y
	1-Hour	35.0 ppm	Y	20.0 ppm	Y
Nitrogen Dioxide	Annual	0.053 ppm	Y	0.030 ppm	Y
	1-Hour	0.100 ppm	Y	0.18 ppm	Y
Sulfur Dioxide	Annual	–	–	–	–
	24-Hour	–	–	0.04 ppm	Y
	1-Hour	0.075 ppm	Y	0.25 ppm	Y
PM_{10}	Annual	–	–	20 $\mu g/m^3$	N
	24-Hour	150 $\mu g/m^3$	Y	50 $\mu g/m^3$	N
$PM_{2.5}$	Annual	12 $\mu g/m^3$	Y	12 $\mu g/m^3$	Y
	24-Hour	35 $\mu g/m^3$	Y	–	–
Lead	30-Day Average	–	–	1.5 $\mu g/m^3$	Y
	3-Month Average	0.15 $\mu g/m^3$	Y	–	–

Notes: Y = yes, N = no, ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter
Source: CARB 2017a and VCAPCD 2017

Ambient Air Quality

To identify ambient concentrations of criteria pollutants, VCAPCD operates eight air quality monitoring stations throughout the County. The monitoring station located closest to the project site and most representative of air quality within the City of Oxnard is the El Rio monitoring station, which is located on the campus of Rio Mesa High School at 545 Central Avenue, approximately 1.75 miles to the north of the project site. Table 2 summarizes the annual air quality data over the past three years of available data for the local airshed (data from 2018 is not yet available).

Table 2 Ambient Air Quality Data at the El Rio Monitoring Station

Pollutant	2015	2016	2017
Ozone, 8-Hour, ppm			
Number of days of State exceedances (> 0.09 ppm)	0	1	1
Number of days of Federal exceedances (> 0.075 ppm)	0	1	1
Nitrogen Dioxide, ppm – Worst Hour			
Number of days of State exceedances (> 0.18 ppm)	0	0	0
Particulate Matter, < 10 microns, μg/m^3			
Number of samples of State exceedances (> 50 μg/m^3)	6	14	29
Number of samples of federal exceedances (> 150 μg/m^3)	0	0	1
Particulate Matter, < 2.5 microns, μg/m^3			
Number of samples of federal exceedances (> 35 μg/m^3)	0	0	4

Notes: ppm = parts per million, μg/m^3 = micrograms per cubic meter
Source: CARB 2017b

1. According to the Ventura County Air Quality Assessment Guidelines (VCAPCD 2003), a project must conform to the local general plan and must not result in or contribute to an exceedance of the County's projected population growth forecast in order to be consistent with the AQMP. According to the California Department of Finance (DOF) population and housing estimates, the City had a total population of 209,879 people and an average household size of 3.97 persons in January 2019. Using the average household size, the 167 proposed condominiums included in the project would accommodate approximately 663 people. This would result in a total population of 210,542 people in the City upon project implementation. VCAPCD's AQMP considers regional population forecasts developed by the Southern California Association of Governments (SCAG). SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy growth forecast projects a population of 237,300 people in the City in the year 2040. The total population in the City with implementation of the project is within SCAG's most recent growth projections for the City. As such, the growth forecast is also within the population growth parameters considered in the AQMP, which is updated by the VCAPCD to manage air emissions in the County of Ventura in accordance with local, State, and federal standards. Therefore, development of the project would not obstruct implementation of the AQMP or attainment of State or federal air quality standards resulting in a less than significant impact.

2. Construction emissions would be temporary in nature and would occur within the project area. The primary source of reactive organic gases (ROG), nitrogen oxides (NO_X), CO, and sulfur oxides (SOX) emissions is from internal combustion of construction equipment exhaust and on-road haul-truck trips, while the majority of particulate matter emissions would occur as a result of fugitive dust emissions generated during grading and excavation activities. Primary sources of PM_{10} and $PM_{2.5}$ emissions would be clearing activities, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth surfaces. As detailed in the Air Quality Study for the project, VCAPCD's Air Quality Assessment Guidelines recommend significance

thresholds for projects proposed in Ventura County. Under these guidelines, projects that generate more than 25 pounds per day (lb/day) of ROG or NO_X are considered to individually and cumulatively jeopardize attainment of the federal ozone standard and thus have a significant adverse impact on air quality. However, VCAPCD's 25 lb/day threshold for ROG and NO_X do not apply to construction emissions because construction emissions are not permanent. Nevertheless, for construction impacts, the VCAPCD recommends imposition of mitigation if emissions of either pollutant exceed 25 lb/day. The VCAPCD requires minimizing fugitive dust through various dust control measures as documented in Rule 55.

As detailed in the Air Quality Study, project construction would generate up to 80.2 lb/day of ROG and 130.2 lb/day of NO_X. The Air Quality Study assumed development of 182 dwelling units, 15,100 square feet of office space, and 463 parking spaces on the project site. The updated project, as proposed, would result in 15 fewer dwelling units and 32 fewer parking spaces than anticipated in the Air Quality Study. Therefore, the emissions estimates therein are considered a conservative estimate for the project as proposed. The project would be required to implement all applicable standard VCAPCD emissions control measures including dust control measures, such as watering graded areas, covering trucks hauling excavated soil, soil stabilization methods, and street sweeping; and construction equipment controls, such as minimizing idle time, maintaining equipment engines, using alternatively fueled equipment, and minimizing the number of pieces of equipment operated simultaneously. Additionally, all construction activities would be required to adhere to the VCAPCD Rule 50 for Opacity, Rule 51 for Nuisance, and Rule 55 for Fugitive Dust. Compliance with these measures would result in less than significant impacts to air quality associated with project construction emissions.

As detailed in the Air Quality Study, operational emissions associated with the project would be generated by both stationary and mobile sources as a result of normal day-to-day use of the proposed residential units and office facilities. Stationary emissions would be generated by the consumption of natural gas for space and water heating equipment. Mobile emissions would be generated by vehicles traveling to and from the project site. Project-generated operational emissions were estimated based on the proposed land use assumptions and vehicle emissions factors using the California Emissions Estimator Model (CalEEMod). According to the CalEEMod data output for the project (included in Appendix A of the Air Quality Study), project operations would generate up to 12.4 lb/day of ROG and 6.8 lb/day of NO_X. As discussed above, these emissions estimates are conservative as the project would result in development of fewer dwelling units and parking spaces than development assumed in the Air Quality Study for the project. Furthermore, these emissions would not exceed the VCAPCD significance thresholds of 25 lb/day. Therefore, impacts to air quality associated with new stationary sources of emissions and increased vehicle trips in the area as a result of the project would be less than significant.

3. The SCCAB is currently a nonattainment area for both the federal and State standards for ozone and the State standard for PM_{10}. With regard to determining the significance of the project's contribution to air quality violations, the VCAPCD neither recommends quantified analyses of cumulative operational emissions nor provides methodologies or threshold of significance to be used to assess cumulative construction or operational impacts. Instead, the VCAPCD recommends

that a project's contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project specific impacts. Therefore, if implementation of the project would generate operational emissions that exceed the VCAPCD-recommended daily thresholds for project-specific impacts, then the project would also cause a cumulatively considerable increase in emissions for those pollutants for which SCCAB is in nonattainment. As previously discussed, operational daily emissions associated with the project would not exceed VCAPCD significance thresholds. Therefore, cumulative impacts to air quality would be less than significant.

4. Neither the State of California nor the VCAPCD has developed a quantitative threshold for the purposes of evaluating the health impacts on residential developments from exposure to Toxic Air Contaminants (TAC) emissions associated with a nearby freeway or high-volume roadway. However, in absence of a threshold specific to assessing health impacts from a freeway, the State's significant risk for exposures to carcinogens thresholds of 10 per one million for cancer risk and 1 for hazard index (HI) were determined to be the most appropriate thresholds for use in this HRA analysis for the project. The analysis in the HRA found that the maximum cancer risk at the project site from DPM emissions generated by diesel-vehicle travel along U.S. 101 is 1.06 per 100,000 or 10.6 per one million, exceeding the State significance criteria. Additionally, the maximum non-cancer HI for the project's residents would be 0.18, which would not exceed the State significance criteria.

   Project construction would result in short-term emissions of diesel particulate matter (DPM), which consists of exhaust $PM_{2.5}$ and PM_{10} and is a TAC. The project would be required to comply with the CARB Airborne Toxic Control Measures' anti-idling measure, which limits idling to no more than five minutes at any location for diesel-fueled commercial vehicles, as well as the required and applicable Best Available Control Technology and the In-Use Off-Road Diesel Vehicle Regulation to avoid and/or reduce emissions of DPM associated with project construction to the maximum extent possible.

   During long-term project operations, TACs could be emitted as part of periodic maintenance operations, cleaning, and painting, and from periodic delivery trucks and service vehicles onsite. However, these uses are expected to be occasional and result in minimal exposure to on- and off-site sensitive receptors. Given that the project consists of residential and office uses, the project would not include sources of substantive TAC emissions identified by the VCAPCD- or CARB-siting recommendations.

   Therefore, with implementation of the required CARB DPM control measures and minimal sources of TAC emissions associated with project operations, the project would not expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for TACs and would not exacerbate existing environmental conditions associated with DPM emissions at the site from U.S. 101. Impacts would be less than significant.

5. Land uses likely to produce objectionable odors include agriculture, chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants. The project would not involve development or operation of any of these types of uses. Potential activities that may emit odors during project construction activities include the use of architectural coatings and solvents and the combustion of diesel fuel in on- and

off-road equipment. VCAPCD Rule 74.2 would limit the amount of ROGs in architectural coatings and solvents. In addition, project construction activities would be required comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Through mandatory compliance with VCAPCD rules and CARB idling limitation, construction activities would not create objectionable odors affecting a substantial number of people. This impact would be less than significant.

Cumulative Impact Analysis: The project's contribution to cumulative impacts to air quality is evaluated under issue 3. As previously discussed, air pollutant emissions would be generated by the consumption of natural gas for space and water heating equipment and by vehicles traveling to and from the project site. These emissions would not exceed the VCAPCD significance thresholds of 25 lb/day at the project level and, therefore, were determined to result in a less than significant cumulative impact to air quality.

IV. Biological Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
2. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations adopted by the California Department of Wildlife and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	■
3. Would the project have a substantial adverse effect on federally protected waters of the U.S. as defined by Section 404 of the federal Clean Water Act or protected waters of the state as defined by Section 1600 et seq. of the California Fish and Game Code (including, but not limited to, marshes, vernal pools, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	■
4. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
5. Would the project conflict with any local policies or ordinances protecting biological resources?	☐	■	☐	☐

6. Would the project conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

The project site is located in a commercial and urban area dominated by ornamental and ruderal vegetation communities. There are no areas with strictly native vegetation and no drainages or waterways are present on the site. The elevation of the site is approximately 90 feet above mean sea level. The entire property had been previously graded and the terrain is flat.

A Biological Assessment Report (BA) was prepared for the project by BioResource Consultants, Inc. in July 2017 and is included as Appendix C. The BA document describes the existing conditions of biological resources on the project site and provides an analysis of biological resources, including the potential occurrence of special-status species and their habitats, on the site.

1. A large portion of the project site is paved and built out with buildings from the former El Rio Elementary School campus. Vegetation on the site consists mainly of ruderal fields. Ornamental shrubs border most fence lines, buildings, and parking lots on the developed portion of the site. The remainder of the site is also bordered by ornamental trees and shrubs. There are three Heritage trees, as defined by the Ventura County Tree Protection Ordinance, in the more central areas of the site. Heritage trees can be a tree of any species that is 90 inches in circumference for a single trunk. Heritage trees on the project area include a single coast live oak (*Quercus agrifolia*) and two velvet ash (*Fraxinus velutina*). All three of these trees are native and provide nesting habitat for birds. During a site visit for the BA, northern mockingbird (*Mimus polyglottos*) fledglings as well as many other adult birds were observed foraging in two of the Heritage trees. Throughout the area of the site with existing school buildings, house sparrows (*Passer domesticus*) were observed nesting. These birds are not protected by the Migratory Bird Act and commonly harass native birds and take over their active nests. Additionally, an inactive American crow (*Corvus brachyrhynchos*) nest was observed in the larger Heritage velvet ash tree. Courting behavior was observed in the field by Anna's hummingbirds (*Calypte anna*) and Cassin's kingbirds (*Tyrannus vociferans*). Although nesting habitat occurs where tall, dense vegetation occurs on the property, high disturbance in this urban area and disconnect of this property from any wildlife corridors results in low likelihood that a special-status bird would be nesting in marginal habitat on site. Nesting raptors could occur adjacent to the property in eucalyptus trees along Rio School Lane on the northeast border.

   The Federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (FGC; §§ 3503, 3503.5, 3511, 3513, and 3800) protect most native birds. In addition, the federal and state endangered species acts protect some bird species listed as threatened or endangered. FGC § 3513 relies on the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds, except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, FGC (§§ 3503, 3503.5, 3511, and 3800) further protects nesting birds, including passerine birds, raptors, and state "fully protected" birds. These regulations generally apply during the breeding season, because unlike adult birds, eggs and chicks are unable to escape impacts. FGC § 3503.5 protects birds of prey, and their nests and eggs against take, possession, or destruction.

According to the BA, the project site is not located within any United States Fish and Wildlife Service (USFWS)-designated critical habitat. A review of the California Natural Diversity Database (CNDDB) and other existing records within the vicinity of the site showed 116 species having previously been reported in the area. Of these 116 species, two species, Davidson's saltscale (*Atriplex serenana var. davidsonii*) and Monarch butterflies (*Danaus plexippus* pop. 1), have marginal habitat on the project site. However, due to the high level of disturbance and existing development, these species are unlikely to occur onsite. Therefore, the project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or USFWS, because no listed species are expected to occur at the project site. Additionally, Heritage trees onsite would be required to be protected in compliance with 2030 General Plan Policy ER-10.2, which is intended to protect certain significant trees on private and public property through replacement or transplantation, as well as the City's Landscape Standards general requirements for the preservation of existing trees. Nevertheless, construction of the project could result in potential impacts to raptors and protected nesting birds located in Heritage trees on the site and in trees near the northeaster boundary of the site. Compliance with mitigation measure BIO-1 would ensure impacts are less than significant.

Mitigation Measure

The following mitigation measures would reduce impacts to a less than significant level.

BIO-1 Nesting Bird and Raptor Survey and Avoidance. In the event that the proposed action is planned to occur within the general bird nesting season, a pre-construction nesting bird survey shall be conducted by a qualified biologist. The nesting season is generally considered February 1 through August 31, with a peak from March to June; however, these dates vary by year depending on prey availability, weather, and other factors. In the event an active bird is observed in the habitats to be removed or in other habitats within 100 feet for songbirds and 500 feet for raptors of the construction work areas, all construction work in the suitable habitat or within 100 feet/500 feet of the suitable habitat must be delayed until after September 1st, or surveys must be continued in order to locate any nests. If an active nest is found, clearing and construction within 100 feet/500 feet of the nest shall be postponed until the nest is vacated and juveniles have fledged, and until there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest site shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the ecological sensitivity of the area.

2. A large portion of the project site is paved and built out with buildings from the former El Rio Elementary School campus, and the entire property had been previously graded and the terrain is flat. Riparian vegetation or other sensitive natural community types do not occur on the project site or within the project vicinity. There are no sensitive natural communities identified in plans,

regulations, or by regulatory agencies within the project site. The proposed project would have no impact to riparian habitat or other sensitive natural communities.

3. According to the USFWS National Wetlands Inventory Wetlands Mapper database, no wetlands or other surface waters exist on the project site. Therefore, the project would not result in any impacts to State or federally protected waters.

4. The project site would not be expected to support wildlife movement due to the disturbed nature of the project site, adjacent urban development, and disconnect from any wildlife corridors. Additionally, the project would be required to comply with the provisions of the MBTA to avoid potential impacts to migratory birds. Therefore, the project would result in less than significant impacts associated with wildlife migration and use of nursery sites.

5. As previously discussed, the project would be required to ensure that on-site Heritage tree protection occurs in compliance with the requirements of the 2030 General Plan Policy ER-10.2 and the City's Landscape Standards. Therefore, with implementation of the requirements of the Tree Protection Ordinance, the project would result in a less than significant impact associated with conflicts with local policies or ordinances protecting biological resources.

6. According to the Environmental Impact Report for the City of Oxnard 2030 General Plan (2009), no established or planned Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan exists in the City Planning Area, which includes the project site. Therefore, the project would not result in any impact associated with conflict with the provisions of such plan.

Cumulative Impact Analysis: Impacts to biological resources in the Planning Area were analyzed by the 2030 General Plan EIR at a programmatic level, including all development facilitated by the 2030 General Plan, and found to be less than significant with implementation of uniformly applied development policies and regulations. The proposed project would have less than significant impacts with respect to biological resources and would be subject to the City's uniformly applied development policies and regulations. Therefore, the project would not contribute to or result in significant cumulative impacts to biological resources.

V. CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
2. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases or otherwise conflict with the state goal or reducing greenhouse gas emissions in California?	☐	☐	■	☐
3. Would the project contribute or be subject to potential secondary effects of climate change (e.g., sea level rise, increase fire hazard)?	☐	☐	■	☐

A Climate Change and Greenhouse Gas (GHG) Study was prepared for the project by Meridian Consultants, LLC. in August 2017 and is included as Appendix D. The GHG Study assesses and discusses the potential GHG impacts that may occur with implementation of the project. The analysis in the GHG Study estimates future emission levels at surrounding land uses resulting from construction and operation of the project, and identifies the potential impacts. The findings of the GHG Study are summarized in this section.

Setting

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34 degrees Celsius (°C) cooler (CalEPA 2006). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the GHGs that are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion. CH_4 results from fossil fuel combustion as well as off-gassing associated with agricultural practices and landfills. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes.

Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. According to the CalEPA 2010 Climate Action Team Biennial Report, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA 2010). While these potential impacts identify the possible effects of climate change at a global and potentially statewide level, current scientific modeling tools are generally unable to predict what impacts would occur locally with a similar degree of accuracy.

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented Assembly Bill (AB) 32, the “California Global Warming Solutions Act of 2006.” AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels), and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, CARB approved a 1990 statewide GHG level and 2020 limit of 427 million metric tons of CO_2 equivalents (MMT CO_2e). The Scoping Plan was approved by CARB on December 11, 2008, and includes GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

In May 2014, CARB approved the 2013 Scoping Plan, the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan defines CARB’s climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in Executive Order (EO) S-3-05. The update highlights California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the original Scoping Plan. It also illustrates how to align the State’s longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (CARB 2014).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. As with the 2013 Scoping Plan, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017c).

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

1. According to the GHG Study for the project, CARB, VCAPCD, and the City of Oxnard have not adopted a numerical GHG significance threshold for land use development projects (e.g., residential/commercial projects). Ventura County is adjacent to the South Coast Air Quality Management District (SCAQMD) jurisdiction and is part of the Southern California Association of Governments (SCAG) region. Given the lack of an adopted VCAPCD numerical significance threshold applicable to this project, the significance of the project is evaluated based on the proposed screening level of 3,000 MT CO_2e per year established by the adjacent SCAQMD. The GHG Study for the project found that the total project construction emissions would be approximately 713.5 MT CO_2e per year and construction emissions amortized over 30 years would be approximately 23.8 MT CO_2e per year. The GHG Study also found that the GHG emissions associated with the project operations would result in 2,184.7 MT CO_2e per year. The GHG Study assumed development of 182 dwelling units, 15,100 square feet of office space, and 463 parking spaces on the project site. The updated project, as proposed, would result in 15 fewer dwelling units and 32 fewer parking spaces than anticipated in the GHG Study. Therefore, the emissions estimates therein are considered a conservative estimate for the proposed project. GHG emissions associated with project construction and operations would not exceed the screening threshold of 3,000 MT CO_2e per year and impacts would be less than significant.

2,3. The California Air Pollution Control Officers Association (CAPCOA) suggests making significance determinations on a case-by-case basis when no significance threshold have been formally adopted by a lead agency. This includes evaluating a project's sources of GHG emissions and considering project consistency with applicable emission reduction strategies and goals. As detailed in the GHG Study, the project would be consistent with the policies identified in the City's 2030 General Plan for addressing energy issues of climate change mitigation and adaptation, sea level rise, and energy conservation and generation by incorporating solar panels and implementing features consistent with the latest requirements of the 2016 California Green Building Code. Additionally, as detailed in Table 7 of the GHG Study, the project would be consistent with recommendations presented in the California Climate Action Team Report and the project's post-2020 GHG emissions trajectory is expected to follow a declining trend, consistent with the State's 2030 and 2050 targets. Furthermore, the GHG Study determines that the project would be consistent with the goals of AB 32. The Project would incorporate energy reduction and water conservation measures, identified in the City's 2030 General Plan, that reduce GHG emissions compared to a conventional project of similar size and scope. Additionally, GHG emissions reductions would be achieved through energy-efficient lighting, installation of low-flow appliances, and water conservation.

In summary, the project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs or otherwise conflict with the state goal or reducing GHGs in California. The GHG reduction strategies incorporated into the project would ensure that the project would not contribute to or be subject to potential secondary effects of climate change. Impacts would be less than significant.

Cumulative Impact Analysis: Development facilitated by the 2030 General Plan would increase overall GHG emissions generated within the City. Analyses of GHG emissions and climate change are cumulative in nature, as they affect the accumulation of GHGs in the atmosphere. Projects that exceed the thresholds discussed above would have a significant impact on GHG emissions and climate change, both individually and cumulatively. As indicated in issue 1, GHG emissions associated with the project would be less than significant. As a result, the project's contribution to cumulative levels of GHGs would not be cumulatively considerable and cumulative impacts to climate change would be less than significant.

VI. CULTURAL AND TRIBAL CULTURAL RESOURCES	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	■	☐
2. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to State CEQA Guidelines Section 15064.5?	☐	■	☐	☐
3. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	■	☐
4. Would the project disturb any human remains, including those interred outside of formal cemeteries?	☐	■	☐	☐

A Phase I Cultural Resource Assessment (Phase I) report was prepared by Applied Earthworks, Inc. in August 2017 and is included in Appendix E. The assessment consisted of records searches, Native American coordination, a Phase I survey, and documentation and evaluation of the project site, formerly the El Rio Elementary School campus, to identify any cultural resources present. A Paleontological Resource Assessment technical memorandum (memo) was also prepared by Applied Earthworks, Inc. in August 2017 for the site and is also included in Appendix E. The assessment consisted of a museum records search, a literature and geologic map review, and preparation of the memo, to identify any paleontological resources present on the project site.

1. Generally, a cultural resource is considered historically significant if it is 45 years old or older, meets the requirements for listing on the California Register of Historic Resources (CRHR) under any one of the criteria defined in 14 CCR Section 15064.5, and possesses integrity of location, design, setting, materials, workmanship, feeling, and association. According to the Phase I for the project, one potentially historical cultural resource, the former El Rio Elementary School campus, was identified and documented on the project site. However, based on an evaluation of the school site in the Phase I, the El Rio Elementary School campus meets none of the CRHR significance criteria and is not considered a historical resource under CEQA. Therefore, the project would result in less than significant impacts to historical resources because no historic resources are present on the project site.

2, 4. The intensive pedestrian survey conducted for the Phase I failed to identify any prehistoric or historic archaeological resources on the project site. The records search for the Phase I indicated that an isolated, partial prehistoric Native American burial was uncovered while excavating for a storm drain adjacent to Vineyard Avenue less than a quarter mile from the project site. Therefore, there is potential to encounter subsurface cultural deposits during project construction activities and grading and impacts to such resources would be potentially significant. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonable suspected to overlie adjacent remains until the Ventura County Coroner has determined whether or not the remains are subject to the Coroner's authority, pursuant to Section 7050.5 of the California Health and Safety Code. If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of identification. The NAHC will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Under certain circumstances, as stipulated by CEQA Guidelines Section 15064.5, the lead agency or applicant must develop an agreement with the Native Americans for the treatment and disposition of the remains. Additionally, compliance with mitigation measure CUL-2 would be required to ensure impacts are less than significant.

Mitigation Measure

The following mitigation measure would reduce impacts to a less than significant level.

CUL-2 A qualified archaeologist shall monitor all project-related ground-disturbing activities. In the unlikely event that potentially significant archaeological materials are encountered during construction, the applicant must comply with State regulations and City's standard condition of approval for handling such resources.

3. Based on the literature review and museum records search results for the Paleontological Resource Assessment for the project, the paleontological sensitivity of the site was determined in accordance with the Society of Vertebrate Paleontology (SVP; 2010) sensitivity scale. The Quaternary alluvium mapped at the surface of the project site was determined to have a low paleontological resource potential because the deposits are likely too young to contain fossilized material. Project-related ground disturbing activities would primarily disturb surface deposits and, therefore, would not result in impacts to paleontological resources. This impact would be less than significant.

Cumulative Impact Analysis: Impacts to cultural resources in the Planning Area were analyzed by the 2030 General Plan EIR at a programmatic level, including all development facilitated by the 2030 General Plan, and found to be less than significant with implementation of the City's resource protection policies and regulations. With implementation of mitigation measure CUL-2, the project would have less than significant impacts with respect to cultural resources and tribal cultural resources and would be subject to the City's uniformly applied resource protection policies and regulations. Therefore, the project would not contribute to or result in significant cumulative impacts to cultural resources or tribal cultural resources.

VII. GEOLOGY AND SOILS	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist or based on other substantial evidence of a known fault?	☐	☐	☐	■
b. Strong seismic groundshaking that cannot be addressed through compliance with standard Code requirements?	☐	☐	■	☐
2. Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse that cannot be addressed through compliance with standard Code requirements?	☐	☐	■	☐
3. Would the project be located on expansive soil, creating substantial risks to life or property that cannot be addressed through compliance with standard Code requirements?	☐	☐	■	☐
4. Would the project expose people or structures to inundation by seiche or tsunami?	☐	☐	☐	■
5. Would the project rely on dredging or other maintenance activity by another agency that is not guaranteed to continue?	☐	☐	☐	■

1a. The Alquist-Priolo Earthquake Fault Zoning Act (1972) requires the delineation of zones along active faults in California in order to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces. According to the City of Oxnard General Plan Background Report (2006), the General Plan Area, including the project site, is not located within an Alquist-Priolo zone. Therefore, the project would not expose people or structures to potential substantial adverse effects involving the rupture of a known Alquist-Priolo earthquake fault. There would be no impact.

1b.-3. The project site is located in a highly active earthquake region of Southern California and thus is subject to various seismic and geologic hazards, including ground shaking, landslide, lateral spreading, subsidence, liquefaction, or collapse. Seismically induced hazards cover a wide area and are greatly influenced by the distance of a site to the seismic source, soil conditions, and depth to groundwater. As with any location in Southern California, in the event of a strong earthquake (magnitude 6.0 to 7.5) originating near the site or a major earthquake (8.0 magnitude) along the San Andreas Fault, damage to onsite structures associated with these hazards could be severe and loss of life could occur.

According to the City of Oxnard General Plan Background Report (2006), there are no known earthquake faults in the City area. However, active and/or potentially active faults are present in the surrounding region, and some of these may extend into the subsurface beneath the General Plan Planning Area that generally extends from Point Mugu to Wells Road.

As part of the Community Development standard permitting procedure and uniformly applied development conditions, the project applicant and/or their contractors shall submit a site-specific soils investigation prepared by a licensed geotechnical engineer. At a minimum, the study shall include liquefaction and compressible soils characteristics on-site and shall identify any necessary construction techniques or other mitigation measures to prevent significant liquefaction/compressible soils impacts on the proposed project. All recommendations of the report shall be incorporated into the project as conditions of approval. The report shall be submitted concurrently with plans submitted for review by the Building Official. Additionally, the project would be required to comply with local policies and state regulations regarding building standards, hazard mitigation and seismic safety that would minimize risk and exposure to adverse effects of seismic events. Therefore, with compliance with local and State standards and the application of uniformly applied development conditions and standards, the project would have a less than significant impact associated with hazards of existing geological and soil conditions.

3. Expansive soils are generally clayey causing them to swell when wetted and shrink when dried. Wetting can occur naturally in a number of ways (e.g., absorption from the air, rainfall, groundwater fluctuations, lawn watering, and broken water or sewer lines). In hillside areas, as expansive soils expand and contract, gradual downslope creep may occur, eventually causing landslides. Clay soils also retain water and may act as lubricated slippage planes between other soil/rock strata, also producing landslides, often during earthquakes or when caused by unusually moist conditions.

Expansive soils are also often prone to erosion. Foundations of structures placed on expansive soils may rise during the wet season and fall during the succeeding dry season. Expansive soils can act as a lubricant when between differing soil/rock strata, which can facilitate movement triggered during heavy rains or earthquakes. According to the County of Ventura Expansive Soils Map, the project site is located in a low expansive soil potential area of Oxnard (Ventura County Resource Management Agency 2010). According to Figure 5-12 of the City of Oxnard General Plan Background Report (2006), the project site is located in an area of low susceptibility to erosion. Therefore, the project would not create substantial risks to life or property due to expansive soils that cannot be addressed through compliance with standard Code requirements and this impact would be less than significant.

4. Seiches are seismically induced waves that occur in large bodies of water, such as lakes and reservoirs. According to the City of Oxnard General Plan Background Report (2006), the City's Channel Islands Harbor and Mandalay Bay could be potentially impacted by seiches. The project site is not in proximity to either of these areas and, therefore, new development and residents on the site would not be at risk of exposure to inundation by seiche. There would be no impact.

   A tsunami is a tidal wave produced by off-shore seismic activity. The project site is not located in a tsunami inundation area as shown on the Tsunami Inundation Map of the Oxnard Quadrangle. Therefore, new development and residents on the site would not be at risk of exposure to inundation by tsunami. There would be no impact.

5. As a typical office and residential development on previously developed, flat site, the project would not require dredging or other maintenance activity that is not guaranteed to continue. There would be no impact.

Cumulative Impact Analysis: Impacts associated with geology and soils in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regards to geology and soils on and in the vicinity of the project site and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with geology and soils.

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VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
2. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
3. Would the project emit hazardous substances or involve handling hazardous or acutely hazardous substances, or waste within one-quarter mile of an existing or proposed school in quantities or a manner that would create a substantial hazard?	☐	☐	☐	■
4. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a substantial hazard to the public or environment?	☐	☐	■	☐
5. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐

1,2. The project would use normal and nominal amounts of hazardous materials during construction of the project as well as using household cleaners in during operation of the development with use of normal amounts of hazardous materials for maintenance of machinery used onsite, such as forklifts and trucks. No routine disposal of hazardous materials is proposed. Therefore, the project would not create a significant hazard to the public or the environment through a foreseeable upset or accident, or the routine transport, use, or disposal of hazardous materials and impacts would be less than significant.

3. The project site currently contains facilities of the former El Rio Elementary School. However, the school has not been in operation for a number of years and these facilities would be demolished as part of the project. The nearest operational school to the project site is Rio del Mar Elementary School, located at 3150 Thames River Drive, approximately one-half mile north of the project site. Therefore, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste in one-quarter mile of an existing or proposed school, and there would be no impact.

4. In order to evaluate hazardous materials records located on the project site or adjacent to the project site, the State Water Resources Control Board GeoTracker database, and the Department of Toxic Substances Control EnviroStor database and Cortese List were reviewed in May 2018. Review of these resources indicates that the project site is not located in a site that is considered to contain hazardous materials pursuant to Government Code Section 65962.5. Two leaking underground storage tank (LUST) cleanup sites (T.W. Brown Oil Co [T0611100270] and Rio School Dist-Maintenance Yd [T0611101240]) are identified on East Vineyard Avenue, adjacent to the western boundary of the project site. However, the T.W. Brown Oil Co site has a Completed- Case Closed as of 8/29/1989 status and the Rio School Dist-Maintenance Yd site has a Completed- Case Closed as of 1/16/2001 status. Therefore, these sites would not present a substantial hazard to the public or environment and this impact would be less than significant.

5. The project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The design of new access points would be reviewed and approved by the City of Oxnard Fire Department to ensure that emergency access meets City standards. Therefore, impacts would be less than significant.

Cumulative Impact Analysis: Impacts associated with hazards and hazardous materials in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regards to hazards and hazardous materials and would be required to comply with the City’s uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with hazards and hazardous materials.

IX. Hydrology and Water Quality	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause a violation of any adopted water quality standards or waste discharge requirements?	☐	☐	■	☐
2. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	■	☐	☐
3. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in on- or off-site flooding or exceed the capacity of existing or planned stormwater drainage systems?	☐	☐	■	☐
4. Would the project place new structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	■	☐
5. Would the project impede or redirect flood flows such that it would increase on- or off-site flood potential?	☐	☐	■	☐
6. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	■	☐
7. Would the project be exposed to a substantial risk related to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	■

1. The Ventura County Watershed Protection District, County of Ventura, and the cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks have joined together to form the Ventura Countywide Stormwater Quality Management Program and are named as co-permittees under a revised countywide municipal NPDES permit for stormwater discharges issued by the Regional Water Quality Control Board in 2010 (Order R4-2010-0108). Under Order R4-2010-0108, the co-permittees are required to administer, implement, and enforce a Stormwater Quality Management Program to reduce pollutants in urban runoff to the maximum extent practicable. Accordingly, the project would be required by uniformly applied regulations and conditions of approval to comply with Clean Water Act National Pollutant Discharge Elimination System (NPDES) requirements. Compliance with the Oxnard building permit would require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMP). The BMPs would include measures that would be implemented to prevent discharge of eroded soils from the construction site and sedimentation of surface waters offsite. The BMPs would also include measures to quickly contain and clean up any minor spills or leaks of fluids from construction equipment. Given the relatively flat topography of the site, distance from surface waters, the minimal grading and excavation required for construction, and implementation of the required SWPPP, construction of the project would not violate any water quality standards or waste discharge requirements. This impact would be less than significant.

2. As with the existing school district facilities on the site, the proposed development would include a connection to the municipal water supply system to provide potable water to the residential and office uses within the project. The following paragraphs provide a brief summary of groundwater resources and their regulation in the area. More detail regarding the planning and regulation of water service, is provided below in Section XVI Utilities and Energy.

   Groundwater within the Oxnard Plain and throughout the region is under the management of the Fox Canyon Groundwater Management Agency (FCGWMA). The FCGWMA was created in 1982 by the California Legislature via the Fox Canyon Groundwater Management Agency Act [AB-2995] for the express purposes of regulating, conserving, managing, and controlling the use and extraction of groundwater to help preserve resources, and to counter seawater intrusion beneath the Oxnard Plain. The regulations of FCGWMA, which restrict groundwater withdrawals, apply to all groundwater users within its jurisdiction. These users include agricultural activities, industrial users, and municipal governments such as the City of Oxnard. The City will provide water to the proposed Rio Urbana development, and approval of the project will be subject to the provisions of the City of Oxnard Municipal Code Chapter 22: Water, as well as to the FCGWMA and other requirements. The City has a "net-zero" policy with respect to new development, which requires a proposed development to provide and transfer any necessary groundwater allocation to the City (subject to FCGMA approval) or contribute to City programs designed to offset potable water use. This policy was confirmed in a report to the City Council on October 19, 2009, and is incorporated into the City's Urban Water Management Plan (UWMP; Oxnard 2016:Section 8.4.1), and other plans. Section XVI Utilities and Energy provides more detail regarding the provision of water service; and the key conclusion from that discussion is that the identified mitigation measures, which would implement these existing requirements, would serve to mitigate the potential effects of the project on regional groundwater supplies.

With respect to potential localized effects on groundwater, Section 22-100 of the Oxnard Municipal Code requires that any existing water rights; groundwater pumping allocations from FCGWMA; and all wells, mains, easements and water production equipment or facilities, be assigned and transferred to the City of Oxnard. In addition, provisions of Article VII of the Municipal Code (starting at Section 22-110) regulate all well operations and require the destruction of any abandoned wells (Section 22-123). Because of these requirements, any wells that exist on the property and which may have been used in the past to serve the school facilities could not be used to serve the proposed development directly. For this reason, the project would not have any localized effects on groundwater withdrawals and would not adversely affect any other wells in the vicinity.

3. During operations of the project, surface water discharge would include minimal amounts of stormwater runoff generated during precipitation events. However, according to a letter prepared by Jensen Design & Survey, Inc. in January 2017 assessing required Ventura County Municipal Separate Storm Sewer Systems (MS4) permit compliance and on-site drainage, the project would increase stormwater flows on the project site. The MS4 compliance and drainage letter was revised on March 25, 2019, and is included in Appendix F of this Initial Study.

   Given the nearly flat topography of the site, and landscaped and open space areas incorporated into the project design, precipitation would be expected to infiltrate or evaporate onsite more so than sheet flow over land and discharge offsite at substantial rates or volumes. The project would continue to use the existing stormwater system that is connected to the city's storm sewer system and consistent with applicable development standards and permits. The project would be subject to the requirements of a Ventura County MS4 permit. Site-specific BMPs would be designed by the contractor in compliance with all applicable regulations and conditions of the MS4 permit. More specifically, stormwater runoff would be directed to multiple inlets throughout the project site that connect to the onsite drainage system. The two proposed parcels (residential and office) would have individual drainage systems, a pollutant trap and separation unit, and an infiltration basin. Low flows entering the inlets would be routed through the separation unit before entering an infiltration basin. High flows that exceed the required volume of infiltration would be routed through the infiltration basin and released to the 54-inch City storm drain located in Vineyard Avenue. According to the MS4 compliance and drainage letter prepared for the project, this drain currently possesses excess capacity that would be sufficient to accommodate increased stormwater flows as a result of the project. The project would not include any unique components that would impact stormwater runoff quality. The project would also be required to comply with all standards for a watercourse permit for potential project drainage effects on flows in the El Rio Drain, as implemented by the Ventura County Watershed Protection District, County of Ventura, and the City.

   The County standard would require that the project not increase peak flows from 10-year, 25-year, and 100-year storms in the El Rio Drain. Section 202 of County Ordinance WP-2 requires County review and permit approval for any alteration in the characteristics of flow in channels under the County jurisdiction. Evidence of County review and issuance of written permission in compliance with County Ordinance WP-2 will be required by the City prior to final approval of the project. Appendix F contains the updated drainage memo for the project prepared by Jensen Design & Survey, Inc., dated March 25, 2019. This study describes the combination of separation structures and infiltration systems that will keep peak flows from the developed project within current values and within the capacity of downstream drainage structures, consistent with requirements of both the City and the County of Ventura. Operation of the project would not be expected to violate any water quality standards or waste discharge requirements. The project would have less than significant impacts on water quality standards and discharge requirements.

4,5. The project site is located in an area mapped by the Federal Emergency Management Agency (FEMA) as Zone X, Area of Minimal Flood Hazard. The project site is not located in a 100-year flood hazard area. Additionally, the project site is an already developed site with existing structures. Redevelopment of the site for the project would not introduce any features or components that would impede or redirect flood flows such that it would increase on- or off-site flood potential. Impacts would be less than significant.

6. According to the Safety and Hazards chapter of the City of Oxnard General Plan Background Report (2006):

   "Several dams are located at least 35 miles to the east and northeast of the city of Oxnard within Ventura and Los Angeles Counties. These include the Santa Felicia Dam at Lake Piru, the Castaic Lake Dam and the Pyramid Lake Dam. The major threat to Oxnard is upstream along the Santa Clara River corridor. Although the potential for a dam failure is considered low, should one or more of these dams fail, the entire city is located within the Dam Inundation Zone, also called Dam Failure Hazard Area. Damage to the city could be in the form of a wall of fast-moving water, mud, and debris."

   While potential failure of any of these dams could cause inundation of the City, including the project site, the Ventura County Hazard Mitigation Plan (2010) states that the probability of dam failure inundation is unknown, but would be the result of certain types of extreme storm events. The project would not exacerbate the potential for levee or dam failure and project-related impacts in relation to levee or dam failure would be less than significant.

7. Seiches are seismically induced waves that occur in large bodies of water, such as lakes and reservoirs. According to the City of Oxnard General Plan Background Report, the City's Channel Islands Harbor and Mandalay Bay could be potentially impacted by seiches. The project site is not in proximity to a large body of water. Therefore, seiches are a not a risk to the project site. No impacts would occur.

   A tsunami is a tidal wave produced by off-shore seismic activity. The project site is not located in a tsunami inundation area as shown on the Ventura County Multi-Jurisdictional Hazard Mitigation Plan Update, and would not be subject to inundation by tsunami (County of Ventura 2010). No impacts would occur.

   The project site is not located in an earthquake-induced landslide zone (California Geological Survey 2002). Landslides and mud flows are most likely to occur on or near a slope or hillside area, rather than in generally level areas, such as the project site. Mud flows would not be a risk to the project. No impacts would occur.

Cumulative Impact Analysis: Impacts to hydrology and water quality as a result of development in the City Planning Area facilitated by the 2030 General Plan were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regards to hydrology and water quality and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with hydrology and water quality.

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X. Land Use and Planning	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project conflict with an applicable land use plan, policy or regulation of the City or other agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating a significant environmental effect?	☐	☐	■	☐
2. Would the project involve land uses that are not allowed under any applicable airport land use compatibility plan?	☐	☐	☐	■
3. Would the project conflict with an applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■
4. Would the project physically divide an established community?	☐	☐	■	☐

1. The project would involve demolition of the existing campus for the former El Rio Elementary School and the construction of 167 condominium residential units and a 15,100-square-foot office building. The project site lies within the County of Ventura's unincorporated community of El Rio, which is in the City of Oxnard's Sphere of Influence (SOI). The City currently designates the project site its former for school use. The entitlements requested by the project applicants include:

   1. Annexation to the City of Oxnard (PZ 17-610-01)
   2. Oxnard General Plan Amendment (PZ 17-620-01) to change the land use designation from School to Commercial General
   3. Pre-Zoning to C-2-PD (PZ 17-560-01)
   4. Tentative Subdivision Map that creates two parcels (Parcel 1 on 1.12 acres and Parcel 2 on 9.12 acres; PZ 17-300-03) and 167 condominium parcels
   5. Special Use Permit (PZ 17-500-13) for development of an office building on Parcel 1;
   6. Special Use Permit (PZ 17-500-05) for residential use on Parcel 2
   7. Issuance of a Density Bonus for provision of three additional units and reduction in interior yard space from 30 percent to 24 percent

   The City's Commercial General land use designation allows retail centers and free-standing commercial uses along arterials, and residential uses up to 18 dwelling units per acre and office use not to exceed a floor area ratio (FAR) of 0.35 to 1. The C-2 General Commercial zoning allows for professional and business offices, with the Planned Development (PD) designation permitting the development of multifamily residential uses in conformance with the City's 2030 General Plan. Based on the area of the parcel for the residential uses (approximately 9.12 acres), the Commercial

General land use designation would permit up to 164 dwelling units. With the approval of Density Bonus for providing 17 (10 percent of units) low and 3 moderate income deed-restricted households, the project would be permitted to construct up an additional 20% or 30 units. Only 3 additional units are requested, however, for a total of 167 residential units. One additional concession, allowed by state and local codes would reduce the interior yard space from 30 percent to 24 percent on the project site. Construction of 167 residential units and a 15,100-square-foot office building as proposed by the project both would be consistent with the City's land use designation for the site if changes from SCH to Commercial General as proposed.

The project would be designed in accordance with the City's Zoning Code development standards to ensure massing and scale compatibility with surrounding uses. The office building would be two stories and consistent with the maximum building height of 35 feet, as well as with the minimum front, rear, and side setbacks permitted by the C-2 zoning designation. The residential buildings would be three stories (38 feet) in height, with review and approval of the requested Special Use Permit. The project incorporates a 30-foot landscaped setback along East Vineyard Avenue, in accordance with 2030 General Plan Policy CD-9.4, to provide a landscaped buffer along this City-designated scenic corridor. As such, implementation of the project would not conflict with the City's 2030 General Plan or zoning code. The project would introduce multifamily residential and commercial office uses that have been designed for visual compatibility and consistency with the surrounding land uses. Impacts would be less than significant.

2. The nearest airport to the project site is the Oxnard Airport, located approximately three miles southwest of the site. The Oxnard Airport Sphere of Influence (SOI) is a designated area for the coordination and review of land use proposals which may affect or be affected by the operations of the Oxnard Airport. The project site is outside of the Airport SOI. Therefore, the project would not result in any impact associated with land uses that are not allowed under an applicable airport land use compatibility plan.

3. According to the City's 2030 General Plan (2009), there is no established or planned Habitat Conservation Plan or Natural Communities Conservation Plan in or near the City's Planning Area, which includes the project site. Therefore, the project would have no impact associated with conflict with such a plan.

4. The proposed residential and office development would occur on a site developed with a former school and surrounded by residential and commercial uses. Therefore, the project would serve to extend similar surrounding uses and would not divide an established community. This impact would be less than significant.

Cumulative Impact Analysis: Impacts associated with land use and planning in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts with regard to land use and planning and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts associated with land use and planning.

XI. Mineral Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project result in the loss of availability of a known mineral resource of value to the region or state?	☐	☐	■	☐
2. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated in the 2030 General Plan, specific plan or other land use plan?	☐	☐	■	☐

1,2. According to the Background Report for the 2030 General Plan, important mineral/sand/gravel deposits are primarily located along the Santa Clara River channel, along the U.S. 101 corridor, and along the eastern edge of the City. The project site is located in the City's Non-designated Mineral Resource Zone-2 (MRZ-2), indicating that mineral deposits may be present in the area. However, policies in the Ventura County Mineral Resource Management Plan establishing land use controls that allow for flexibility for mineral extraction do not apply because the site is not in an officially designated MRZ-2 area. Therefore, the project would not result in the loss of availability of a known mineral resource that is of known value to the region or the State, or loss of a designated locally important mineral resource recovery site. Impacts would be less than significant.

Cumulative Impact Analysis: Impacts to mineral resources in the City Planning Area were analyzed by the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts to mineral resources and would be required to comply with the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts to mineral resources.

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XII. NOISE	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project generate or expose persons to noise levels in excess of standards established in the Oxnard 2030 General Plan or Noise Ordinance, or applicable standards of other agencies?	☐	■	☐	☐
2. Would the project generate or expose persons to excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
3. Would the project generate a substantial temporary or periodic increase in ambient noise in the project vicinity above levels existing without the project?	☐	■	☐	☐
4. Would the project generate a substantial permanent increase in ambient noise in the project vicinity above levels existing without the project?	☐	☐	■	☐
5. For a project located within the airport land use plan for Oxnard Airport or within two miles of Naval Base, Ventura County at Point Mugu, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■
6. Would the project expose non-human species to excessive noise?	☐	☐	■	☐

1. The Noise Study for the Rio Urbana Project (Noise Study), prepared by Meridian Consultants in May 2018, is included as Appendix G of this Initial Study. This study provides background information on noise and how it is measured and described. The Noise Study also provides quantitative estimates of potential noise effects of the proposed project based on criteria in use by the City of Oxnard. Material from the Noise Study, as well as additional information from other City documents is summarized in the following paragraphs.

   The proposed multi-family residences within the project and existing detached single family homes and mobile homes to the northeast in the Rio neighborhood are noise-sensitive land uses. The Oxnard 2030 General Plan Goals & Policies (Oxnard December 2016:Goals SH-5 and SH-6) include the City's noise goals and policies for maintaining appropriate noise levels in residential and other land uses within the City. Two different specific standards or criteria are described in the City of Oxnard CEQA Guidelines related to acceptable noise levels in various land use types (Oxnard May 2017:Section 12.3). These noise criteria are found (1) in the Oxnard General Plan Draft Background Report and (2) in the City's noise ordinance, Section 7-185 Exterior Noise Standards.

From the General Plan Draft Background Report, the maximum Community Noise Equivalent Level (CNEL) considered "normally acceptable" for single family and mobile home land uses is 60 decibels (dBA), and for multi-family land uses the CNEL limit is 65 dBA (Oxnard April 2006:Table 6-4). CNEL is a 24-hour average noise level, and is often used interchangeably with the Day-Night Average Noise Level (Ldn). The City's use of the CNEL standards in this manner is consistent with many other agencies and local governments (see Figure 6 in the Noise Study for the Rio Urbana Project.) These limits or criteria are intended to be applied to the evaluation of noise from all sources and how it affects the various land uses. Thus, these criteria are commonly used in evaluating noise from roadways, airports and aircraft overflights, rail operations, and similar sources.

In assessing the significance of noise level increases caused by a project – such as long-term increases in noise due to project-generated traffic, the Oxnard CEQA Guidelines reference criteria used by the Federal Transit Administration. For typical urban areas where existing noise levels range from 55 to 65 dBA (measured either as Ldn or Leq), a project-generated increase of from 2-3 dBA would be considered allowable. If existing noise levels are already excessive, then a more stringent increase of 1 dBA is applied up to 74 dBA. And if existing noise levels already exceed 75 dBA, then any increase is considered a significant impact (Oxnard May 2017:Table 5).

The City's noise ordinance uses a different approach to setting noise standards for various land uses. The ordinance is part of the City's process for regulating nuisances, and applies to the generation of noise from specific activities. For residential uses, the maximum allowable exterior sound level during daytime hours (7:00 a.m. to 10:00 p.m.) is 55 dBA, and for nighttime hours (10:00 p.m. to 7:00 a.m.), the limit is 50 dBA. In this context, the stated noise levels are One-hour Equivalent Noise Levels (Leq), not 24-hour averages. The noise ordinance itself has more details, including various adjustments for the presence of impulse sound and for various short-term exceedances. The ordinance also includes several exemptions, one of which applies to construction activities as long as specific days and hours are followed. For this reason, the City of Oxnard CEQA Guidelines suggests, "…construction related noise be considered 'substantial' only in unusual circumstances…" (Oxnard May 2017:page 57).

The Noise Study also reviews California State building code requirements applicable to multi-family residential dwellings, which require that interior living spaces meet a standard of 45 dBA CNEL or less. The Noise Study for the Rio Urbana Project describes the project, addressing both construction related noise and increases in traffic noise levels after the project is completed. Construction related effects are addressed in issues 2 and 3 below.

Traffic noise levels are computed in Table 5 (existing) and Table 9 (existing plus project) of the Noise Study for the Rio Urbana Project, which is Appendix G of this Initial Study. Aspects of the presentation in Tables 5 and 9 of the Noise Study may be confusing because it lists CNEL values for "AM" and "PM" time periods. As noted above, CNEL is a 24-hour noise descriptor so it does not apply to morning or afternoon periods – it represents the average for an entire day. The "AM" and PM" periods are identified in Table 9 because the morning and afternoon peak hour traffic volumes were used, in turn, to estimate the Average Daily Traffic (ADT) volumes for the noise model work. Thus, slightly different results of CNEL were obtained reflecting the use of either morning or afternoon peak hour volumes to estimate the ADT values used in the model work. Additionally, the noise estimates in the Noise Study are based on traffic generated by development of 182 dwelling units and 15,100 square feet of office space. The updated project, as proposed, would result in 15 fewer dwelling units, and thus fewer vehicle trips, than anticipated in the traffic and noise analyses for the project. Therefore, noise estimates herein are considered conservative estimates for the project as proposed. Excerpts from Table 9 in the Noise Study for the Rio Urbana Project are summarized here in-Table 3. All of the noise levels shown in Table 3 are CNEL values computed for a distance of 75 feet from the center of the identified roadway.

Table 3 Summary of Existing Plus Project Traffic Noise Levels

Street	Intersection No. – Location of segment	Existing Noise Level	Existing Plus Project Noise Level	Change
Vineyard Ave.	1 North of E. Stroube St.	65.3 dBA	65.4 dBA	0.1 dBA
Vineyard Ave.	1 South of E. Stroube St.	65.2 dBA	65.3 dBA	0.1 dBA
Vineyard Ave	2 North of Rio School Lane	65.6 dBA	65.6 dBA	0.0 dBA
Vineyard Ave.	3 South of Rio School Lane	65.6 dBA	65.7 dBA	0.1 dBA
Stroube St.	1 East of Vineyard Ave.	49.6 dBA	49.8 dBA	0.2 dBA
Stroube St.	1 West of Vineyard Ave.	47.0 dBA	47.0 dBA	0.0 dBA
Rio School Lane	2 East of Vineyard Ave	39.9 dBA	44.4 dBA	4.5 dBA

Source: Meridian Consultants, Inc. Noise Study for the Rio Urbana Project, Table 9, May 2018. Noise levels recorded on July 6, 2017
Note from Meridian Consultants, Inc. Noise Study: Roadway noise levels are modeled 75 feet from the center of the roadway.

Most of the intersections and roadway segments analyzed in the Noise Study for the Rio Urbana Project are located at some distance from the project site itself and are not representative of the residential neighborhood generally between Rio School Lane and Stroube Street. Table 3 above includes only those intersections potentially impacted by project traffic that are located generally near existing residential neighborhoods.

For the intersections where the existing CNEL value exceeds 65 dBA, the increase due to project traffic would be much less than 1 dBA. The only substantial increase in roadway noise levels caused by the project would be along what is now Rio School Lane that would serve as the primary access to the proposed development. Although the increase in traffic noise here would be about 4.5 dBA at 75 feet, the resulting CNEL values would still be relatively low (less than 45 dBA) in areas removed from Vineyard Avenue. The actual distance from the centerline of Rio School Lane and the nearest existing house is about 30 feet. At this distance the CNEL would be about 50.4 dBA, still well below the impact threshold of 65 dBA. The existing residences on the north side of Rio School Lane closest to Vineyard Avenue are about 200 feet from the center of Vineyard Avenue. At this distance, the "Existing Plus Project" CNEL value would be reduced from 65.6 dBA to approximately 60 dBA. Areas closer to Vineyard Avenue would experience higher noise levels, but the added effect of project traffic would be much less in these areas. The primary concern in this respect would be the residences proposed within the project itself, specifically those in residential Building 2 (south of Rio

School Lane) that would be about 86 feet from the center of Vineyard Avenue. At this distance, the existing CNEL from Vineyard Avenue would be about 64.7 dBA, and the existing plus project CNEL would be 64.8 dBA. This result is right at the limit considered acceptable for multi-family residential uses, and exterior living areas would exceed 65 dBA. Although the increases in noise would be relatively minor, the proposed development would lead to small increases in traffic related noise levels in areas where existing noise levels already exceed and mitigation would be required to reduce potential impacts to nearby sensitive receptors to a less than significant level.

Mitigation Measure

The following mitigation measures would reduce potential impacts related to the exposure of people to excessive noise levels to a less than significant level. Equivalent design measures may be substituted as long as the identified performance standard is met.

N-1(a) **Building Material Guidelines.** The living areas for all residences in the project, including those adjacent to Vineyard Avenue, shall be constructed to include sufficient noise attenuation to reduce interior noise levels to a CNEL of 45 dBA, as required by California building standards. For the estimated exterior CNEL values of 65 dBA, ~~t~~This performance standard requires an exterior-to interior noise reduction of approximately 20 dBA~~ or more~~. This noise reduction is routinely achieved in residential construction that is consistent with current California energy conservation standards, and involves measures such as exterior stucco walls with a Sound Transmission Class (STC) rating of 45, double-paned windows with an STC of 37, solid core exterior doors. Building permit applications shall include documentation that the interior standard of 45 dBA CNEL will be achieved through a combination of these or other measures.

N-1(b) **Building Design.** The living areas shall contain forced air ventilation. All duct work for ventilation shall include noise louvers at the exterior outlet and/or duct outlets shall be directed either opposite to or perpendicular to Vineyard Avenue. Upper level patio/deck areas shall not be positioned facing the Vineyard Avenue for residences along the western site boundary without additional mitigation or verification that exterior CNEL values would meet the City noise standard of 65 dBA as shown in a Noise Study reviewed and approved by the Planning Manager or designee.

2. Ground vibration is discussed in the *Noise Study for the Rio Urbana Project*. The study focused on three existing residences near the project site that are representative of residences in the vicinity. Due to the relatively short distances separating these residences from the project site, construction noise levels from the proposed development would cause increases ranging from about 9 dBA to 21 dBA over short periods of time. As described above, the City of Oxnard Noise Ordinance includes an exemption for construction activities during normal working hours. Even with this exemption, the construction noise from the proposed development is considered a potential significant impact that warrants mitigation. Specific mitigation measures to reduce construction noise levels are listed below.

   No mitigation measures are necessary related to ground vibration, since the Noise Study for the Rio Urbana Project concludes that ground vibration from construction activities would remain well below the criteria used. Specifically, the construction activities are estimated to cause peak particle velocities (PPV) of 0.021 inches per second at the nearest residences, which is well below the criterion of 0.5 inches per second for PPV.

Mitigation Measure

To reduce the effects of construction activity noise to a less than significant level, the following mitigation measure would be required:

N-2 Construction Noise Levels. For all construction-related activities, noise-attenuation techniques shall be employed as needed to ensure that noise remains as low as possible during construction, specifically at REC-1 through REC-3. The following noise-attenuation techniques shall be incorporated into contract specifications to reduce the impact of construction noise:

- Ensure that construction equipment is properly muffled according to industry standards and in good working condition.
- Place noise-generating construction equipment and locate construction-staging areas away from sensitive uses, where feasible.
- Schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses.
- Implement noise attenuation measures to the extent feasible, which may include but are not limited to temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
- All stationary construction equipment (e.g., air compressors, generators, impact wrenches, etc.) shall be operated as far away from residential uses as possible and shall be shielded with temporary sound barriers, sound aprons, or sound skins.
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes.
- Clearly post construction hours, allowable workdays, and the phone number of the job superintendent at all construction entrances to allow for surrounding owners to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

3. Temporary increases in noise levels caused by the project would occur due to construction activities. This potential impact is discussed above in issue 2.

4. The project is not expected to cause any significant permanent increases in noise levels. Increases in traffic noise levels due to the project are discussed in issue 1 above, and are considered to be a less than significant impact.

5. As discussed in the Land Use and Planning section, the project site is located outside of the Oxnard Airport Sphere of Influence. The project site is located approximately two miles from the nearest points of the 60 dBA CNEL contours associated with the Oxnard Airport (to the southwest) and about three miles from the nearest extent of the 60 dBA CNEL contour from the Camarillo Airport

(to the east-southeast) (Ventura County Department of Airports August 2004:Exhibit D-4, and Ventura County Airports Land Use Commission July 2007:Exhibit E-3). This project site is also located more than five miles from Naval Base, Ventura County at Point Mugu. Therefore, the project would not result in exposure of people residing or working in the project area to excessive noise levels associated with nearby airports. There would be no impact.

6. There are no listed endangered or threatened species within the project site, and the proposed development would not subject any sensitive biological species to noise levels beyond those common in urban neighborhoods. Additionally, the project would be required to implement mitigation measure BIO-1 to reduce and/or avoid potential impacts to nesting birds and raptors. For this reason, potential effects related to this issue would be less than significant.

Cumulative Impact Analysis: Impacts associated with noise generated by all development facilitated by the 2030 General Plan were analyzed by the 2030 General Plan EIR and found to be significant for which an overriding consideration was adopted. The project would have less than significant impacts with respect to noise with implementation of mitigation measure N-2, and would be subject to the City's uniformly applied resource protection policies and regulations. Therefore, the project would not contribute to or result in significant cumulative impacts to noise.

XIII. POPULATION, EDUCATION, AND HOUSING	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project involve a General Plan amendment that could result in an increase in population over that projected in the 2030 General Plan that may result in one or more significant physical environmental effects?	☐	☐	■	☐
2. Would the project induce substantial growth on the project site or surrounding area, resulting in one or more significant physical environmental effects?	☐	☐	■	☐
3. Would the project result in a substantial (15 single-family or 25 multi-family dwelling units – about one-half block) net loss of housing units through demolition, conversion, or other means that may necessitate the development of replacement housing?	☐	☐	☐	■
4. Would the project result in a net loss of existing housing units affordable to very low- or low-income households (as defined by federal and/or City standards), through demolition, conversion, or other means that may necessitate the development of replacement housing?	☐	☐	☐	■
5. Would the project cause an increase in enrollment at local public schools that would exceed capacity and necessitate the construction of new or expanded facilities?	☐	☐	■	☐
6. Would the project directly or indirect interfere with the operation of an existing or planned school?	☐	☐	■	☐

1,2. The project consists of the development of 167 condominium residential units and a 15,100-square-foot office building on an approximately 10.5-acre site containing the former El Rio Elementary School campus. In January 2019, the City had a total population of 209,879 people and an average household size of 3.97 persons (DOF 2019). Based on the 2019 population and household size, the project would result in an increase of approximately 663 residents in the City, representing an increase of 0.32 percent from the January 2019 population. The proposed office uses are not likely to generate an additional population within the City because the majority of these new employees would be relocated from existing Rio School District facilities located nearby at 2500 East Vineyard Avenue.

The 2030 General Plan projects a City population within a range of 238,000 to 286,000 people, with the Southern California Association of Governments (SCAG) projecting a population of 237,300 people by 2040. The population growth facilitated by the project would represent less than one percent of these growth forecasts and would be within the predicted growth projections previously evaluated by the City's 2030 General Plan and SCAG. While the project applicant is requesting an amendment to the 2030 General Plan to annex the project site into the City limits and to change the land use designation from School to Commercial General, the project site is in a developed area of the County surrounded by various low density residential and general commercial uses. Therefore, the proposed residential and office uses would be compatible with the uses designated by the City's General Plan for the project area. Impacts would be less than significant.

3,4. The project site does not contain any existing dwelling units. Therefore, the project would not result in any loss of housing units, including affordable to very low- or low-income households, through demolition, conversion, or other means that may necessitate the development of replacement housing. There would be no impacts.

5,6. According to the DOF population and housing estimates, the City had a total population of 209,879 people and an average household size of 3.97 persons in January 2019. Using the average household size, the 167 proposed condominiums included in the project would result in an increase in the City's population of 663 people. A portion of this new population would likely be school-age and would attend local public schools including those operated by Rio School District, and Oxnard Union High School District.

At the elementary school level (grades k-5), the Rio Elementary School District is over capacity. At the time the *Facilities Master Plan* was prepared in 2014, it was predicted that only one elementary school would be under capacity by 2016 and that two schools would be over 100% utilization (Rio School District September 2014:page 5). By 2018, in the *Developer Fee Justification Study & School Facilities Needs Analysis*, the District determined that for the elementary grades K-5 it was 207 students over capacity, but for the middle school grades 6-8 is was 201 students under capacity (Rio School District October 2018:Table 2).

The projections of future development and student generation in the 2018 study included the assumption that the Rio Urbana development project would be completed (along with other projects in the City). Based on generation rates used in the 2018 study, the Rio Urbana project would generate about 29 K-5 students and 10 grade 6-8 students, or about 10% of the projected growth at the time (Rio School District 2018:Tables 4 and 5).

Oxnard Union High School District has seven existing high schools, plus an independent study school and a continuation school. Nearest to the project site are: Oxnard High School, Pacifica High School, and Rio Mesa High School. All three of these high schools have student enrollment in excess of their original facility capacity and all three use portable classrooms to accommodate part of their current enrollment. The Oxnard Union High School District has acquired land and is planning a new eighth high school southeast of N. Rose Avenue and Caesar Chavez Drive, with construction to start in 2020 (Oxnard Union High School District, October 2017 and January 2019.

To offset a project's potential impact on schools, Government Code 65995(b) establishes the base amount of allowable developer fees a school district can collect from development projects located within its boundaries. The fees obtained by the local districts are used to maintain the desired school capacity and the maintenance and/or development of new school facilities. The project proponents would be required to pay the State-mandated school impact fees. Pursuant to Section 65995(3)(h) of the California Government Code (SB 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Additionally, the project would provide new administrative office space for the Rio School District, assisting in the operation of the schools in this district. Therefore, impacts to local public schools as a result of the project would be less than significant.

Cumulative Impact Analysis: Population and housing were analyzed by the 2030 General Plan EIR and found to be less than significant after implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts to population, education, and housing and would be required to implement the City's uniformly applied development policies and regulations. Therefore, the project would not contribute to or result in cumulative impacts to population, housing, and education.

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XIV. Public Services and Recreation	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project increase demand for fire protection service such that new or expanded facilities would be needed to maintain acceptable service levels, the construction of which may have significant environmental effects?	☐	☐	■	☐
2. Would the project increase demand for law enforcement service such that new or expanded facilities would be needed to maintain acceptable service levels, the construction of which may have significant environmental effects?	☐	☐	■	☐
3. Would the project increase the use of existing park facilities such that substantial physical deterioration of the facilities would occur or be accelerated or that new or expanded park facilities would be needed to maintain acceptable service levels?	☐	☐	■	☐
4. Would the project increase the need for or use of existing library or other community facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	■	☐

1. Upon annexation to the City of Oxnard, the project site and proposed development would be under the jurisdiction of the Oxnard Fire Department (OFD). The OFD fire station nearest to the project site is Station 7, located approximately 0.6 mile northeast of the site at 3300 Turnout Park Circle. The project would increase development density on the project site and result in new population in the City of Oxnard resulting in a potential increase in demand for OFD services. However, the population growth facilitated by the project would not substantially affect provision of fire protection given the location of the project in an urbanized area adjacent to the City and in close proximity to existing fire stations. Additional information related to police and fire service is provided in Response 3.3 contained in Attachment 1, Responses to Comments. For clarification, that information is repeated here in the following paragraphs

In the 2018 Municipal Services Review for the City of Oxnard, LAFCO indicated that the City employed 0.67 firefighters for every 1,000 residents (up from a ratio of 0.48 in 2000). The Police Department employed one officer for each 831 residents (LAFCO 2018:pages 11-12).

With respect to fire service, the project site is less than one mile from the City of Oxnard Fire Station No. 7, located at 3300 Turnout Park Circle. The City Fire Department sets a goal of a 240 second (4 minute) travel time. Station No. 7 achieves this goal about 42% of the time. Station No. 7 is located approximately 0.7 miles to the northeast, just off of E. Vineyard Avenue. This proximity would allow a travel time well within the goal of 4 minutes. This City Fire Station No. 7 is located adjacent to the Ventura County Fire Station No. 51, located at 3302 Turnout Park Circle, which currently serves the unincorporated El Rio community (including the project site).

The City provides police services directly, including community patrol, criminal investigation, emergency communications, animal safety, and support services. The project site is located within Police Beat 14, Riverpark District. According to the LAFCO Municipal Services Review, the City of Oxnard 2017-2018 budget allowed for increased spending both for new vehicles and staffing to help maintain the police staffing ratio (Ventura LAFCO 2018:12).

The proposed development would be required to meet all fire and building code provisions to the satisfaction of the City and OFD. As such, the increase in demand for OFD services would not result in the need for new or expanded facilities to maintain acceptable service levels, the construction of which may have significant environmental effects. This impact would be less than significant.

2. Upon annexation to the City of Oxnard, the project site and proposed development would be under the jurisdiction of the Oxnard Police Department (OPD) for law enforcement protection services. OPD operates from its police station located at 251 South C Street, approximately 2.5 miles south of the project site. OPD also operates a police substation located within the Collection RiverPark center at 2751 Park View Court, less than one mile west of the project site. The City is divided into four police districts, each of which is further divided into smaller response beats. The project site is located in Beat 12, which is part of the North District. The project would increase development density on the project site and result in new population in the City of Oxnard resulting in a potential increase in demand for OPD services. However, the population growth facilitated by the project would not substantially affect provision of police protection given the location of the project in an urbanized area adjacent to the City and in close proximity to existing police stations. Additionally, construction of the project would incorporate various security features, such as fencing, surveillance cameras, and security lighting, to minimize trespassing, vandalism, and other uses that could place an additional demand on OPD. As such, the increase in demand for OPD services would not result in the need for new or expanded facilities to maintain acceptable service levels, the construction of which may have significant environmental effects. This impact would be less than significant.

3. Under the Quimby Act (California Government Code Section 66477), cities and counties in California may require that developers set aside land, donate conservation easements, or pay fees for park improvements in order to achieve a minimum of three acres per 1,000 residents. The goal of the Quimby Act is to require developers to assist in the mitigation of impacts associated with property improvements and development. According to Section 4.5.1 of the Background Report for the 2030

General Plan, the City of Oxnard operates 50 existing park facilities located in the City Planning Area. In total, the City Planning Area contains approximately 828 acres of parkland, including a 362-acre public golf course. Based on the City's January 2019 population of 209,879, the City currently possesses 3.9 acres of parkland per 1,000 residents. The project would generate approximately 663 new residents in the City of Oxnard, increasing demand on City park and recreational facilities. However, the project would provide various on-site recreational amenities, including a recreation center and activity room, tot lot, and small dog park, as well as open space areas. Therefore, the new residents generated by the project would likely use these areas for recreation before going elsewhere in the City alleviating some of the potential demand of the project on existing City park or recreational facilities. Additionally, the increase in City residents as a result of the project would not decrease the parkland to resident ratio below the requirement of three acres per 1,000 residents of the Quimby Act. The employees associated with the proposed office uses are likely to be relocated from existing Rio School District facilities and, therefore, would not result in a substantial increase in demand on existing park or recreational facilities. In accordance with the City's 2030 General Plan, the project applicant would meet any additional demand on parks and recreational facilities through payment of applicable developer fees to finance public facilities. These developer fees would be assessed and determined by the City's Community Development Department through the plan check and permitting process prior to the issuance of building permits. This impact would be less than significant.

4. The nearest library to the project site is the Albert H. Soliz Library. This library is owned and operated by the County of Ventura, but located in the City of Oxnard at 2820 Jourdan Street, approximately 350 feet north of the project site. Due to the close proximity to the project site, future residents on the site are likely to use this facility for their library needs. However, with other accessible library facilities throughout the City and County, the project would not create a substantial increase in demand for library services such that new facilities are needed. In accordance with the City's 2030 General Plan, the project applicant would meet any additional demand on library facilities through payment of applicable developer fees to finance public facilities. These developer fees would be assessed and determined by the Community Development Department through the plan check and permitting process prior to the issuance of building permits. This impact would be less than significant.

Cumulative Impact Analysis: Impacts to public services were analyzed in the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations. The project would result in less than significant impacts to public services and recreation and would be required to implement the City's uniformly applied development policies and regulations. Therefore, the project would not result in or contribute to cumulative impacts to public services and recreation.

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XV. TRANSPORTATION AND CIRCULATION	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections) based on adopted City of Oxnard level of service (LOS) standards?	☐	☐	■	☐
2. Would the project exceed, either individually or cumulatively, and LOS standard established by the Ventura County Congestion Management Program (CMP) for designated roads or highways?	☐	☐	■	☐
3. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	■	☐
4. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
5. Would the project result in inadequate emergency access?	☐	☐	■	☐
6. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	■	☐

1. CONSTRUCTION

Equipment and materials associated with project demolition and construction activities would be imported and exported from the project site and stored onsite for the duration of construction, where possible. Construction delivery and demolished materials export trips would be infrequent and short-term. The project demolition and construction workforce would likely commute to the project site in personal vehicles. The additional daily vehicle trips generated from the demolition and construction workforce would have localized impacts on Vineyard Avenue, Oxnard Boulevard, and Channel Islands Boulevard. However, the number of daily trips would be minimal in comparison of the average daily vehicle trips on these arterial roadways of the city. All additional trips generated from the demolition and construction workforce would be temporary and short term.

OPERATION

A Revised Traffic and Circulation Study (Traffic Study) was completed for the project by Associated Transportation Engineers (ATE) on April 27, 2018 (refer to Appendix H). The Traffic Study describes the existing conditions, project trip generation rates, and the impact of the project on existing conditions. The Traffic Study also includes an analysis of the proposed and developing projects in the vicinity and the project's related impacts to traffic and circulation in a future setting.

The project site is served by a circulation system comprising arterial and collector streets. Traffic flow on urban arterials is most constrained at intersections. Therefore, a detailed analysis of traffic flows must examine the operating conditions of critical intersections during peak travel periods. Levels of Service (LOS) A through F are used to rate intersection operations, with LOS A indicating free flow operations and LOS F indicating congested operations. In the City of Oxnard LOS C is the acceptable operating standard for intersections.

Existing Conditions

The existing a.m. and p.m. peak hour traffic volumes at the study area intersections were collected by ATE in March of 2016, and March and June of 2017. Existing LOS for the study area intersections were calculated using the Intersection Capacity Utilization (ICU) methodology as required by the City of Oxnard. Table 4 below lists the existing LOS for study area intersections during the a.m. and p.m. peak hour periods.

Table 4 Existing Peak Hour Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		ICU	LOS	ICU	LOS
Vineyard Avenue/Stroube Street	Signal	0.56	A	0.55	A
Vineyard Avenue/Rio School Lane	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Sycamore Street	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Riverpark Boulevard	Signal	0.55	A	0.56	A
U.S. Highway 101 NB ramps/Vineyard Avenue	Signal	0.50	A	0.52	A
U.S. Highway 101 SB ramps/Vineyard Avenue	Signal	0.53	A	0.55	A
Vineyard Avenue/Esplanade Drive	Signal	0.56	A	0.63	B
Rose Avenue/Stroube Street	STOP-Sign	15.3 sec.	C	12.3 sec.	B
Rose Avenue/Auto Center Drive	Signal	0.55	A	0.77	C
U.S. Highway 101 NB ramps/Rose Avenue	Signal	0.42	A	0.47	A
U.S. Highway 101 SB ramps/Rose Avenue	Signal	0.61	B	0.69	B

Source: ATE Revised Traffic and Circulation Study, Table 1, April 2018.

As shown in Table 4, the study area intersections currently operate at LOS C or better during the a.m. and p.m. peak hour periods, which meets the City's LOS C standard.

Project Trip Generation

Trip generation estimates were calculated for the project based on Residential Condominiums (Land-Use Code #230) and Single Tenant Office Buildings (Land Use Code #715) rates presented in the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition. The trip generation estimates in the Traffic Study are based on development of 182 dwelling units and 15,000 square feet of office space. The updated project, as proposed, would result in 15 fewer dwelling units, and thus fewer trips, than anticipated in the Traffic Study. Therefore, trip generation estimates herein are considered conservative estimates for the project as proposed. Table 5 summarizes the average daily, a.m., and p.m. peak hour trip generation estimates for the project.

Table 5 Project Trip Generation

Intersection	Size	ADT		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
Condominium	182 units	5.81	1,057	0.44	80 (14/66)	0.52	95 (64/31)
Office	15,000 sq.ft.	11.65	175	1.80	27 (24/3)	1.74	26 (4/22)
	Total Project Trip Generation:		**1,232**		**107 (38/69)**		**121 (68/53)**

Source: ATE Revised Traffic and Circulation Study, Table 2, April 2018.

The data presented in Table 5 show that the project would generate a total of 1,232 average daily trips (ADT), 107 a.m. peak hour trips, and 121 p.m. peak hour trips.

Project Trip Distribution and Assignment

The project-generated a.m. and p.m. peak hour traffic volumes were distributed and assigned to the study area intersection based on travel data derived from the existing traffic volumes as well as general knowledge of the population, employment, and commercial centers in the Oxnard/Ventura area.

Project-Specific Impacts

LOS were calculated for the study area intersection assuming the Existing + Project traffic volumes. Table 6 shows the results of the calculations and identifies the project's impacts based on City of Oxnard thresholds.

Table 6 Existing plus Project Peak Hour Levels of Service

Intersection	Existing		Existing plus Project		Change	Impact?
	ICU/Delay	LOS	ICU/Delay	LOS		
A.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.56	A	0.57	A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	~~8.9~~0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.5 sec.	A	0.5 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.55	A	0.55	A	0.00	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.50	A	0.51	A	0.01	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.53	A	0.54	A	0.01	No
Vineyard Avenue/Esplanade Drive	0.56	A	0.56	A	0.00	No
Rose Avenue/Stroube Street	15.3 sec.	C	17.1 sec.	C	1.8 sec.	No
Rose Avenue/Auto Center Drive	0.55	A	0.55	A	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.42	A	0.42	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.58	A	0.58	A	0.00	No
P.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.55	A	0.56	A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.6 sec.	A	0.6 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.56	A	0.57	A	0.01	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.52	A	0.54	A	0.02	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.55	A	0.56	A	0.01	No
Vineyard Avenue/Esplanade Drive	0.63	B	0.63	B	0.00	No
Rose Avenue/Stroube Street	12.3 sec.	B	13.0 sec.	B	0.7 sec.	No
Rose Avenue/Auto Center Drive	0.77	C	0.77	C	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.47	A	0.47	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.69	B	0.69	B	0.00	No

Source: ATE Revised Traffic and Circulation Study, Tables 3 and 4, April 2018.

As shown in Table 6, the project would not generate traffic level impacts of a significant level to the study area intersections, based on the City of Oxnard's traffic impact thresholds during the a.m. or p.m. peak hour periods.

Cumulative (Existing + Approved/Pending Project) Conditions

The City of Oxnard requires that intersection operations be analyzed with the addition of traffic generated by projects that have been approved or are pending in the project study area. Trip generation estimates were used for the developments that are approved or pending near the project study area using the rates presented in the ITE, Trip Generation, 9th Edition. Table 7 summarizes the average daily, a.m., and p.m. peak hour trip generation estimates for the approved and pending projects, buildout of Riverpark Specific Plan, and third tower at Esplanade.

Table 7 Approved and Pending Projects (Cumulative Development) Trip Generation

No.	Project	Land Use	Size	ADT	A.M. Peak Hour	P.M. Peak Hour
1	Oakmont Senior Living	Assisted Living	85 units	172	5	14
2	The Village	Multi-Family Res.	88 units	580	40	51
3	The Village	Multi-Family Res.	78 units	514	36	45
4	The Village	Multi-Family Res.	144 units	949	66	84
5	Ventura/Vineyard Homes	Single Family Res.	152 units	1,447	114	152
6	River Park Senior	Senior Residential	136 units	275	8	23
7	Wagon Wheel The Village	Multi-Family Res. Retail Commercial	219 units 16,303 sq.ft.	1,443 722	101 22	127 44
8	Veranda	Single-Family Res.	95 units	904	71	95
9	Westerly River Park	Single-Family Res.	69 units	657	52	69
10	V.C. Credit Union	Bank	3,391 sq.ft.	230	0	41
11	Shoe City	Retail Commercial	17,513 sq.ft.	776	23	47
12	The Point	Retail Commercial	45,000 sq.ft.	1,922	43	167
13	Esplanade Gateway	Coffee Shop Retail Commercial	1,836 sq.ft. 5,000 sq.ft.	762	97	37
14	The Collection – River Park	Retail Commercial	40,000 sq.ft.	1,708	38	148
15	Campus at Topa Towers	Restaurant Retail Commercial	8,350 sq.ft. 15,240 sq.ft.	1,062 675	90 22	82 41
16	Third Tower	Office	300,000 sq.ft.	3,308	468	447
17	Gold Coast Transit	Trip Generation from Penfield & Smith TIA		2,263	153	78
18	Audi of Oxnard	Auto Dealership	35,064 sq.ft.	939	76	97
19	Food 4 Less Center	Retail Commercial Gas Station	75,776 sq.ft. 14 pumps	3,236 2,360	73 170	281 194
			Total Trips	**21,965**	**1,427**	**2,066**

Source: ATE Revised Traffic and Circulation Study, Table 5, April 2018.

The data presented in Table 7 indicate that the approved and pending projects would generate a total of 21,965 average daily trips, 1,427 a.m. peak hour trips and 2,066 p.m. peak hour trips. The traffic generated by the approved and pending projects was distributed and assigned to the study area intersections based on the location of each project, recent traffic studies, existing traffic patterns observed in the study area as well as a general knowledge of the population, employment and commercial centers in Oxnard and surrounding Ventura County area. The Cumulative LOS for the study area intersections are shown in Table 8.

Table 8 Cumulative Peak Hour Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		ICU	LOS	ICU	LOS
Vineyard Avenue/Stroube Street	Signal	0.58	A	0.55	A
Vineyard Avenue/Rio School Lane	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Sycamore Street	STOP-Sign	1.0 sec.	A	1.0 sec.	A
Vineyard Avenue/Riverpark Boulevard	Signal	0.55	A	0.58	A
U.S. Highway 101 NB ramps/Vineyard Avenue	Signal	0.54	A	0.53	A
U.S. Highway 101 SB ramps/Vineyard Avenue	Signal	0.61	B	0.67	B
Vineyard Avenue/Esplanade Drive	Signal	0.52	A	0.66	B
Rose Avenue/Stroube Street	STOP-Sign	16.7 sec.	B	12.6 sec.	B
Rose Avenue/Auto Center Drive	Signal	0.61	B	0.83	D
U.S. Highway 101 NB ramps/Rose Avenue	Signal	0.45	A	0.53	A
U.S. Highway 101 SB ramps/Rose Avenue	Signal	0.61	B	0.74	C

Source: ATE Revised Traffic and Circulation Study, Table 6, April 2018.

The date presented in Table 8 indicate that the Rose Avenue/Auto Center Drive intersection would operate at LOS D during the p.m. peak hour period with the addition of Cumulative traffic volumes, which does not meet the City's LOS C standard. The Rose Avenue/Auto Center Drive intersection would operate at LOS B during the a.m. peak hour period and all other study intersections would operation at LOS C or better during the a.m. and p.m. peak hour periods with the addition of cumulative traffic volumes, meeting the City's LOS C standard.

Cumulative Plus Project Impacts

LOS was calculated for the study area intersections, assuming the Cumulative plus Project volumes. Table 9 shows the results of the calculations and identifies the impacts of the project, based on City of Oxnard thresholds.

Table 9 Cumulative plus Project Peak Hour Levels of Service

Intersection	Cumulative		Cumulative plus Project		Change	Project Impact Alone?
	ICU/Delay	LOS	ICU/Delay	LOS		
A.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.58	A	0.59	A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	0.00 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.6 sec.	A	0.6 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.55	A	0.56	A	0.01	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.54	A	0.55	A	0.01	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.61	B	0.62	B	0.00	No
Vineyard Avenue/Esplanade Drive	0.52	A	0.52	A	0.00	No
Rose Avenue/Stroube Street	16.7 sec.	C	19.1 sec.	C	2.4 sec.	No
Rose Avenue/Auto Center Drive	0.61	B	0.61	B	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.45	A	0.45	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.61	B	0.61	B	0.00	No
P.M. Peak Hour						
Vineyard Avenue/Stroube Street	0.55	A	0.57	A	0.02	No
Vineyard Avenue/Rio School Lane	1.0 sec.	A	1.0 sec.	A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	A	1.3	A	0.3	No
Vineyard Avenue/Riverpark Boulevard	0.58	A	0.59	A	0.01	No
U.S. Highway 101 NB ramps/Vineyard Avenue	0.53	A	0.55	A	0.02	No
U.S. Highway 101 SB ramps/Vineyard Avenue	0.67	B	0.68	B	0.01	No
Vineyard Avenue/Esplanade Drive	0.66	B	0.67	B	0.01	No
Rose Avenue/Stroube Street	12.6 sec.	B	13.5 sec.	B	0.9 sec.	No
Rose Avenue/Auto Center Drive	0.83	D	0.83	D	0.00	No
U.S. Highway 101 NB ramps/Rose Avenue	0.53	A	0.53	A	0.00	No
U.S. Highway 101 SB ramps/Rose Avenue	0.74	C	0.74	C	0.00	No

Source: ATE Revised Traffic and Circulation Study, Tables 7 and 8, April 2018.

The data presented in Table 9 indicate that the project contribution to traffic would not result in significant cumulative impacts to the study area intersections based on the City's traffic impact thresholds during the a.m. or the p.m. peak hour periods. Additionally, the project applicant would be required to pay the City's standard traffic mitigation fees to off-set any project contribution to cumulative traffic increases in the City.

2. According the County's Congestion Management Program (CMP; 2009), the minimum acceptable standard for traffic operations is LOS E. However, to avoid unfair penalization to local jurisdictions for existing congestion, CMP locations that currently operate in the LOS F range are considered acceptable.

The study area intersections along Vineyard Avenue and Rose Avenue are included in the County's CMP. These intersections would operate at LOS D or better with the addition of Cumulative plus Project peak hour volumes and, thus, would not exceed the CMP LOS E standard.

3. The project would not result in a change in air traffic patterns including either an increase in traffic levels or a change in location that results in a substantial safety risk. The project represents an infill project on a parcel that has been utilized for public school uses for a number of decades. Also, as discussed in the Land Use and Planning section, the project site is located outside of the Oxnard Airport SOI. Therefore, development on the project site would not result in substantial safety risks associated with the airport. This impact would be less than significant.

4,5. Rio School Lane would be vacated by the County of Ventura for the project, with current access and parking for adjoining properties, maintained. Access to the project site would be provided by three driveways from Vineyard Avenue. The project would also be designed to incorporate fire/emergency access and circulation throughout the proposed development. Turning radius within the proposed development would accommodate maneuverability on the site of large trucks and vehicles, including fire and solid waste collection trucks. The entrances and internal circulation routes would be designed and constructed to City of Oxnard design standards and include driveway aprons.

Construction of the project would involve typical construction equipment and project materials that would be delivered via trucks. Large flatbed trucks, dump trucks, and water trucks would travel on Vineyard Avenue, Rio Lane, and other roads in the area while delivering supplies and equipment. Streets used to access the project site are public streets designed for use by large trucks. Therefore, the project would not substantially increase hazards due to a design feature or incompatible uses. This impact would be less than significant.

6. According to the City's Bicycle and Pedestrian Master Plan (2011) and the Ventura County Regional Bikeway Wayfinding Plan (Ventura County Transportation Commission 2017), there are no existing bicycle routes adjacent to the project site. However, according to both plans, Class II Bicycle Lanes are proposed along Vineyard Avenue adjacent to the project site. Gold Coast Transit District provides bus and paratransit services in the City of Oxnard, with Route 15 transit stops along Vineyard Avenue in close proximity to the project site. Route 15 includes eastbound stops at Vineyard Avenue/Ventura Boulevard, approximately 600 feet south of the site, and Vineyard Avenue/Collins Street, approximately 1,000 feet north of the site, and a westbound stop at Vineyard Avenue/Olive Street, approximately 230 south of the site. The project would not preclude future implementation of the City's planned bicycle facilities along Vineyard Avenue or use of existing transit services. Additionally, the project would preserve the existing public sidewalk along Vineyard Avenue and would include various new pedestrian connectivity routes throughout the project site. Therefore, the project would not conflict with adopted policies, plans, or programs supporting alternative transportation. This impact would be less than significant.

Cumulative Impact Analysis: The project's contribution to cumulative impacts to transportation and circulation is evaluated under issue 1 and would be less than significant.

XVI. Utilities and Energy	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
With respect to Utilities:				
1. Would the project need new or expanded water supply entitlements that are not anticipated in the current Urban Water Management Plan?	□	■	□	□
2. Would additional wastewater conveyance or treatment capacity be required to serve project demand and existing commitments?	□	□	■	□
3. Would the project generate solid waste that would exceed the permitted capacity of a landfill serving the City?	□	□	■	□
4. Would the project conflict with federal, state, or local statutes or regulations related to solid waste?	□	□	■	□
With respect to Energy:				
5. Would the project involve wasteful, inefficient, or unnecessary consumption of energy during project construction, operation, maintenance, and/or removal?	□	□	■	□
6. Would the project require additional energy facilities, the provision of which may have a significant effect on the environment?	□	□	■	□
7. Would the project be inconsistent with existing energy standards?	□	□	■	□
8. Would the project preempt future energy development or future energy conservation, or inhibit the future use of renewable energy or energy storage?	□	□	■	□

A Wet Utility Preliminary Investigation was prepared by Jensen Design & Survey, Inc. in August 2017 and revised through August 6, 2018 to assess existing and proposed water usage and sewer loading associated with the project. A Domestic Water Supply and Demand memorandum was also prepared by Jensen Design & Survey, Inc. in April 2019 to provide an updated analysis of projected water demand for the project, and the proposed transfer of pumping rights to the City of Oxnard from active Rio School District groundwater wells. These reports are included in Appendix I of this Initial Study. The Wet Utility Preliminary Investigation determined that operation of the former El Rio Elementary School on the project site resulted in a historical sewer loading of 12,470 gallons per day (GPD). Past water consumption for the former El Rio Elementary School is documented by allocations by the Fox Canyon Groundwater Management Agency (FCGWMA) to three separate wells that were operated by the Rio School District. This allocation was assigned to the well onsite (Well No. 02N22W22Q05S). According to the Wet Utility Preliminary Investigation, the FCGWMA existing allocation for this well is 42.676 acre-feet per year (AFY). This allocation is based on the historic allocation dating back to 1990, as adjusted by subsequent restrictions imposed by the FCGWMA – reviewed and explained in Section 3.0 of the Wet Utility Preliminary Investigation. According to the Domestic Water Supply and Demand memorandum, FCGWMA is in process of conducting hearings to adopt an Ordinance which will require well owners to reduce groundwater pumping and reduce transferable allocation and pumping rights. Based on well pumping information provided by Rio School District and review by FCGWMA, pumping a maximum of 52.074 AFY will be allowed for development on the project site once the Ordinance is adopted. Currently, the well on Rio Urbana project site would have an allocation of 10.483 AFY per the proposed future Ordinance with the remaining amount of 41.591 AFY allocated to the other two wells to be held by the Rio School District.

The Wet Utility Preliminary Investigation determined that the proposed development would result in sewer loading of 45,717 GPD. The Domestic Water Supply and Demand memorandum determined that the proposed development would result in water demand of 40.399 AFY. This equates to a net difference, or increase of 33,247 GPD of sewer loading demand and decrease of 2.277 AFY in water demand, from existing to proposed conditions.

1. Impacts to water supply

<u>a. Water System and Sources</u>

The discussion below provides a brief summary of the current sources of water used in the City of Oxnard and the various government agencies and regulatory systems that control those sources. Much of the information in this discussion is based on the City of Oxnard UWMP (prepared in July 2016 and updated January 19, 2018). Documents or codes and ordinance adopted by other agencies are cited as necessary. With respect to the water demands of the proposed project itself, a Wet Utility Preliminary Investigation was prepared by Jensen Design & Survey, Inc. in August 2017, and then updated in August 6, 2018, to assess existing and proposed water usage and sewer loading associated with the project. The updated version of the report is included in Appendix I of this document. That investigation identifies the existing allocation of groundwater to the Rio School site, as well as a projection of the water demand of the proposed development and the potential for reclaimed water use in the development. The earlier version of the report also provided estimates of actual past water use on the property. The Wet Utility Preliminary Investigation also discusses sewer service, which is the topic in Issue 2 below.

The City of Oxnard provides potable water service to the existing El Rio School District facilities on the project site, even though the land is within the unincorporated area of Ventura County, outside of the existing City limits. This water service is limited to the existing storage and maintenance uses at the school district facilities, and the property will have to be annexed to the City in order for the City to provide water for the proposed development. The following paragraphs describe the water supply of the City of Oxnard.

As of 2015, the total volume of potable water distributed by the City of Oxnard to its service area was approximately 25,806 acre-feet per year (AFY).The City uses three sources of water to make up it system supply, as described in the Oxnard UWMP (Oxnard January 19, 2018:Sections 4 and 6) and summarized as follows:

- **Imported water purchased from the Calleguas Municipal Water District (CMWD)**. Surface water imported from CMWD constitutes about 36 percent of the City water supply or 8,059 AFY in 2016. CMWD obtains the vast majority of its water (about 90,000 AFY) from the Metropolitan Water District of Southern California (MWD or Metropolitan). CMWD also participates in aquifer storage and recovery projects and other projects to recover and reclaim water, but these comprise less than 5,000 AFY (CMWD UWMP June 2016:Sections 4 and 6). The larger MWD system and the CMWD system on the regional level provide a reliable water source and an administrative structure for the management of surface water. There are, however, several constraints to this system (CMWD UWMP June 2016:Section 7.1). These include:
  - Increasing demands throughout California
  - Potential for damage to SWP system and interruption of supply due to earthquake
  - Increased demands for water to support environmental resources in San Joaquin Delta
  - Drought
  - Climate Change leading to increased variability in supply
  - Need to offset historic overdraft of groundwater

  For these reasons, an increase in water supply directly from CMWD is not likely in the future without an increase in water resources available from the larger State Water Project, through MWD.

- **Groundwater purchased from the United Water Conservation District (UWCD)**, The UWCD provides about 32 percent of the City supply (7,329 AFY in 2016). UWCD obtains water from the Santa Clara River, and diverts it to spreading basins to help replenish groundwater within the Oxnard Plain. UWCD is within, and subject to the regulations of, FCGWMA, introduced in Section IX above, Hydrology and Groundwater.

- **Groundwater pumped from a system of City-owned wells** The City of Oxnard owns 10 groundwater wells throughout the Oxnard Plain, and operates six blending stations within the City. Groundwater from City-owned wells is blended at six of these stations. These City-owned wells supply about 32 percent of the potable water distributed by the City (7,186 AFY in 2016).

As with the UWCD and all other groundwater users, the City of Oxnard is subject to the monitoring and allocation requirements of the FCGWMA to help achieve and maintain sustainable use of the groundwater resources in the region.

Other programs within the City provide additional, although smaller, volumes of water. These include the Advanced Water Purification Facility (AWPF), which is part of the City's wastewater treatment system and uses Reverse Osmosis technology to produce treated wastewater that can be recycled for irrigation and other uses to offset the demand for potable water. The Calleguas Municipal Water District (discussed above) participates in this program by conveying treated wastewater from the City of Oxnard AWPF to agricultural customers for irrigation in lieu of groundwater pumping (CMWD UWMP, June 2016:Section 6.5). As of 2015 the AWPF has the capability to produce about 7,000 AFY. This effort is part of the City's Groundwater Recovery Enhancement and Treatment (GREAT) program. In coordination with other service providers in the region (including Pleasant Valley County Water District, Port Hueneme Water Agency, and UWCD, the GREAT program is a regional effort that will assist in aquifer restoration and in achieving the groundwater allocation restrictions imposed by the FCGWMA.

Another component of the City's GREAT program is its desalinization plant, or Desalter #1. This plant treats brackish groundwater, and works in conjunction with the AWPF described above and the City's groundwater injection well as part of the larger aquifer or groundwater management system. At the present time, expansion of the desalinization program to treat seawater is not considered financially feasible.

b. Applicable Regulations and Policies

The complex water supply and delivery network summarized above is regulated through a hierarchy of codes, ordinances, plans, and agreements adopted at the state, regional, and local level. The following paragraphs summarize the applicable requirements and procedures that apply to the proposed development.

California Requirements. The California Sustainable Groundwater Management Act in 2014 resulted in the designation of the Oxnard Plain as a "high priority" groundwater basin, within which local governments and agencies are required to prepare Groundwater Sustainability Plans. Any General Plan amendments or similar actions must consider compliance with applicable Groundwater Sustainability Plan (Government Code Section 65350.5). In this region, the FCGWMA was designated as the Groundwater Management Agency.

FCGWMA Requirements. Since 1982, FCGWMA has overseen monitoring and allocation of groundwater resources in the region as part of its original responsibility and authority. These actions include the development of strict groundwater monitoring requirements, preparation of a *Groundwater Management Plan* updated in 2007 (FCGWMA May 2007), several ordinances that were consolidated and updated into a single Ordinance Code in January 2015, various annual reports, and Emergency Ordinance E. The latter ordinance was in response to the state declaration of drought in 2014, and established a Temporary Extraction Allowance for Municipal and Industrial users, such as the City of Oxnard, limited to 80 percent of their annual average use between 2003 and 2012. Ordinance E also imposes additional efficiency requirements for agricultural users. Since its designation as the Groundwater Management Agency, FCGWMA has released a draft *Sustainable Groundwater Plan for the Oxnard Plain* (FCGWMA November 2017). This draft plan describes the coordinated plans and programs in the City of Oxnard (FCGWMA November 2017:Section 1.2.6.2, pages 1-28 and 1-29)—including the City's "net-zero" policy regarding water use by new development--and would further reduce groundwater allocations to 50 percent compared to the historical averages. The goals of the plan are to restore the groundwater resources in the region, and specifically to maintain groundwater elevations near the coast for the management of seawater intrusion (page 1-30).

CMWD Requirements. The Calleguas Municipal Water District also operates under an UWMP, and also has a district Code that defines its service area and annexation requirements. All groundwater use and any reclamation and recharge programs within CMWD also occur under the umbrella of the FCGWMA plans and requirements described above. The project site is not within the CMWD but would join the CMWD through annexation to the City of Oxnard. For this reason, CMWD is listed in among other agencies that must review and approve annexation (page iv of this IS-MND). The following paragraphs, provided by CMWD, describe the district and their requirements.

> Land on which the proposed projects will be built is not presently within the boundaries of Calleguas Municipal Water District or Metropolitan Water District of Southern California. The Administrative Codes of both agencies state that water delivered by their systems may be used only within their respective service area boundaries. Calleguas purchases all of its potable water from Metropolitan. Metropolitan supplies water from the Colorado River and the State Water Project for municipal, industrial and agricultural uses within its service area. Annexation to Calleguas and Metropolitan of the land under consideration is necessary to allow annexation to and water service by the City of Oxnard.
>
> Annexation procedures for Metropolitan are defined in Section 3500 of the Metropolitan Water District Act, which are also observed by Calleguas. In addition, annexations to Calleguas are subject to Part 8 of Calleguas' Administrative Code. Annexation is also subject to approval by the Ventura Local Agency Formation Commission and any terms and conditions the Commission may apply. Pursuant to Section 56017 of Part 1, Chapter 2, of the Cortese/Knox/Hertzberg Local Government Reorganization Act of 2000, annexation means the annexation, inclusion, attachment, or addition of territory to a city or district. This action will require amendment of the Spheres of Influence of Calleguas and Metropolitan.
>
> Calleguas and Metropolitan have in place Water Standby Charges. In the course of annexation, such charges will be fixed for the subject property. Water Standby Charges are assessed to pay for the benefits that properties receive from the projects and facilities provided by Calleguas and Metropolitan, whether or not they receive water from Calleguas and Metropolitan.
>
> This administrative change in water service areas will have a less than significant impact.

City of Oxnard Requirements. The City of Oxnard Municipal Code Chapter 22 addresses water resources in all respects. As a general summary, all applicants are responsible for making arrangements for any allocation adjustments or transfers of water rights to the City, as set forth in Article VI, Section 22-100 Water Rights and Groundwater Pumping Allocations:

> …the land owner …shall transfer or assign to the city any water rights, water wells, mains, easements, and water production equipment or facilities which may be appurtenant to such property or which may be used exclusively thereon as follows:
>
> …Any and all applicable groundwater pumping allocations and/or credits attributable to the property to be served by the city and available from the Fox Canyon Groundwater Management Agency, shall be transferred to the city by the property owner. The property owner shall be responsible for all fees and charges necessary to obtain the approval of the transfer of pumping allocations and/or credits from the Fox Canyon Groundwater Management Agency to the city;

The Rio Urbana development would be subject to other municipal code provisions that identify and prohibit wasteful use of water (Article VIII, beginning at Section 22-135)) and require conformance with water conservation measures that exist or may be declared by the City in the Future (Article IX, beginning at Section 22-150). These measures would reduce water consumption internally, but would not eliminate or necessarily guarantee a complete offset any new water use caused by the project. Therefore, additional measures would be necessary to mitigate the impact of increased water use by the project. These are discussed below under mitigation. Specifically, Mitigation W-1 addresses the provision of groundwater allocation to the City within the FCGWMA to provide for the project.

c. Project Effects and Mitigation

The Domestic Water Supply and Demand memorandum determined that the water demand for all proposed uses in the Rio Urbana project would amount to 40.399 acre-feet per year (AFY). As noted above, this memorandum also estimated that the maximum pumping allowed for the three active Rio School District wells under the current FCGWMA requirements is 52.074AFY. Therefore, without any offsets, or other mitigation measures, this estimated demand would be consistent with the City of Oxnard “net-zero” policy for water use by new development and would not be considered a significant impact.

In order to provide the necessary water supply to the City for the project, the Rio School District must arrange for an allocation and transfer of sufficient water rights to the City, consistent with the requirements and procedures of the FCGWMA.

Mitigation W-1. The applicant shall provide for the allocation of groundwater pumping rights sufficient to serve the development (40.399 acre feet per year) from the Fox Canyon Groundwater Management Agency to the City of Oxnard, consistent with the ordinances and requirements of the two agencies, prior to recording the final map for the project.

Implementation of this mitigation will ensure that the project complies with the “net-zero” water service policy in the City. Thus the potential impact on water service would be less than significant.

2. The project site is located in County Service Area (CSA) No. 34, in an area informally referred to as the El Rio community. On August 12, 1999, the Regional Water Quality Control Board (RWQCB) amended the Water Quality Control Basin Plan for the Los Angeles Region and prohibited the use of septic systems in the Oxnard Forebay, including the El Rio area. CSA No. 34 was formed in December 2005 to provide administration, operations, and maintenance of a new sewer system in the area to bring the area in compliance with the State septic system prohibition. CSA No. 34 planned and constructed a sewer collection system in phases as funding was secured. All phases of the project were completed in April 2011. Phases 1 and 5D of the Sewer System Project established sewer lines adjacent to the project sites southern, western, and northern boundaries. Waste water discharged into these lines is sent to the City's Wastewater Treatment Plant for treatment and disposal. The project site is also included in the boundary area of the City of Oxnard's Wastewater Master Plan Update (September 2008). Land use projections used for creating the Wastewater Master Plan were based on the City's adopted 2020 General Plan in which the project site was identified as a Redevelopment Area.

   Existing development on the project site currently disposes of wastewater into the existing sewer line in Rio School Lane via pump and force main. This sewer line in Rio School Lane enters the 10-inch trunk sewer line in Vineyard Avenue at a manhole near the intersection of the two roadways. There was inconclusive data in the City's Wastewater Master Plan (2008) and the City's Integrated Waste Master Plan (2015) to determine the sewer capacity of the 10-inch trunk sewer line in Vineyard Avenue at the time of project submittal. Response 3.9 in Attachment 1 provides updated information regarding sewer capacity in this line. Based on updated information in the revised 2018 Wet Utility Memo prepared for the project, the City determined that the sewer transmission capacity in this line was adequate to serve the project. The proposed development on the site would connect to the existing sewer system line in Rio School Lane. Although the project would increase the load on the sewer system, the applicant would be required to pay the City-required and CSA No. 34-required Sewer Connection Fees (SCF) and service charges that finance the operation and maintenance of the sewer system for all properties in the El Rio area. With payment of these fees, the project would not result in a significant adverse effect on the system and this impact would be less than significant.

3, 4. According to the City's 2017 CEQA Guidelines, the City's Environmental Resources Division oversees solid waste programs in the City, including residential waste collection and recycling programs. Commercial facilities in the City contract with private waste haulers. The City operates the Del Norte Regional Recycling and Transfer Station (also referred to as the Materials Recovery Facility [MRF]), which serves as the hub of the City's solid waste management system and serves as a resource for rest of the County. Solid waste that is incapable of being recycled is hauled to other landfill sites in Ventura County, primarily the Toland Road Landfill. As of 2017, the City meets or exceeds state mandated rates for diversion of solid waste from landfills via waste reduction, reuse, and recycling.

Solid waste generated from project demolition and construction activities would be segregated for recycling, where possible. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at the Toland Road

Landfill. According to the CalEEMod output generated for the Air Quality Study for the project (Appendix A), the project would generate approximately 49.1 metric tons of solid waste per year, or 0.13 tons of waste per day. In January 2016, the total remaining capacity of the Toland Road Landfill was approximately 10.6 million cubic yards and the facility is permitted to accept up to 1,500 tons of solid waste per day (CalRecycle 2018). Using a conservative assumption that all project waste would be diverted to the landfill rather than recycled, the project would contribute less than 0.01 percent of the daily permitted capacity to the landfill. With the recycling programs in place in the City and required compliance with all federal, state, and local regulations regarding solid waste disposal, the projects contribution to the landfill would be even less. Therefore, solid waste generated by the project would have a less than significant impact on the permitted remaining capacity of the landfill.

5-8. The City's standard conditions of approval and application of uniformly applied development standards require compliance with the California Green Building Code which includes energy efficiency standards. The project would involve typical to low consumption of energy during project construction, operation, and maintenance. As descried in the GHG Study (Appendix D) for the project, the project would incorporate solar panels on the proposed office building and would implement various features consistent with the latest requirements of the 2016 California Green Building Code including, energy-efficient lighting, installation of low-flow appliances, and water conservation. Therefore, the project would not require additional energy facilities, would be consistent with existing energy standards, and would not inhibit the future use of renewable energy or energy storage. Impacts would be less than significant.

Cumulative Impact Analysis: Utilities and services were analyzed by the 2030 General Plan EIR and found to be less than significant with implementation of uniformly applied development policies and regulations.

XVII. CUMULATIVE IMPACTS	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would cumulative impact of the project in combination with the impacts of past, present, and reasonably foreseeable future projects exceed a City significance threshold?	☐	■	☐	☐
2. If so, would the project's contribution to the significant cumulative impact be cumulatively considerable?	☐	■	☐	☐

1, 2. The proposed project would result in less than significant impacts with implementation of mitigation measures BIO-1, CUL-2, N-1(a), N-1(b), and N-2 provided herein. The proposed project is an urban infill project in an area planned for development under the 2030 General Plan. Most of the surrounding properties are currently developed, and it is therefore expected that project implementation would result in less than significant cumulative impacts. Cumulative citywide significant impacts were documented in the 2030 General Plan Program EIR and overriding considerations were adopted in 2011.

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PLANNING DIVISION
214 SOUTH C STREET
OXNARD, CALIFORNIA 93030

CITY OF
OXNARD
CALIFORNIA

NOTICE OF INTENT
TO ADOPT MITIGATED NEGATIVE DECLARATION NO. 2017-04

The City of Oxnard Planning Division has reviewed an application on the following proposal:

PLANNING AND ZONING (PZ) PERMIT NOS. 17-610-01 (Annexation); 17-620-01 (General Plan Amendment), 17-560-01 (Pre-Zoning), 17-300-03 (Tentative Subdivision Map for Tract No. 5998), 17-500-05 (Special Use Permit – Office), 17-500-13 (Special Use Permit - Residential), and 17-535-02 (Density Bonus): Request to annex the 10.5 acre former school parcel located at 2714 E. Vineyard Avenue (APN 145-0-232-010) to the City of Oxnard with 2030 General Plan land use and zoning designations of General Commercial, and demolish five structures, paving, vegetation, and a water well in order to subdivide and develop 1.12 acres (Parcel 1) with a two-story 15,000 square foot (sf) office building with 61 parking spaces and develop 9.1 acres (Parcel 2) with 167 one to three-bedroom attached apartment condominiums (17 low income affordable units) in eight, three-story (38 feet), structures; fitness center; recreation pavilion; four refuse structures; 169 resident garages; 163 resident parking spaces; 99 guest parking spaces; storm water retention and treatment facilities; on-site utilities and off-site connections; landscaping; seven play areas with a tot lot; and a dog run. The project includes widening of Vineyard Avenue by 23 ft.; relocating four SCE 66kV transmission poles; and maintaining parking and access to abutting properties. A Density Bonus is required for three additional units and reduction in qualifying interior yard space from 30% to 24% of the parcel area. Filed by Rio School District, 2500 E. Vineyard Ave., Oxnard, CA and The Pacific Companies, 430 E. State Street #100, Eagle, Idaho.

In accordance with Section 15070 of the California Code of Regulations, the Planning Division of the City of Oxnard has determined that with the proposed mitigations, there is no substantial evidence that the proposed project would have a significant effect on the environment, and that a mitigated negative declaration may be adopted.

The draft environmental document may be reviewed at the following City webpage:
https://www.oxnard.org/city-department/community-development/planning/environmental-documents/.

The draft environmental document is also available for review at the Oxnard Planning Division office (214 South "C" Street, 8:00 a.m. to 6:00 p.m., Monday through Thursday and 9:00 a.m. to 5:00 p.m. on alternative Fridays), Oxnard Main Library, 251 South "A" Street (9:00 a.m. to 8:00 p.m., Monday through Thursday, and 9:00 a.m. to 5:30 p.m. on Saturday), and at the Albert H. Soliz Library, 2820 Jourdan Street, El Rio (call for hours of operation, 805-485-4515).

The 30-day public review period begins on July 19, 2019 and ends on August 19, 2019.

All comments should be provided in writing and received before 5:00 p.m. on Monday, August 19, 2019. Inquiries should be directed to Chris Williamson, Consultant Planner, at (805) 385-8156, or by e-mail to Chris.Williamson@oxnard.org. Written comments may be faxed to (805) 385-7417 or mailed to "City of Oxnard, Planning Division, 214 South C Street, Oxnard, CA 93030 - Attn: Chris Williamson."

7.18.19

Date

Isidro Figueroa, Acting Planning Manager

cc: - Applicant
- County Clerk
- CEQA Distribution List
- Property Owners within 300 feet

Mitigation Monitoring and Reporting Plan (MMRP)

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
Biological Resources	Potentially Significant	**BIO-1** Nesting Bird and Raptor Survey and Avoidance. In the event that the proposed action is planned to occur within the general bird nesting season, a pre-construction nesting bird survey shall be conducted by a qualified biologist. The nesting season is generally considered February 1 through August 31, with a peak from March to June; however, these dates vary by year depending on prey availability, weather, and other factors. In the event an active bird is observed in the habitats to be removed or in other habitats within 100 feet for songbirds and 500 feet for raptors of the construction work areas, all construction work in the suitable habitat or within 100 feet/500 feet of the suitable habitat must be delayed until after September 1st, or surveys must be continued in order to locate any nests. If an active nest is found, clearing and construction within 100 feet/500 feet of the nest shall be postponed until the nest is vacated and juveniles have fledged, and until there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest site shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the ecological sensitivity of the area.	Less Than Significant	Community Development
Cultural and Tribal Cultural Resources	Potentially Significant	**CUL-2** A qualified archaeologist shall monitor all project-related ground-disturbing activities. In the unlikely event that potentially significant archaeological materials are encountered during construction, the applicant must comply with State regulations and City's standard condition of approval for handling such resources.	Less Than Significant	Community Development
Noise	Potentially Significant	**N-1(a)** Building Material Guidelines. The living areas for all residences in the project, including those adjacent to Vineyard Avenue, shall be constructed to include sufficient noise attenuation to reduce interior noise levels to a CNEL of 45 dBA, as required by California building standards. For the estimated exterior CNEL values of 65 dBA, this performance standard requires an exterior-to interior noise reduction of approximately 20 dBA. This noise reduction is	Less Than Significant	Community Development

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
		routinely achieved in residential construction that is consistent with current California energy conservation standards, and involves measures such as exterior stucco walls with a Sound Transmission Class (STC) rating of 45, double-paned windows with an STC of 37, solid core exterior doors. Building permit applications shall include documentation that the interior standard of 45 dBA CNEL will be achieved through a combination of these or other measures. **N-1(b)** Building Design. The living areas shall contain forced air ventilation. All duct work for ventilation shall include noise louvers at the exterior outlet and/or duct outlets shall be directed either opposite to or perpendicular to Vineyard Avenue. Upper level patio/deck areas shall not be positioned facing the Vineyard Avenue for residences along the western site boundary <u>without additional mitigation or verification that exterior CNEL values would meet the City noise standard of 65 dBA as shown in a Noise Study reviewed and approved by the Planning Manager or designee.</u>		
Noise	Potentially Significant	**N-2** Construction Noise Levels. For all construction-related activities, noise-attenuation techniques shall be employed as needed to ensure that noise remains as low as possible during construction, specifically at REC-1 through REC-3. The following noise-attenuation techniques shall be incorporated into contract specifications to reduce the impact of construction noise: • Ensure that construction equipment is properly muffled according to industry standards and in good working condition. • Place noise-generating construction equipment and locate construction-staging areas away from sensitive uses, where feasible. • Schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses. • Implement noise attenuation measures to the extent feasible, which may include but are not limited to temporary noise barriers or noise blankets around stationary construction noise sources.	Less Than Significant	Community Development

Environmental Impact	Significance Before Mitigation	Recommended Mitigation Measure	Significance After Mitigation	Responsible Party
		• Use electric air compressors and similar power tools rather than diesel equipment, where feasible. • All stationary construction equipment (e.g., air compressors, generators, impact wrenches, etc.) shall be operated as far away from residential uses as possible and shall be shielded with temporary sound barriers, sound aprons, or sound skins. • Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. • Clearly post construction hours, allowable workdays, and the phone number of the job superintendent at all construction entrances to allow for surrounding owners to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.		
Utilities and Energy	Potentially Significant	**W-1** The applicant shall provide for the allocation of groundwater pumping rights sufficient to serve the development (40.399 acre feet per year) from the Fox Canyon Groundwater Management Agency to the City of Oxnard, consistent with the ordinances and requirements of the two agencies, prior to recording the final map for the project.	Less Than Significant	Water Division

Appendix A

Air Quality Study

Air Quality Study

for the

Rio Urbana Project

Prepared for:

The Pacific West Communities
430 E. State Street, Suite 100
Eagle, Idaho 83616

Prepared by:

Meridian Consultants, LLC
910 Hampshire Road, Suite V
Westlake Village, CA 91361

August 2017

Table of Contents

Figures

Tables

EXECUTIVE SUMMARY

This Air Quality Study assesses and discusses the potential air quality impacts that may occur with the implementation of the Rio Urbana Project ("Project"), located in Oxnard, California. The analysis estimates future emission levels at surrounding land uses resulting from construction and operation of the Project, and identifies the potential for significant impacts. An evaluation of the Project's contribution to potential cumulative air quality impacts is also provided. Air quality worksheets are provided in the Appendix.

This report summarizes the potential for the Project to conflict with an applicable air quality plan, violate an air quality standard or threshold, result in a cumulatively net increase of criteria pollutant emissions, expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors affecting a substantial number of people. The findings of the analyses are as follows:

- The Project would be consistent with air quality policies set forth by the Ventura County Air Pollution Control District (VCAPCD) and the Southern California Association of Governments (SCAG).
- Construction emissions would not contribute to long-term emissions that would increase the carcinogenic effects on sensitive receptors. Emissions associated with operation would not exceed the VCAPCD-recommended thresholds. Thus, the Project would not result in a regional violation of applicable air quality standards or jeopardize the timely attainment of such standards in the South Central Coast Air Basin ("Basin").
- Operation of the Project will not employ toxic air contaminant (TAC)-emitting processes. No substantial pollutant concentration would be generated.
- Project construction and operations would not result in significant levels of odors.
- The Project would result in less than significant cumulative air quality impacts during construction and operation of the Project.

INTRODUCTION

The purpose of this Air Quality Study is to assess and discuss the potential air quality impacts that may occur with the implementation of the Rio Urbana Project, located in Oxnard, California. The regional location of the proposed Project is depicted in **Figure 1, Regional Location Map.** The Project site is located to the northeast of Ventura Freeway (US Route 101 [US 101]), within the VCAPCD. Furthermore, the Project site is located along E. Vineyard Avenue and bounded by Rio School Lane to the north (refer to **Figure 2, Project Site Aerial**). This report includes an analysis of estimated emissions of criteria air pollutants (CAPs) that will be generated by the Project during construction and operation.

Project Description

The Project site consists of approximately 10.24 acres of developed land with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that was formerly the El Rio Elementary School Campus. The school has been closed since 2008 and is currently utilized for storage and as a dispatch for school buses. The proposed Project would include demolition of the existing uses to allow the construction of a new mixed-use development that includes 182 condominium residential units and a 15,000-square-foot office building containing the Rio School District administrative offices.

The surrounding environment includes residential development to the north and west, commercial development to the south, and industrial uses to the east. Regional access to the Project site is provided by US 101 to the south.

AIR QUALITY

Air pollutant emissions within the region are primarily generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack at a facility. Area sources are widely distributed and can include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, parking lots, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on road or off road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles. The main source of pollutants near the Project site area includes mobile emissions generated from on-road vehicles. Traffic-congested roadways and intersections have the potential to generate localized high levels of carbon monoxide (CO). Localized areas where ambient concentrations exceed state and/or federal standards are termed CO “hot spots.”

The US Environmental Protection Agency (USEPA) is the federal agency responsible for setting the National Ambient Air Quality Standards (NAAQS). Air quality of a region is considered to be in attainment of the NAAQS if the measured ambient air pollutant levels are not exceeded more than once per year, except for levels of ozone, particulate matter (PM10), and fine particulate matter (PM2.5), and those based on annual averages or arithmetic mean. The NAAQS for ozone, PM10, and PM2.5 are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The California Air Resources Board (CARB) is the state agency responsible for setting the California Ambient Air Quality Standards (CAAQS). Air quality of a region is considered to be in attainment of the CAAQS if the measured ambient air pollutant levels for ozone (O3), CO, nitrogen dioxide (NO2), sulfur dioxide (SO2), PM10, PM2.5, and lead (Pb) are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive 3-year period.

A brief description of the criteria pollutants is provided below.

- **Ozone** is a gas formed when volatile organic compounds (VOCs) and oxides of nitrogen (NOx), both byproducts of internal combustion engine exhaust and other sources, undergo slow photochemical reactions in the presence of sunlight. O3 concentrations are generally highest during the summer months, when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

- **Volatile Organic Compounds** are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Adverse effects on human health are not caused directly by VOCs, but rather by reactions of VOCs to form secondary air pollutants, including O3. VOCs are also referred to as reactive organic compounds (ROCs) or reactive organic gases (ROGs). VOCs themselves are not “criteria” pollutants; however, they contribute to the formation of O3.

- **Nitrogen Dioxide** is a reddish-brown, highly reactive gas that forms in the ambient air through the oxidation of nitric oxide (NO). NO2 is also a byproduct of fuel combustion. The principle form of NO2 produced by combustion is NO, but NO reacts quickly to form NO2, creating the mixture of NO and NO2 referred to as NOx. NO2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NOx is only potentially irritating. NO2 absorbs blue light, the result of which is a brownish-red cast to the atmosphere and reduced visibility.

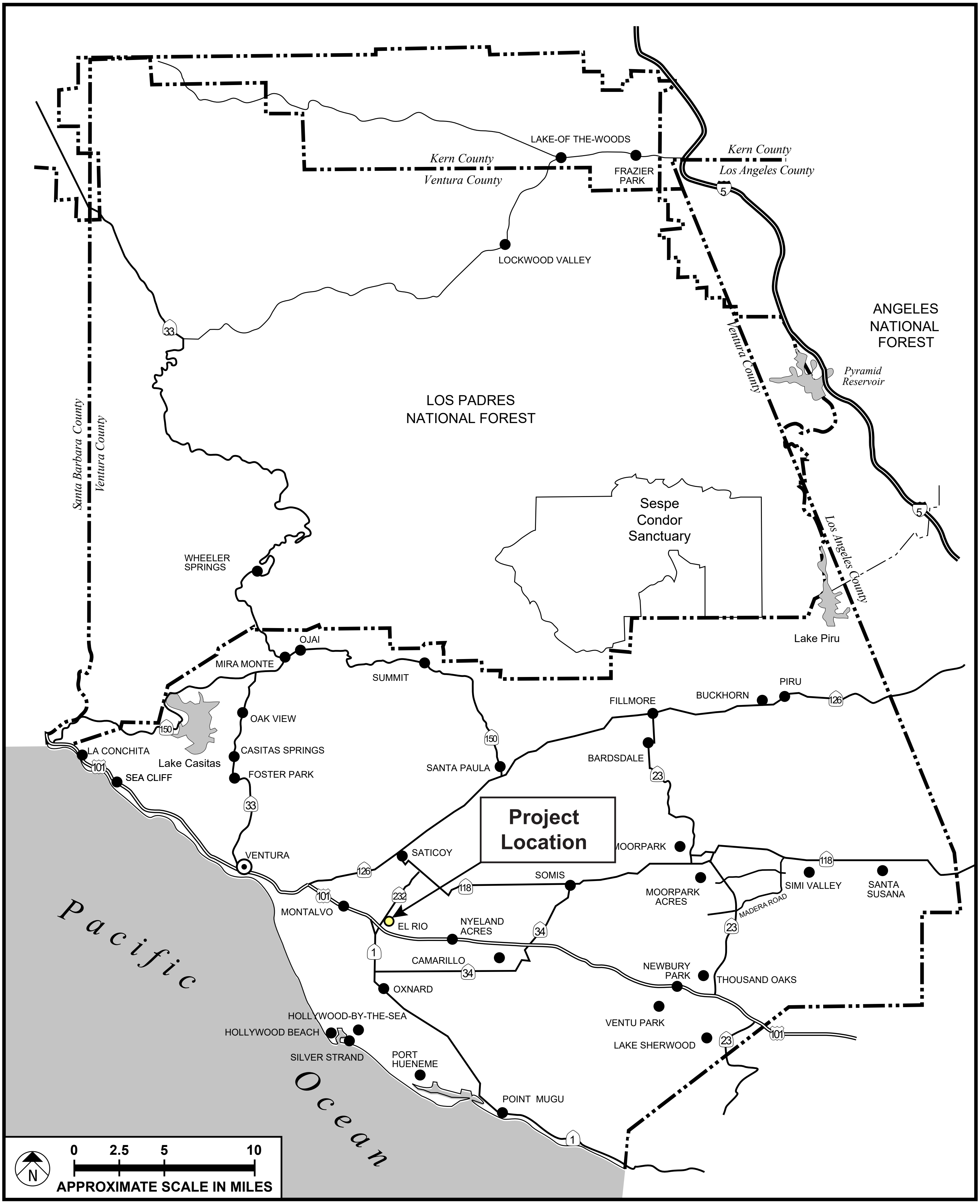
- **Carbon Monoxide** is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike O3, and motor vehicles operating at slow speeds are the primary source of CO in the Basin, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

- **Sulfur dioxide** is a colorless, highly irritating gas or liquid. It enters the atmosphere as a pollutant mainly from burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfates (SO4).
- **Respirable Particulate Matter** consists of extremely small, suspended particles or droplets 10 microns or smaller in diameter. Some sources of PM10, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM10 is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- **Fine Particulate Matter** refers to particulate matter that is 2.5 micrometers or smaller in size. The sources of PM2.5 include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as sulfur dioxide, NOx, and VOCs are transformed in the air by chemical reactions.
- **Lead** occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the Basin. The use of leaded gasoline is no longer permitted for on-road motor vehicles; thus, most such combustion emissions are associated with off-road vehicles, such as racecars, that use leaded gasoline. Other sources of Pb include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters.

AMBIENT AIR QUALITY

Ventura County is designated under the federal standard as nonattainment for 1-hour and 8-hour ozone. State nonattainment designations are in effect for ozone, PM2.5, and PM10 within Ventura County.

To identify ambient concentrations of criteria pollutants, the VCAPCD operates eight air quality monitoring stations throughout the County. The monitoring station is located closest to the proposed project and most representative of air quality within the City of Oxnard is the El Rio Monitoring station, located approximately 1.75 miles to the north of the Project site. This station currently monitoring the ambient concentration levels of O3, NO2, and particulate matters (PM10 and PM2.5.) **Table 1, Ambient Air Quality at the El Rio Monitoring Station**, summarizes the annual air quality data for 2014–2016 in the local airshed for the criteria pollutants of greatest concern in Ventura County.



SOURCE: Meridian Consultants, LLC - August 2017

FIGURE 1

Meridian Consultants

Regional Location Map

174-001-17

SOURCE: Google Earth - 2017

FIGURE **2**

Meridian Consultants

Project Site Aerial

174-001-17

Table 1
Ambient Air Quality at the El Rio Monitoring Station

Air Pollutant	Average Time (Units)	2014	2015	2016
Ozone (O3)	State Max 1 hour (ppm)	0.112	0.070	0.084
	Days > CAAQS threshold (0.09 ppm)	1	0	0
	National Max 8 hour (ppm)	0.077	0.066	0.071
	Days > NAAQS threshold (0.075 ppm)	2	0	1
	State Max 8 hour (ppm)	0.077	0.066	0.071
	Days > CAAQS threshold (0.07 ppm)	2	0	1
Nitrogen dioxide (NO2)	National Max 1 hour (ppm)	0.039	0.036	0.033
	Days > NAAQS threshold (0.1 ppm)	0	0	0
	State Max 1 hour (ppm)	0.039	0.036	0.033
	Days > CAAQS threshold (0.18 ppm)	0	0	0
Respirable particulate matter (PM10)	National Max (μg/m^3)	51.1	93.3	105.0
	National Annual Average (μg/m^3)	18.1	25.8	24.6
	Days > NAAQS threshold (150 μg/m^3)	0	0	0
	State Max (μg/m^3)	115.3	92.0	101.6
	State Annual Average (μg/m^3)	27.4	25.6	ND
	Days > CAAQS threshold (50 μg/m^3)	7	6	14
Fine particulate matter (PM2.5)	National Max (μg/m^3)	22.2	25.5	22.7
	National Annual Average (μg/m^3)	9.3	9.6	8.1
	Days > NAAQS threshold (35 μg/m^3)	0	0	0
	State Max (μg/m^3)	22.2	25.5	22.7
	State Annual Average (μg/m^3)	9.4	9.7	8.2

____
Source: California Air Resources Board (CARB), "Historical Data by Year," El Rio-Rio Mesa School #2.
Notes: > = exceed; CAAQS = California Ambient Air Quality Standards; max = maximum; mean = annual arithmetic mean; μg/m^3 = micrograms per cubic meter; ND = no data; NAAQS = National Ambient Air Quality Standards; ppm = parts per million.

The attainment designations for the Basin are shown in **Table 2, Ventura County Attainment Status**. USEPA and CARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If here are inadequate or inconclusive data to make definitive attainment designation, they are considered "unclassified." Areas where air pollution persistently exceed the State or national ambient air quality standards are designated "nonattainment." Federal nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Ventura County is designated under the federal standard as nonattainment for 8-hour ozone. State nonattainment designations are in effect for ozone and PM10 within Ventura County.

Individuals who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. The VCAPCD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain on site for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities would be considered sensitive receptors for those purposes.

Table 2
Ventura County Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Unclassified/Attainment
PM10	Nonattainment	Unclassified
PM2.5	Attainment	Unclassified/Attainment

Source: CARB, Area Designations Maps/State and National, https://www.arb.ca.gov/desig/adm/adm.htm.

AIR QUALITY STANDARDS

Ventura County Air Pollution Control District

The VCAPCD is the agency principally responsible for comprehensive air pollution control in the Basin. As a regional agency, the VCAPCD works directly with SCAG, county transportation commissions, and local governments and cooperates actively with all federal and State government agencies. The VCAPCD develops rules and regulations to reduce emissions, protect public health and agriculture, and achieve and maintain State and federal air quality standards. In addition, the VCAPCD establishes permitting requirements for stationary sources, inspects emissions sources, and enforces such measures through educational programs or fines when necessary.

The VCAPCD is directly responsible for reducing emissions from stationary, area, and mobile sources. It has responded to this requirement by preparing a sequence of AQMPs. The most recent of these was the 2016 Ventura County Air Quality Management Plan ("2016 AQMP") adopted by the Governing Board of the VCAPCD in February 2017.[1] The 2016 AQMP is based on growth projections for Ventura County and

1 VCAPCD, *Final 2016 Ventura County Air Quality Management Plan* (adopted February 14, 2017).

subareas within the County that have been agreed to by both the County and the SCAG. As such, the 2016 AQMP presents Ventura County's (1) strategy to attain the 2008 federal 8-hour ozone standard; (2) attainment demonstration for the federal 8-hour ozone standard; and (3) reasonable further progress demonstration for the federal 8-hour ozone standard.

California Air Pollution Control Officers Association

In its January 2008 CEQA and Climate Change white paper, the California Air Pollution Control Officers Association (CAPCOA) identified a number of potential approaches for determining the significance of GHG emissions in CEQA documents. CAPCOA suggests making significance determinations on a case-by-case basis when no significance thresholds have been formally adopted by a lead agency. Although GHG emissions can be quantified, CARB, VCAPCD, and the City of Oxnard have yet to adopt project-level significance thresholds for GHG emissions that would be applicable to the Project. Assessing the significance of a project's contribution to cumulative global climate change involves (1) evaluating the project's sources of GHG emissions; and (2) considering project consistency with applicable emission reduction strategies and goals, such as those set forth by the lead agency or other regional or State agency.

Local and regional agencies and the State-recommended general policies and measures to minimize and reduce GHG emissions from land use development projects. Thus, if the Project were designed in accordance and not in conflict with applicable policies and measures, it would be consistent with the strategies and actions to reduce GHG emission.

METHODOLOGY

Significance Thresholds

To analyze Project-generated emissions, the VCAPCD's *Air Quality Assessment Guidelines* ("VPAPCD Guidelines") recommend significance thresholds for projects proposed in Ventura County. Under these guidelines, projects that generate more than 25 pounds per day (lb/day) of ROG or NOx are considered to individually and cumulatively jeopardize attainment of the federal O3 standard and thus have a significant adverse impact on air quality. The VCAPCD's 25 lb/day threshold for ROG and NOx do not apply to construction emissions because such emissions are not permanent. Nevertheless, for construction impacts, the VCAPCD recommends imposition of mitigation if emissions of either pollutant exceed 25 lb/day. The VCAPCD requires minimizing fugitive dust through various dust control measures as documented in Rule 55.

Air Quality Modeling

The emissions for the Project site were calculated according to the VCAPCD Guidelines and construction emission factors contained in the CARB-approved California Emissions Estimator Model (CalEEMod).

Operational emissions would be generated by both stationary and mobile sources as a result of normal day-to-day use of the proposed facilities after occupancy. Stationary emissions would be generated by the consumption of natural gas for space and water heating equipment. Mobile emissions would be generated by motor vehicles traveling to and from the Project site. The analysis of daily operational emissions has been prepared using the data and methodologies identified in the VCAPCD Guidelines and current motor vehicle emission factors in the CalEEMod model. CalEEMod is designed to model construction and operational emissions for land use development projects and allows for the input of project-specific information when it is known. The program contains default settings specific to the air district, air basin, or State level using approved vehicle emissions factors (EMFAC2014), established methodologies, and the latest survey data.

Data Summary

The Project's air emissions are reported in relation to the ambient concentrations of the six primary CAPs (ROGs, NOx, CO, SOx, PM10, and PM2.5) identified by the VCAPCD.

Assumptions

The following assumptions were made in the CalEEMod computer program:

Land Uses

Existing

- 44,637 square feet of building to be demolished
- 147,667 square feet of other surface (concrete, asphalt, awnings) to be demolished

Proposed

- 15,100-square-foot office building
- 182-unit condo/townhouse
- 463 parking spaces

Construction

Construction would occur over six phases beginning the first quarter of 2018: (1) demolition, which would last approximately 20 days; (2) site preparation, which would last approximately 3 days; (3) grading, which would last approximately 6 days; (4) building construction, which would last approximately 220 days; (5) architectural coating, which would last approximately 30 days; and (6) paving, which would last approximately 10 days.

Each phase of construction would result in vary levels of intensity and number of construction personnel. The construction workforce would consist of 13 worker trips per day and 875 total hauling trips during demolition; 8 worker trips per day during site preparation; 10 worker trips per day and 2,125 total hauling trips during grading; 214 worker trips per day and 54 vendor trips per day during building construction; 43 worker trips per day during architectural coating; and 15 worker trips per day during paving.

AIR QUALITY MODELING RESULTS

Construction

Construction emissions would be temporary in nature and would occur within the Project area. The primary source of ROG, NOx, CO, and SOx emissions is from internal combustion of construction equipment exhaust and on-road haul-truck trips, while the majority of particulate matter emissions would occur as a result of fugitive dust emissions generated during grading and excavation activities. Primary sources of PM10 and PM2.5 emissions would be clearing activities, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth surfaces.

As shown in **Table 3, Maximum Construction Emissions**, the Project would generate up to 80.2 lb/day of ROG and 130.2 lb/day of NOx. As discussed above, the VCAPCD's 25 lb/day threshold for ROG and NOx does not apply to construction emissions because such emissions are temporary. Emissions of TACs are localized, not regional, in nature; impacts related to construction activities would be limited to the area immediately surrounding the construction site within the Project area, and the VCAPCD does not recommend any thresholds of significance for their associated emissions. Instead, the VCAPCD bases the determination of significance on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by the VCAPCD Guidelines are implemented for a project, then construction emissions are not considered significant. Recommendations include dust control measures, such as watering graded areas, covering trucks hauling excavated soil, soil stabilization methods, and street sweeping; and construction equipment controls, such as minimizing idle time, maintaining equipment engines, using alternatively fueled equipment, and minimizing the number of pieces of equipment operated simultaneously. All construction activities would adhere to the VCAPCD Rule 50 for Opacity, Rule 51 for Nuisance, and Rule 55 for Fugitive Dust. Therefore, impacts would not considered significant.

Table 3
Maximum Construction Emissions

Source	ROG	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
Maximum Winter Emissions						
2018	80.2	130.2	35.9	0.3	10.1	4.1
2019	80.1	29.3	26.7	0.1	3.4	1.6
Maximum Summer Emissions						
2018	80.0	128.7	34.1	0.3	10.0	4.1
2019	79.9	29.2	26.6	0.1	3.4	1.6
VCAPCD Threshold	**25**	**25**	—	—	—	—
Threshold Exceeded?	**Yes**	**Yes**	—	—	—	—

*Note: Refer to **Appendices A2 (Summer)** through **A3 (Winter),** Section 2.1, Overall Construction, for maximum construction emissions during both the summer and winter seasons.*

Operation

The estimated operational emissions based on the development of the Project are presented in **Table 4, Maximum Operational Emissions**, and are compared to the VCAPCD-established operational significance thresholds. Operational emissions will consists primarily from passenger vehicles traveling to and from the Project site. As shown in **Table 4,** the emissions associated with the Project would not exceed the VCAPCD-recommended operational emission thresholds.

Table 4
Maximum Operational Emissions

Source	ROG	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
Maximum Winter Emissions						
	12.3	6.8	50.0	0.1	7.3	2.1
Maximum Summer Emissions						
	12.4	6.4	48.4	0.1	7.3	2.1
VCAPCD Threshold	**25**	**25**	—	—	—	—
Threshold Exceeded?	**No**	**No**	—	—	—	—

*Note: Refer to **Appendices A2 (Summer)** through **A3 (Winter),** Section 2.1, Overall Construction, for maximum existing operational emissions during both the summer and winter seasons.*

Toxic Air Contaminants

Project construction would result in short-term emissions of diesel particulate matter (DPM), which is a TAC. As shown in **Table 5, Localized Emissions,** localized DPM emissions would be minimal. In addition, the Project would comply with the CARB Airborne Toxic Control Measures' anti-idling measure, which limits idling to no more than 5 minutes at any location for diesel-fueled commercial vehicles. The Project would also comply with the required and applicable Best Available Control Technology and the In-Use Off-Road Diesel Vehicle Regulation.

During long-term operations, TACs could be emitted as part of periodic maintenance operations, cleaning, painting, etc., and from periodic by from delivery trucks and service vehicles. However, these uses are expected to be occasional and result in minimal exposure to off-site sensitive receptors. Given that the Project consists of residential and office uses, the Project would not include sources of substantive TAC emissions identified by the VCAPCD- or CARB-siting recommendations.

Table 5
Localized Emissions

Source	NOx	CO	PM10	PM2.5
	pounds/day			
Construction				
Maximum on-site emissions	21.2	15.4	4.5	1.8
Operational				
Maximum area/energy emissions	1.1	15.5	0.2	0.2

*Note: Refer to **Appendix A2 (summer)** and **Appendix A3 (winter)**, Sections 3.2 through 3.7, for maximum construction localized emissions.*

AQMP Consistency

According to the VCAPCD Guidelines, to be consistent with the AQMP, a project must conform to the local general plan and must not result in or contribute to an exceedance of the County's projected population growth forecast. A discussion of AQMP consistency would be required to determine the significance of cumulative impacts. The Project would develop 182 residential dwelling units that would accommodate approximately 557 people by Project buildout. This would increase the County's population to 823,899 people.

The VCAPCD's AQMP considers regional population forecasts developed by SCAG. SCAG's most recent population forecast was adopted in April 2016 as part of the *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy.* The 2016 SCAG growth forecast projects a population in Oxnard of 200,100 people for 2012 and 237,300 people for 2040.[2] The population increase of 557 that could result from the construction of the new residential housing and employment opportunities associated with the Project, in addition, the existing population is within SCAG's most recent growth projections for the City of Oxnard. As such, the growth forecast is also within the population growth parameters considered in the AQMP, which is updated by the VCAPCD to manage air emissions in the County of Ventura in accordance with local, State, and federal standards. Development of the Project will not obstruct implementation of the AQMP or attainment of State or federal air quality standards. Therefore, the Project would be consistent with the applicable air quality plans.

Odors

Potential activities that may emit odors during construction activities includes the use of architectural coatings and solvents and the combustion of diesel fuel in on- and off-road equipment. VCAPCD Rule 74.2 would limit the amount of ROGs in architectural coatings and solvents. In addition, the Project would comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Through mandatory compliance with VCAPCD Rules, no construction activities or materials are expected to create objectionable odors affecting a substantial number of people.

Land uses more likely to produce odors include agriculture, chemical plants, composting operations, dairies, fiberglass molding, landfills, refineries, rendering plants, rail yards, and wastewater treatment plants. The Project would allow residential and office development, none of which contains any active manufacturing activities. No impacts due to odors would occur with the implementation of the Project.

CUMULATIVE IMPACTS

The Basin is currently a nonattainment area both the federal and State standards for O3 and the State standard for PM10. With regard to determining the significance of the proposed Project's contribution, the VCAPCD neither recommends quantified analyses of cumulative operational emissions nor provides methodologies or threshold of significance to be used to assess cumulative construction or operational impacts. Instead, the VCAPCD recommends that a project's contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project specific impacts. Therefore, this study assumes that individual development projects that generate operational emission that exceed the VCAPCD-recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. As

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2 Southern California Association of Government, *2016-2040 Regional Transportation Plan/Sustain Communities Strategy* (April 2016).

discussed previously, operational daily emission associated with the Project would not exceed VCAPCD significance thresholds. As such, cumulative impacts would not be considered significant.

REGULATORY MEASURES

Potential impacts from implementation of the Project will result in increased air quality emissions during construction. In addition, the mitigation measures identified in the Specific Plan are applicable to this Project. As such, the following regulatory measures would reduce construction-related emissions:

AQ-1: During clearing, grading, earthmoving, or excavation operations, excessive fugitive dust emissions shall be controlled by regular watering or other dust-preventative measures using the following procedures as specified by the Ventura County Air Pollution Control District (VCAPCD), including, without limitation, VCAPCD Rule 50 (Opacity), Rule 51 (Nuisance), and Rule 55 (Fugitive Dust):

- On-site vehicle speed shall not exceed 15 miles per hour (the Project site will contain posted signs with the speed limit).
- All on-site construction roads with vehicle traffic shall be watered periodically.
- Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated from construction activities to prevent excessive amounts of dust.
- All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day.
- All clearing, grading, earthmoving, or excavation activities shall cease during periods of high winds (i.e., greater than 25 miles per hour averaged over 1 hour) to prevent excessive amounts of dust (contact the VCAPCD meteorologist for current information about average wind speeds).
- All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earthmoving, or excavation operations shall be minimized to prevent excessive amounts of dust.

These control techniques shall be indicated on Project grading plans. The Applicant and/or its contractor shall be responsible for implementing these measures, and compliance with this measure will be subject to periodic site inspections by the City.

AQ-2: Project grading plans shall show that for the duration of construction, ozone precursor emissions from construction equipment vehicles must be controlled by maintaining equipment engines in good condition and in proper tune per manufacturer's specifications, to the satisfaction of the City Engineer. Compliance with this measure will be subject to periodic inspections of construction equipment vehicles by the Public Works Department.

AQ-3: Construction equipment shall be outfitted with Best Available Control Technology devices, including a California Air Resources Board–certified Level 3 Diesel Particulate Filter or equivalent control device.

AQ-4: All trucks that will haul excavated or graded material on site shall comply with California Vehicle Code Section 23114, with special attention to subsections 2311(b)(F), (e)(2), and (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads.

AQ-5: The construction contractor shall adhere to VCAPCD Rule 74.2 (Architectural Coatings) for limiting volatile organic compounds from architectural coatings. This rule specifies architectural coatings storage, clean up, and labeling requirements.

APPENDIX A

CalEEMod Air Quality and Greenhouse Gas Emissions Files

Rio Urbana Mixed Use (Proposed)

Ventura County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.10	1000sqft	0.18	15,100.00	0
Enclosed Parking with Elevator	463.00	Space	0.00	185,200.00	0
Condo/Townhouse	182.00	Dwelling Unit	2.64	182,000.00	557

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction to be completed 2020.

Land Use - Total Project are = 10.49 acres
Lot coverage: School office = 7,830 sq. ft.; apartment = 115,026 sq. ft.

Construction Phase - Architectural coating to take place intermittently towards the tail end of building construction

Off-road Equipment - No Cranes

Grading - +/- 17,000 cy of import

Vehicle Trips - Based on Traffic Study

Energy Use -

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2
Compliance with VCAPCD Rule 55 - Fugitive Dust

Area Mitigation -

Energy Mitigation - Project will include high efficiency lighting compliant with latest Title 24 requirements.

Water Mitigation -

Demolition - Existing Buildings: 44,637 sq. ft.
Other surfaces (concrete, asphalt, awnings): 147,667 sq. ft.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	PhaseEndDate	2/12/2019	1/25/2019
tblConstructionPhase	PhaseStartDate	1/30/2019	12/15/2018
tblGrading	MaterialImported	0.00	17,000.00
tblLandUse	LotAcreage	0.35	0.18
tblLandUse	LotAcreage	4.17	0.00
tblLandUse	LotAcreage	11.38	2.64
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	WD_TR	11.03	11.65

2.0 Emissions Summary

2.1 Overall Construction

Baseline Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.9037	3.7752	2.8825	7.3800e-003	0.3646	0.1616	0.5261	0.0913	0.1543	0.2456	0.0000	670.3661	670.3661	0.0848	0.0000	672.4864
2019	0.7682	0.2234	0.2187	4.6000e-004	0.0153	0.0113	0.0265	4.1100e-003	0.0107	0.0148	0.0000	40.8830	40.8830	6.0300e-003	0.0000	41.0339

Maximum	**0.9037**	**3.7752**	**2.8825**	**7.3800e-003**	**0.3646**	**0.1616**	**0.5261**	**0.0913**	**0.1543**	**0.2456**	**0.0000**	**670.3661**	**670.3661**	**0.0848**	**0.0000**	**672.4864**

Regulatory Compliance Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.6749	3.6525	2.8597	7.3800e-003	0.2919	0.1054	0.3973	0.0760	0.1049	0.1810	0.0000	670.3658	670.3658	0.0848	0.0000	672.4861
2019	0.7554	0.2498	0.2250	4.6000e-004	0.0153	8.5700e-003	0.0239	4.1100e-003	8.5500e-003	0.0127	0.0000	40.8830	40.8830	6.0300e-003	0.0000	41.0339
Maximum	**0.7554**	**3.6525**	**2.8597**	**7.3800e-003**	**0.2919**	**0.1054**	**0.3973**	**0.0760**	**0.1049**	**0.1810**	**0.0000**	**670.3658**	**670.3658**	**0.0848**	**0.0000**	**672.4861**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**14.46**	**2.41**	**0.53**	**0.00**	**19.12**	**34.05**	**23.79**	**16.02**	**31.22**	**25.65**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Baseline ROG + NOX (tons/quarter)	Maximum Regulatory Compliance ROG + NOX (tons/quarter)
1	**2-1-2018**	**4-30-2018**	1.4114	1.2881
2	**5-1-2018**	**7-31-2018**	1.0488	0.9625
3	**8-1-2018**	**10-31-2018**	1.0517	0.9654
4	**11-1-2018**	**1-31-2019**	2.1309	2.0881
		Highest	2.1309	2.0881

2.2 Overall Operational

Baseline Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.9397	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Energy	0.0212	0.1818	0.0802	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	984.4889	984.4889	0.0360	0.0105	988.5078
Mobile	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188
Waste						0.0000	0.0000		0.0000	0.0000	19.8444	0.0000	19.8444	1.1728	0.0000	49.1637
Water						0.0000	0.0000		0.0000	0.0000	4.6135	92.6165	97.2300	0.4777	0.0120	112.7416
Total	**1.5447**	**1.1782**	**7.1796**	**0.0136**	**1.1894**	**0.0329**	**1.2223**	**0.3174**	**0.0322**	**0.3496**	**24.4579**	**2,202.5556**	**2,227.0134**	**1.7640**	**0.0225**	**2,277.8019**

<u>Regulatory Compliance Operational</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8821	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Energy	0.0189	0.1615	0.0712	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	885.9115	885.9115	0.0325	9.4000e-003	889.5223
Mobile	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188
Waste						0.0000	0.0000		0.0000	0.0000	19.8444	0.0000	19.8444	1.1728	0.0000	49.1637
Water						0.0000	0.0000		0.0000	0.0000	3.6908	78.5810	82.2717	0.3823	9.6200e-003	94.6971
Total	**1.4848**	**1.1579**	**7.1705**	**0.0135**	**1.1894**	**0.0313**	**1.2206**	**0.3174**	**0.0306**	**0.3480**	**23.5352**	**2,089.9426**	**2,113.4777**	**1.6651**	**0.0190**	**2,160.7719**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**3.88**	**1.72**	**0.13**	**0.96**	**0.00**	**4.98**	**0.13**	**0.00**	**5.09**	**0.47**	**3.77**	**5.11**	**5.10**	**5.61**	**15.28**	**5.14**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2018	2/28/2018	5	20	
2	Site Preparation	Site Preparation	3/1/2018	3/5/2018	5	3	
3	Grading	Grading	3/6/2018	3/13/2018	5	6	
4	Building Construction	Building Construction	3/14/2018	1/15/2019	5	220	
5	Paving	Paving	1/16/2019	1/29/2019	5	10	
6	Architectural Coating	Architectural Coating	12/15/2018	1/25/2019	5	30	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 368,550; Residential Outdoor: 122,850; Non-Residential Indoor: 22,650; Non-Residential Outdoor: 7,550; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	214.00	52.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0958	0.0000	0.0958	0.0145	0.0000	0.0145	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2436	0.1511	2.4000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297
Total	**0.0248**	**0.2436**	**0.1511**	**2.4000e-004**	**0.0958**	**0.0144**	**0.1102**	**0.0145**	**0.0134**	**0.0279**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8300e-003	0.1400	0.0277	3.4000e-004	7.5000e-003	7.5000e-004	8.2400e-003	2.0600e-003	7.2000e-004	2.7700e-003	0.0000	33.1966	33.1966	3.2600e-003	0.0000	33.2781
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	4.1000e-004	4.2400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9532	0.9532	3.0000e-005	0.0000	0.9539
Total	**4.3900e-003**	**0.1405**	**0.0319**	**3.5000e-004**	**8.5500e-003**	**7.6000e-004**	**9.3000e-003**	**2.3400e-003**	**7.3000e-004**	**3.0600e-003**	**0.0000**	**34.1498**	**34.1498**	**3.2900e-003**	**0.0000**	**34.2320**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0374	0.0000	0.0374	5.6600e-003	0.0000	5.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8600e-003	0.2121	0.1542	2.4000e-004		7.1800e-003	7.1800e-003		7.1800e-003	7.1800e-003	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297

Total	**8.8600e-003**	**0.2121**	**0.1542**	**2.4000e-004**	**0.0374**	**7.1800e-003**	**0.0446**	**5.6600e-003**	**7.1800e-003**	**0.0128**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8300e-003	0.1400	0.0277	3.4000e-004	7.5000e-003	7.5000e-004	8.2400e-003	2.0600e-003	7.2000e-004	2.7700e-003	0.0000	33.1966	33.1966	3.2600e-003	0.0000	33.2781
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	4.1000e-004	4.2400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9532	0.9532	3.0000e-005	0.0000	0.9539
Total	**4.3900e-003**	**0.1405**	**0.0319**	**3.5000e-004**	**8.5500e-003**	**7.6000e-004**	**9.3000e-003**	**2.3400e-003**	**7.3000e-004**	**3.0600e-003**	**0.0000**	**34.1498**	**34.1498**	**3.2900e-003**	**0.0000**	**34.2320**

3.3 Site Preparation - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8500e-003	0.0354	0.0191	4.0000e-005		1.4300e-003	1.4300e-003		1.3200e-003	1.3200e-003	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851
Total	**2.8500e-003**	**0.0354**	**0.0191**	**4.0000e-005**	**2.3900e-003**	**1.4300e-003**	**3.8200e-003**	**2.6000e-004**	**1.3200e-003**	**1.5800e-003**	**0.0000**	**3.3590**	**3.3590**	**1.0500e-003**	**0.0000**	**3.3851**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0880	0.0880	0.0000	0.0000	0.0881
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0880**	**0.0880**	**0.0000**	**0.0000**	**0.0881**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9000e-004	0.0300	0.0205	4.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851
Total	**9.9000e-004**	**0.0300**	**0.0205**	**4.0000e-005**	**9.3000e-004**	**7.5000e-004**	**1.6800e-003**	**1.0000e-004**	**7.5000e-004**	**8.5000e-004**	**0.0000**	**3.3590**	**3.3590**	**1.0500e-003**	**0.0000**	**3.3851**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0880	0.0880	0.0000	0.0000	0.0881
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0880**	**0.0880**	**0.0000**	**0.0000**	**0.0881**

3.4 Grading - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0209	0.0000	0.0209	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4500e-003	0.0729	0.0311	6.0000e-005		3.5000e-003	3.5000e-003		3.2200e-003	3.2200e-003	0.0000	5.6539	5.6539	1.7600e-003	0.0000	5.6979
Total	**6.4500e-003**	**0.0729**	**0.0311**	**6.0000e-005**	**0.0209**	**3.5000e-003**	**0.0244**	**0.0103**	**3.2200e-003**	**0.0135**	**0.0000**	**5.6539**	**5.6539**	**1.7600e-003**	**0.0000**	**5.6979**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2900e-003	0.3401	0.0672	8.2000e-004	0.0182	1.8200e-003	0.0200	4.9900e-003	1.7400e-003	6.7300e-003	0.0000	80.6203	80.6203	7.9200e-003	0.0000	80.8182
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	9.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2200	0.2200	1.0000e-005	0.0000	0.2201
Total	**9.4200e-003**	**0.3402**	**0.0682**	**8.2000e-004**	**0.0184**	**1.8200e-003**	**0.0203**	**5.0500e-003**	**1.7400e-003**	**6.8000e-003**	**0.0000**	**80.8402**	**80.8402**	**7.9300e-003**	**0.0000**	**81.0384**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.1300e-003	0.0000	8.1300e-003	4.0100e-003	0.0000	4.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8800e-003	0.0543	0.0364	6.0000e-005		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003	0.0000	5.6539	5.6539	1.7600e-003	0.0000	5.6979
Total	**1.8800e-003**	**0.0543**	**0.0364**	**6.0000e-005**	**8.1300e-003**	**1.4600e-003**	**9.5900e-003**	**4.0100e-003**	**1.4600e-003**	**5.4700e-003**	**0.0000**	**5.6539**	**5.6539**	**1.7600e-003**	**0.0000**	**5.6979**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2900e-003	0.3401	0.0672	8.2000e-004	0.0182	1.8200e-003	0.0200	4.9900e-003	1.7400e-003	6.7300e-003	0.0000	80.6203	80.6203	7.9200e-003	0.0000	80.8182
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	9.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2200	0.2200	1.0000e-005	0.0000	0.2201
Total	**9.4200e-003**	**0.3402**	**0.0682**	**8.2000e-004**	**0.0184**	**1.8200e-003**	**0.0203**	**5.0500e-003**	**1.7400e-003**	**6.8000e-003**	**0.0000**	**80.8402**	**80.8402**	**7.9300e-003**	**0.0000**	**81.0384**

3.5 Building Construction - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3044	2.1640	1.6426	2.6100e-003		0.1314	0.1314		0.1259	0.1259	0.0000	220.8646	220.8646	0.0476	0.0000	222.0541
Total	**0.3044**	**2.1640**	**1.6426**	**2.6100e-003**		**0.1314**	**0.1314**		**0.1259**	**0.1259**	**0.0000**	**220.8646**	**220.8646**	**0.0476**	**0.0000**	**222.0541**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0248	0.6965	0.1904	1.4100e-003	0.0362	6.1300e-003	0.0423	0.0104	5.8700e-003	0.0163	0.0000	136.6102	136.6102	0.0123	0.0000	136.9180
Worker	0.0968	0.0704	0.7299	1.8200e-003	0.1803	1.3300e-003	0.1817	0.0479	1.2300e-003	0.0491	0.0000	163.9697	163.9697	5.2100e-003	0.0000	164.1000
Total	**0.1216**	**0.7669**	**0.9203**	**3.2300e-003**	**0.2165**	**7.4600e-003**	**0.2240**	**0.0583**	**7.1000e-003**	**0.0654**	**0.0000**	**300.5799**	**300.5799**	**0.0175**	**0.0000**	**301.0180**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0990	2.0949	1.6102	2.6100e-003		0.0855	0.0855		0.0855	0.0855	0.0000	220.8644	220.8644	0.0476	0.0000	222.0539

Total	**0.0990**	**2.0949**	**1.6102**	**2.6100e-003**		**0.0855**	**0.0855**		**0.0855**	**0.0855**	**0.0000**	**220.8644**	**220.8644**	**0.0476**	**0.0000**	**222.0539**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0248	0.6965	0.1904	1.4100e-003	0.0362	6.1300e-003	0.0423	0.0104	5.8700e-003	0.0163	0.0000	136.6102	136.6102	0.0123	0.0000	136.9180
Worker	0.0968	0.0704	0.7299	1.8200e-003	0.1803	1.3300e-003	0.1817	0.0479	1.2300e-003	0.0491	0.0000	163.9697	163.9697	5.2100e-003	0.0000	164.1000
Total	**0.1216**	**0.7669**	**0.9203**	**3.2300e-003**	**0.2165**	**7.4600e-003**	**0.2240**	**0.0583**	**7.1000e-003**	**0.0654**	**0.0000**	**300.5799**	**300.5799**	**0.0175**	**0.0000**	**301.0180**

3.5 Building Construction - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0141	0.1040	0.0839	1.4000e-004		6.0000e-003	6.0000e-003		5.7500e-003	5.7500e-003	0.0000	11.5365	11.5365	2.4000e-003	0.0000	11.5965
Total	**0.0141**	**0.1040**	**0.0839**	**1.4000e-004**		**6.0000e-003**	**6.0000e-003**		**5.7500e-003**	**5.7500e-003**	**0.0000**	**11.5365**	**11.5365**	**2.4000e-003**	**0.0000**	**11.5965**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1900e-003	0.0345	9.2800e-003	7.0000e-005	1.9000e-003	2.8000e-004	2.1800e-003	5.5000e-004	2.7000e-004	8.1000e-004	0.0000	7.1549	7.1549	6.3000e-004	0.0000	7.1705
Worker	4.6700e-003	3.2800e-003	0.0345	9.0000e-005	9.4900e-003	7.0000e-005	9.5600e-003	2.5200e-003	6.0000e-005	2.5800e-003	0.0000	8.3962	8.3962	2.5000e-004	0.0000	8.4023
Total	**5.8600e-003**	**0.0378**	**0.0438**	**1.6000e-004**	**0.0114**	**3.5000e-004**	**0.0117**	**3.0700e-003**	**3.3000e-004**	**3.3900e-003**	**0.0000**	**15.5510**	**15.5510**	**8.8000e-004**	**0.0000**	**15.5728**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.2100e-003	0.1103	0.0847	1.4000e-004		4.5000e-003	4.5000e-003		4.5000e-003	4.5000e-003	0.0000	11.5365	11.5365	2.4000e-003	0.0000	11.5965
Total	**5.2100e-003**	**0.1103**	**0.0847**	**1.4000e-004**		**4.5000e-003**	**4.5000e-003**		**4.5000e-003**	**4.5000e-003**	**0.0000**	**11.5365**	**11.5365**	**2.4000e-003**	**0.0000**	**11.5965**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1900e-003	0.0345	9.2800e-003	7.0000e-005	1.9000e-003	2.8000e-004	2.1800e-003	5.5000e-004	2.7000e-004	8.1000e-004	0.0000	7.1549	7.1549	6.3000e-004	0.0000	7.1705
Worker	4.6700e-003	3.2800e-003	0.0345	9.0000e-005	9.4900e-003	7.0000e-005	9.5600e-003	2.5200e-003	6.0000e-005	2.5800e-003	0.0000	8.3962	8.3962	2.5000e-004	0.0000	8.4023
Total	**5.8600e-003**	**0.0378**	**0.0438**	**1.6000e-004**	**0.0114**	**3.5000e-004**	**0.0117**	**3.0700e-003**	**3.3000e-004**	**3.3900e-003**	**0.0000**	**15.5510**	**15.5510**	**8.8000e-004**	**0.0000**	**15.5728**

3.6 Paving - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2300e-003	0.0628	0.0593	9.0000e-005		3.6500e-003	3.6500e-003		3.3600e-003	3.3600e-003	0.0000	7.9208	7.9208	2.4600e-003	0.0000	7.9823
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.2300e-003**	**0.0628**	**0.0593**	**9.0000e-005**		**3.6500e-003**	**3.6500e-003**		**3.3600e-003**	**3.3600e-003**	**0.0000**	**7.9208**	**7.9208**	**2.4600e-003**	**0.0000**	**7.9823**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.1000e-004	2.2000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5350	0.5350	2.0000e-005	0.0000	0.5354
Total	**3.0000e-004**	**2.1000e-004**	**2.2000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5350**	**0.5350**	**2.0000e-005**	**0.0000**	**0.5354**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6700e-003	0.0781	0.0649	9.0000e-005		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003	0.0000	7.9208	7.9208	2.4600e-003	0.0000	7.9823
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.6700e-003**	**0.0781**	**0.0649**	**9.0000e-005**		**2.7900e-003**	**2.7900e-003**		**2.7900e-003**	**2.7900e-003**	**0.0000**	**7.9208**	**7.9208**	**2.4600e-003**	**0.0000**	**7.9823**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.1000e-004	2.2000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5350	0.5350	2.0000e-005	0.0000	0.5354
Total	**3.0000e-004**	**2.1000e-004**	**2.2000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5350**	**0.5350**	**2.0000e-005**	**0.0000**	**0.5354**

3.7 Architectural Coating - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6400e-003	0.0110	0.0102	2.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	1.4043	1.4043	1.3000e-004	0.0000	1.4076
Total	**0.4287**	**0.0110**	**0.0102**	**2.0000e-005**		**8.3000e-004**	**8.3000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.3000e-004**	**0.0000**	**1.4076**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.4000e-004	7.7200e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7341	1.7341	6.0000e-005	0.0000	1.7354
Total	**1.0200e-003**	**7.4000e-004**	**7.7200e-003**	**2.0000e-005**	**1.9100e-003**	**1.0000e-005**	**1.9200e-003**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.7341**	**1.7341**	**6.0000e-005**	**0.0000**	**1.7354**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	6.3000e-004	0.0129	0.0101	2.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.4043	1.4043	1.3000e-004	0.0000	1.4076
Total	**0.4277**	**0.0129**	**0.0101**	**2.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.3000e-004**	**0.0000**	**1.4076**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.4000e-004	7.7200e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7341	1.7341	6.0000e-005	0.0000	1.7354
Total	**1.0200e-003**	**7.4000e-004**	**7.7200e-003**	**2.0000e-005**	**1.9100e-003**	**1.0000e-005**	**1.9200e-003**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.7341**	**1.7341**	**6.0000e-005**	**0.0000**	**1.7354**

3.7 Architectural Coating - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5300e-003	0.0174	0.0175	3.0000e-005		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	2.4256	2.4256	2.0000e-004	0.0000	2.4307
Total	**0.7401**	**0.0174**	**0.0175**	**3.0000e-005**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**2.4256**	**2.4256**	**2.0000e-004**	**0.0000**	**2.4307**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1400e-003	0.0120	3.0000e-005	3.2900e-003	2.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9141	2.9141	9.0000e-005	0.0000	2.9162
Total	**1.6200e-003**	**1.1400e-003**	**0.0120**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3200e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.9141**	**2.9141**	**9.0000e-005**	**0.0000**	**2.9162**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0224	0.0174	3.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004	0.0000	2.4256	2.4256	2.0000e-004	0.0000	2.4307
Total	**0.7387**	**0.0224**	**0.0174**	**3.0000e-005**		**9.0000e-004**	**9.0000e-004**		**9.0000e-004**	**9.0000e-004**	**0.0000**	**2.4256**	**2.4256**	**2.0000e-004**	**0.0000**	**2.4307**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1400e-003	0.0120	3.0000e-005	3.2900e-003	2.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9141	2.9141	9.0000e-005	0.0000	2.9162
Total	**1.6200e-003**	**1.1400e-003**	**0.0120**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3200e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.9141**	**2.9141**	**9.0000e-005**	**0.0000**	**2.9162**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Regulatory Compliance	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188
Baseline	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188

4.2 Trip Summary Information

	Average Daily Trip Rate			Baseline	Regulatory Compliance
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,057.42	1,031.94	880.88	2,841,986	2,841,986
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	175.92	37.15	15.86	318,375	318,375
Total	1,233.34	1,069.09	896.74	3,160,361	3,160,361

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Enclosed Parking with Elevator	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Condo/Townhouse	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Regulatory Compliance						0.0000	0.0000		0.0000	0.0000	0.0000	699.2320	699.2320	0.0289	5.9700e-003	701.7335
Electricity Baseline						0.0000	0.0000		0.0000	0.0000	0.0000	774.3982	774.3982	0.0320	6.6100e-003	777.1686
NaturalGas Regulatory Compliance	0.0189	0.1615	0.0712	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	186.6794	186.6794	3.5800e-003	3.4200e-003	187.7888
NaturalGas Baseline	0.0212	0.1818	0.0802	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	210.0907	210.0907	4.0300e-003	3.8500e-003	211.3392

5.2 Energy by Land Use - NaturalGas

Baseline

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	3.79833e+006	0.0205	0.1750	0.0745	1.1200e-003		0.0142	0.0142		0.0142	0.0142	0.0000	202.6935	202.6935	3.8800e-003	3.7200e-003	203.8980
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	138618	7.5000e-004	6.8000e-003	5.7100e-003	4.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	7.3972	7.3972	1.4000e-004	1.4000e-004	7.4411
Total		**0.0212**	**0.1818**	**0.0802**	**1.1600e-003**		**0.0147**	**0.0147**		**0.0147**	**0.0147**	**0.0000**	**210.0907**	**210.0907**	**4.0200e-003**	**3.8600e-003**	**211.3392**

Regulatory Compliance

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	3.37917e+006	0.0182	0.1557	0.0663	9.9000e-004		0.0126	0.0126		0.0126	0.0126	0.0000	180.3254	180.3254	3.4600e-003	3.3100e-003	181.3969
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	119071	6.4000e-004	5.8400e-003	4.9000e-003	4.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3541	6.3541	1.2000e-004	1.2000e-004	6.3918
Total		**0.0189**	**0.1616**	**0.0712**	**1.0300e-003**		**0.0130**	**0.0130**		**0.0130**	**0.0130**	**0.0000**	**186.6794**	**186.6794**	**3.5800e-003**	**3.4300e-003**	**187.7888**

5.3 Energy by Land Use - Electricity

Baseline

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Condo/Townhouse	965683	307.6873	0.0127	2.6300e-003	308.7880
Enclosed Parking with Elevator	1.24825e+006	397.7186	0.0164	3.4000e-003	399.1414
General Office Building	216534	68.9924	2.8500e-003	5.9000e-004	69.2392
Total		**774.3982**	**0.0320**	**6.6200e-003**	**777.1686**

Regulatory Compliance

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	933022	297.2809	0.0123	2.5400e-003	298.3444
Enclosed Parking with Elevator	1.06629e+006	339.7425	0.0140	2.9000e-003	340.9580
General Office Building	195243	62.2086	2.5700e-003	5.3000e-004	62.4312
Total		**699.2320**	**0.0289**	**5.9700e-003**	**701.7335**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Regulatory Compliance	0.8821	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Baseline	0.9397	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700

6.2 Area by SubCategory

Baseline

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7818					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0415	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Total	**0.9397**	**0.0157**	**1.3587**	**7.0000e-005**		**7.4800e-003**	**7.4800e-003**		**7.4800e-003**	**7.4800e-003**	**0.0000**	**2.2160**	**2.2160**	**2.1600e-003**	**0.0000**	**2.2700**

Regulatory Compliance

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7242					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0415	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Total	**0.8821**	**0.0157**	**1.3587**	**7.0000e-005**		**7.4800e-003**	**7.4800e-003**		**7.4800e-003**	**7.4800e-003**	**0.0000**	**2.2160**	**2.2160**	**2.1600e-003**	**0.0000**	**2.2700**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Regulatory Compliance	82.2717	0.3823	9.6200e-003	94.6971
Baseline	97.2300	0.4777	0.0120	112.7416

7.2 Water by Land Use

Baseline

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	11.858 / 7.47572	79.4214	0.3895	9.7700e-003	92.0708
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.68378 / 1.6449	17.8086	0.0882	2.2100e-003	20.6709
Total		**97.2300**	**0.4777**	**0.0120**	**112.7416**

Regulatory Compliance

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	9.48643 / 7.0197	67.2155	0.3118	7.8500e-003	77.3482
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.14702 / 1.54456	15.0562	0.0706	1.7700e-003	17.3489
Total		**82.2717**	**0.3823**	**9.6200e-003**	**94.6971**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Regulatory Compliance	19.8444	1.1728	0.0000	49.1637
Baseline	19.8444	1.1728	0.0000	49.1637

8.2 Waste by Land Use

Baseline

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	83.72	16.9944	1.0043	0.0000	42.1029
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.04	2.8500	0.1684	0.0000	7.0607
Total		**19.8444**	**1.1728**	**0.0000**	**49.1637**

Regulatory Compliance

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Condo/Townhouse	83.72	16.9944	1.0043	0.0000	42.1029
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.04	2.8500	0.1684	0.0000	7.0607
Total		**19.8444**	**1.1728**	**0.0000**	**49.1637**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Rio Urbana Mixed Use (Proposed)

Ventura County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.10	1000sqft	0.18	15,100.00	0
Enclosed Parking with Elevator	463.00	Space	0.00	185,200.00	0
Condo/Townhouse	182.00	Dwelling Unit	2.64	182,000.00	557

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction to be completed 2020.

Land Use - Total Project are = 10.49 acres
Lot coverage: School office = 7,830 sq. ft.; apartment = 115,026 sq. ft.

Construction Phase - Architectural coating to take place intermittently towards the tail end of building construction

Off-road Equipment - No Cranes

Grading - +/- 17,000 cy of import

Vehicle Trips - Based on Traffic Study

Energy Use -

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2
Compliance with VCAPCD Rule 55 - Fugitive Dust

Area Mitigation -

Energy Mitigation - Project will include high efficiency lighting compliant with latest Title 24 requirements.

Water Mitigation -

Demolition - Existing Buildings: 44,637 sq. ft.
Other surfaces (concrete, asphalt, awnings): 147,667 sq. ft.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	PhaseEndDate	2/12/2019	1/25/2019
tblConstructionPhase	PhaseStartDate	1/30/2019	12/15/2018
tblGrading	MaterialImported	0.00	17,000.00
tblLandUse	LotAcreage	0.35	0.18
tblLandUse	LotAcreage	4.17	0.00
tblLandUse	LotAcreage	11.38	2.64
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	WD_TR	11.03	11.65

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Baseline Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	82.1874	134.8786	32.3089	0.2955	13.1999	1.7679	14.9678	5.1379	1.6485	6.7863	0.0000	31,973.5628	31,973.5628	3.5108	0.0000	32,061.3328
2019	81.6896	27.5568	26.4796	0.0626	2.4627	1.2841	3.7467	0.6611	1.2355	1.8966	0.0000	6,148.7051	6,148.7051	0.6875	0.0000	6,165.8932

Maximum	**82.1874**	**134.8786**	**32.3089**	**0.2955**	**13.1999**	**1.7679**	**14.9678**	**5.1379**	**1.6485**	**6.7863**	**0.0000**	**31,973.5628**	**31,973.5628**	**3.5108**	**0.0000**	**32,061.3328**

Regulatory Compliance Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	80.0371	128.6941	34.0735	0.2955	8.9602	1.0846	10.0448	3.0469	1.0587	4.1056	0.0000	31,973.5628	31,973.5628	3.5108	0.0000	32,061.3328
2019	79.9261	29.2100	26.6243	0.0626	2.4627	0.9780	3.4407	0.6611	0.9747	1.6358	0.0000	6,148.7051	6,148.7051	0.6875	0.0000	6,165.8932
Maximum	**80.0371**	**128.6941**	**34.0735**	**0.2955**	**8.9602**	**1.0846**	**10.0448**	**3.0469**	**1.0587**	**4.1056**	**0.0000**	**31,973.5628**	**31,973.5628**	**3.5108**	**0.0000**	**32,061.3328**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**2.39**	**2.79**	**-3.25**	**0.00**	**27.07**	**32.42**	**27.94**	**36.06**	**29.50**	**33.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Baseline Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3822	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031
Energy	0.1163	0.9963	0.4394	6.3400e-003		0.0804	0.0804		0.0804	0.0804		1,268.9608	1,268.9608	0.0243	0.0233	1,276.5016
Mobile	3.5403	5.3281	32.9460	0.0746	7.0396	0.0626	7.1022	1.8760	0.0584	1.9343		7,460.6005	7,460.6005	0.4757		7,472.4926
Total	**9.0388**	**6.4985**	**48.4823**	**0.0817**	**7.0396**	**0.2261**	**7.2657**	**1.8760**	**0.2219**	**2.0978**	**0.0000**	**8,756.7024**	**8,756.7024**	**0.5265**	**0.0233**	**8,776.7972**

Regulatory Compliance Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Area	8.7338	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031
Energy	0.1034	0.8852	0.3899	5.6400e-003		0.0714	0.0714		0.0714	0.0714		1,127.5554	1,127.5554	0.0216	0.0207	1,134.2559
Mobile	3.5403	5.3281	32.9460	0.0746	7.0396	0.0626	7.1022	1.8760	0.0584	1.9343		7,460.6005	7,460.6005	0.4757		7,472.4926
Total	**12.3775**	**6.3875**	**48.4328**	**0.0810**	**7.0396**	**0.2171**	**7.2567**	**1.8760**	**0.2129**	**2.0888**	**0.0000**	**8,615.2971**	**8,615.2971**	**0.5238**	**0.0207**	**8,634.5516**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**-36.94**	**1.71**	**0.10**	**0.86**	**0.00**	**3.96**	**0.12**	**0.00**	**4.04**	**0.43**	**0.00**	**1.61**	**1.61**	**0.51**	**11.13**	**1.62**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2018	2/28/2018	5	20	
2	Site Preparation	Site Preparation	3/1/2018	3/5/2018	5	3	
3	Grading	Grading	3/6/2018	3/13/2018	5	6	
4	Building Construction	Building Construction	3/14/2018	1/15/2019	5	220	
5	Paving	Paving	1/16/2019	1/29/2019	5	10	
6	Architectural Coating	Architectural Coating	12/15/2018	1/25/2019	5	30	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 368,550; Residential Outdoor: 122,850; Non-Residential Indoor: 22,650; Non-Residential Outdoor: 7,550; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	214.00	52.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.5829	0.0000	9.5829	1.4512	0.0000	1.4512			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**9.5829**	**1.4365**	**11.0193**	**1.4512**	**1.3429**	**2.7941**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.3773	13.6576	2.6673	0.0339	0.7618	0.0740	0.8358	0.2086	0.0708	0.2794		3,682.6399	3,682.6399	0.3535		3,691.4766
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0557	0.0361	0.4372	1.1000e-003	0.1068	7.7000e-004	0.1076	0.0283	7.1000e-004	0.0290		109.5240	109.5240	3.4400e-003		109.6099
Total	**0.4330**	**13.6937**	**3.1045**	**0.0350**	**0.8686**	**0.0748**	**0.9434**	**0.2369**	**0.0715**	**0.3084**		**3,792.1639**	**3,792.1639**	**0.3569**		**3,801.0865**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7373	0.0000	3.7373	0.5660	0.0000	0.5660			0.0000			0.0000
Off-Road	0.8857	21.2053	15.4154	0.0241		0.7182	0.7182		0.7182	0.7182	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**0.8857**	**21.2053**	**15.4154**	**0.0241**	**3.7373**	**0.7182**	**4.4555**	**0.5660**	**0.7182**	**1.2841**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3773	13.6576	2.6673	0.0339	0.7618	0.0740	0.8358	0.2086	0.0708	0.2794		3,682.6399	3,682.6399	0.3535		3,691.4766
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0557	0.0361	0.4372	1.1000e-003	0.1068	7.7000e-004	0.1076	0.0283	7.1000e-004	0.0290		109.5240	109.5240	3.4400e-003		109.6099

Total	**0.4330**	**13.6937**	**3.1045**	**0.0350**	**0.8686**	**0.0748**	**0.9434**	**0.2369**	**0.0715**	**0.3084**		**3,792.1639**	**3,792.1639**	**0.3569**		**3,801.0865**

3.3 Site Preparation - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.8995	23.6201	12.7461	0.0245		0.9540	0.9540		0.8777	0.8777		2,468.4131	2,468.4131	0.7685		2,487.6244
Total	**1.8995**	**23.6201**	**12.7461**	**0.0245**	**1.5908**	**0.9540**	**2.5448**	**0.1718**	**0.8777**	**1.0494**		**2,468.4131**	**2,468.4131**	**0.7685**		**2,487.6244**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0343	0.0222	0.2691	6.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		67.3994	67.3994	2.1100e-003		67.4522
Total	**0.0343**	**0.0222**	**0.2691**	**6.8000e-004**	**0.0657**	**4.8000e-004**	**0.0662**	**0.0174**	**4.4000e-004**	**0.0179**		**67.3994**	**67.3994**	**2.1100e-003**		**67.4522**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	0.6625	20.0179	13.6431	0.0245		0.4988	0.4988		0.4988	0.4988	0.0000	2,468.4131	2,468.4131	0.7685		2,487.6244
Total	**0.6625**	**20.0179**	**13.6431**	**0.0245**	**0.6204**	**0.4988**	**1.1191**	**0.0670**	**0.4988**	**0.5657**	**0.0000**	**2,468.4131**	**2,468.4131**	**0.7685**		**2,487.6244**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0343	0.0222	0.2691	6.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		67.3994	67.3994	2.1100e-003		67.4522
Total	**0.0343**	**0.0222**	**0.2691**	**6.8000e-004**	**0.0657**	**4.8000e-004**	**0.0662**	**0.0174**	**4.4000e-004**	**0.0179**		**67.3994**	**67.3994**	**2.1100e-003**		**67.4522**

3.4 Grading - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					6.9505	0.0000	6.9505	3.4278	0.0000	3.4278			0.0000			0.0000
Off-Road	2.1515	24.2895	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748		2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**2.1515**	**24.2895**	**10.3804**	**0.0206**	**6.9505**	**1.1683**	**8.1188**	**3.4278**	**1.0748**	**4.5026**		**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.0545	110.5613	21.5921	0.2741	6.1673	0.5990	6.7663	1.6883	0.5731	2.2614		29,811.8470	29,811.8470	2.8614		29,883.3823
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0428	0.0278	0.3363	8.5000e-004	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		84.2492	84.2492	2.6400e-003		84.3153
Total	**3.0973**	**110.5891**	**21.9285**	**0.2749**	**6.2495**	**0.5996**	**6.8490**	**1.7101**	**0.5736**	**2.2837**		**29,896.0962**	**29,896.0962**	**2.8641**		**29,967.6976**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7107	0.0000	2.7107	1.3368	0.0000	1.3368			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**0.6262**	**18.1050**	**12.1450**	**0.0206**	**2.7107**	**0.4850**	**3.1957**	**1.3368**	**0.4850**	**1.8219**	**0.0000**	**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.0545	110.5613	21.5921	0.2741	6.1673	0.5990	6.7663	1.6883	0.5731	2.2614		29,811.8470	29,811.8470	2.8614		29,883.3823
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0428	0.0278	0.3363	8.5000e-004	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		84.2492	84.2492	2.6400e-003		84.3153
Total	**3.0973**	**110.5891**	**21.9285**	**0.2749**	**6.2495**	**0.5996**	**6.8490**	**1.7101**	**0.5736**	**2.2837**		**29,896.0962**	**29,896.0962**	**2.8641**		**29,967.6976**

3.5 Building Construction - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**2.9127**	**20.7077**	**15.7183**	**0.0250**		**1.2575**	**1.2575**		**1.2051**	**1.2051**		**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2324	6.5562	1.7188	0.0136	0.3514	0.0581	0.4096	0.1011	0.0556	0.1567		1,455.4054	1,455.4054	0.1260		1,458.5560
Worker	0.9167	0.5947	7.1974	0.0181	1.7580	0.0128	1.7707	0.4663	0.0118	0.4781		1,802.9328	1,802.9328	0.0566		1,804.3470
Total	**1.1491**	**7.1509**	**8.9162**	**0.0317**	**2.1094**	**0.0709**	**2.1803**	**0.5674**	**0.0674**	**0.6348**		**3,258.3382**	**3,258.3382**	**0.1826**		**3,262.9029**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**0.9471**	**20.0464**	**15.4081**	**0.0250**		**0.8178**	**0.8178**		**0.8178**	**0.8178**	**0.0000**	**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2324	6.5562	1.7188	0.0136	0.3514	0.0581	0.4096	0.1011	0.0556	0.1567		1,455.4054	1,455.4054	0.1260		1,458.5560
Worker	0.9167	0.5947	7.1974	0.0181	1.7580	0.0128	1.7707	0.4663	0.0118	0.4781		1,802.9328	1,802.9328	0.0566		1,804.3470

Total	**1.1491**	**7.1509**	**8.9162**	**0.0317**	**2.1094**	**0.0709**	**2.1803**	**0.5674**	**0.0674**	**0.6348**		**3,258.3382**	**3,258.3382**	**0.1826**		**3,262.9029**

3.5 Building Construction - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2118	6.1793	1.5911	0.0135	0.3515	0.0500	0.4014	0.1011	0.0478	0.1489		1,448.4880	1,448.4880	0.1218		1,451.5320
Worker	0.8414	0.5262	6.4888	0.0176	1.7580	0.0127	1.7706	0.4663	0.0117	0.4780		1,754.1535	1,754.1535	0.0508		1,755.4232
Total	**1.0532**	**6.7054**	**8.0799**	**0.0311**	**2.1094**	**0.0626**	**2.1721**	**0.5674**	**0.0595**	**0.6269**		**3,202.6415**	**3,202.6415**	**0.1725**		**3,206.9551**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**0.9471**	**20.0464**	**15.4081**	**0.0250**		**0.8178**	**0.8178**		**0.8178**	**0.8178**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2118	6.1793	1.5911	0.0135	0.3515	0.0500	0.4014	0.1011	0.0478	0.1489		1,448.4880	1,448.4880	0.1218		1,451.5320
Worker	0.8414	0.5262	6.4888	0.0176	1.7580	0.0127	1.7706	0.4663	0.0117	0.4780		1,754.1535	1,754.1535	0.0508		1,755.4232
Total	**1.0532**	**6.7054**	**8.0799**	**0.0311**	**2.1094**	**0.0626**	**2.1721**	**0.5674**	**0.0595**	**0.6269**		**3,202.6415**	**3,202.6415**	**0.1725**		**3,206.9551**

3.6 Paving - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2453**	**12.5685**	**11.8507**	**0.0178**		**0.7301**	**0.7301**		**0.6728**	**0.6728**		**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0369	0.4548	1.2300e-003	0.1232	8.9000e-004	0.1241	0.0327	8.2000e-004	0.0335		122.9547	122.9547	3.5600e-003		123.0437
Total	**0.0590**	**0.0369**	**0.4548**	**1.2300e-003**	**0.1232**	**8.9000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**122.9547**	**122.9547**	**3.5600e-003**		**123.0437**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7344	15.6108	12.9737	0.0178		0.5580	0.5580		0.5580	0.5580	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7344**	**15.6108**	**12.9737**	**0.0178**		**0.5580**	**0.5580**		**0.5580**	**0.5580**	**0.0000**	**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

Regulatory Compliance Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0369	0.4548	1.2300e-003	0.1232	8.9000e-004	0.1241	0.0327	8.2000e-004	0.0335		122.9547	122.9547	3.5600e-003		123.0437
Total	**0.0590**	**0.0369**	**0.4548**	**1.2300e-003**	**0.1232**	**8.9000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**122.9547**	**122.9547**	**3.5600e-003**		**123.0437**

3.7 Architectural Coating - 2018

Baseline Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**77.9415**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1842	0.1195	1.4462	3.6400e-003	0.3532	2.5600e-003	0.3558	0.0937	2.3600e-003	0.0961		362.2715	362.2715	0.0114		362.5557
Total	**0.1842**	**0.1195**	**1.4462**	**3.6400e-003**	**0.3532**	**2.5600e-003**	**0.3558**	**0.0937**	**2.3600e-003**	**0.0961**		**362.2715**	**362.2715**	**0.0114**		**362.5557**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**77.7567**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1842	0.1195	1.4462	3.6400e-003	0.3532	2.5600e-003	0.3558	0.0937	2.3600e-003	0.0961		362.2715	362.2715	0.0114		362.5557

Total	0.1842	0.1195	1.4462	3.6400e-003	0.3532	2.5600e-003	0.3558	0.0937	2.3600e-003	0.0961		362.2715	362.2715	0.0114		362.5557

3.7 Architectural Coating - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**77.9093**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1691	0.1057	1.3038	3.5400e-003	0.3532	2.5400e-003	0.3558	0.0937	2.3400e-003	0.0960		352.4701	352.4701	0.0102		352.7252
Total	**0.1691**	**0.1057**	**1.3038**	**3.5400e-003**	**0.3532**	**2.5400e-003**	**0.3558**	**0.0937**	**2.3400e-003**	**0.0960**		**352.4701**	**352.4701**	**0.0102**		**352.7252**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**77.7567**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1691	0.1057	1.3038	3.5400e-003	0.3532	2.5400e-003	0.3558	0.0937	2.3400e-003	0.0960		352.4701	352.4701	0.0102		352.7252
Total	**0.1691**	**0.1057**	**1.3038**	**3.5400e-003**	**0.3532**	**2.5400e-003**	**0.3558**	**0.0937**	**2.3400e-003**	**0.0960**		**352.4701**	**352.4701**	**0.0102**		**352.7252**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Regulatory Compliance	3.5403	5.3281	32.9460	0.0746	7.0396	0.0626	7.1022	1.8760	0.0584	1.9343		7,460.6005	7,460.6005	0.4757		7,472.4926
Baseline	3.5403	5.3281	32.9460	0.0746	7.0396	0.0626	7.1022	1.8760	0.0584	1.9343		7,460.6005	7,460.6005	0.4757		7,472.4926

4.2 Trip Summary Information

	Average Daily Trip Rate			Baseline	Regulatory Compliance
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,057.42	1,031.94	880.88	2,841,986	2,841,986
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	175.92	37.15	15.86	318,375	318,375
Total	1,233.34	1,069.09	896.74	3,160,361	3,160,361

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Enclosed Parking with Elevator	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Condo/Townhouse	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Regulatory Compliance	0.1034	0.8852	0.3899	5.6400e-003		0.0714	0.0714		0.0714	0.0714		1,127.5554	1,127.5554	0.0216	0.0207	1,134.2559
NaturalGas Baseline	0.1163	0.9963	0.4394	6.3400e-003		0.0804	0.0804		0.0804	0.0804		1,268.9608	1,268.9608	0.0243	0.0233	1,276.5016

5.2 Energy by Land Use - NaturalGas

Baseline

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	10406.4	0.1122	0.9590	0.4081	6.1200e-003		0.0775	0.0775		0.0775	0.0775		1,224.2813	1,224.2813	0.0235	0.0225	1,231.5566
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	379.775	4.1000e-003	0.0372	0.0313	2.2000e-004		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003		44.6795	44.6795	8.6000e-004	8.2000e-004	44.9450

Total		**0.1163**	**0.9963**	**0.4394**	**6.3400e-003**		**0.0804**	**0.0804**		**0.0804**	**0.0804**		**1,268.9608**	**1,268.9608**	**0.0243**	**0.0233**	**1,276.5016**

<u>**Regulatory Compliance**</u>

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	9.258	0.0998	0.8532	0.3631	5.4500e-003		0.0690	0.0690		0.0690	0.0690		1,089.1764	1,089.1764	0.0209	0.0200	1,095.6488
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.326222	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003		38.3791	38.3791	7.4000e-004	7.0000e-004	38.6071
Total		**0.1034**	**0.8852**	**0.3899**	**5.6400e-003**		**0.0714**	**0.0714**		**0.0714**	**0.0714**		**1,127.5554**	**1,127.5554**	**0.0216**	**0.0207**	**1,134.2559**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regulatory Compliance	8.7338	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031
Baseline	5.3822	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031

6.2 Area by SubCategory

Baseline

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2835					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4605	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831		27.1412	27.1412	0.0265		27.8031
Total	**5.3822**	**0.1742**	**15.0969**	**8.0000e-004**		**0.0831**	**0.0831**		**0.0831**	**0.0831**	**0.0000**	**27.1412**	**27.1412**	**0.0265**	**0.0000**	**27.8031**

Regulatory Compliance

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6351					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	0.4605	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831		27.1412	27.1412	0.0265		27.8031
Total	**8.7338**	**0.1742**	**15.0969**	**8.0000e-004**		**0.0831**	**0.0831**		**0.0831**	**0.0831**	**0.0000**	**27.1412**	**27.1412**	**0.0265**	**0.0000**	**27.8031**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Rio Urbana Mixed Use (Proposed)

Ventura County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.10	1000sqft	0.18	15,100.00	0
Enclosed Parking with Elevator	463.00	Space	0.00	185,200.00	0
Condo/Townhouse	182.00	Dwelling Unit	2.64	182,000.00	557

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction to be completed 2020.

Land Use - Total Project are = 10.49 acres
Lot coverage: School office = 7,830 sq. ft.; apartment = 115,026 sq. ft.

Construction Phase - Architectural coating to take place intermittently towards the tail end of building construction

Off-road Equipment - No Cranes

Grading - +/- 17,000 cy of import

Vehicle Trips - Based on Traffic Study

Energy Use -

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2
Compliance with VCAPCD Rule 55 - Fugitive Dust

Area Mitigation -

Energy Mitigation - Project will include high efficiency lighting compliant with latest Title 24 requirements.

Water Mitigation -

Demolition - Existing Buildings: 44,637 sq. ft.
Other surfaces (concrete, asphalt, awnings): 147,667 sq. ft.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	PhaseEndDate	2/12/2019	1/25/2019
tblConstructionPhase	PhaseStartDate	1/30/2019	12/15/2018
tblGrading	MaterialImported	0.00	17,000.00
tblLandUse	LotAcreage	0.35	0.18
tblLandUse	LotAcreage	4.17	0.00
tblLandUse	LotAcreage	11.38	2.64
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	WD_TR	11.03	11.65

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Baseline Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	82.3462	136.3765	34.1592	0.2913	13.1999	1.7849	14.9848	5.1379	1.6647	6.8026	0.0000	31,519.5437	31,519.5437	3.6225	0.0000	31,610.1062
2019	81.8353	27.6845	26.5194	0.0613	2.4627	1.2854	3.7480	0.6611	1.2367	1.8978	0.0000	6,012.1795	6,012.1795	0.6939	0.0000	6,029.5264

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Maximum	**82.3462**	**136.3765**	**34.1592**	**0.2913**	**13.1999**	**1.7849**	**14.9848**	**5.1379**	**1.6647**	**6.8026**	**0.0000**	**31,519.5437**	**31,519.5437**	**3.6225**	**0.0000**	**31,610.1062**

Regulatory Compliance Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	80.1959	130.1920	35.9238	0.2913	8.9602	1.1016	10.0617	3.0469	1.0749	4.1218	0.0000	31,519.5437	31,519.5437	3.6225	0.0000	31,610.1062
2019	80.0719	29.3377	26.6641	0.0613	2.4627	0.9793	3.4420	0.6611	0.9759	1.6370	0.0000	6,012.1795	6,012.1795	0.6939	0.0000	6,029.5264
Maximum	**80.1959**	**130.1920**	**35.9238**	**0.2913**	**8.9602**	**1.1016**	**10.0617**	**3.0469**	**1.0749**	**4.1218**	**0.0000**	**31,519.5437**	**31,519.5437**	**3.6225**	**0.0000**	**31,610.1062**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**2.38**	**2.76**	**-3.15**	**0.00**	**27.07**	**32.22**	**27.91**	**36.06**	**29.32**	**33.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Baseline Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3822	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031
Energy	0.1163	0.9963	0.4394	6.3400e-003		0.0804	0.0804		0.0804	0.0804		1,268.9608	1,268.9608	0.0243	0.0233	1,276.5016
Mobile	3.4482	5.7688	34.4890	0.0715	7.0396	0.0628	7.1024	1.8760	0.0586	1.9345		7,150.5574	7,150.5574	0.4927		7,162.8757
Total	**8.9468**	**6.9392**	**50.0253**	**0.0786**	**7.0396**	**0.2263**	**7.2659**	**1.8760**	**0.2221**	**2.0980**	**0.0000**	**8,446.6594**	**8,446.6594**	**0.5435**	**0.0233**	**8,467.1804**

Regulatory Compliance Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.7338	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031
Energy	0.1034	0.8852	0.3899	5.6400e-003		0.0714	0.0714		0.0714	0.0714		1,127.5554	1,127.5554	0.0216	0.0207	1,134.2559
Mobile	3.4482	5.7688	34.4890	0.0715	7.0396	0.0628	7.1024	1.8760	0.0586	1.9345		7,150.5574	7,150.5574	0.4927		7,162.8757
Total	**12.2854**	**6.8282**	**49.9758**	**0.0779**	**7.0396**	**0.2174**	**7.2569**	**1.8760**	**0.2131**	**2.0890**	**0.0000**	**8,305.2540**	**8,305.2540**	**0.5408**	**0.0207**	**8,324.9347**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**-37.32**	**1.60**	**0.10**	**0.89**	**0.00**	**3.96**	**0.12**	**0.00**	**4.03**	**0.43**	**0.00**	**1.67**	**1.67**	**0.50**	**11.13**	**1.68**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2018	2/28/2018	5	20	
2	Site Preparation	Site Preparation	3/1/2018	3/5/2018	5	3	
3	Grading	Grading	3/6/2018	3/13/2018	5	6	
4	Building Construction	Building Construction	3/14/2018	1/15/2019	5	220	
5	Paving	Paving	1/16/2019	1/29/2019	5	10	
6	Architectural Coating	Architectural Coating	12/15/2018	1/25/2019	5	30	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 368,550; Residential Outdoor: 122,850; Non-Residential Indoor: 22,650; Non-Residential Outdoor: 7,550; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	214.00	52.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.5829	0.0000	9.5829	1.4512	0.0000	1.4512			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**9.5829**	**1.4365**	**11.0193**	**1.4512**	**1.3429**	**2.7941**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.3896	13.8420	2.8965	0.0333	0.7618	0.0761	0.8379	0.2086	0.0728	0.2814		3,627.0586	3,627.0586	0.3673		3,636.2405
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0631	0.0423	0.4298	1.0500e-003	0.1068	7.7000e-004	0.1076	0.0283	7.1000e-004	0.0290		104.2264	104.2264	3.3400e-003		104.3099
Total	**0.4527**	**13.8844**	**3.3263**	**0.0344**	**0.8686**	**0.0769**	**0.9455**	**0.2369**	**0.0735**	**0.3104**		**3,731.2850**	**3,731.2850**	**0.3706**		**3,740.5504**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7373	0.0000	3.7373	0.5660	0.0000	0.5660			0.0000			0.0000
Off-Road	0.8857	21.2053	15.4154	0.0241		0.7182	0.7182		0.7182	0.7182	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**0.8857**	**21.2053**	**15.4154**	**0.0241**	**3.7373**	**0.7182**	**4.4555**	**0.5660**	**0.7182**	**1.2841**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3896	13.8420	2.8965	0.0333	0.7618	0.0761	0.8379	0.2086	0.0728	0.2814		3,627.0586	3,627.0586	0.3673		3,636.2405
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0631	0.0423	0.4298	1.0500e-003	0.1068	7.7000e-004	0.1076	0.0283	7.1000e-004	0.0290		104.2264	104.2264	3.3400e-003		104.3099

Total	0.4527	13.8844	3.3263	0.0344	0.8686	0.0769	0.9455	0.2369	0.0735	0.3104		3,731.2850	3,731.2850	0.3706		3,740.5504

3.3 Site Preparation - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.8995	23.6201	12.7461	0.0245		0.9540	0.9540		0.8777	0.8777		2,468.4131	2,468.4131	0.7685		2,487.6244
Total	**1.8995**	**23.6201**	**12.7461**	**0.0245**	**1.5908**	**0.9540**	**2.5448**	**0.1718**	**0.8777**	**1.0494**		**2,468.4131**	**2,468.4131**	**0.7685**		**2,487.6244**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0388	0.0261	0.2645	6.4000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		64.1393	64.1393	2.0600e-003		64.1907
Total	**0.0388**	**0.0261**	**0.2645**	**6.4000e-004**	**0.0657**	**4.8000e-004**	**0.0662**	**0.0174**	**4.4000e-004**	**0.0179**		**64.1393**	**64.1393**	**2.0600e-003**		**64.1907**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	0.6625	20.0179	13.6431	0.0245		0.4988	0.4988		0.4988	0.4988	0.0000	2,468.4131	2,468.4131	0.7685		2,487.6244
Total	**0.6625**	**20.0179**	**13.6431**	**0.0245**	**0.6204**	**0.4988**	**1.1191**	**0.0670**	**0.4988**	**0.5657**	**0.0000**	**2,468.4131**	**2,468.4131**	**0.7685**		**2,487.6244**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0388	0.0261	0.2645	6.4000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		64.1393	64.1393	2.0600e-003		64.1907
Total	**0.0388**	**0.0261**	**0.2645**	**6.4000e-004**	**0.0657**	**4.8000e-004**	**0.0662**	**0.0174**	**4.4000e-004**	**0.0179**		**64.1393**	**64.1393**	**2.0600e-003**		**64.1907**

3.4 Grading - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					6.9505	0.0000	6.9505	3.4278	0.0000	3.4278			0.0000			0.0000
Off-Road	2.1515	24.2895	10.3804	0.0206		1.1683	1.1683		1.0748	1.0748		2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**2.1515**	**24.2895**	**10.3804**	**0.0206**	**6.9505**	**1.1683**	**8.1188**	**3.4278**	**1.0748**	**4.5026**		**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.1542	112.0544	23.4482	0.2699	6.1673	0.6160	6.7833	1.6883	0.5893	2.2776		29,361.9030	29,361.9030	2.9732		29,436.2326
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0326	0.3306	8.1000e-004	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		80.1742	80.1742	2.5700e-003		80.2384
Total	**3.2027**	**112.0870**	**23.7788**	**0.2707**	**6.2495**	**0.6166**	**6.8660**	**1.7101**	**0.5899**	**2.3000**		**29,442.0771**	**29,442.0771**	**2.9758**		**29,516.4710**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7107	0.0000	2.7107	1.3368	0.0000	1.3368			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	2,077.4666	2,077.4666	0.6467		2,093.6352
Total	**0.6262**	**18.1050**	**12.1450**	**0.0206**	**2.7107**	**0.4850**	**3.1957**	**1.3368**	**0.4850**	**1.8219**	**0.0000**	**2,077.4666**	**2,077.4666**	**0.6467**		**2,093.6352**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.1542	112.0544	23.4482	0.2699	6.1673	0.6160	6.7833	1.6883	0.5893	2.2776		29,361.9030	29,361.9030	2.9732		29,436.2326
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0326	0.3306	8.1000e-004	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		80.1742	80.1742	2.5700e-003		80.2384
Total	**3.2027**	**112.0870**	**23.7788**	**0.2707**	**6.2495**	**0.6166**	**6.8660**	**1.7101**	**0.5899**	**2.3000**		**29,442.0771**	**29,442.0771**	**2.9758**		**29,516.4710**

3.5 Building Construction - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9127	20.7077	15.7183	0.0250		1.2575	1.2575		1.2051	1.2051		2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**2.9127**	**20.7077**	**15.7183**	**0.0250**		**1.2575**	**1.2575**		**1.2051**	**1.2051**		**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2450	6.5837	1.9373	0.0133	0.3514	0.0595	0.4110	0.1011	0.0569	0.1581		1,421.1632	1,421.1632	0.1347		1,424.5315
Worker	1.0385	0.6971	7.0750	0.0172	1.7580	0.0128	1.7707	0.4663	0.0118	0.4781		1,715.7273	1,715.7273	0.0550		1,717.1017
Total	**1.2834**	**7.2808**	**9.0122**	**0.0305**	**2.1094**	**0.0723**	**2.1817**	**0.5674**	**0.0687**	**0.6361**		**3,136.8905**	**3,136.8905**	**0.1897**		**3,141.6332**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,329.7759	2,329.7759	0.5019		2,342.3232
Total	**0.9471**	**20.0464**	**15.4081**	**0.0250**		**0.8178**	**0.8178**		**0.8178**	**0.8178**	**0.0000**	**2,329.7759**	**2,329.7759**	**0.5019**		**2,342.3232**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2450	6.5837	1.9373	0.0133	0.3514	0.0595	0.4110	0.1011	0.0569	0.1581		1,421.1632	1,421.1632	0.1347		1,424.5315
Worker	1.0385	0.6971	7.0750	0.0172	1.7580	0.0128	1.7707	0.4663	0.0118	0.4781		1,715.7273	1,715.7273	0.0550		1,717.1017

Total	**1.2834**	**7.2808**	**9.0122**	**0.0305**	**2.1094**	**0.0723**	**2.1817**	**0.5674**	**0.0687**	**0.6361**		**3,136.8905**	**3,136.8905**	**0.1897**		**3,141.6332**

3.5 Building Construction - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2233	6.1980	1.7952	0.0132	0.3515	0.0512	0.4027	0.1011	0.0490	0.1502		1,413.9399	1,413.9399	0.1300		1,417.1902
Worker	0.9532	0.6169	6.3520	0.0168	1.7580	0.0127	1.7706	0.4663	0.0117	0.4780		1,669.2384	1,669.2384	0.0492		1,670.4686
Total	**1.1765**	**6.8149**	**8.1473**	**0.0300**	**2.1094**	**0.0639**	**2.1733**	**0.5674**	**0.0607**	**0.6281**		**3,083.1783**	**3,083.1783**	**0.1792**		**3,087.6587**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9471	20.0464	15.4081	0.0250		0.8178	0.8178		0.8178	0.8178	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**0.9471**	**20.0464**	**15.4081**	**0.0250**		**0.8178**	**0.8178**		**0.8178**	**0.8178**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2233	6.1980	1.7952	0.0132	0.3515	0.0512	0.4027	0.1011	0.0490	0.1502		1,413.9399	1,413.9399	0.1300		1,417.1902
Worker	0.9532	0.6169	6.3520	0.0168	1.7580	0.0127	1.7706	0.4663	0.0117	0.4780		1,669.2384	1,669.2384	0.0492		1,670.4686
Total	**1.1765**	**6.8149**	**8.1473**	**0.0300**	**2.1094**	**0.0639**	**2.1733**	**0.5674**	**0.0607**	**0.6281**		**3,083.1783**	**3,083.1783**	**0.1792**		**3,087.6587**

3.6 Paving - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2453**	**12.5685**	**11.8507**	**0.0178**		**0.7301**	**0.7301**		**0.6728**	**0.6728**		**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0432	0.4452	1.1800e-003	0.1232	8.9000e-004	0.1241	0.0327	8.2000e-004	0.0335		117.0027	117.0027	3.4500e-003		117.0889
Total	**0.0668**	**0.0432**	**0.4452**	**1.1800e-003**	**0.1232**	**8.9000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**117.0027**	**117.0027**	**3.4500e-003**		**117.0889**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7344	15.6108	12.9737	0.0178		0.5580	0.5580		0.5580	0.5580	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7344**	**15.6108**	**12.9737**	**0.0178**		**0.5580**	**0.5580**		**0.5580**	**0.5580**	**0.0000**	**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0432	0.4452	1.1800e-003	0.1232	8.9000e-004	0.1241	0.0327	8.2000e-004	0.0335		117.0027	117.0027	3.4500e-003		117.0889
Total	**0.0668**	**0.0432**	**0.4452**	**1.1800e-003**	**0.1232**	**8.9000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**117.0027**	**117.0027**	**3.4500e-003**		**117.0889**

3.7 Architectural Coating - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**77.9415**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2087	0.1401	1.4216	3.4600e-003	0.3532	2.5600e-003	0.3558	0.0937	2.3600e-003	0.0961		344.7490	344.7490	0.0111		345.0251
Total	**0.2087**	**0.1401**	**1.4216**	**3.4600e-003**	**0.3532**	**2.5600e-003**	**0.3558**	**0.0937**	**2.3600e-003**	**0.0961**		**344.7490**	**344.7490**	**0.0111**		**345.0251**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**77.7567**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2087	0.1401	1.4216	3.4600e-003	0.3532	2.5600e-003	0.3558	0.0937	2.3600e-003	0.0961		344.7490	344.7490	0.0111		345.0251

Total	**0.2087**	**0.1401**	**1.4216**	**3.4600e-003**	**0.3532**	**2.5600e-003**	**0.3558**	**0.0937**	**2.3600e-003**	**0.0961**		**344.7490**	**344.7490**	**0.0111**		**345.0251**

3.7 Architectural Coating - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**77.9093**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1915	0.1240	1.2763	3.3700e-003	0.3532	2.5400e-003	0.3558	0.0937	2.3400e-003	0.0960		335.4077	335.4077	9.8900e-003		335.6549
Total	**0.1915**	**0.1240**	**1.2763**	**3.3700e-003**	**0.3532**	**2.5400e-003**	**0.3558**	**0.0937**	**2.3400e-003**	**0.0960**		**335.4077**	**335.4077**	**9.8900e-003**		**335.6549**

Regulatory Compliance Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	77.6428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**77.7567**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Regulatory Compliance Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1915	0.1240	1.2763	3.3700e-003	0.3532	2.5400e-003	0.3558	0.0937	2.3400e-003	0.0960		335.4077	335.4077	9.8900e-003		335.6549
Total	**0.1915**	**0.1240**	**1.2763**	**3.3700e-003**	**0.3532**	**2.5400e-003**	**0.3558**	**0.0937**	**2.3400e-003**	**0.0960**		**335.4077**	**335.4077**	**9.8900e-003**		**335.6549**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Regulatory Compliance	3.4482	5.7688	34.4890	0.0715	7.0396	0.0628	7.1024	1.8760	0.0586	1.9345		7,150.5574	7,150.5574	0.4927		7,162.8757
Baseline	3.4482	5.7688	34.4890	0.0715	7.0396	0.0628	7.1024	1.8760	0.0586	1.9345		7,150.5574	7,150.5574	0.4927		7,162.8757

4.2 Trip Summary Information

	Average Daily Trip Rate			Baseline	Regulatory Compliance
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,057.42	1,031.94	880.88	2,841,986	2,841,986
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	175.92	37.15	15.86	318,375	318,375
Total	1,233.34	1,069.09	896.74	3,160,361	3,160,361

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Enclosed Parking with Elevator	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Condo/Townhouse	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Regulatory Compliance	0.1034	0.8852	0.3899	5.6400e-003		0.0714	0.0714		0.0714	0.0714		1,127.5554	1,127.5554	0.0216	0.0207	1,134.2559
NaturalGas Baseline	0.1163	0.9963	0.4394	6.3400e-003		0.0804	0.0804		0.0804	0.0804		1,268.9608	1,268.9608	0.0243	0.0233	1,276.5016

5.2 Energy by Land Use - NaturalGas

<u>Baseline</u>

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	10406.4	0.1122	0.9590	0.4081	6.1200e-003		0.0775	0.0775		0.0775	0.0775		1,224.2813	1,224.2813	0.0235	0.0225	1,231.5566
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	379.775	4.1000e-003	0.0372	0.0313	2.2000e-004		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003		44.6795	44.6795	8.6000e-004	8.2000e-004	44.9450

Total		**0.1163**	**0.9963**	**0.4394**	**6.3400e-003**		**0.0804**	**0.0804**		**0.0804**	**0.0804**		**1,268.9608**	**1,268.9608**	**0.0243**	**0.0233**	**1,276.5016**

Regulatory Compliance

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	9.258	0.0998	0.8532	0.3631	5.4500e-003		0.0690	0.0690		0.0690	0.0690		1,089.1764	1,089.1764	0.0209	0.0200	1,095.6488
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.326222	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003		38.3791	38.3791	7.4000e-004	7.0000e-004	38.6071
Total		**0.1034**	**0.8852**	**0.3899**	**5.6400e-003**		**0.0714**	**0.0714**		**0.0714**	**0.0714**		**1,127.5554**	**1,127.5554**	**0.0216**	**0.0207**	**1,134.2559**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Regulatory Compliance	8.7338	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031
Baseline	5.3822	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831	0.0000	27.1412	27.1412	0.0265	0.0000	27.8031

6.2 Area by SubCategory

Baseline

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2835					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4605	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831		27.1412	27.1412	0.0265		27.8031
Total	**5.3822**	**0.1742**	**15.0969**	**8.0000e-004**		**0.0831**	**0.0831**		**0.0831**	**0.0831**	**0.0000**	**27.1412**	**27.1412**	**0.0265**	**0.0000**	**27.8031**

Regulatory Compliance

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6382					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6351					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	0.4605	0.1742	15.0969	8.0000e-004		0.0831	0.0831		0.0831	0.0831		27.1412	27.1412	0.0265		27.8031
Total	**8.7338**	**0.1742**	**15.0969**	**8.0000e-004**		**0.0831**	**0.0831**		**0.0831**	**0.0831**	**0.0000**	**27.1412**	**27.1412**	**0.0265**	**0.0000**	**27.8031**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Health Risk Assessment of Diesel Emissions

Rio Urbana Mixed Use

Health Risk Assessment of Diesel Emissions

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July 2017

Table of Contents

Figures

Tables

EXECUTIVE SUMMARY

This Health Risk Assessment (HRA) assesses potential health risk impacts on future residents from exposure to diesel emissions generated by vehicles on the US Route 101 (US 101) freeway. The AERMOD dispersion model was used to determine concentrations of diesel particulate matter generated by US 101 at the Project area. The AERMOD model takes into account both terrain and atmospheric conditions.

This study identifies the level of air filtration required in the heating ventilating and air conditioning (HVAC) system. Limiting particulate infiltration can be accomplished by installing and maintain air filtration systems with a minimum efficiency reporting value (MERV) 9 or higher as defined by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2. These filters are rated to remove a portion of the ultrafine and submicron particles, such as diesel particulate matter emitted from mobile sources.

With installation of MERV 9 or higher filters, potential cancer risks would be well below the significant criterion of 10 per 1 million, depending on the amount of time a resident has the window open and the level of MERV filtration added.

INTRODUCTION

This HRA has been prepared for the Rio Urbana Mixed-Use Project ("Project") to assess potential health risk impacts on future residents from exposure to diesel emissions generated by vehicles on US 101. Based on the California Air Resources Board's (CARB) *Air Quality and Land Use Handbook: A Community Perspective,* siting sensitive land uses such as residential uses close to freeways and high-traffic roads can increase the potential for adverse health effects.[1] The Project consists of the construction of a mixed-use development that includes 182 condominium residential units and a 15,000-square-foot building containing the Rio School District administrative offices.

PROJECT LOCATION

The Project is located in the City of Oxnard ("City"), within the Ventura County Air Pollution Control District (VCAPCD), as shown in **Figure 1, Regional Location Map**. Regional access to the Project site is provided by the Ventura Freeway (US 101). The Project site consists of the two parcels bounded by Rio School Lane and E. Vineyard Avenue**.** Surrounding uses include residential development to the north and west, commercial development to the south, and industrial uses to the east. The US 101 freeway corridor and the E. Vineyard Boulevard US 101 northbound off-ramp are located approximately 1,250 feet and 925 feet

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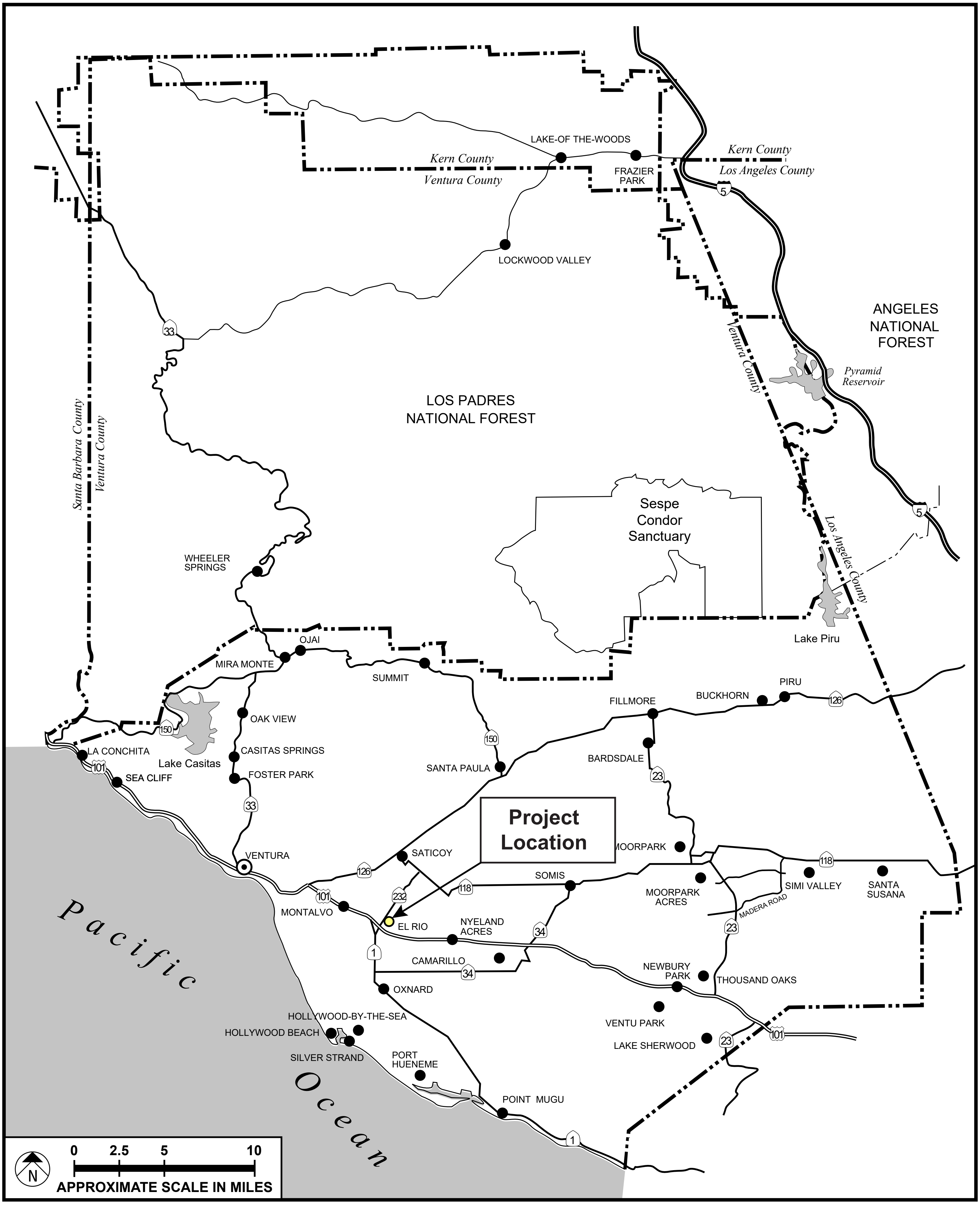
1 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005).

to the south of the Project site, respectively. The US 101 is situated approximately 7 feet lower than the Project site.

PROJECT DESCRIPTION

The Project site is currently developed with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that made up the former El Rio Elementary School campus, as shown in **Figure 2, Project Site Aerial.** The proposed Project would involve the demolition of the existing uses to allow the construction of a new mixed-use development that includes 182 condominium residential units and a 15,000-square-foot building containing the Rio School District Administrative Offices.

Construction would occur during the first quarter of 2018, with Project building occupancy expected in 2020.



SOURCE: Meridian Consultants, LLC - July 2017

FIGURE 1

Meridian Consultants

Regional Location Map

174-001-17

SOURCE: Google Earth - 2017

FIGURE **2**

Meridian Consultants

Project Site Aerial

174-001-17

HEALTH RISK ASSESSMENT

Introduction

The primary toxic air contaminant (TAC) of concern from diesel exhaust is diesel particulate matter (DPM). In 1998, CARB identified DPM from diesel-powered engines as a TAC based on its potential to result in an increased cancer risk, as well as other noncancer adverse health effects, due to prolonged exposure. Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation; coughs; headaches; light-headedness; and nausea. Long-term (chronic) effects include aggravation of existing respiratory and cardiovascular disease; alteration in the body's defense systems against foreign materials; damage to lung tissue and reduced lung function; carcinogenesis; premature birth rates; and premature death.

TAC generators located with the South Central Coast Air Basin are associated with diesel-fueled vehicles producing DPM, as well as with specific types of facilities, such as dry cleaners, gas stations, distribution centers, and ports. The CARB has made specific recommendations with respect to siting new sensitive uses near existing TAC-emitting facilities. Among other specific recommendations, CARB suggests siting sensitive receptors (such as residences) no less than 500 feet from freeways or major roadways.

This HRA evaluates the potential for increased health risks to future residents of the proposed Project resulting from exposure to diesel exhaust emissions (a TAC) generated by vehicles on the US 101 freeway and E. Vineyard Boulevard US 101 northbound off-ramp, which are located approximately 1,250 feet and 925 feet south of the Project site, respectively. Because the Project is not located within the buffer distance of any other major TAC-emitting facilities, this HRA is limited to the impacts from DPM associated with the US 101 freeway.

Average daily trips for the analyzed segments are presented in **Table 1, Traffic Volumes**. As shown in **Table 1,** annual average daily trips along this segment of US 101 is approximately 140,000 vehicles.[2] Of these, 6,635 annual average daily trips are contributed by trucks.[3]

2 Caltrans, "2015 Traffic Volumes (for all Vehicles on California State Highways), Postmile 22.006." Available at http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_volumes.pdf.

3 Caltrans, "2015 Annual Average Daily Truck Traffic, Postmile 22.006." Available at http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_truck.pdf

Table 1
Traffic Volumes

Segment	Annual Average Daily Trips
US-101 NB	140,000
US-101 SB	140,000
US-101 SB on from NB Vineyard Ave	9,701
US 101 NB off to Vineyard Ave	9,501
US-101 NB on from SB Vineyard Ave	4,201
US-101 SB off to Vineyard Ave	5,901

Sources:
Caltrans,"2015 Traffic Volumes on California State Highways, Postmile 22.006." Available at http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_volumes.pdf.
Caltrans "2015 Ramp Volumes on the California State Freeway System District 7." Available at http://www.dot.ca.gov/trafficops/census/docs/2015-ramp-vol-district07.pdf

Because diesel-powered trucks are the primary contributors of DPM on roadways and freeways, this HRA analysis evaluates the cancer risk and noncancer health effects of the future residents' increased exposure to DPM associated with vehicles traveling along US 101. Adverse health risks are discussed in terms of noncancer and cancer risks. Noncancer health risks can be measured quantitively, with the risk designated as a hazard quotient (HQ). The HQ is the ratio of the calculated concentration to a threshold concentration that has been identified as having some level of adverse health affect.

Cancer risks have no set thresholds because carcinogens are considered to be nonthreshold pollutants. This means that for any nonzero concentration of a carcinogen, there is an increased risk of developing cancer. Therefore, significance exposure to a carcinogen is evaluated based on the increase in risk. The increased risk is determined by multiplying a calculated dose with the cancer potency factor and then by 1 million to express risk in the common term of the risk per million people. An HRA evaluates the increased cancer risk from the continuous exposure to a pollutant over a lifetime.

Inhalable particulate matter equal to or less than 10 microns in diameter (PM10) from diesel exhaust is used as a surrogate for evaluating the cancer and chronic noncancer (HQ) risk from DPM exposure. The health risks for the proposed Project are evaluated by first estimating the DPM emissions produced by diesel vehicles that are currently traveling on the segment of US 101 that passes by the Project site. Dispersion modeling is then used to convert those emissions to ambient (existing background) concentrations. Finally, the ambient concentrations are used to determine whether the future residents of the proposed Project would be exposed to an increased potential for health risks from existing conditions at the Project site.

Significance Criteria

Neither the State of California nor the VCAPCD has developed a quantitative threshold for the purposes of evaluating the health impacts on residential developments from exposure to TAC emissions associated with a nearby freeway or high-volume roadway. However, in absence of a threshold specific to assessing health impacts from a freeway, the State's significant risk for exposures to carcinogens thresholds of 10 per 1 million for cancer risk and 1 for hazard index (HI) would serve as the most appropriate thresholds for use in this HRA analysis.

Freeway Exposure Health Risks and Hazards

Table 2, Estimated Inhalation Cancer Risk and Chronic Hazards, shows the cancer risk and chronic HI for future residents of the proposed Project. It is important to note that the cancer risk and chronic HI for the on-site residential receptors would gradually decrease as their distance from the freeway increases across the Project site. As shown in **Table 2**, the maximally exposed individual receptor (MEIR) is represented by the proposed residential dwelling unit located approximately 1,250 feet from the nearest travel lane on the US 101 Freeway and 925 feet from the Vineyard Avenue US 101 northbound off-ramp.

As shown in **Table 2**, the maximum cancer risks at the Project site from DPM emissions generated by diesel-vehicle travel along US 101 is 1.06 per 100,000. The cancer risk for residents at the site would exceed the State's significance criteria of 10 per 1 million. Additionally, the maximum noncancer HI for the Project's residents are 0.18 for the MEIR receptors. An HI of less than 1 is considered to be inconsequential.

Table 2
Estimated Inhalation Cancer Risk and Chronic Hazards

Receptor	Cancer Risk	Chronic Noncancer Hazard Index (HI)
Resident MEIR	1.06 E-05	0.18

*Notes: See **Appendix D** for calculations. MEIR = maximally exposed individual receptor.*

Criteria Pollutant Exposures

The State of California has promulgated strict ambient air quality standards for various pollutants. These standards were established to safeguard the public's health and welfare, with specific emphasis on protecting those individuals susceptible to respiratory distress, such as asthmatics, the young, the elderly, and those with existing conditions that may be affected by increased pollutant concentrations. However, recent research has shown that unhealthful respiratory responses occur with exposures to pollutants at levels that only marginally exceed clean air standards. **Table 3, California Ambient Air Quality Standards**, presents the California Ambient Air Quality Standards (CAAQS) for the criteria pollutants considered in the analysis.

Table 3
California Ambient Air Quality Standards

Pollutant	Standard	Health Effects
Particulates (PM10)	>50 μg/m^3 (24 hour average) > 20 μg/m^3 (Annual)	1. Excess deaths from short-term exposures and the exacerbation of symptoms in sensitive individuals with respiratory disease. 2. Excess seasonal declines in pulmonary function especially in children.
Particulates (PM2.5)	> 12 μg/m^3 (Annual)	1. Excess deaths and illness from long-term exposures and the exacerbation of symptoms in sensitive individuals with respiratory and cardio pulmonary disease.
Carbon Monoxide (CO)	> 9.0 ppm (8 hour average) > 20.0 ppm (1 hour average)	1. Aggravation of angina pectoris and other aspects of coronary heart disease. 2. Decreased exercise tolerance in persons with peripheral vascular disease and lung disease. 3. Impairment of central nervous system functions. 4. Possible increased risk to fetuses.
Nitrogen Dioxide (NO2)	> 0.18 ppm (1 hour average)	1. Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups. 2. Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structure changes

Source: California Code of Regulations, Title 17, Section 70200.
Notes: ppm: parts per million; μg/m^3: micrograms per cubic meter.

Pollutant emissions are considered to have a significant effect on the environment if they result in concentrations that create either a violation of an ambient air quality standard, contribute to an existing air quality violation or expose sensitive receptors to substantive pollutant concentrations. Should ambient air quality already exceed existing standards, the VCAPCD has established significance criteria for selected compounds to account for the continued degradation of local air quality. Background concentrations are based on the highest observed value for the most recent 3-year period. Annual exposures were not considered because event scenarios were based on single-day activities; it would be speculative to forecast concentration estimates without information and schedules to reflect reasonable assumptions associated with seasonal event activities.

Table 4, Ventura County–Oxnard Monitoring Summary, shows the pollutant concentrations collected at the El Rio-Rio Mesa School #2 monitoring station for the last three years of available data. **Table 5, Air Quality Significance Thresholds** outlines the relevant significance thresholds considered to affect local air quality.

Table 4
Ventura County–Oxnard Monitoring Summary

Pollutant/Averaging Time	2014	Year 2015	2016	Maximum
Particulates (PM10)				
24-hour	115.3	92.0	101.6	115.3
# of days above 24-hour standard	7	6	14	14
Particulates (PM2.5)				
24-hour	22.2	25.5	22.7	25.5
# of days above 24-hour standard	0	0	0	0
Carbon monoxide (CO)				
1-hour	N/A	N/A	N/A	N/A
Nitrogen dioxide (NO2)				
1-hour	39	36	33	39
# of days above 24-hour standard	0	0	0	0

Source: California Air Resources Board; US Environmental Protection Agency.
Note: PM10 and PM2.5 concentrations are expressed in micrograms per cubic meter (µg/m³). All others are expressed in parts per billion (ppb).

Table 5
Air Quality Significance Thresholds

Pollutant	Averaging Time	Pollutant Concentration
Particulates (PM10) Particulates (PM2.5)	24 hours	2.5 µg/m^3 (operation)
Particulates (PM10)	Annual	1.0 µg/m^3
Carbon monoxide (CO)	1 hour 8 hours	Area is in attainment; impacts are significant if they cause or contribute to an exceedance of the following attainment standards of 20 ppm (1-hour) and 9 ppm (8-hour).
Nitrogen dioxide (NO2)	1 hour	Area is in attainment; impacts are significant if they cause or contribute to an exceedance of the following attainment standard of 0.18 ppm.

Source: Ventura County Air Pollution District.
Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter.

For the maximum exposed residential units, results of the analysis predicted freeway emissions will produce maximum PM10 concentrations of 3.5 µg/m^3 and 1.2 µg/m^3 for the 24-hour and annual averaging times, respectively. These values would exceed the 24-hour and annual significance thresholds of 2.5 µg/m^3 and 1.0 µg/m^3, respectively, without air filtration. For PM2.5, a maximum 24-hour average concentration of 2.7 µg/m^3 was predicted. This value exceeds the significance threshold of 2.5 µg/m^3 without air filtration.

The maximum modeled 1-hour concentration for CO of 0.2 ppm (256.8 µg/m^3) would not exceed the CAAQS of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.1 ppm (131.9 µg/m^3) would not exceed the CAAQS of 9 ppm.

The maximum 1-hour concentration for NO2 of 0.01 ppm (23.7 µg/m^3) would not exceed the CAAQS of 0.18 ppm.

Recommendations

As stated previously, with respect to cancer risk, any nonzero concentration of a carcinogen represents an increased risk of developing cancer. Therefore, to minimize adverse health effects associated with exposure of future Project residents to DPM concentrations from the US 101 freeway, it is recommended that the Project incorporate the following design features to reduce potential cancer risk:

- Plant vegetation between residential receptors and the freeway;
- Install, operate, and maintain an HVAC system that uses high-efficiency filters of MERV 9 or higher for the residential units;

- Locate the air intakes for the residential units as far from the freeway as possible; and
- Provide a disclosure letter to all new residents that (1) discusses the potential risk from living close to the US-101 freeway, and (2) points out that opening windows reduces the effectiveness of implemented reduction measures and increases individuals' exposure and hence risk.

High-efficiency (MERV 9 or higher) pleated particle filters for residential uses located near busy roadways would generally be considered the most effective approach to filtration because these filters can remove the very small particles emitted by motor vehicles without emitting ozone, formaldehyde, or other harmful by-products. Such high-efficiency filtration can reduce indoor PM2.5 and ultrafine particle levels by up to 90 percent (MERV 12) relative to incoming outdoor levels when doors and windows are kept mostly closed. However, only those particles in the airstream actually passing through the filter are removed. Consequently, because most residential occupants of the proposed Project are anticipated to open their windows or doors at least part of the day, any pollutant reduction attained through the use of high-efficiency filters would be compromised based on the amount of time doors and windows are left open. **Table 6, Reduced Estimated Inhalation Cancer Risk**, identified the reduction in risk associated with incorporation of MERV 9 through MERV 12 filters when windows are open 25 percent, 50 percent, and 75 percent of the time.

Limiting particulate infiltration will be accomplished by installing and maintain air filtration systems with efficiencies of MERV 9 or higher as defined by ASHRAE Standard 52.2. These filters are rated to remove a portion of the ultrafine and submicron particles, such as diesel particulate matter emitted from mobile sources. MERV 9 or higher air filtration systems are capable of removing 50 percent of particles between 0.3 and 1.0 microns, and 85 percent or more of particles between 1.0 and 10.0 microns. With installation of MERV 9 air filtration systems, PM10 concentrations for the maximum exposed residential units would be 1.8 $\mu g/m^3$ and 0.6 $\mu g/m^3$ for the 24-hour and annual averaging times, respectively. These values would not exceed the 24-hour and annual significance thresholds of 2.5 $\mu g/m^3$ and 1.0 $\mu g/m^3$, respectively. Furthermore, PM2.5 concentrations for the maximum exposed residential units would be 0.27 $\mu g/m^3$, below the significance threshold of 2.5 $\mu g/m^3$.

Table 6
Reduced Estimated Inhalation Cancer Risk

Receptor	MERV 9	MERV 10	MERV 11	MERV 12
Windows open 25 percent of the time				
Resident MEIR	7.41E-06	6.50E-06	5.28E-06	4.98E-06
Windows open 50 percent of the time				
Resident MEIR	8.42E-06	7.81E-06	7.00E-06	6.80E-06
Windows open 75 percent of the time				
Resident MEIR	9.43E-06	9.13E-06	8.72E-06	8.62E-06

*Notes: See **Appendix B** for calculations. MEIR = maximally exposed individual receptor.*

CONCLUSION

The estimated maximum cancer risk for the Project's residential MEIR is 1.06 per 100,000, which would exceed the significance criterion of 10 per 1 million. The maximum noncancer HI for the Project's MEIR would be 0.18, which is also below the significance criterion of 1.

To reduce the exposure of the Project's on-site residents to DPM emissions, it is recommended that high-efficiency filters (MERV 9 or higher) be installed; communal outdoor areas and air intakes be located as far as from the freeway as possible; and a letter identifying the increased risk from DPM exposure be provided to all future residents. The implementation of these measures will reduce risk exposure at the MEIR to between 4.98 and 9.43 per 1 million, below the significance criterion of 10 per 1 million, depending on the amount of time a resident has the window open and the level of MERV filtration added.

Appendix A

Methodology

HRA METHODOLOGY

The methodologies and assumptions used in this Health Risk Assessment (HRA) are consistent with the guidance recommended by the Ventura County Air Pollution Control District (VCAPCD) Air Toxics "Hot Spots" Information and Assessment Act, Ventura County Air Quality Assessment Guidelines[1], and the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) Air Toxic Hot Spots Program Risk Assessment Guidelines.[2] The methodology used in this assessment uses a dose-response assessment to characterize risk from cancer due to inhaled toxic air contaminants (TACs) and the assessment of acute and chronic noncancer from diesel particulate matter (DPM). Based on the OEHHA guidance, the evaluation of potential health risks uses the following standard four-step risk assessment process: (1) Hazard Identification; (2) Exposure Assessment; (3) Dose-Response Assessment; and (4) Risk Characterization.

Hazard Identification

The hazard identification process is undertaken to determine what TACs are potentially present in the assessment areas and, if so, to identify what the pollutants of concern are along with their potential adverse health effects. In this HRA, the primary hazard is DPM emissions from vehicular sources (specifically diesel-powered trucks) along the US 101 freeway corridor and the E. Vineyard Boulevard US 101 northbound off-ramp, located approximately 1,250 feet and 925 feet to the south of the Project site, respectively. CARB identified DPM as a TAC with a potential cancer and chronic non-cancer effects.

DPM historically has been used a surrogate measure of exposure for whole diesel exhaust emissions. Diesel exhaust is a complex mixture of thousands of gases and fine particles (commonly known as soot). Diesel exhaust particles and gases are suspended in the air due to thermal buoyancy and the small size of the particles. The composition of diesel exhaust varies depending on engine type, operating conditions, fuel composition, lubricating oil, and presence of an emission control system. One of the main characteristics of diesel exhaust is the release of particles at a relative rate approximately 20 times greater than that by gasoline-fueled vehicles, on an equivalent fuel basis. Diesel particulates are mainly aggregates of spherical carbon particles coated with inorganic and organic substances. The inorganic fraction primarily consists of small carbon (elemental carbon) particles ranging from 0.01 to 0.08 microns in diameter. The organic fraction consists of soluble organic compounds.

1 Available at http://www.vcapcd.org/air_toxics.htm.

2 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA), *Air Toxic Hot Spots Program Risk Assessment Guideline,* (May 2015).

Exposure Assessment

The degree of the Project's exposure to DPM from existing vehicle traffic on US 101 was evaluated under the exposure assessment portion of the HRA. This assessment starts with the quantification of DPM emissions, followed by dispersion modeling and an estimation of long-term exposure levels. The amount of DPM emissions generated by vehicle traffic on US 101 was determined using PM10 from diesel exhaust as a surrogate.

Detailed Modeling

Air dispersion modeling was conducted using the American Meteorological Society/Environmental Protection Agency Regulator Model (AERMOD v. 9.4.0). This model is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the release heights of the emission sources (i.e., complex terrain). AERMOD is the US Environmental Protection Agency's (USEPA) regulatory dispersion model specified in the Guideline for Air Quality Methods.[3] AERMOD is recommended for use by the California Air Resources Board (CARB) and the VCAPCD.

Emission Sources

Within AERMOD, diesel vehicle traffic was modeled as a line source comprising separate volume sources along the stretch of US 101 freeway corridor and the E. Vineyard Boulevard US 101 northbound off-ramp that is located approximately 1,250 feet and 925 feet to the south of the Project boundary. Diesel exhaust emissions were modeling using a release height of 7.41 feet (2.26 meters), which is the weighted average height of an exhaust stack above ground level for the combined diesel car and truck traffic along this stretch of freeway. The plume height and width used for each volume sources was 14.86 feet and 73.75 feet (4.53 and 22.48 meters), respectively. Based on guidance, the plume height was determined by multiplying the average stack height by a factor of 2, while the plume width was determined by adding 19.69 feet (6 meters) to the freeway width.

Emission Rates

The quantification of diesel exhaust emissions requires a diesel exhaust emission rate (in grams per second) from trucks. To estimate this emission rate, emission factors (in grams per mile) for the various vehicle classes of diesel-powered trucks and cars were first obtained from the EMFAC2014 web database.[4] Pollutant emission rates were identified for total organic gases (TOG), diesel particulates,

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3 U.S. EPA Code of Federal Regulations, Title 40, Part 51, Appendix W

4 EMFAC2014 is the California Air Resources Boards' tool for estimating emissions from on-road vehicles. The 2014 version was released April of 2015. Available at https://www.arb.ca.gov/emfac/2014/.

particulates (PM10 and PM2.5), carbon monoxide (CO) and nitrogen oxide (NOx) compounds. Using these emission factors and the available average daily vehicle traffic counts published by the California Department of Transportation (Caltrans) along with the distance of the US 101 corridor to be modeled, the total grams of diesel exhaust emissions that would be generated along the US 101 segment to be modeled were obtained. In turn, the total emissions amount was then converted into an exhaust emission rate in grams per second.

A conservative route speed of 65 miles per hour (mph) was assumed for the northbound and southbound lanes on US 101. For congested or minimum speed conditions, 10 and 5 miles per hour were identified and used for the north and southbound routes, respectively. Ramp volumes were assumed to have a uniform distribution and were averaged to produce an hourly traffic profile.

For particulates (PM10 and PM2.5), emissions were quantified through the reentrainment of paved roadway dust. The predictive emission equation developed by the USEPA (AP-42, Section 13.2.1) was used to generate particulate source strength. To account for the mass rate emissions entrained from the roadway surface, the contribution from exhaust, brake and tire wear were added to the AP-42 emission factor equation.

Meteorological Data

To run AERMOD, the following hourly surface meteorological data are required: wind speed, wind direction, ambient temperature, and opaque cloud cover. These meteorological variables are used to estimate air dispersion of pollutants in the atmosphere. Wind speed determines how rapidly pollutants are diluted and influences the rise of the emission plume in the air, thus affecting downwind pollutant concentrations. Wind direction determines where pollutants will be transported. The opaque cloud cover and upper air surrounding data are used in calculations to determine other important dispersion parameters. These include atmospheric stability (a measure of turbulence and the rate at which pollutants disperse laterally and vertically) and mixing height (the vertical depth of the atmosphere within which dispersion occurs). The greater the mixing height is, the larger the volume of atmosphere is available to dilute the pollutant concentration.

The dispersion modeling for the Project utilized preprocessed meteorological data from the Oxnard Airport Meteorological Station, which is the station nearest to the Project site (located approximately 2.7 miles to the southeast).

Sensitive Receptors

To determine the DPM concentrations at the Project site, discrete receptors were placed inside the boundary of the Project site at areas where future residences would be located. Based on VCAPCD's

AERMOD modeling guidance, all receptors should be set to a height of 0 feet (0 meters) so that ground-level concentrations are analyzed. To fulfill VCAPCD's requirements and accurately characterize the risk throughout the Project site, a 32.81-by-32.81-foot (10-by-10-meter) receptor grid was placed over the Project site (including site boundaries). The receptor grid was then converted to discrete receptors to maintain spacing and provide for ease in determining the maximum exposed individual (MEI).

Terrain Data

The modeling analysis also included terrain data to accurately assess impacts in three dimensions. The terrain data used for the analysis was from the digital elevation model data for the Los Angeles 1 degree quadrangles obtained through the AERMOD program.

Urban/Rural

The AERMOD model requires that the user specify whether a site should be modeled as either urban or rural. The urban option allows the user to incorporate the effects of increased surface heating from an urban area on pollutant dispersion under stable atmospheric conditions. This surface heating typically causes better dispersion, which results in lower pollutant concentrations.

Based on VCAPCD's AERMOD modeling guidance, all air quality impact analyses in the South Central Coast Air Basin should be executed using the urban modeling option. In addition, all sources should be modeled with urban effects using the population of the city or county where the project is located. The 2040 population of 237,300 for Oxnard[5] was used in the AERMOD run.

Dose-Response Assessment

The dose-response assessment in the process of characterizing the relationship between exposure to diesel exhaust and the incidence of an adverse health effect in the exposed populations.

The estimation of potential inhalation cancer risk posed by exposure to DPM requires a cancer potency factor. Cancer potency factors are expressed as the upper bound probability of developing cancer, assuming continuous lifetime exposure to diesel exhaust at a dose of 1 milligram per kilogram of body weight, and are expressed in units of inverse dose as a potency slope (i.e., $[mg/kg/day]^{-1}$). A cancer potency factor when multiplied by the dose of a carcinogen gives the associated lifetime cancer risk. The cancer potency factor for DPM is 1.1 $(mg/kg/day)^{-1}$.[6] The estimation of potential inhalation chronic noncancer effects posed by exposure to DPM requires a chronic reference exposure level (REL). A chronic

5 Southern California Association of Governments, *Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (adopted April 2016), Appendix: Demographics and Growth Forecast.

6 OEHHA, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (August 2003).

REL is a concentration level (expressed in units of micrograms per cubic meter [$\mu g/m^3$] for inhalation exposures) at or below which no adverse health effects are anticipated following long-term exposure. The chronic REL for DPM is 5 $\mu g/m^3$.[7] The chronic hazard index target organ for DPM is the respiratory system.

Risk Characterization

Risk characterization combines the maximum annual average ground-level DPM concentration from the exposure assessment and the cancer potency factor and chronic REL from the dose-response analysis to estimate the potential inhalation cancer risk and chronic hazard index (HI) from the exposure to DPM emissions.

For the Project's health risk evaluation, MEI was assumed to reside at the same receptor location for 70 years. This is a conservative assumption because, typically speaking, people no longer spend their entire life in one location.

The equation used to calculate the potential excess lifetime cancer risk for the residential inhalation pathway is as follows:

$$Dose = (C_{air} \times DBR \times A \times EF \times ED \times CF) / AT$$

where:

Dose = Dose through inhalation (milligrams per kilogram-day [mg/kg/day])
C_{air} = Concentration of DPM in air (micrograms per cubic meter [$\mu g/m^3$] = from AERMOD)
DBR = Daily breathing rate, or the average amount of air inhaled daily (liters per kilograms body weight-day [L/kg body weight-day]) = 302 L/kg)
A = Inhalation absorption factor (unitless), the potential for absorption into the body through the lungs = 1
EF = Exposure frequency (days per year [days/yr]) = 350 days/year
ED = Exposure duration (years[yr]) = 70 years
CF = Composite conversion factor (micrograms per cubic meters – milligram per 1,000 liter [mg/µg x m^3/L]) = 1×10^{-6}
AT = Averaging time period over which exposure is averaged (number of days over total exposure period; for lifetime cancer risk, averaging time is 70 regardless of exposure duration) = 25,550 days

The following equation was used to estimate the excess cancer risk for a resident at the Project based upon the calculated dosage:

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7 OEHHA, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (August 2003).

$$\text{Cancer Risk} = \text{Dose X CPF}$$

where:

Cancer Risk = Risk (potential chances per million)

Dose = Dose from inhalation (mg/kg-day)

CPF = Chemical or compound cancer potency factor = (1 mg/kg-day-1)

Finally, the potential noncancer health risk for chronic exposure to DPM was evaluated by calculating the hazard quotient (HQ) using the following equation:

$$HQ = C_{airi}/REL$$

where:

HQ = Hazard quotient for DPM (unitless)

C_{airi} = Increase in average annual PM10 concentration (µg/m^3) from air dispersion model at the MEI

REL = Reference exposure level for DPM (5 µg/m^3)

APPENDIX B

Emission Factor Rates/Mobile Emissions/Chronic and Acute Exposure/Caltrans Traffic Volume

Emission Factor Rate Adjustment

CO Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.986	FROM EMFAC SHEET: Value at 45 mph
Speed (mph)	45	
acceleration time (sec)	18	
acceleration rate (mph/sec)	2.5	
Emfac (gr/mi)	2.345	

Deceleration/Off-Ramp

Emfac (gr/mi) = (emfac at idle speed * 1.5)

Emfac Idle speed (gr/mi)	2.94	FROM EMFAC SHEET: Value at 5 mph
Emfac Deceleration (gr/mi)	4.410	

NOX Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.254
Speed (mph)	45
acceleration time (sec)	18
acceleration rate (mph/sec)	2.5
Emfac (gr/mi)	0.604

Deceleration/Off-Ramp

Emfac (gr/mi) = (emfac at idle speed * 1.5)

Emfac Idle speed (gr/mi)	1.48
Emfac Deceleration (gr/mi)	2.220

PM10 Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.00282
Speed (mph)	45
acceleration time (sec)	18
acceleration rate (mph/sec)	2.5
Emfac (gr/mi)	0.0067

Deceleration/Off-Ramp

*Emfac (gr/mi) = (emfac at idle speed * 1.5)*

Emfac Idle speed (gr/mi)	0.0253
Emfac Deceleration (gr/mi)	0.038

PM2.5 Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.00265
Speed (mph)	45
acceleration time (sec)	18
acceleration rate (mph/sec)	2.5
Emfac (gr/mi)	0.0063

Deceleration/Off-Ramp

*Emfac (gr/mi) = (emfac at idle speed * 1.5)*

Emfac Idle speed (gr/mi)	0.0238
Emfac Deceleration (gr/mi)	0.036

TOG GAS Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.0376
Speed (mph)	45
acceleration time (sec)	18
acceleration rate (mph/sec)	2.5
Emfac (gr/mi)	0.089

Deceleration/Off-Ramp

*Emfac (gr/mi) = (emfac at idle speed * 1.5)*

Emfac Idle speed (gr/mi)	0.318
Emfac Deceleration (gr/mi)	0.477

TOG DSL Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.00503
Speed (mph)	45
acceleration time (sec)	18
acceleration rate (mph/sec)	2.5
Emfac (gr/mi)	0.012

Deceleration/Off-Ramp

*Emfac (gr/mi) = (emfac at idle speed * 1.5)*

Emfac Idle speed (gr/mi)	2.11
Emfac Deceleration (gr/mi)	3.165

DSL Particulate Emissions

Acceleration/On-Ramp (15 - 45 mph)

Emfac (gr/mi) = (emfac at average link speed x 16/60) x (0.027) x (exp (.098 x acceleration speed product)) x (60 min/hr) / (average link speed)

Emfac at link speed	0.00149
Speed (mph)	45
acceleration time (sec)	18
acceleration rate (mph/sec)	2.5
Emfac (gr/mi)	0.004

Deceleration/Off-Ramp

*Emfac (gr/mi) = (emfac at idle speed * 1.5)*

Emfac Idle speed (gr/mi)	0.107
Emfac Deceleration (gr/mi)	0.161

Source: California Department of Transportation, 1989. Division of New Technology and Research. Caline4 - A Dispersion Model for Predicting Air Pollution Concentration Near Roadways (Revised). FHWA/CA/TL-84/15.

On-Road Mobile Sources
Emission Rate

Minimum Speed Scenario (15mph)

US 101 NB

CO Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	1.81

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.0778
Pollutant Emission Rate/Source (gr/sec/source)	7.99E-02

US 101 NB

NOx Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	1.02

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.170895
Pollutant Emission Rate/Source (gr/sec/source)	4.50E-02

US 101 NB

TOG GAS Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.116

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.133161
Pollutant Emission Rate/Source (gr/sec/source)	5.12E-03

US 101 NB

TOG DSL Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.102

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.117089
Pollutant Emission Rate/Source (gr/sec/source)	4.50E-03

US 101 NB

DSL Particulate Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.01100

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.012627
Pollutant Emission Rate/Source (gr/sec/source)	4.86E-04

US 101 SB

CO Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	1.81

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.0843
Pollutant Emission Rate/Source (gr/sec/source)	8.02E-02

US 101 SB

NOx Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	1.02

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.174592
Pollutant Emission Rate/Source (gr/sec/source)	4.52E-02

US 101 SB

TOG GAS Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.116

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.133581
Pollutant Emission Rate/Source (gr/sec/source)	5.14E-03

US 101 SB

TOG DSL Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.102

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.117459
Pollutant Emission Rate/Source (gr/sec/source)	4.52E-03

US 101 SB

DSL Particulate Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.01100

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.012667
Pollutant Emission Rate/Source (gr/sec/source)	4.87E-04

US 101 NB off to Vineyard Ave

CO Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	4.41

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.1392
Pollutant Emission Rate/Source (gr/sec/source)	7.73E-03

US 101 NB off to Vineyard Ave

NOx Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	2.22

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.070057219
Pollutant Emission Rate/Source (gr/sec/source)	3.89E-03

US 101 NB off to Vineyard Ave

TOG GAS Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	0.020471886

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.000646038
Pollutant Emission Rate/Source (gr/sec/source)	3.5891E-05

US 101 NB off to Vineyard Ave

TOG DSL Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	0.76772772

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.024227418
Pollutant Emission Rate/Source (gr/sec/source)	0.001345968

US 101 NB off to Vineyard Ave

DSL Particulate Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	0.1605

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.005064948
Pollutant Emission Rate/Source (gr/sec/source)	2.81E-04

US 101 NB on from SB Vineyard Ave

CO Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	2.35

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0228
Pollutant Emission Rate/Source (gr/sec/source)	1.63E-03

US 101 NB on from SB Vineyard Ave

NOx Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.60

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.00587
Pollutant Emission Rate/Source (gr/sec/source)	4.19E-04

US 101 NB on from SB Vineyard Ave

TOG GAS Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.00384

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.7E-05
Pollutant Emission Rate/Source (gr/sec/source)	2.7E-06

US 101 NB on from SB Vineyard Ave

TOG DSL Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.0029

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.8E-05
Pollutant Emission Rate/Source (gr/sec/source)	2.01E-06

US 101 NB on from SB Vineyard Ave

DSL Particulate Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.00354

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.4E-05
Pollutant Emission Rate/Source (gr/sec/source)	2.5E-06

US 101 SB Off to Vineyard Ave

CO Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	4.41

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0814
Pollutant Emission Rate/Source (gr/sec/source)	4.52E-03

US 101 SB Off to Vineyard Ave

NOx Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	2.22

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.040979004
Pollutant Emission Rate/Source (gr/sec/source)	2.28E-03

US 101 SB Off to Vineyard Ave

TOG Gas Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	0.020471886

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.000377891
Pollutant Emission Rate/Source (gr/sec/source)	2.09939E-05

US 101 SB Off to Vineyard Ave

TOG DSL Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	0.76772772

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.014171494
Pollutant Emission Rate/Source (gr/sec/source)	7.87E-04

US 101 SB Off to Vineyard Ave

DSL Particulate Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	0.1605

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.002962671
Pollutant Emission Rate/Source (gr/sec/source)	0.000164593

US 101 SB On from NB Vineyard Ave

CO Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	2.35

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0564
Pollutant Emission Rate/Source (gr/sec/source)	4.03E-03

US 101 SB On from NB Vineyard Ave

NOx Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.60

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.014537953
Pollutant Emission Rate/Source (gr/sec/source)	1.04E-03

US 101 SB On from NB Vineyard Ave

TOG Gas Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.00383837

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	9.23628E-05
Pollutant Emission Rate/Source (gr/sec/source)	6.59734E-06

US 101 SB On from NB Vineyard Ave

TOG DSL Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.002902158

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	6.98347E-05
Pollutant Emission Rate/Source (gr/sec/source)	4.99E-06

US 101 SB On from NB Vineyard Ave

DSL Particulate Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.003544099

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	8.52817E-05
Pollutant Emission Rate/Source (gr/sec/source)	6.09155E-06

On-Road Mobile Sources
Emission Rate

Average Speed Scenario (65 mph)

US 101 NB

CO Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.902

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.0354384
Pollutant Emission Rate/Source (gr/sec/source)	3.98E-02

NOx Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.262

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.3007593
Pollutant Emission Rate/Source (gr/sec/source)	1.16E-02

TOG GAS Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.0446

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.051198
Pollutant Emission Rate/Source (gr/sec/source)	0.0019692

TOG DSL Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.00401

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0046032
Pollutant Emission Rate/Source (gr/sec/source)	1.77E-04

DSL Particulate Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.0018

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.1E-03
Pollutant Emission Rate/Source (gr/sec/source)	7.95E-05

PM10 Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.0037
Emfac2014 Emissions TW/BW (g/mi)	0.048
PM10 Reetrainment Mass Rate (gr/mi)	0.1211629

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vel
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.139087
PM10 Reetrainment Emission Rate/Source	5.35E-03

PM2.5 Emissions

Number of Sources	26
Link Length (meters)	1140.1
Volume/Baseline (VPH)	5833.3
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.0037
Emfac2014 Emissions TW/BW (g/mi)	0.019
PM10 Reetrainment Mass Rate (gr/mi)	0.0921629

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vel
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.105797
PM10 Reetrainment Emission Rate/Source	4.07E-03

US 101 SB

CO Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.902

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.038708
Pollutant Emission Rate/Source (gr/sec/source)	4.00E-02

NOx Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.262

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.301709
Pollutant Emission Rate/Source (gr/sec/source)	1.16E-02

TOG GAS Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.0446

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0513596
Pollutant Emission Rate/Source (gr/sec/source)	0.0019754

TOG DSL Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.00401

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0046178
Pollutant Emission Rate/Source (gr/sec/source)	1.78E-04

DSL Particulate Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Pollutant Mass Emission Rate (gr/mi)	0.0018

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.1E-03
Pollutant Emission Rate/Source (gr/sec/source)	7.97E-05

PM10 Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.0037
Emfac2014 Emissions TW/BW (g/mi)	0.048
PM10 Reetrainment Mass Rate (gr/mi)	0.1211629

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gr
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.139526
PM10 Reetrainment Emission Rate/Source	5.37E-03

PM2.5 Emissions

Number of Sources	26
Link Length (meters)	1143.7
Volume/Baseline (VPH)	5833.3
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.00316
Emfac2014 Emissions TW/BW (g/mi)	0.019
PM10 Reetrainment Mass Rate (gr/mi)	0.0916229

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gr
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.105509
PM10 Reetrainment Emission Rate/Source	4.06E-03

US 101 NB off to Vineyard Ave

CO Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	4.41

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.139167719
Pollutant Emission Rate/Source (gr/sec/source)	7.73E-03

NOx Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	2.22

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.070057219
Pollutant Emission Rate/Source (gr/sec/source)	3.89E-03

TOG GAS Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	0.020471886

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.000646038
Pollutant Emission Rate/Source (gr/sec/source)	3.5891E-05

TOG DSL Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	0.76772772

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.024227418
Pollutant Emission Rate/Source (gr/sec/source)	0.001345968

DSL Particulate Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Pollutant Mass Emission Rate (gr/mi)	0.1605

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	5.1E-03
Pollutant Emission Rate/Source (gr/sec/source)	2.81E-04

PM10 Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.03795
Emfac2014 Emissions TW/BW (g/mi)	0.048
PM10 Reetrainment Mass Rate (gr/mi)	0.155412876

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vel
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.004904
PM10 Reetrainment Emission Rate/Source	2.72E-04

PM2.5 Emissions

Number of Sources	18
Link Length (meters)	461.8
Volume/Baseline (VPH)	395.9
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.0357
Emfac2014 Emissions TW/BW (g/mi)	0.019
PM10 Reetrainment Mass Rate (gr/mi)	0.124162876

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vel
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.003918
PM10 Reetrainment Emission Rate/Source	2.18E-04

US 101 NB on from SB Vineyard Ave

CO Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	2.3453

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.022775923
Pollutant Emission Rate/Source (gr/sec/source)	1.63E-03

NOx Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.6042

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.005867226
Pollutant Emission Rate/Source (gr/sec/source)	4.19E-04

TOG GAS Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.0038

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.72758E-05
Pollutant Emission Rate/Source (gr/sec/source)	2.66255E-06

TOG DSL Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.002902158

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.81839E-05
Pollutant Emission Rate/Source (gr/sec/source)	2.01E-06

DSL Particulate Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Pollutant Mass Emission Rate (gr/mi)	0.003544099

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.4E-05
Pollutant Emission Rate/Source (gr/sec/source)	2.45843E-06

PM10 Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.006707623
Emfac2014 Emissions TW/BW (g/mi)	0.048
PM10 Reetrainment Mass Rate (gr/mi)	0.1241705

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vehicle Weight)^1.02)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.001206
PM10 Reetrainment Emission Rate/Source	8.61E-05

PM2.5 Emissions

Number of Sources	14
Link Length (meters)	321.5
Volume/Baseline (VPH)	175
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.006303263
Emfac2014 Emissions TW/BW (g/mi)	0.019
PM10 Reetrainment Mass Rate (gr/mi)	0.094766139

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vehicle Weight)^1.02)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.000920
PM10 Reetrainment Emission Rate/Source	6.57E-05

US 101 SB Off to Vineyard Ave

CO Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	4.41

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.081404238
Pollutant Emission Rate/Source (gr/sec/source)	4.52E-03

NOx Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	2.22

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.040979004
Pollutant Emission Rate/Source (gr/sec/source)	2.28E-03

TOG Gas Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	0.020471886

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.000377891
Pollutant Emission Rate/Source (gr/sec/source)	2.09939E-05

TOG DSL Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	0.76772772

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.014171494
Pollutant Emission Rate/Source (gr/sec/source)	7.87E-04

DSL Particulate Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Pollutant Mass Emission Rate (gr/mi)	0.1605

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.0E-03
Pollutant Emission Rate/Source (gr/sec/source)	0.000164593

PM10 Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.03795
Emfac2014 Emissions TW/BW (g/mi)	0.048
PM10 Reetrainment Mass Rate (gr/mi)	0.155412876

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vehicle Weigh
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.002869
PM10 Reetrainment Emission Rate/Source	1.59E-04

PM2.5 Emissions

Number of Sources	18
Link Length (meters)	434.9
Volume/Baseline (VPH)	245.9
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.0357
Emfac2014 Emissions TW/BW (g/mi)	0.019
PM10 Reetrainment Mass Rate (gr/mi)	0.124162876

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vehicle Weigh
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.002292
PM10 Reetrainment Emission Rate/Source	1.27E-04

US 101 SB On from NB Vineyard Ave

CO Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	2.35

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.0564
Pollutant Emission Rate/Source (gr/sec/source)	4.03E-03

NOx Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.60

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.014537953
Pollutant Emission Rate/Source (gr/sec/source)	1.04E-03

TOG Gas Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.00383837

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	9.23628E-05
Pollutant Emission Rate/Source (gr/sec/source)	6.59734E-06

TOG DSL Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.002902158

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	6.98347E-05
Pollutant Emission Rate/Source (gr/sec/source)	4.99E-06

DSL Particulate Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Pollutant Mass Emission Rate (gr/mi)	0.003544099

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	8.5E-05
Pollutant Emission Rate/Source (gr/sec/source)	6.09155E-06

PM10 Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.006707623
Emfac2014 Emissions TW/BW (g/mi)	0.048
PM10 Reetrainment Mass Rate (gr/mi)	0.1241705

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vehicle Weight)^1.02) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.002988
PM10 Reetrainment Emission Rate/Source	2.13E-04

PM2.5 Emissions

Number of Sources	14
Link Length (meters)	344.9
Volume/Baseline (VPH)	404.2
Particle Size Multiplier (g/mi)	1
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2014 Emissions Run (g/mi)	0.006303263
Emfac2014 Emissions TW/BW (g/mi)	0.019
PM10 Reetrainment Mass Rate (gr/mi)	0.094766139

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)^0.91 x (Gross Vehicle Weight)^1.02) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reetrainment Emission Rate (gr/sec)	0.002280
PM10 Reetrainment Emission Rate/Source	1.63E-04

Emission Factor Profile Worksheet
Chronic Exposure

TOG - Toxic Emissions

Gasoline/Toxic Fractions/Hot Stabilized Exhaust

Year	Benzene	Formaldehyde	1,3-Butadiene	Acetaldehyde	Acrolein
2004	0.028414	0.021422	0.006603	0.005511	0.001533
2005	0.028205	0.021200	0.006551	0.005450	0.001520
2006	0.027938	0.021000	0.006483	0.005350	0.001510
2007	0.027660	0.020700	0.006410	0.005250	0.001490
2008	0.027338	0.020300	0.006326	0.005120	0.001470
2009	0.026849	0.019800	0.006190	0.004870	0.001450
2010	0.026521	0.019400	0.006105	0.004750	0.001430
2011	0.026521	0.019400	0.006105	0.004750	0.001430
2012	0.025656	0.018500	0.005873	0.004370	0.001380
2013	0.025656	0.018500	0.005873	0.004370	0.001380
2014	0.025656	0.018500	0.005873	0.004370	0.001380
2015	0.024349	0.017100	0.005530	0.003850	0.001310
2016	0.024349	0.017100	0.005530	0.003850	0.001310
2017	0.024349	0.017100	0.005530	0.003850	0.001310
2018	0.022182	0.014700	0.004944	0.002860	0.001190
2019	0.022182	0.014700	0.004944	0.002860	0.001130
2020	0.021079	0.013600	0.004659	0.002450	0.001130
2021	0.021079	0.013600	0.004659	0.002450	0.001130
2022	0.021079	0.013600	0.004659	0.002450	0.001130
2023	0.021079	0.013600	0.004659	0.002450	0.001130
2024	0.021079	0.013600	0.004659	0.002450	0.001130
2025	0.021079	0.013600	0.004659	0.002450	0.001130
2026	0.021079	0.013600	0.004659	0.002450	0.001130
2027	0.021079	0.013600	0.004659	0.002450	0.001130
2028	0.021079	0.013600	0.004659	0.002450	0.001130
2029	0.021079	0.013600	0.004659	0.002450	0.001130
2030	0.021079	0.013600	0.004659	0.002450	0.001130

Analysis Year

2020	0.021079	0.013600	0.004659	0.002450	0.001130

TOG Emission Rate - gr/mi

Speed (MPH)	Acceleration	0.089434979	
	Deceleration	0.477	
	65	0.0446	FROM EMFAC SHEET (TOG_GAS_RUNEX)

Toxic Emission Rate - gr/mi

	Acceleration	Deceleration	65
Benzene	0.0018852	0.010054683	0.000940123
Formaldehyde	0.001216316	0.0064872	0.00060656
1,3-Butadiene	0.000416678	0.002222343	0.000207791
Acetaldehyde	0.000219116	0.00116865	0.00010927
Acrolein	0.000101062	0.00053901	0.000050398

Toxic Emission Rate - gr/mi

	Acceleration	0.00383837
Speed (MPH)	Deceleration	0.020471886
	65	0.001914143

Weight Fraction/Speciation

Benzene	0.491
Formaldehyde	0.317
1,3-Butadiene	0.020
Acetaldehyde	0.057
Acrolein	0.026

Diesel Particulate Emissions - PM10

PM10 Emission Rate - gr/mi	Acceleration	0.003544099	
Speed (MPH)	Deceleration	0.1605	
	15	0.011	FROM EMFAC SHEET (PM10_DSL_RUNEX)
	65	0.0018	FROM EMFAC SHEET (PM10_DSL_RUNEX)

Source: TOG/toxic fraction from UC Davis-Caltrans Air Quality Project, *Estimating Mobile Source Air Toxic Emissions: A Step-by-Step Project Analysis Methodology.* Task Order No. 61.

Emission Factor Profile Worksheet
Acute/8-hour Exposure

TOG - Toxic Emissions

Gasoline/Toxic Fractions/Hot Stabilized Exhaust

Year	Benzene	Formaldehyde	1,3-Butadiene	Acetaldehyde	Acrolein
2004	0.028414	0.021422	0.006603	0.005511	0.001533
2005	0.028205	0.021200	0.006551	0.005450	0.001520
2006	0.027938	0.021000	0.006483	0.005350	0.001510
2007	0.027660	0.020700	0.006410	0.005250	0.001490
2008	0.027338	0.020300	0.006326	0.005120	0.001470
2009	0.026849	0.019800	0.006190	0.004870	0.001450
2010	0.026521	0.019400	0.006105	0.004750	0.001430
2011	0.026521	0.019400	0.006105	0.004750	0.001430
2012	0.025656	0.018500	0.005873	0.004370	0.001380
2013	0.025656	0.018500	0.005873	0.004370	0.001380
2014	0.025656	0.018500	0.005873	0.004370	0.001380
2015	0.024349	0.017100	0.005530	0.003850	0.001310
2016	0.024349	0.017100	0.005530	0.003850	0.001310
2017	0.024349	0.017100	0.005530	0.003850	0.001310
2018	0.022182	0.014700	0.004944	0.002860	0.001190
2019	0.022182	0.014700	0.004944	0.002860	0.001130
2020	0.021079	0.013600	0.004659	0.002450	0.001130
2021	0.021079	0.013600	0.004659	0.002450	0.001130
2022	0.021079	0.013600	0.004659	0.002450	0.001130
2023	0.021079	0.013600	0.004659	0.002450	0.001130
2024	0.021079	0.013600	0.004659	0.002450	0.001130
2025	0.021079	0.013600	0.004659	0.002450	0.001130
2026	0.021079	0.013600	0.004659	0.002450	0.001130
2027	0.021079	0.013600	0.004659	0.002450	0.001130
2028	0.021079	0.013600	0.004659	0.002450	0.001130
2029	0.021079	0.013600	0.004659	0.002450	0.001130
2030	0.021079	0.013600	0.004659	0.002450	0.001130

Analysis Year

2020	0.021079	0.013600	0.004659	0.002450	0.001130

TOG Emission Rate - gr/mi

Speed (MPH)			
Acceleration	0.089	
Deceleration	0.477	
15	0.116	FROM EMFAC SHEET (TOG_GAS_RUNEX)
65	0.0446	FROM EMFAC SHEET (TOG_GAS_RUNEX)

Toxic Emission Rate - gr/mi

	Acceleration	**Deceleration**	**15**	**65**
Benzene	0.0018852	0.010054683	0.0024452	0.000940123
Formaldehyde	0.001216316	0.0064872	0.0015776	0.00060656
1,3-Butadiene	0.000416678	0.002222343	0.0005404	0.000207791
Acetaldehyde	0.000219116	0.00116865	0.0002842	0.00010927
Acrolein	0.000101062	0.00053901	0.0001311	0.000050398

Toxic Emission Rate - gr/mi

Speed (MPH)	
Acceleration	0.00383837
Deceleration	0.020471886
15	0.004978488
65	0.001914143

Weight Fraction/Speciation

Benzene	0.491
Formaldehyde	0.317
1,3-Butadiene	0.020
Acetaldehyde	0.057
Acrolein	0.026

Source: TOG/toxic fraction from UC Davis-Caltrans Air Quality Project, *Estimating Mobile Source Air Toxic Emissions: A Step-by-Step Project Analysis Methodology.* Task Order No. 61.

Emission Factor Profile Worksheet
Acute/8-hour Exposure

TOG - Toxic Emissions

Diesel/Toxic Fractions/Hot Stabilized Exhaust

Year	Benzene	Formaldehyde	1,3-Butadiene	Acetaldehyde	Acrolein
2004	0.020009	0.147133	0.001900	0.073526	0
2005	0.020009	0.147133	0.001900	0.073526	0
2006	0.020009	0.147133	0.001900	0.073526	0
2007	0.020009	0.147133	0.001900	0.073526	0
2008	0.020009	0.147133	0.001900	0.073526	0
2009	0.020009	0.147133	0.001900	0.073526	0
2010	0.020009	0.147133	0.001900	0.073526	0
2011	0.020009	0.147133	0.001900	0.073526	0
2012	0.020009	0.147133	0.001900	0.073526	0
2013	0.020009	0.147133	0.001900	0.073526	0
2014	0.020009	0.147133	0.001900	0.073526	0
2015	0.020009	0.147133	0.001900	0.073526	0
2016	0.020009	0.147133	0.001900	0.073526	0
2017	0.020009	0.147133	0.001900	0.073526	0
2018	0.020009	0.147133	0.001900	0.073526	0
2019	0.020009	0.147133	0.001900	0.073526	0
2020	0.020009	0.147133	0.001900	0.073526	0
2021	0.020009	0.147133	0.001900	0.073526	0
2022	0.020009	0.147133	0.001900	0.073526	0
2023	0.020009	0.147133	0.001900	0.073526	0
2024	0.020009	0.147133	0.001900	0.073526	0
2025	0.020009	0.147133	0.001900	0.073526	0
2026	0.020009	0.147133	0.001900	0.073526	0
2027	0.020009	0.147133	0.001900	0.073526	0
2028	0.020009	0.147133	0.001900	0.073526	0
2029	0.020009	0.147133	0.001900	0.073526	0
2030	0.020009	0.147133	0.001900	0.073526	0

Analysis Year

2020	0.020009	0.147133	0.001900	0.073526	0.0

TOG Emission Rate - gr/mi

Speed (MPH)	Acceleration		0.012	
	Deceleration		3.165	
		15	0.102	FROM EMFAC SHEET (TOG_DSL_RUNEX)
		65	0.00401	FROM EMFAC SHEET (TOG_DSL_RUNEX)

Toxic Emission Rate - gr/mi

	Acceleration	**Deceleration**	**15**	**65**
Benzene	0.000239394	0.063328485	0.0020409	8.02361E-05
Formaldehyde	0.001760344	0.465675945	0.0150076	0.000590003
1,3-Butadiene	2.27322E-05	0.0060135	0.0001938	0.000007619
Acetaldehyde	0.000879688	0.23270979	0.0074997	0.000294839
Acrolein	0	0	0	0

Toxic Emission Rate - gr/mi	Acceleration		0.002902158
Speed (MPH)	Deceleration		0.76772772
		15	0.024741936
		65	0.000972698

Weight Fraction/Speciation

Benzene	0.082
Formaldehyde	0.607
1,3-Butadiene	0.008

Acetaldehyde	0.303
Acrolein	0

Source: TOG/toxic fraction from UC Davis-Caltrans Air Quality Project, *Estimating Mobile Source Air Toxic Emissions: A Step-by-Step Project Analysis Methodology.* Task Order No. 61.

2015 Traffic Volumes on California State Highways

Distance	Route	County	Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
7	101	VEN	22.006	OXNARD, JCT. RTE. 232	10900	143000	140000	10300	132000	129000
7	101	VEN	22.729	OXNARD, JCT. RTE. 1 SOUTH	10300	132000	129000	12000	153000	151000

Source: 2015 Traffic Volumes on California State Highways

Caltrans Traffic Volumes for Ramp

Post Mile	Description	2006 ADT	2007 ADT	2008 ADT	2009 ADT	2010 ADT	2011 ADT	2012 ADT	2013 ADT	2014 ADT	2015 ADT
21.78	SB On from NB Vineyard Ave		10400						9701		
21.847	NB Off to Vineyard Ave		10200						9501		
21.966	NB On from NB Vineyard Ave		4700						5001		
22.031	SB On from SB Vineyard Ave		3200						3001		
22.179	NB On from SB Vineyard Ave		3900						4201		
22.18	SB Off to Vineyard Ave		5500						5901		

Source: 2015 Ramp Volumes on the California State Freeway System District 7 (Includes Counties: Los Angeles, Ventura)

APPENDIX C

EMFAC2014 Worksheets

Appendix C1

2020 Annual—5 mph

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	5	DSL	180.8862445	0.001642599	0.560019343	0.637539393	1.74031424	11.42367766	2295.240526	0.038088684	0.036440984
South Central Coast	2020	LDA	Aggregated	5	GAS	50605.54666	0.459540784	0.090017929	0.131218426	1.293290727	0.118775154	893.8973222	0.012022687	0.011054823
South Central Coast	2020	LDA	Aggregated	5	DSL	614.5010167	0.005580184	0.248834368	0.283281385	3.593435744	0.215620848	691.5390147	0.055764443	0.053352098
South Central Coast	2020	LDT1	Aggregated	5	GAS	3482.362914	0.031622774	0.195826744	0.285163277	3.154347926	0.297773361	1062.80499	0.016186552	0.014885005
South Central Coast	2020	LDT1	Aggregated	5	DSL	4.443188573	4.03479E-05	0.881331682	1.003337525	4.010897884	0.851621526	941.0437973	0.6467712	0.618792164
South Central Coast	2020	LDT2	Aggregated	5	GAS	18031.93576	0.163745092	0.146879491	0.214141335	2.039798394	0.252655354	1221.264529	0.012210409	0.011227588
South Central Coast	2020	LDT2	Aggregated	5	DSL	34.73918433	0.000315461	0.266265876	0.303125997	2.367625607	0.167371025	871.2532393	0.02051689	0.019629338
South Central Coast	2020	LHD1	Aggregated	5	GAS	8154.108956	0.074046145	0.390818039	0.568198207	4.50141129	0.751718567	1397.220885	0.010747149	0.009883682
South Central Coast	2020	LHD1	Aggregated	5	DSL	5696.197007	0.051726244	0.813585473	0.92621297	3.467862399	3.390144418	1279.415701	0.123331531	0.117996263
South Central Coast	2020	LHD2	Aggregated	5	GAS	1324.953023	0.012031684	0.173074278	0.252515697	1.731279223	0.455930892	1473.206945	0.007229983	0.006647736
South Central Coast	2020	LHD2	Aggregated	5	DSL	1901.130952	0.017263863	0.770168868	0.876786052	3.25548552	2.356786471	1330.793476	0.085603797	0.081900615
South Central Coast	2020	MCY	Aggregated	5	GAS	453.1598245	0.004115071	13.03840831	15.88553476	56.52041614	1.522474497	547.5471201	0.010737725	0.01007837
South Central Coast	2020	MDV	Aggregated	5	GAS	11207.57556	0.101774181	0.276574125	0.390842738	3.553298072	0.416828369	1642.764742	0.012039285	0.011079104
South Central Coast	2020	MDV	Aggregated	5	DSL	192.2242052	0.001745557	0.21936376	0.249731056	3.68267928	0.168467935	1069.193804	0.025283634	0.024189875
South Central Coast	2020	MH	Aggregated	5	GAS	247.0641048	0.002243549	0.912917582	1.293011892	15.91680625	1.186766215	3917.246298	0.013337584	0.012289464
South Central Coast	2020	MH	Aggregated	5	DSL	60.44646594	0.000548905	1.184916711	1.348948897	2.521448028	16.37884364	2101.437035	0.402948079	0.385516723
South Central Coast	2020	Motor Coach	Aggregated	5	DSL	57.3632825	0.000520907	1.098850595	1.250957757	4.019508654	18.74466764	3297.054997	0.045016004	0.043068631
South Central Coast	2020	OBUS	Aggregated	5	GAS	216.1640761	0.001962951	0.417820447	0.609358878	3.391643472	0.866525557	3836.225507	0.005628873	0.005175759
South Central Coast	2020	SBUS	Aggregated	5	GAS	197.1065112	0.001789892	0.395583009	0.577233798	2.982605396	0.897693071	1854.717758	0.004116589	0.003785051
South Central Coast	2020	SBUS	Aggregated	5	DSL	241.5727959	0.002193683	0.769333868	0.875828046	1.337419362	18.22287032	2313.531577	0.137402764	0.131458782
South Central Coast	2020	T6 Ag	Aggregated	5	DSL	45.48860608	0.000413075	4.353952967	4.956644024	5.357457267	17.39274324	2359.617266	1.020812984	0.976653066
South Central Coast	2020	T6 CAIRP heavy	Aggregated	5	DSL	3.879657094	3.52305E-05	0.335291577	0.381703938	1.356342548	9.458115184	2211.470234	0.016729669	0.016005951
South Central Coast	2020	T6 CAIRP small	Aggregated	5	DSL	11.90958975	0.000108149	0.594632043	0.676943317	1.604552097	9.190545141	2191.712348	0.042563616	0.040722333
South Central Coast	2020	T6 instate construction heavy	Aggregated	5	DSL	65.71213459	0.000596721	0.528310841	0.601441677	1.539854456	11.59220833	2268.607194	0.043183714	0.041315606
South Central Coast	2020	T6 instate construction small	Aggregated	5	DSL	195.9940561	0.00177979	0.885163551	1.007691323	2.03255732	10.16988262	2230.005038	0.067237081	0.064328435
South Central Coast	2020	T6 instate heavy	Aggregated	5	DSL	644.4999605	0.0058526	0.498117952	0.567069371	1.654124079	10.83190784	2272.53526	0.033315039	0.031873845
South Central Coast	2020	T6 instate small	Aggregated	5	DSL	1589.44141	0.01443346	1.069752668	1.217831982	2.243854286	11.09355968	2242.511013	0.090274515	0.086369279
South Central Coast	2020	T6 OOS heavy	Aggregated	5	DSL	2.222897711	2.01858E-05	0.339442145	0.386429043	1.35872247	9.567046472	2214.641449	0.017517236	0.016759448
South Central Coast	2020	T6 OOS small	Aggregated	5	DSL	6.823747346	6.19653E-05	0.594632043	0.676943317	1.604552097	9.190545141	2191.712348	0.042563616	0.040722333
South Central Coast	2020	T6 Public	Aggregated	5	DSL	52.6415742	0.00047803	0.469227833	0.534180169	1.007681765	13.96240418	2311.886692	0.080789249	0.077294342
South Central Coast	2020	T6 utility	Aggregated	5	DSL	12.10457006	0.00010992	0.182249724	0.207477438	0.959302719	5.722746116	2240.187357	0.003936834	0.003766528
South Central Coast	2020	T6TS	Aggregated	5	GAS	407.4135068	0.003699656	0.829122029	1.209852919	7.380432092	1.561888476	3842.735616	0.007950075	0.0073098
South Central Coast	2020	T7 Ag	Aggregated	5	DSL	16.38764801	0.000148814	9.062942206	10.31746982	14.42297713	32.14994564	3497.54275	1.986665637	1.900723361
South Central Coast	2020	T7 CAIRP	Aggregated	5	DSL	287.4298795	0.002610104	1.006295733	1.145591092	4.466045942	22.13738833	3111.492597	0.03622772	0.034660525
South Central Coast	2020	T7 CAIRP construction	Aggregated	5	DSL	25.066023	0.000227621	1.021564255	1.162973142	4.155117087	21.65691268	3107.388264	0.038694071	0.037020183
South Central Coast	2020	T7 NNOOS	Aggregated	5	DSL	356.4134082	0.003236533	0.611466196	0.696107719	3.27323215	17.76298801	2883.035934	0.014646957	0.014013336
South Central Coast	2020	T7 NOOS	Aggregated	5	DSL	113.5347176	0.00103099	1.007264203	1.146693621	4.461582841	22.27684842	3116.529952	0.03690385	0.035307406
South Central Coast	2020	T7 other port	Aggregated	5	DSL	76.61289336	0.000695709	1.278523731	1.455501945	4.810117766	20.9076247	3235.615845	0.045837615	0.0438547
South Central Coast	2020	T7 POLA	Aggregated	5	DSL	8.793658985	7.98538E-05	1.446950849	1.647243398	5.161227385	21.75859822	3300.190131	0.054243747	0.051897186
South Central Coast	2020	T7 Public	Aggregated	5	DSL	50.86569614	0.000461903	0.85388134	0.972078907	2.028684555	26.66870568	3439.160916	0.16480586	0.157676432
South Central Coast	2020	T7 Single	Aggregated	5	DSL	292.9187292	0.002659948	1.059007152	1.20559903	3.081135297	21.54046407	3329.455728	0.107679077	0.103020927
South Central Coast	2020	T7 single construction	Aggregated	5	DSL	64.84250348	0.000588824	0.837239983	0.953133989	3.008695835	17.01593696	3181.590202	0.048526522	0.046427286
South Central Coast	2020	T7 SWCV	Aggregated	5	DSL	1618.562141	0.014697901	0.609633713	9.569594379	23.29013385	17.4802484	6469.209019	0.021753837	0.020812776
South Central Coast	2020	T7 tractor	Aggregated	5	DSL	355.0417961	0.003224077	1.212707299	1.380574947	4.536477182	21.9181079	3188.172555	0.057682383	0.055187068
South Central Coast	2020	T7 tractor construction	Aggregated	5	DSL	48.34487885	0.000439012	1.20635296	1.373341016	4.22916929	22.19364021	3207.892989	0.059990898	0.057395719
South Central Coast	2020	T7 utility	Aggregated	5	DSL	3.011532864	2.73472E-05	0.370919385	0.422263484	2.190192799	8.833045462	3104.324239	0.006033554	0.005772545
South Central Coast	2020	T7IS	Aggregated	5	GAS	29.91147253	0.000271621	3.280289804	4.754416806	62.62991623	6.27893701	4158.892072	0.005199614	0.004789657
South Central Coast	2020	UBUS	Aggregated	5	GAS	308.9065924	0.002805131	1.852358709	2.702511908	10.73577503	1.805289416	3842.687046	0.007237997	0.006655291
South Central Coast	2020	UBUS	Aggregated	5	DSL	523.7352656	0.004755955	2.586122717	8.900520166	23.39097017	22.99575954	3556.385302	0.546888205	0.523230063
							Composite	3.18E-01	5.70E-01	2.94E+00	1.48E+00	1.30E+03	2.53E-02	2.38E-02

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	LDA	Aggregated	5	GAS	50605.54666	0.534568218	0.090017929	0.131218426	1.293290727	0.118775154	893.8973222	0.012022687	0.011054823
South Central Coast	2020	LDT1	Aggregated	5	GAS	3482.362914	0.036785702	0.195826744	0.285163277	3.154347926	0.297773361	1062.80499	0.016186552	0.014885005
South Central Coast	2020	LDT2	Aggregated	5	GAS	18031.93576	0.190479116	0.146879491	0.214141335	2.039798394	0.252655354	1221.264529	0.012210409	0.011227588
South Central Coast	2020	LHD1	Aggregated	5	GAS	8154.108956	0.08613537	0.390818039	0.568198207	4.50141129	0.751718567	1397.220885	0.010747149	0.009883682
South Central Coast	2020	LHD2	Aggregated	5	GAS	1324.953023	0.01399605	0.173074278	0.252515697	1.731279223	0.455930892	1473.206945	0.007229983	0.006647736
South Central Coast	2020	MCY	Aggregated	5	GAS	453.1598245	0.004786923	13.03840831	15.88553476	56.52041614	1.522474497	547.5471201	0.010737725	0.01007837
South Central Coast	2020	MDV	Aggregated	5	GAS	11207.57556	0.118390455	0.276574125	0.390842738	3.553298072	0.416828369	1642.764742	0.012039285	0.011079104
South Central Coast	2020	MH	Aggregated	5	GAS	247.0641048	0.002609845	0.912917582	1.293011892	15.91680625	1.186766215	3917.246298	0.013337584	0.012289464
South Central Coast	2020	OBUS	Aggregated	5	GAS	216.1640761	0.002283434	0.417820447	0.609358878	3.391643472	0.866525557	3836.225507	0.005628873	0.005175759
South Central Coast	2020	SBUS	Aggregated	5	GAS	197.1065112	0.002082121	0.395583009	0.577233798	2.982605396	0.897693071	1854.717758	0.004116589	0.003785051
South Central Coast	2020	T6TS	Aggregated	5	GAS	407.4135068	0.004303685	0.829122029	1.209852919	7.380432092	1.561888476	3842.735616	0.007950075	0.0073098
South Central Coast	2020	T7IS	Aggregated	5	GAS	29.91147253	0.000315968	3.280289804	4.754416806	62.62991623	6.27893701	4158.892072	0.005199614	0.004789657
South Central Coast	2020	UBUS	Aggregated	5	GAS	308.9065924	0.003263114	1.852358709	2.702511908	10.73577503	1.805289416	3842.687046	0.007237997	0.006655291
							Composite	2.29E-01	3.18E-01	2.44E+00	2.72E-01	1.14E+03	1.20E-02	1.10E-02

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
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Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	5	DSL	180.8862445	0.011703467	0.560019343	0.637539393	1.74031424	11.42367766	2295.240526	0.038088684	0.036440984
South Central Coast	2020	LDA	Aggregated	5	DSL	614.5010167	0.039758646	0.248834368	0.283281385	3.593435744	0.215620848	691.5390147	0.055764443	0.053352098
South Central Coast	2020	LDT1	Aggregated	5	DSL	4.443188573	0.000287477	0.881331682	1.003337525	4.010897884	0.851621526	941.0437973	0.6467712	0.618792164
South Central Coast	2020	LDT2	Aggregated	5	DSL	34.73918433	0.00224765	0.266265876	0.303125997	2.367625607	0.167371025	871.2532393	0.02051689	0.019629338
South Central Coast	2020	LHD1	Aggregated	5	DSL	5696.197007	0.368547934	0.813585473	0.92621297	3.467862399	3.390144418	1279.415701	0.123331531	0.117996263
South Central Coast	2020	LHD2	Aggregated	5	DSL	1901.130952	0.123004503	0.770168868	0.876786052	3.25548552	2.356786471	1330.793476	0.085603797	0.081900615
South Central Coast	2020	MDV	Aggregated	5	DSL	192.2242052	0.012437041	0.21936376	0.249731056	3.68267928	0.168467935	1069.193804	0.025283634	0.024189875
South Central Coast	2020	MH	Aggregated	5	DSL	60.44646594	0.003910929	1.184916711	1.348948897	2.521448028	16.37884364	2101.437035	0.402948079	0.385516723
South Central Coast	2020	Motor Coach	Aggregated	5	DSL	57.3632825	0.003711445	1.098850595	1.250957757	4.019508654	18.74466764	3297.054997	0.045016004	0.043068631
South Central Coast	2020	SBUS	Aggregated	5	DSL	241.5727959	0.015629929	0.769333868	0.875828046	1.337419362	18.22287032	2313.531577	0.137402764	0.131458782
South Central Coast	2020	T6 Ag	Aggregated	5	DSL	45.48860608	0.002943145	4.353952967	4.956644024	5.357457267	17.39274324	2359.617266	1.020812984	0.976653066
South Central Coast	2020	T6 CAIRP heavy	Aggregated	5	DSL	3.879657094	0.000251017	0.335291577	0.381703938	1.356342548	9.458115184	2211.470234	0.016729669	0.016005951
South Central Coast	2020	T6 CAIRP small	Aggregated	5	DSL	11.90958975	0.000770559	0.594632043	0.676943317	1.604552097	9.190545141	2191.712348	0.042563616	0.040722333
South Central Coast	2020	T6 instate construction heavy	Aggregated	5	DSL	65.71213459	0.004251621	0.528310841	0.601441677	1.539854456	11.59220833	2268.607194	0.043183714	0.041315606
South Central Coast	2020	T6 instate construction small	Aggregated	5	DSL	195.9940561	0.012680953	0.885163551	1.007691323	2.03255732	10.16988262	2230.005038	0.067237081	0.064328435
South Central Coast	2020	T6 instate heavy	Aggregated	5	DSL	644.4999605	0.041699599	0.498117952	0.567069371	1.654124079	10.83190784	2272.53526	0.033315039	0.031873845
South Central Coast	2020	T6 instate small	Aggregated	5	DSL	1589.44141	0.102837972	1.069752668	1.217831982	2.243854286	11.09355968	2242.511013	0.090274515	0.086369279
South Central Coast	2020	T6 OOS heavy	Aggregated	5	DSL	2.222897711	0.000143823	0.339442145	0.386429043	1.35872247	9.567046472	2214.641449	0.017517236	0.016759448
South Central Coast	2020	T6 OOS small	Aggregated	5	DSL	6.823747346	0.000441501	0.594632043	0.676943317	1.604552097	9.190545141	2191.712348	0.042563616	0.040722333
South Central Coast	2020	T6 Public	Aggregated	5	DSL	52.6415742	0.003405947	0.469227833	0.534180169	1.007681765	13.96240418	2311.886692	0.080789249	0.077294342
South Central Coast	2020	T6 utility	Aggregated	5	DSL	12.10457006	0.000783174	0.182249724	0.207477438	0.959302719	5.722746116	2240.187357	0.003936834	0.003766528
South Central Coast	2020	T7 Ag	Aggregated	5	DSL	16.38764801	0.001060292	9.062942206	10.31746982	14.42297713	32.14994564	3497.54275	1.986665637	1.900723361
South Central Coast	2020	T7 CAIRP	Aggregated	5	DSL	287.4298795	0.018596914	1.006295733	1.145591092	4.466045942	22.13738833	3111.492597	0.03622772	0.034660525
South Central Coast	2020	T7 CAIRP construction	Aggregated	5	DSL	25.066023	0.001621789	1.021564255	1.162973142	4.155117087	21.65691268	3107.388264	0.038694071	0.037020183
South Central Coast	2020	T7 NNOOS	Aggregated	5	DSL	356.4134082	0.023060197	0.611466196	0.696107719	3.27323215	17.76298801	2883.035934	0.014646957	0.014013336
South Central Coast	2020	T7 NOOS	Aggregated	5	DSL	113.5347176	0.007345776	1.007264203	1.146693621	4.461582841	22.27684842	3116.529952	0.03690385	0.035307406
South Central Coast	2020	T7 other port	Aggregated	5	DSL	76.61289336	0.004956908	1.278523731	1.455501945	4.810117766	20.9076247	3235.615845	0.045837615	0.0438547
South Central Coast	2020	T7 POLA	Aggregated	5	DSL	8.793658985	0.000568956	1.446950849	1.647243398	5.161227385	21.75859822	3300.190131	0.054243747	0.051897186
South Central Coast	2020	T7 Public	Aggregated	5	DSL	50.86569614	0.003291046	0.85388134	0.972078907	2.028684555	26.66870568	3439.160916	0.16480586	0.157676432
South Central Coast	2020	T7 Single	Aggregated	5	DSL	292.9187292	0.018952047	1.059007152	1.20559903	3.081135297	21.54046407	3329.455728	0.107679077	0.103020927
South Central Coast	2020	T7 single construction	Aggregated	5	DSL	64.84250348	0.004195355	0.837239983	0.953133989	3.008695835	17.01593696	3181.590202	0.048526522	0.046427286
South Central Coast	2020	T7 SWCV	Aggregated	5	DSL	1618.562141	0.104722104	0.609633713	9.569594379	23.29013385	17.4802484	6469.209019	0.021753837	0.020812776
South Central Coast	2020	T7 tractor	Aggregated	5	DSL	355.0417961	0.022971453	1.212707299	1.380574947	4.536477182	21.9181079	3188.172555	0.057682383	0.055187068
South Central Coast	2020	T7 tractor construction	Aggregated	5	DSL	48.34487885	0.003127948	1.20635296	1.373341016	4.22916929	22.19364021	3207.892989	0.059990898	0.057395719
South Central Coast	2020	T7 utility	Aggregated	5	DSL	3.011532864	0.000194848	0.370919385	0.422263484	2.190192799	8.833045462	3104.324239	0.006033554	0.005772545
South Central Coast	2020	UBUS	Aggregated	5	DSL	523.7352656	0.033886038	2.586122717	8.900520166	23.39097017	22.99575954	3556.385302	0.546888205	0.523230063
							Composite	8.63E-01	2.11E+00	5.96E+00	8.91E+00	2.29E+03	1.07E-01	1.02E-01

Appendix C2

2020 Annual—10 mph

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	10	DSL	896.712905	0.00343418	0.447991636	0.510004376	1.411183545	9.340498931	2041.838351	0.033253163	0.031814646
South Central Coast	2020	LDA	Aggregated	10	DSL	1306.015607	0.005001705	0.181064951	0.206130408	2.65842985	0.191859426	572.3009661	0.039587374	0.037874842
South Central Coast	2020	LDT1	Aggregated	10	DSL	9.07917786	3.47709E-05	0.584624475	0.665556097	2.773291441	0.852989228	783.5022184	0.418077544	0.399991694
South Central Coast	2020	LDT2	Aggregated	10	DSL	75.0246522	0.000287325	0.196440022	0.223633904	1.747053509	0.140342583	728.690547	0.014658061	0.01402396
South Central Coast	2020	LHD1	Aggregated	10	DSL	16665.94559	0.063826295	0.582323107	0.662936142	2.516179038	3.557138964	1076.285111	0.089048164	0.08519598
South Central Coast	2020	LHD2	Aggregated	10	DSL	5511.76517	0.021108646	0.559889796	0.637397309	2.392094973	2.425716683	1183.774954	0.063701455	0.060945759
South Central Coast	2020	MDV	Aggregated	10	DSL	416.589908	0.001595432	0.161947615	0.184366593	2.73765302	0.142278547	905.2899585	0.018816826	0.018002818
South Central Coast	2020	MH	Aggregated	10	DSL	273.5560067	0.001047649	0.90028345	1.024912853	2.056008818	13.75249237	1908.269373	0.348061277	0.3330043
South Central Coast	2020	Motor Coach	Aggregated	10	DSL	281.7948114	0.001079202	0.883014968	1.005245325	3.252348886	15.27215309	2932.520928	0.040420437	0.038671867
South Central Coast	2020	SBUS	Aggregated	10	DSL	846.7002679	0.003242645	0.592694475	0.674737543	1.108333258	14.83933753	2076.476784	0.113674364	0.108756861
South Central Coast	2020	T6 Ag	Aggregated	10	DSL	217.2965253	0.00083219	3.390134879	3.859410498	4.660912877	14.3327608	2111.485232	0.860209232	0.822996961
South Central Coast	2020	T6 CAIRP heavy	Aggregated	10	DSL	18.5329048	7.09763E-05	0.269541214	0.306852155	1.097637753	7.51122348	1963.517833	0.014941689	0.014295318
South Central Coast	2020	T6 CAIRP small	Aggregated	10	DSL	56.89144367	0.00021788	0.461223528	0.525067877	1.286554266	7.237692805	1947.387884	0.040017387	0.038286253
South Central Coast	2020	T6 instate construction heavy	Aggregated	10	DSL	304.7752007	0.001167211	0.419752764	0.47785657	1.249956853	9.422921344	2020.110468	0.037351761	0.035735941
South Central Coast	2020	T6 instate construction small	Aggregated	10	DSL	936.2526365	0.003585607	0.681322553	0.775633864	1.622312807	8.160956138	1983.919789	0.063537116	0.060788528
South Central Coast	2020	T6 instate heavy	Aggregated	10	DSL	2907.83698	0.01113627	0.401999818	0.457646192	1.342157818	8.936232537	2021.734543	0.030169261	0.028864152
South Central Coast	2020	T6 instate small	Aggregated	10	DSL	7149.941761	0.027382442	0.826373803	0.94076367	1.796535508	9.038438838	1998.596739	0.08571384	0.082005897
South Central Coast	2020	T6 OOS heavy	Aggregated	10	DSL	10.61865795	4.06667E-05	0.272452469	0.310166396	1.099518396	7.609309708	1966.620896	0.015614365	0.014938895
South Central Coast	2020	T6 OOS small	Aggregated	10	DSL	32.59665915	0.000124837	0.461223528	0.525067877	1.286554266	7.237692805	1947.387884	0.040017387	0.038286253
South Central Coast	2020	T6 Public	Aggregated	10	DSL	242.965106	0.000930494	0.372149704	0.423664109	0.833911089	11.58600626	2073.006091	0.069066256	0.066078481
South Central Coast	2020	T6 utility	Aggregated	10	DSL	57.82285367	0.000221447	0.147603061	0.16803485	0.776934058	4.447050696	1986.335371	0.003541349	0.003388152
South Central Coast	2020	T7 Ag	Aggregated	10	DSL	54.52735377	0.000208826	7.076392772	8.055934507	12.739752	26.3284313	3134.921711	1.684005251	1.611155929
South Central Coast	2020	T7 CAIRP	Aggregated	10	DSL	956.3782863	0.003662683	0.810092428	0.922228565	3.610788358	17.73562521	2764.240487	0.032528532	0.031121362
South Central Coast	2020	T7 CAIRP construction	Aggregated	10	DSL	83.4032988	0.000319413	0.820024911	0.933535939	3.361572267	17.28594161	2762.940056	0.03485777	0.033349838
South Central Coast	2020	T7 NNOOS	Aggregated	10	DSL	1185.910265	0.004541732	0.493610979	0.561938525	2.648299589	13.73681299	2557.741496	0.013253889	0.012680532
South Central Coast	2020	T7 NOOS	Aggregated	10	DSL	377.769141	0.001446759	0.810208313	0.92236049	3.607314957	17.85783363	2769.009182	0.03308949	0.031658053
South Central Coast	2020	T7 other port	Aggregated	10	DSL	254.9175047	0.000976269	1.034496424	1.177695432	3.894863417	17.01623295	2875.401845	0.041250376	0.039465903
South Central Coast	2020	T7 POLA	Aggregated	10	DSL	29.25953463	0.000112057	1.170584243	1.332621054	4.178953592	17.87126952	2934.172368	0.048817811	0.046705974
South Central Coast	2020	T7 Public	Aggregated	10	DSL	169.2495231	0.000648182	0.673259371	0.766454544	1.707250874	21.92543222	3087.944475	0.141032714	0.134931701
South Central Coast	2020	T7 Single	Aggregated	10	DSL	965.5171812	0.003697683	0.848284254	0.965707051	2.527758588	17.91363225	2980.982327	0.09622661	0.092063889
South Central Coast	2020	T7 single construction	Aggregated	10	DSL	215.7533603	0.00082628	0.667319204	0.759692116	2.441122987	13.71091285	2832.651771	0.041928542	0.040114731
South Central Coast	2020	T7 SWCV	Aggregated	10	DSL	3889.815284	0.014896994	0.47617	7.631363115	18.86547771	14.52945136	5796.610095	0.018672582	0.017864815
South Central Coast	2020	T7 tractor	Aggregated	10	DSL	1181.346439	0.004524254	0.973098009	1.10779801	3.670423218	17.81829104	2835.803278	0.051120047	0.048908617
South Central Coast	2020	T7 tractor construction	Aggregated	10	DSL	160.8600765	0.000616053	0.962505967	1.095739776	3.423726107	18.00185593	2856.946138	0.053116059	0.050818281
South Central Coast	2020	T7 utility	Aggregated	10	DSL	10.02040792	3.83756E-05	0.300405594	0.341988901	1.773825245	6.903718087	2752.550593	0.005427438	0.005192649
South Central Coast	2020	UBUS	Aggregated	10	DSL	1715.31519	0.006569217	1.971616987	6.595383363	18.25616711	19.2445194	3233.999306	0.457717325	0.437916676
							Composite	2.51E-01	4.50E-01	2.50E+00	1.71E+00	1.12E+03	2.27E-02	2.15E-02

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
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Calendar Year: 2020
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Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	LDA	Aggregated	10	GAS	110977.1044	0.425013834	0.056603055	0.082503387	1.151953388	0.100450884	662.5644838	0.007622916	0.00700928
South Central Coast	2020	LDT1	Aggregated	10	GAS	7874.504943	0.030157333	0.125626442	0.182953762	2.684551214	0.246105279	786.8677224	0.010576455	0.009726018
South Central Coast	2020	LDT2	Aggregated	10	GAS	39252.70126	0.150327774	0.087237349	0.127192042	1.691677719	0.196147879	900.3460893	0.00764343	0.007028188
South Central Coast	2020	LHD1	Aggregated	10	GAS	19367.46105	0.074172406	0.256581911	0.37300361	3.531596884	0.66273987	1374.284412	0.006846635	0.006296638
South Central Coast	2020	LHD2	Aggregated	10	GAS	3130.678978	0.011989697	0.111509603	0.162689935	1.402800682	0.396266076	1528.944336	0.004575181	0.004206735
South Central Coast	2020	MCY	Aggregated	10	GAS	979.7833397	0.003752319	8.514022005	10.38762618	41.450427	1.39492541	407.2271384	0.007022801	0.006590106
South Central Coast	2020	MDV	Aggregated	10	GAS	24237.41646	0.092823086	0.170911032	0.241022937	2.923887724	0.334946889	1214.157244	0.0076044	0.006998259
South Central Coast	2020	MH	Aggregated	10	GAS	1103.637849	0.00422665	0.627981338	0.888695483	12.21086776	1.103868195	3344.288532	0.008843992	0.008150083
South Central Coast	2020	OBUS	Aggregated	10	GAS	1022.290425	0.00391511	0.271580631	0.396160488	3.077399528	0.775081402	3277.371209	0.003543409	0.00325812
South Central Coast	2020	SBUS	Aggregated	10	GAS	690.8482191	0.002645771	0.249414591	0.363945186	2.721703396	0.776940943	1583.304623	0.002590148	0.002381545
South Central Coast	2020	T6TS	Aggregated	10	GAS	1887.637551	0.007229167	0.540475634	0.788660776	6.498668952	1.394111536	3282.50373	0.005076075	0.004667263
South Central Coast	2020	T7IS	Aggregated	10	GAS	111.7743819	0.000428067	2.141911226	3.102932387	56.7388282	5.527548113	3539.939155	0.003274434	0.003016965
South Central Coast	2020	UBUS	Aggregated	10	GAS	1009.502629	0.003866136	1.263439842	1.84329394	8.583113868	1.629951873	3280.949507	0.004680869	0.004304042
							Composite	1.23E-01	1.71E-01	1.71E+00	1.98E-01	7.44E+02	6.12E-03	5.63E-03

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	10	DSL	896.712905	0.00343418	0.447991636	0.510004376	1.411183545	9.340498931	2041.838351	0.033253163	0.031814646
South Central Coast	2020	LDA	Aggregated	10	DSL	1306.015607	0.005001705	0.181064951	0.206130408	2.65842985	0.191859426	572.3009661	0.039587374	0.037874842
South Central Coast	2020	LDT1	Aggregated	10	DSL	9.07917786	3.47709E-05	0.584624475	0.665556097	2.773291441	0.852989228	783.5022184	0.418077544	0.399991694
South Central Coast	2020	LDT2	Aggregated	10	DSL	75.0246522	0.000287325	0.196440022	0.223633904	1.747053509	0.140342583	728.690547	0.014658061	0.01402396
South Central Coast	2020	LHD1	Aggregated	10	DSL	16665.94559	0.063826295	0.582323107	0.662936142	2.516179038	3.557138964	1076.285111	0.089048164	0.08519598
South Central Coast	2020	LHD2	Aggregated	10	DSL	5511.76517	0.021108646	0.559889796	0.637397309	2.392094973	2.425716683	1183.774954	0.063701455	0.060945759
South Central Coast	2020	MDV	Aggregated	10	DSL	416.589908	0.001595432	0.161947615	0.184366593	2.73765302	0.142278547	905.2899585	0.018816826	0.018002818
South Central Coast	2020	MH	Aggregated	10	DSL	273.5560067	0.001047649	0.90028345	1.024912853	2.056008818	13.75249237	1908.269373	0.348061277	0.3330043
South Central Coast	2020	Motor Coach	Aggregated	10	DSL	281.7948114	0.001079202	0.883014968	1.005245325	3.252348886	15.27215309	2932.520928	0.040420437	0.038671867
South Central Coast	2020	SBUS	Aggregated	10	DSL	846.7002679	0.003242645	0.592694475	0.674737543	1.108333258	14.83933753	2076.476784	0.113674364	0.108756861
South Central Coast	2020	T6 Ag	Aggregated	10	DSL	217.2965253	0.00083219	3.390134879	3.859410498	4.660912877	14.3327608	2111.485232	0.860209232	0.822996961
South Central Coast	2020	T6 CAIRP heavy	Aggregated	10	DSL	18.5329048	7.09763E-05	0.269541214	0.306852155	1.097637753	7.51122348	1963.517833	0.014941689	0.014295318
South Central Coast	2020	T6 CAIRP small	Aggregated	10	DSL	56.89144367	0.00021788	0.461223528	0.525067877	1.286554266	7.237692805	1947.387884	0.040017387	0.038286253
South Central Coast	2020	T6 instate construction heavy	Aggregated	10	DSL	304.7752007	0.001167211	0.419752764	0.47785657	1.249956853	9.422921344	2020.110468	0.037351761	0.035735941
South Central Coast	2020	T6 instate construction small	Aggregated	10	DSL	936.2526365	0.003585607	0.681322553	0.775633864	1.622312807	8.160956138	1983.919789	0.063537116	0.060788528
South Central Coast	2020	T6 instate heavy	Aggregated	10	DSL	2907.83698	0.01113627	0.401999818	0.457646192	1.342157818	8.936232537	2021.734543	0.030169261	0.028864152
South Central Coast	2020	T6 instate small	Aggregated	10	DSL	7149.941761	0.027382442	0.826373803	0.94076367	1.796535508	9.038438838	1998.596739	0.08571384	0.082005897
South Central Coast	2020	T6 OOS heavy	Aggregated	10	DSL	10.61865795	4.06667E-05	0.272452469	0.310166396	1.099518396	7.609309708	1966.620896	0.015614365	0.014938895
South Central Coast	2020	T6 OOS small	Aggregated	10	DSL	32.59665915	0.000124837	0.461223528	0.525067877	1.286554266	7.237692805	1947.387884	0.040017387	0.038286253
South Central Coast	2020	T6 Public	Aggregated	10	DSL	242.965106	0.000930494	0.372149704	0.423664109	0.833911089	11.58600626	2073.006091	0.069066256	0.066078481
South Central Coast	2020	T6 utility	Aggregated	10	DSL	57.82285367	0.000221447	0.147603061	0.16803485	0.776934058	4.447050696	1986.335371	0.003541349	0.003388152
South Central Coast	2020	T7 Ag	Aggregated	10	DSL	54.52735377	0.000208826	7.076392772	8.055934507	12.739752	26.3284313	3134.921711	1.684005251	1.611155929
South Central Coast	2020	T7 CAIRP	Aggregated	10	DSL	956.3782863	0.003662683	0.810092428	0.922228565	3.610788358	17.73562521	2764.240487	0.032528532	0.031121362
South Central Coast	2020	T7 CAIRP construction	Aggregated	10	DSL	83.4032988	0.000319413	0.820024911	0.933535939	3.361572267	17.28594161	2762.940056	0.03485777	0.033349838
South Central Coast	2020	T7 NNOOS	Aggregated	10	DSL	1185.910265	0.004541732	0.493610979	0.561938525	2.648299589	13.73681299	2557.741496	0.013253889	0.012680532
South Central Coast	2020	T7 NOOS	Aggregated	10	DSL	377.769141	0.001446759	0.810208313	0.92236049	3.607314957	17.85783363	2769.009182	0.03308949	0.031658053
South Central Coast	2020	T7 other port	Aggregated	10	DSL	254.9175047	0.000976269	1.034496424	1.177695432	3.894863417	17.01623295	2875.401845	0.041250376	0.039465903
South Central Coast	2020	T7 POLA	Aggregated	10	DSL	29.25953463	0.000112057	1.170584243	1.332621054	4.178953592	17.87126952	2934.172368	0.048817811	0.046705974
South Central Coast	2020	T7 Public	Aggregated	10	DSL	169.2495231	0.000648182	0.673259371	0.766454544	1.707250874	21.92543222	3087.944475	0.141032714	0.134931701
South Central Coast	2020	T7 Single	Aggregated	10	DSL	965.5171812	0.003697683	0.848284254	0.965707051	2.527758588	17.91363225	2980.982327	0.09622661	0.092063889
South Central Coast	2020	T7 single construction	Aggregated	10	DSL	215.7533603	0.00082628	0.667319204	0.759692116	2.441122987	13.71091285	2832.651771	0.041928542	0.040114731
South Central Coast	2020	T7 SWCV	Aggregated	10	DSL	3889.815284	0.014896994	0.47617	7.631363115	18.86547771	14.52945136	5796.610095	0.018672582	0.017864815
South Central Coast	2020	T7 tractor	Aggregated	10	DSL	1181.346439	0.004524254	0.973098009	1.10779801	3.670423218	17.81829104	2835.803278	0.051120047	0.048908617
South Central Coast	2020	T7 tractor construction	Aggregated	10	DSL	160.8600765	0.000616053	0.962505967	1.095739776	3.423726107	18.00185593	2856.946138	0.053116059	0.050818281
South Central Coast	2020	T7 utility	Aggregated	10	DSL	10.02040792	3.83756E-05	0.300405594	0.341988901	1.773825245	6.903718087	2752.550593	0.005427438	0.005192649
South Central Coast	2020	UBUS	Aggregated	10	DSL	1715.31519	0.006569217	1.971616987	6.595383363	18.25616711	19.2445194	3233.999306	0.457717325	0.437916676
							Composite	1.27E-01	2.79E-01	7.91E-01	1.51E+00	3.77E+02	1.66E-02	1.59E-02

Appendix C3

2020 Annual—15 mph

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	15	DSL	1163.133951	0.002148307	0.300952023	0.34261097	0.989602013	6.63231589	1715.212428	0.026216571	0.025082454
South Central Coast	2020	LDA	Aggregated	15	DSL	2764.299126	0.005105657	0.098736468	0.112404904	1.343850104	0.157321586	469.4960519	0.02990706	0.028613294
South Central Coast	2020	LDT1	Aggregated	15	DSL	19.08601855	3.52519E-05	0.404436616	0.460424198	1.920140617	0.869220938	646.8610566	0.296692816	0.283858016
South Central Coast	2020	LDT2	Aggregated	15	DSL	160.0928898	0.000295691	0.097780551	0.111316657	0.860578566	0.100771558	603.3610878	0.011468231	0.010972121
South Central Coast	2020	LHD1	Aggregated	15	DSL	38487.27381	0.071085949	0.373527832	0.425236603	1.647073671	3.639238425	702.6909777	0.06582444	0.062976904
South Central Coast	2020	LHD2	Aggregated	15	DSL	12780.94731	0.023606394	0.329129476	0.374692026	1.434256748	2.416839251	787.6911327	0.048081871	0.046001871
South Central Coast	2020	MDV	Aggregated	15	DSL	884.7233591	0.001634083	0.082016625	0.093370475	1.347441479	0.103087847	766.1241032	0.014477433	0.013851146
South Central Coast	2020	MH	Aggregated	15	DSL	385.4908106	0.000712001	0.459915798	0.523583559	1.310053939	9.641990776	1566.88554	0.252167168	0.241258528
South Central Coast	2020	Motor Coach	Aggregated	15	DSL	327.9713485	0.000605763	0.604225741	0.687865012	2.275897746	10.7884707	2464.276067	0.034225956	0.032745356
South Central Coast	2020	SBUS	Aggregated	15	DSL	1693.400536	0.003127709	0.333894997	0.380114038	0.781955129	10.15758012	1725.642791	0.07576731	0.07248965
South Central Coast	2020	T6 Ag	Aggregated	15	DSL	289.0945054	0.000533957	1.885414262	2.146400617	3.554998253	10.06519369	1756.996086	0.598865471	0.572958816
South Central Coast	2020	T6 CAIRP heavy	Aggregated	15	DSL	24.65645016	4.55404E-05	0.183501579	0.208902579	0.771239911	4.97947695	1647.545476	0.011962334	0.011444849
South Central Coast	2020	T6 CAIRP small	Aggregated	15	DSL	75.68921659	0.000139798	0.272111777	0.309778544	0.859088096	4.680573687	1631.91328	0.035535907	0.033998639
South Central Coast	2020	T6 instate construction heavy	Aggregated	15	DSL	418.8231383	0.000773566	0.273796993	0.311697034	0.874454189	6.553153967	1694.149267	0.028536014	0.027301559
South Central Coast	2020	T6 instate construction small	Aggregated	15	DSL	1245.60433	0.00230063	0.390449225	0.444496721	1.060488126	5.505854159	1661.834696	0.057267067	0.054789719
South Central Coast	2020	T6 instate heavy	Aggregated	15	DSL	4056.582177	0.007492502	0.267970572	0.305064098	0.940816577	6.295628751	1696.630954	0.02322161	0.022217053
South Central Coast	2020	T6 instate small	Aggregated	15	DSL	9996.060933	0.018462713	0.460065891	0.523749996	1.159511129	6.108346535	1671.210454	0.07480744	0.071571304
South Central Coast	2020	T6 OOS heavy	Aggregated	15	DSL	14.12721931	2.6093E-05	0.184568799	0.210117528	0.77197646	5.060514372	1649.864606	0.012478358	0.01193855
South Central Coast	2020	T6 OOS small	Aggregated	15	DSL	43.36707659	8.00989E-05	0.272111777	0.309778544	0.859088096	4.680573687	1631.91328	0.035535907	0.033998639
South Central Coast	2020	T6 Public	Aggregated	15	DSL	333.9356401	0.000616779	0.222806086	0.253647769	0.590495974	8.049377403	1725.850416	0.048108484	0.046027332
South Central Coast	2020	T6 utility	Aggregated	15	DSL	76.92837821	0.000142087	0.103953428	0.118343065	0.547176718	2.828614884	1666.519691	0.003043096	0.002911453
South Central Coast	2020	T7 Ag	Aggregated	15	DSL	78.02146018	0.000144106	3.933903667	4.478449871	10.0035075	18.50514233	2598.41964	1.193357057	1.141732959
South Central Coast	2020	T7 CAIRP	Aggregated	15	DSL	1368.451341	0.002527528	0.556954797	0.63405064	2.542290078	12.09659129	2320.440468	0.026713621	0.025558001
South Central Coast	2020	T7 CAIRP construction	Aggregated	15	DSL	119.3391336	0.000220419	0.55881542	0.636168817	2.351326607	11.69250002	2318.852226	0.029626669	0.028345032
South Central Coast	2020	T7 NNOOS	Aggregated	15	DSL	1696.881365	0.003134138	0.344476945	0.39216078	1.863863333	8.655188353	2146.182051	0.011437165	0.010942398
South Central Coast	2020	T7 NOOS	Aggregated	15	DSL	540.5378761	0.000998373	0.555329839	0.632200749	2.538538709	12.19336163	2324.072001	0.027110902	0.025938096
South Central Coast	2020	T7 other port	Aggregated	15	DSL	364.7533682	0.000673699	0.726127083	0.82664041	2.740232964	12.11561635	2421.094166	0.035462151	0.033928074
South Central Coast	2020	T7 POLA	Aggregated	15	DSL	41.8665396	7.73274E-05	0.821165545	0.934834464	2.939379444	12.97434108	2472.390902	0.041969992	0.040154388
South Central Coast	2020	T7 Public	Aggregated	15	DSL	241.4170791	0.000445897	0.396660648	0.451567954	1.250020383	15.1748755	2557.078027	0.098600875	0.094335444
South Central Coast	2020	T7 Single	Aggregated	15	DSL	1366.775675	0.002524433	0.526214336	0.599054965	1.798463809	12.3252178	2486.672808	0.066286755	0.063419219
South Central Coast	2020	T7 single construction	Aggregated	15	DSL	308.7146368	0.000570196	0.440497356	0.501472708	1.710598203	9.419641824	2374.348008	0.032017142	0.030632095
South Central Coast	2020	T7 SWCV	Aggregated	15	DSL	1777.72268	0.003283452	0.287913569	5.053259531	13.28625723	10.37726089	4817.136575	0.013802661	0.013205564
South Central Coast	2020	T7 tractor	Aggregated	15	DSL	1690.351131	0.003122077	0.660216674	0.751606426	2.585158831	12.48018583	2381.197942	0.040287096	0.038544294
South Central Coast	2020	T7 tractor construction	Aggregated	15	DSL	230.1695788	0.000425123	0.639727641	0.728281222	2.388213643	12.55968113	2395.734266	0.043152339	0.041285588
South Central Coast	2020	T7 utility	Aggregated	15	DSL	14.33788371	2.64821E-05	0.211568723	0.240854887	1.249264164	4.476234546	2309.368212	0.004663821	0.004462066
South Central Coast	2020	UBUS	Aggregated	15	DSL	2942.38835	0.005434588	1.035273015	3.401834296	10.8633441	13.49476271	2652.630038	0.302111322	0.28904212
							Composite	1.49E-01	2.18E-01	1.81E+00	1.02E+00	7.69E+02	1.52E-02	1.44E-02

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	LDA	Aggregated	15	GAS	237126.0161	0.43797147	0.03740133	0.054510282	1.031135661	0.08687194	510.0103283	0.005083491	0.004674296
South Central Coast	2020	LDT1	Aggregated	15	GAS	17151.27266	0.03167838	0.086503128	0.125972857	2.364938121	0.212611579	606.1149777	0.00723947	0.0066574
South Central Coast	2020	LDT2	Aggregated	15	GAS	83206.40349	0.153682128	0.055855317	0.081434817	1.459860839	0.161014248	691.4698187	0.005051023	0.004644457
South Central Coast	2020	LHD1	Aggregated	15	GAS	46612.66531	0.086093537	0.177995997	0.258697548	2.906619634	0.598137406	954.7069379	0.004609341	0.00423916
South Central Coast	2020	LHD2	Aggregated	15	GAS	7549.35659	0.013943653	0.07648234	0.111585476	1.192158463	0.355179053	1075.642435	0.003057062	0.002810873
South Central Coast	2020	MCY	Aggregated	15	GAS	1994.049847	0.003683008	5.885731606	7.177066029	32.61233233	1.297602858	313.693497	0.004884902	0.004584559
South Central Coast	2020	MDV	Aggregated	15	GAS	51257.99769	0.094673461	0.113473729	0.159681473	2.513215071	0.283624708	933.73526	0.005079421	0.004674805
South Central Coast	2020	MH	Aggregated	15	GAS	1489.981931	0.002751995	0.433043285	0.612294528	9.287788472	0.995030607	2305.181897	0.005957123	0.00549056
South Central Coast	2020	OBUS	Aggregated	15	GAS	1304.664877	0.002409714	0.178135672	0.259779793	2.694514422	0.667189549	2257.785201	0.002358356	0.002168526
South Central Coast	2020	SBUS	Aggregated	15	GAS	1381.696438	0.002551992	0.165555455	0.241578131	2.485371104	0.685996907	1091.374766	0.001719278	0.001580813
South Central Coast	2020	T6TS	Aggregated	15	GAS	2440.100847	0.004506863	0.3579995479	0.522386163	5.592925883	1.2090779	2261.19485	0.003378242	0.003106169
South Central Coast	2020	T7IS	Aggregated	15	GAS	147.2060169	0.000271889	1.384797438	2.00509718	50.00541943	4.784838531	2540.583218	0.002237716	0.002061838
South Central Coast	2020	UBUS	Aggregated	15	GAS	1734.437164	0.003203503	0.888590518	1.296402635	7.04381554	1.488504431	2261.276954	0.003172875	0.002917454
							Composite	8.34E-02	1.16E-01	1.48E+00	1.75E-01	5.68E+02	4.22E-03	3.88E-03

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	15	DSL	1163.133951	0.002148307	0.300952023	0.34261097	0.989602013	6.63231589	1715.212428	0.026216571	0.025082454
South Central Coast	2020	LDA	Aggregated	15	DSL	2764.299126	0.005105657	0.098736468	0.112404904	1.343850104	0.157321586	469.4960519	0.02990706	0.028613294
South Central Coast	2020	LDT1	Aggregated	15	DSL	19.08601855	3.52519E-05	0.404436616	0.460424198	1.920140617	0.869220938	646.8610566	0.296692816	0.283858016
South Central Coast	2020	LDT2	Aggregated	15	DSL	160.0928898	0.000295691	0.097780551	0.111316657	0.860578566	0.100771558	603.3610878	0.011468231	0.010972121
South Central Coast	2020	LHD1	Aggregated	15	DSL	38487.27381	0.071085949	0.373527832	0.425236603	1.647073671	3.639238425	702.6909777	0.06582444	0.062976904
South Central Coast	2020	LHD2	Aggregated	15	DSL	12780.94731	0.023606394	0.329129476	0.374692026	1.434256748	2.416839251	787.6911327	0.048081871	0.046001871
South Central Coast	2020	MDV	Aggregated	15	DSL	884.7233591	0.001634083	0.082016625	0.093370475	1.347441479	0.103087847	766.1241032	0.014477433	0.013851146
South Central Coast	2020	MH	Aggregated	15	DSL	385.4908106	0.000712001	0.459915798	0.523583559	1.310053939	9.641990776	1566.88554	0.252167168	0.241258528
South Central Coast	2020	Motor Coach	Aggregated	15	DSL	327.9713485	0.000605763	0.604225741	0.687865012	2.275897746	10.7884707	2464.276067	0.034225956	0.032745356
South Central Coast	2020	SBUS	Aggregated	15	DSL	1693.400536	0.003127709	0.333894997	0.380114038	0.781955129	10.15758012	1725.642791	0.07576731	0.07248965
South Central Coast	2020	T6 Ag	Aggregated	15	DSL	289.0945054	0.000533957	1.885414262	2.146400617	3.554998253	10.06519369	1756.996086	0.598865471	0.572958816
South Central Coast	2020	T6 CAIRP heavy	Aggregated	15	DSL	24.65645016	4.55404E-05	0.183501579	0.208902579	0.771239911	4.97947695	1647.545476	0.011962334	0.011444849
South Central Coast	2020	T6 CAIRP small	Aggregated	15	DSL	75.68921659	0.000139798	0.272111777	0.309778544	0.859088096	4.680573687	1631.91328	0.035535907	0.033998639
South Central Coast	2020	T6 instate construction heavy	Aggregated	15	DSL	418.8231383	0.000773566	0.273796993	0.311697034	0.874454189	6.553153967	1694.149267	0.028536014	0.027301559
South Central Coast	2020	T6 instate construction small	Aggregated	15	DSL	1245.60433	0.00230063	0.390449225	0.444496721	1.060488126	5.505854159	1661.834696	0.057267067	0.054789719
South Central Coast	2020	T6 instate heavy	Aggregated	15	DSL	4056.582177	0.007492502	0.267970572	0.305064098	0.940816577	6.295628751	1696.630954	0.02322161	0.022217053
South Central Coast	2020	T6 instate small	Aggregated	15	DSL	9996.060933	0.018462713	0.460065891	0.523749996	1.159511129	6.108346535	1671.210454	0.07480744	0.071571304
South Central Coast	2020	T6 OOS heavy	Aggregated	15	DSL	14.12721931	2.6093E-05	0.184568799	0.210117528	0.77197646	5.060514372	1649.864606	0.012478358	0.01193855
South Central Coast	2020	T6 OOS small	Aggregated	15	DSL	43.36707659	8.00989E-05	0.272111777	0.309778544	0.859088096	4.680573687	1631.91328	0.035535907	0.033998639
South Central Coast	2020	T6 Public	Aggregated	15	DSL	333.9356401	0.000616779	0.222806086	0.253647769	0.590495974	8.049377403	1725.850416	0.048108484	0.046027332
South Central Coast	2020	T6 utility	Aggregated	15	DSL	76.92837821	0.000142087	0.103953428	0.118343065	0.547176718	2.828614884	1666.519691	0.003043096	0.002911453
South Central Coast	2020	T7 Ag	Aggregated	15	DSL	78.02146018	0.000144106	3.933903667	4.478449871	10.0035075	18.50514233	2598.41964	1.193357057	1.141732959
South Central Coast	2020	T7 CAIRP	Aggregated	15	DSL	1368.451341	0.002527528	0.556954797	0.63405064	2.542290078	12.09659129	2320.440468	0.026713621	0.025558001
South Central Coast	2020	T7 CAIRP construction	Aggregated	15	DSL	119.3391336	0.000220419	0.55881542	0.636168817	2.351326607	11.69250002	2318.852226	0.029626669	0.028345032
South Central Coast	2020	T7 NNOOS	Aggregated	15	DSL	1696.881365	0.003134138	0.344476945	0.39216078	1.863863333	8.655188353	2146.182051	0.011437165	0.010942398
South Central Coast	2020	T7 NOOS	Aggregated	15	DSL	540.5378761	0.000998373	0.555329839	0.632200749	2.538538709	12.19336163	2324.072001	0.027110902	0.025938096
South Central Coast	2020	T7 other port	Aggregated	15	DSL	364.7533682	0.000673699	0.726127083	0.82664041	2.740232964	12.11561635	2421.094166	0.035462151	0.033928074
South Central Coast	2020	T7 POLA	Aggregated	15	DSL	41.8665396	7.73274E-05	0.821165545	0.934834464	2.939379444	12.97434108	2472.390902	0.041969992	0.040154388
South Central Coast	2020	T7 Public	Aggregated	15	DSL	241.4170791	0.000445897	0.396660648	0.451567954	1.250020383	15.1748755	2557.078027	0.098600875	0.094335444
South Central Coast	2020	T7 Single	Aggregated	15	DSL	1366.775675	0.002524433	0.526214336	0.599054965	1.798463809	12.3252178	2486.672808	0.066286755	0.063419219
South Central Coast	2020	T7 single construction	Aggregated	15	DSL	308.7146368	0.000570196	0.440497356	0.501472708	1.710598203	9.419641824	2374.348008	0.032017142	0.030632095
South Central Coast	2020	T7 SWCV	Aggregated	15	DSL	1777.72268	0.003283452	0.287913569	5.053259531	13.28625723	10.37726089	4817.136575	0.013802661	0.013205564
South Central Coast	2020	T7 tractor	Aggregated	15	DSL	1690.351131	0.003122077	0.660216674	0.751606426	2.585158831	12.48018583	2381.197942	0.040287096	0.038544294
South Central Coast	2020	T7 tractor construction	Aggregated	15	DSL	230.1695788	0.000425123	0.639727641	0.728281222	2.388213643	12.55968113	2395.734266	0.043152339	0.041285588
South Central Coast	2020	T7 utility	Aggregated	15	DSL	14.33788371	2.64821E-05	0.211568723	0.240854887	1.249264164	4.476234546	2309.368212	0.004663821	0.004462066
South Central Coast	2020	UBUS	Aggregated	15	DSL	2942.38835	0.005434588	1.035273015	3.401834296	10.8633441	13.49476271	2652.630038	0.302111322	0.28904212
							Composite	6.52E-02	1.02E-01	3.38E-01	8.45E-01	2.01E+02	1.10E-02	1.05E-02

Appendix C4

2020 Annual—45 mph

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	45	DSL	2421.941986	0.00055337	0.047600974	0.054190085	0.168075571	2.692317926	1132.315953	0.014391524	0.013768953
South Central Coast	2020	LDA	Aggregated	45	GAS	2461143.355	0.562326632	0.011114023	0.016190038	0.648750618	0.063655138	232.0306983	0.001356073	0.001246936
South Central Coast	2020	LDA	Aggregated	45	DSL	29942.65165	0.006841353	0.018821928	0.021427513	0.195438563	0.137493159	231.122074	0.012212104	0.011683814
South Central Coast	2020	LDT1	Aggregated	45	GAS	162577.8995	0.037146102	0.025756777	0.037465624	1.346579506	0.144230432	274.8277068	0.001922023	0.001767634
South Central Coast	2020	LDT1	Aggregated	45	DSL	213.0808704	4.86851E-05	0.16214611	0.184592566	0.948307623	1.1885558	318.7921575	0.129025814	0.123444215
South Central Coast	2020	LDT2	Aggregated	45	GAS	895074.1437	0.204508213	0.019729818	0.028750201	1.02931613	0.138121938	317.7663181	0.001429426	0.001314423
South Central Coast	2020	LDT2	Aggregated	45	DSL	1672.003405	0.000382022	0.012166223	0.013850436	0.100773688	0.052401345	293.7704538	0.005732004	0.00548404
South Central Coast	2020	LHD1	Aggregated	45	GAS	23416.07797	0.005350149	0.050222945	0.072662009	1.429053496	0.393231098	682.0662028	0.001165666	0.001072406
South Central Coast	2020	LHD1	Aggregated	45	DSL	28691.42389	0.00655547	0.102955069	0.117207502	0.597690324	4.00996638	454.2621466	0.023901048	0.022867099
South Central Coast	2020	LHD2	Aggregated	45	GAS	5118.026525	0.001169376	0.017172348	0.025056711	0.517330259	0.208852067	732.6462632	0.000719093	0.00066118
South Central Coast	2020	LHD2	Aggregated	45	DSL	10428.03053	0.002382616	0.0724092	0.082433061	0.408410925	2.49405214	495.5813625	0.017931442	0.017155736
South Central Coast	2020	MCY	Aggregated	45	GAS	25392.82976	0.005801801	1.917279245	2.320233827	18.30598277	1.155188923	142.2748866	0.001583121	0.001488775
South Central Coast	2020	MDV	Aggregated	45	GAS	557129.2285	0.127293927	0.037675053	0.052306815	1.617085685	0.226805815	426.5368508	0.001421507	0.00130896
South Central Coast	2020	MDV	Aggregated	45	DSL	9439.207591	0.002156688	0.01166914	0.013284541	0.155879206	0.05959653	383.1299393	0.00693742	0.00663731
South Central Coast	2020	MH	Aggregated	45	GAS	4912.161276	0.00112234	0.138575457	0.194727205	4.663946791	0.795557457	1037.516835	0.001744017	0.00160855
South Central Coast	2020	MH	Aggregated	45	DSL	1250.348209	0.000285682	0.073142599	0.083267986	0.39072954	5.037073635	941.9221494	0.135382882	0.129526278
South Central Coast	2020	Motor Coach	Aggregated	45	DSL	759.7225905	0.000173583	0.096671173	0.110052772	0.381004818	4.029842632	1627.424904	0.021865697	0.020919796
South Central Coast	2020	OBUS	Aggregated	45	GAS	3754.346658	0.0008578	0.044358675	0.064583391	1.483610997	0.416340522	1013.799208	0.00063919	0.000587809
South Central Coast	2020	SBUS	Aggregated	45	GAS	1180.678254	0.000269764	0.043356564	0.063265797	1.518560862	0.458743377	491.4129197	0.00045228	0.000415854
South Central Coast	2020	SBUS	Aggregated	45	DSL	1447.033613	0.000330621	0.051230667	0.058322215	0.183395252	5.959557959	1092.229771	0.026673151	0.025519283
South Central Coast	2020	T6 Ag	Aggregated	45	DSL	767.5299346	0.000175367	0.347392103	0.395479465	1.126211534	5.21880308	1136.785884	0.228957784	0.219053171
South Central Coast	2020	T6 CAIRP heavy	Aggregated	45	DSL	65.4615125	1.49568E-05	0.029108762	0.033138109	0.126983669	1.211171361	1079.559662	0.006850656	0.0065543
South Central Coast	2020	T6 CAIRP small	Aggregated	45	DSL	200.950687	4.59136E-05	0.0508394	0.057876787	0.20588055	0.988874722	1094.020237	0.032834635	0.031414223
South Central Coast	2020	T6 instate construction heavy	Aggregated	45	DSL	1243.906191	0.00028421	0.043756978	0.049813989	0.157486735	2.649503174	1114.422708	0.0153432	0.01467946
South Central Coast	2020	T6 instate construction small	Aggregated	45	DSL	3307.010657	0.000755592	0.075900013	0.086406387	0.290724824	1.548268339	1104.950606	0.055113953	0.052729748
South Central Coast	2020	T6 instate heavy	Aggregated	45	DSL	13915.36912	0.00317941	0.041561768	0.047314909	0.157049639	2.208132402	1096.048497	0.011958741	0.011441411
South Central Coast	2020	T6 instate small	Aggregated	45	DSL	34722.32974	0.007933423	0.087246873	0.099323923	0.332427956	1.783445997	1105.124462	0.066704297	0.063818699
South Central Coast	2020	T6 OOS heavy	Aggregated	45	DSL	37.50698652	8.56967E-06	0.029394169	0.033463024	0.12832428	1.267674157	1080.275629	0.007266869	0.006952507
South Central Coast	2020	T6 OOS small	Aggregated	45	DSL	115.1371916	2.63068E-05	0.0508394	0.057876787	0.20588055	0.988874722	1094.020237	0.032834635	0.031414223
South Central Coast	2020	T6 Public	Aggregated	45	DSL	1028.401198	0.000234971	0.03563648	0.040569419	0.126082304	4.233362948	1102.610577	0.019860323	0.019001174
South Central Coast	2020	T6 utility	Aggregated	45	DSL	204.2405926	4.66653E-05	0.016253327	0.018503176	0.085552178	0.363860769	1130.102491	0.001849443	0.001769437
South Central Coast	2020	T6TS	Aggregated	45	GAS	7615.718549	0.001740054	0.094244391	0.137521194	3.126179356	0.796568812	1016.611597	0.000901424	0.000828826
South Central Coast	2020	T7 Ag	Aggregated	45	DSL	791.7292854	0.000180896	0.70784628	0.805829107	3.387748617	9.93633728	1653.635401	0.479249671	0.458517542
South Central Coast	2020	T7 CAIRP	Aggregated	45	DSL	13886.47431	0.003172808	0.088297214	0.100519657	0.414576217	3.337582676	1510.496647	0.016356628	0.015649047
South Central Coast	2020	T7 CAIRP construction	Aggregated	45	DSL	1211.003828	0.000276692	0.089854611	0.102292635	0.394855468	3.373153645	1539.871146	0.01967159	0.018820606
South Central Coast	2020	T7 NNOOS	Aggregated	45	DSL	17219.24542	0.003934285	0.05444486	0.061981328	0.296901665	1.242418767	1415.40298	0.00745163	0.007129276
South Central Coast	2020	T7 NOOS	Aggregated	45	DSL	5485.153256	0.001253258	0.088195232	0.100403558	0.416070526	3.387353892	1512.197378	0.016661122	0.015940369
South Central Coast	2020	T7 other port	Aggregated	45	DSL	3701.365276	0.000845695	0.113938957	0.129710829	0.432740482	4.488396316	1600.354375	0.0216677	0.020730365
South Central Coast	2020	T7 POLA	Aggregated	45	DSL	424.8442082	9.70692E-05	0.128932603	0.146779954	0.465293197	5.301819503	1625.478144	0.025660897	0.024550818
South Central Coast	2020	T7 Public	Aggregated	45	DSL	2446.97733	0.00055909	0.068392652	0.077859828	0.313598698	8.462926179	1613.426271	0.041764173	0.039957473
South Central Coast	2020	T7 Single	Aggregated	45	DSL	13853.64686	0.003165307	0.085425044	0.09724991	0.362616758	5.807133429	1608.95863	0.030511724	0.0291918
South Central Coast	2020	T7 single construction	Aggregated	45	DSL	3132.707568	0.000715767	0.069876151	0.079548679	0.299523109	3.628553973	1563.093739	0.01715614	0.016413973
South Central Coast	2020	T7 SWCV	Aggregated	45	DSL	3846.031908	0.000878749	0.044511053	0.78650885	2.085896779	6.252851018	3076.438402	0.007023049	0.006719235
South Central Coast	2020	T7 tractor	Aggregated	45	DSL	17152.97932	0.003919145	0.104457293	0.118916676	0.43226787	4.565897233	1533.983894	0.02277529	0.021790041
South Central Coast	2020	T7 tractor construction	Aggregated	45	DSL	2335.66503	0.000533657	0.103434764	0.117752605	0.422576711	4.667043995	1574.185361	0.026880302	0.025717472
South Central Coast	2020	T7 utility	Aggregated	45	DSL	145.4948728	3.32429E-05	0.033079194	0.037658145	0.195324958	0.660930345	1566.031762	0.002834438	0.002711822
South Central Coast	2020	T7IS	Aggregated	45	GAS	1062.409366	0.000242741	0.374777418	0.540730777	30.2849704	3.242651651	1661.898142	0.000619231	0.00057105
South Central Coast	2020	UBUS	Aggregated	45	GAS	307.8914691	7.03476E-05	0.31648843	0.461738964	4.050714329	1.205642997	1018.073022	0.000941699	0.000865898
South Central Coast	2020	UBUS	Aggregated	45	DSL	523.5345598	0.000119618	0.173430813	0.543675002	2.80495642	8.595740684	1593.218423	0.09440747	0.090323444
							Composite	3.17E-02	4.26E-02	9.86E-01	2.54E-01	3.23E+02	2.82E-03	2.65E-03

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	LDA	Aggregated	45	GAS	2461143.355	0.562326632	0.011114023	0.016190038	0.648750618	0.063655138	232.0306983	0.001356073	0.001246936
South Central Coast	2020	LDT1	Aggregated	45	GAS	162577.8995	0.037146102	0.025756777	0.037465624	1.346579506	0.144230432	274.8277068	0.001922023	0.001767634
South Central Coast	2020	LDT2	Aggregated	45	GAS	895074.1437	0.204508213	0.019729818	0.028750201	1.02931613	0.138121938	317.7663181	0.001429426	0.001314423
South Central Coast	2020	LHD1	Aggregated	45	GAS	23416.07797	0.005350149	0.050222945	0.072662009	1.429053496	0.393231098	682.0662028	0.001165666	0.001072406
South Central Coast	2020	LHD2	Aggregated	45	GAS	5118.026525	0.001169376	0.017172348	0.025056711	0.517330259	0.208852067	732.6462632	0.000719093	0.00066118
South Central Coast	2020	MCY	Aggregated	45	GAS	25392.82976	0.005801801	1.917279245	2.320233827	18.30598277	1.155188923	142.2748866	0.001583121	0.001488775
South Central Coast	2020	MDV	Aggregated	45	GAS	557129.2285	0.127293927	0.037675053	0.052306815	1.617085685	0.226805815	426.5368508	0.001421507	0.00130896
South Central Coast	2020	MH	Aggregated	45	GAS	4912.161276	0.00112234	0.138575457	0.194727205	4.663946791	0.795557457	1037.516835	0.001744017	0.00160855
South Central Coast	2020	OBUS	Aggregated	45	GAS	3754.346658	0.0008578	0.044358675	0.064583391	1.483610997	0.416340522	1013.799208	0.00063919	0.000587809
South Central Coast	2020	SBUS	Aggregated	45	GAS	1180.678254	0.000269764	0.043356564	0.063265797	1.518560862	0.458743377	491.4129197	0.00045228	0.000415854
South Central Coast	2020	T6TS	Aggregated	45	GAS	7615.718549	0.001740054	0.094244391	0.137521194	3.126179356	0.796568812	1016.611597	0.000901424	0.000828826
South Central Coast	2020	T7IS	Aggregated	45	GAS	1062.409366	0.000242741	0.374777418	0.540730777	30.2849704	3.242651651	1661.898142	0.000619231	0.00057105
South Central Coast	2020	UBUS	Aggregated	45	GAS	307.8914691	7.03476E-05	0.31648843	0.461738964	4.050714329	1.205642997	1018.073022	0.000941699	0.000865898
							Composite	2.79E-02	3.76E-02	9.66E-01	1.11E-01	2.70E+02	1.33E-03	1.22E-03

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	45	DSL	2421.941986	0.00055337	0.047600974	0.054190085	0.168075571	2.692317926	1132.315953	0.014391524	0.013768953
South Central Coast	2020	LDA	Aggregated	45	DSL	29942.65165	0.006841353	0.018821928	0.021427513	0.195438563	0.137493159	231.122074	0.012212104	0.011683814
South Central Coast	2020	LDT1	Aggregated	45	DSL	213.0808704	4.86851E-05	0.16214611	0.184592566	0.948307623	1.1885558	318.7921575	0.129025814	0.123444215
South Central Coast	2020	LDT2	Aggregated	45	DSL	1672.003405	0.000382022	0.012166223	0.013850436	0.100773688	0.052401345	293.7704538	0.005732004	0.00548404
South Central Coast	2020	LHD1	Aggregated	45	DSL	28691.42389	0.00655547	0.102955069	0.117207502	0.597690324	4.00996638	454.2621466	0.023901048	0.022867099
South Central Coast	2020	LHD2	Aggregated	45	DSL	10428.03053	0.002382616	0.0724092	0.082433061	0.408410925	2.49405214	495.5813625	0.017931442	0.017155736
South Central Coast	2020	MDV	Aggregated	45	DSL	9439.207591	0.002156688	0.01166914	0.013284541	0.155879206	0.05959653	383.1299393	0.00693742	0.00663731
South Central Coast	2020	MH	Aggregated	45	DSL	1250.348209	0.000285682	0.073142599	0.083267986	0.39072954	5.037073635	941.9221494	0.135382882	0.129526278
South Central Coast	2020	Motor Coach	Aggregated	45	DSL	759.7225905	0.000173583	0.096671173	0.110052772	0.381004818	4.029842632	1627.424904	0.021865697	0.020919796
South Central Coast	2020	SBUS	Aggregated	45	DSL	1447.033613	0.000330621	0.051230667	0.058322215	0.183395252	5.959557959	1092.229771	0.026673151	0.025519283
South Central Coast	2020	T6 Ag	Aggregated	45	DSL	767.5299346	0.000175367	0.347392103	0.395479465	1.126211534	5.21880308	1136.785884	0.228957784	0.219053171
South Central Coast	2020	T6 CAIRP heavy	Aggregated	45	DSL	65.4615125	1.49568E-05	0.029108762	0.033138109	0.126983669	1.211171361	1079.559662	0.006850656	0.0065543
South Central Coast	2020	T6 CAIRP small	Aggregated	45	DSL	200.950687	4.59136E-05	0.0508394	0.057876787	0.20588055	0.988874722	1094.020237	0.032834635	0.031414223
South Central Coast	2020	T6 instate construction heavy	Aggregated	45	DSL	1243.906191	0.00028421	0.043756978	0.049813989	0.157486735	2.649503174	1114.422708	0.0153432	0.01467946
South Central Coast	2020	T6 instate construction small	Aggregated	45	DSL	3307.010657	0.000755592	0.075900013	0.086406387	0.290724824	1.548268339	1104.950606	0.055113953	0.052729748
South Central Coast	2020	T6 instate heavy	Aggregated	45	DSL	13915.36912	0.00317941	0.041561768	0.047314909	0.157049639	2.208132402	1096.048497	0.011958741	0.011441411
South Central Coast	2020	T6 instate small	Aggregated	45	DSL	34722.32974	0.007933423	0.087246873	0.099323923	0.332427956	1.783445997	1105.124462	0.066704297	0.063818699
South Central Coast	2020	T6 OOS heavy	Aggregated	45	DSL	37.50698652	8.56967E-06	0.029394169	0.033463024	0.12832428	1.267674157	1080.275629	0.007266869	0.006952507
South Central Coast	2020	T6 OOS small	Aggregated	45	DSL	115.1371916	2.63068E-05	0.0508394	0.057876787	0.20588055	0.988874722	1094.020237	0.032834635	0.031414223
South Central Coast	2020	T6 Public	Aggregated	45	DSL	1028.401198	0.000234971	0.03563648	0.040569419	0.126082304	4.233362948	1102.610577	0.019860323	0.019001174
South Central Coast	2020	T6 utility	Aggregated	45	DSL	204.2405926	4.66653E-05	0.016253327	0.018503176	0.085552178	0.363860769	1130.102491	0.001849443	0.001769437
South Central Coast	2020	T7 Ag	Aggregated	45	DSL	791.7292854	0.000180896	0.70784628	0.805829107	3.387748617	9.93633728	1653.635401	0.479249671	0.458517542
South Central Coast	2020	T7 CAIRP	Aggregated	45	DSL	13886.47431	0.003172808	0.088297214	0.100519657	0.414576217	3.337582676	1510.496647	0.016356628	0.015649047
South Central Coast	2020	T7 CAIRP construction	Aggregated	45	DSL	1211.003828	0.000276692	0.089854611	0.102292635	0.394855468	3.373153645	1539.871146	0.01967159	0.018820606
South Central Coast	2020	T7 NNOOS	Aggregated	45	DSL	17219.24542	0.003934285	0.05444486	0.061981328	0.296901665	1.242418767	1415.40298	0.00745163	0.007129276
South Central Coast	2020	T7 NOOS	Aggregated	45	DSL	5485.153256	0.001253258	0.088195232	0.100403558	0.416070526	3.387353892	1512.197378	0.016661122	0.015940369
South Central Coast	2020	T7 other port	Aggregated	45	DSL	3701.365276	0.000845695	0.113938957	0.129710829	0.432740482	4.488396316	1600.354375	0.0216677	0.020730365
South Central Coast	2020	T7 POLA	Aggregated	45	DSL	424.8442082	9.70692E-05	0.128932603	0.146779954	0.465293197	5.301819503	1625.478144	0.025660897	0.024550818
South Central Coast	2020	T7 Public	Aggregated	45	DSL	2446.97733	0.00055909	0.068392652	0.077859828	0.313598698	8.462926179	1613.426271	0.041764173	0.039957473
South Central Coast	2020	T7 Single	Aggregated	45	DSL	13853.64686	0.003165307	0.085425044	0.09724991	0.362616758	5.807133429	1608.95863	0.030511724	0.0291918
South Central Coast	2020	T7 single construction	Aggregated	45	DSL	3132.707568	0.000715767	0.069876151	0.079548679	0.299523109	3.628553973	1563.093739	0.01715614	0.016413973
South Central Coast	2020	T7 SWCV	Aggregated	45	DSL	3846.031908	0.000878749	0.044511053	0.78650885	2.085896779	6.252851018	3076.438402	0.007023049	0.006719235
South Central Coast	2020	T7 tractor	Aggregated	45	DSL	17152.97932	0.003919145	0.104457293	0.118916676	0.43226787	4.565897233	1533.983894	0.02277529	0.021790041
South Central Coast	2020	T7 tractor construction	Aggregated	45	DSL	2335.66503	0.000533657	0.103434764	0.117752605	0.422576711	4.667043995	1574.185361	0.026880302	0.025717472
South Central Coast	2020	T7 utility	Aggregated	45	DSL	145.4948728	3.32429E-05	0.033079194	0.037658145	0.195324958	0.660930345	1566.031762	0.002834438	0.002711822
South Central Coast	2020	UBUS	Aggregated	45	DSL	523.5345598	0.000119618	0.173430813	0.543675002	2.80495642	8.595740684	1593.218423	0.09440747	0.090323444
							Composite	3.81E-03	5.03E-03	2.04E-02	1.43E-01	5.37E+01	1.49E-03	1.43E-03

Appendix C5

2020 Annual—65 mph

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	65	DSL	1311.22884	0.000297557	0.025635331	0.029183873	0.09054711	2.420220382	1050.762568	0.014370205	0.013748557
South Central Coast	2020	LDA	Aggregated	65	DSL	30200.30711	0.006853341	0.020960103	0.023861684	0.22520406	0.153946476	295.6916546	0.014762644	0.014124019
South Central Coast	2020	LDT1	Aggregated	65	DSL	216.3535445	4.9097E-05	0.214101512	0.243740337	1.71703729	1.389620432	406.6219864	0.170990844	0.163593856
South Central Coast	2020	LDT2	Aggregated	65	DSL	1685.082004	0.000382395	0.010748715	0.012236698	0.093718897	0.054113913	374.7105733	0.006097193	0.005833431
South Central Coast	2020	LHD1	Aggregated	65	DSL	53421.05876	0.012122815	0.11716073	0.133379701	0.940871572	4.187352862	506.6067915	0.027262222	0.02608287
South Central Coast	2020	LHD2	Aggregated	65	DSL	20514.09992	0.004655255	0.078192915	0.089017435	0.608086999	2.59039089	532.3752569	0.019409499	0.018569852
South Central Coast	2020	MDV	Aggregated	65	DSL	9488.918095	0.002153316	0.011108216	0.012645965	0.141332408	0.062247348	494.0401547	0.007598469	0.007269762
South Central Coast	2020	MH	Aggregated	65	DSL	1192.193382	0.000270544	0.079411743	0.090404989	0.390266958	5.013607194	923.4008319	0.222208794	0.21259614
South Central Coast	2020	Motor Coach	Aggregated	65	DSL	571.8201781	0.000129763	0.04863433	0.055366482	0.201515527	3.557937046	1509.275478	0.021382375	0.020457383
South Central Coast	2020	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0	0	0
South Central Coast	2020	T6 Ag	Aggregated	65	DSL	594.9932391	0.000135022	0.341179002	0.388406323	0.887347992	5.116729879	1072.137071	0.24767418	0.236959904
South Central Coast	2020	T6 CAIRP heavy	Aggregated	65	DSL	50.74610853	1.15158E-05	0.014414865	0.016410227	0.063445318	0.967757838	999.7539364	0.006436889	0.006158432
South Central Coast	2020	T6 CAIRP small	Aggregated	65	DSL	155.7780287	3.53506E-05	0.033120536	0.037705209	0.164032803	0.801210814	1021.116455	0.042770449	0.040920218
South Central Coast	2020	T6 instate construction heavy	Aggregated	65	DSL	1096.074414	0.000248732	0.025530021	0.029063985	0.092059309	2.438082916	1037.035581	0.016662359	0.015941553
South Central Coast	2020	T6 instate construction small	Aggregated	65	DSL	2563.612041	0.000581759	0.05195929	0.059151697	0.255431201	1.341231315	1031.423093	0.072987877	0.069830453
South Central Coast	2020	T6 instate heavy	Aggregated	65	DSL	13585.08885	0.003082858	0.020600632	0.023452251	0.079956338	1.807115098	1011.378135	0.010898965	0.010427481
South Central Coast	2020	T6 instate small	Aggregated	65	DSL	34181.99451	0.007756903	0.059733828	0.068002416	0.295539056	1.451494401	1032.666959	0.086524991	0.082781958
South Central Coast	2020	T6 OOS heavy	Aggregated	65	DSL	29.07561307	6.59811E-06	0.014828345	0.016880942	0.065413364	1.027142334	1000.764751	0.007109287	0.006801742
South Central Coast	2020	T6 OOS small	Aggregated	65	DSL	89.25495604	2.02546E-05	0.033120536	0.037705209	0.164032803	0.801210814	1021.116455	0.042770449	0.040920218
South Central Coast	2020	T6 Public	Aggregated	65	DSL	929.2249913	0.000210869	0.026218043	0.029847246	0.08349754	4.008441975	1036.33649	0.022039622	0.021086198
South Central Coast	2020	T6 utility	Aggregated	65	DSL	158.3283808	3.59294E-05	0.007577135	0.008625991	0.03988355	0.238601574	1053.519295	0.00159796	0.001528833
South Central Coast	2020	T7 Ag	Aggregated	65	DSL	716.5951328	0.000162617	0.687094207	0.782204452	2.663877349	9.814598201	1569.121671	0.500391969	0.478745234
South Central Coast	2020	T7 CAIRP	Aggregated	65	DSL	12568.66467	0.002852201	0.043140361	0.049112017	0.205954473	2.662221166	1397.456536	0.014831644	0.014190034
South Central Coast	2020	T7 CAIRP construction	Aggregated	65	DSL	1096.081028	0.000248733	0.045576356	0.051885212	0.209948303	2.888113433	1432.115946	0.020054639	0.019187084
South Central Coast	2020	T7 NNOOS	Aggregated	65	DSL	15585.15983	0.003536733	0.026041142	0.029645858	0.143400793	0.911171621	1311.832833	0.006933427	0.00663349
South Central Coast	2020	T7 NOOS	Aggregated	65	DSL	4964.61884	0.001126619	0.043529289	0.049554782	0.20899036	2.71657058	1399.666542	0.015468226	0.014799077
South Central Coast	2020	T7 other port	Aggregated	65	DSL	3350.110184	0.000760239	0.053569975	0.060985339	0.205866798	3.895073462	1478.77177	0.018865131	0.018049034
South Central Coast	2020	T7 POLA	Aggregated	65	DSL	384.5270062	8.72605E-05	0.060708958	0.069112527	0.222401684	4.655787613	1499.164684	0.022362678	0.021395278
South Central Coast	2020	T7 Public	Aggregated	65	DSL	2181.48341	0.000495043	0.052103023	0.059315325	0.213411937	7.833093937	1522.234908	0.043544768	0.04166104
South Central Coast	2020	T7 Single	Aggregated	65	DSL	11786.50763	0.002674706	0.04967502	0.056551229	0.203603038	4.726540972	1502.726299	0.02740019	0.02621487
South Central Coast	2020	T7 single construction	Aggregated	65	DSL	2835.417405	0.00064344	0.039206919	0.044634093	0.168351168	3.323474244	1456.014933	0.018584119	0.017780178
South Central Coast	2020	T7 SWCV	Aggregated	65	DSL	0	0	0	0	0	0	0	0	0
South Central Coast	2020	T7 tractor	Aggregated	65	DSL	15525.18231	0.003523122	0.053037097	0.060378698	0.222184804	3.859790264	1416.41564	0.021088577	0.020176294
South Central Coast	2020	T7 tractor construction	Aggregated	65	DSL	2114.013241	0.000479732	0.056264725	0.064053107	0.242659254	4.175711446	1464.98031	0.028652928	0.027413415
South Central Coast	2020	T7 utility	Aggregated	65	DSL	131.6875851	2.98838E-05	0.015421182	0.017555842	0.091058497	0.441928236	1459.907124	0.002449018	0.002343075
South Central Coast	2020	UBUS	Aggregated	65	DSL	347.3296978	7.88194E-05	0.228290626	1.036857494	4.015606609	7.255180171	1469.401074	0.083839483	0.080212624
							Composite	3.68E-02	4.86E-02	9.02E-01	2.62E-01	3.80E+02	3.37E-03	3.16E-03

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	LDA	Aggregated	65	GAS	2472719.636	0.56113305	0.012968312	0.018886947	0.516535482	0.069151982	288.209176	0.001611708	0.001482007
South Central Coast	2020	LDT1	Aggregated	65	GAS	163337.9057	0.037066191	0.029217339	0.042474273	1.211142569	0.170897285	341.4917294	0.002226374	0.002047603
South Central Coast	2020	LDT2	Aggregated	65	GAS	898282.3099	0.203846762	0.022599812	0.032924702	0.845474416	0.155452656	394.9562382	0.001684373	0.001548876
South Central Coast	2020	LHD1	Aggregated	65	GAS	26060.86204	0.005913979	0.061071232	0.088173275	1.761563812	0.417703991	779.0242217	0.001387081	0.001276257
South Central Coast	2020	LHD2	Aggregated	65	GAS	6051.585607	0.001373283	0.019793023	0.028881933	0.495684693	0.219098816	814.6363405	0.000844169	0.000776183
South Central Coast	2020	MCY	Aggregated	65	GAS	25208.97522	0.00572066	2.444600545	2.953308134	27.52780285	1.28580648	176.9536848	0.002019547	0.001899937
South Central Coast	2020	MDV	Aggregated	65	GAS	559515.6799	0.126970618	0.044999796	0.062106224	1.52299559	0.256768814	530.1107315	0.0016888	0.001555344
South Central Coast	2020	MH	Aggregated	65	GAS	3057.336716	0.0006938	0.16056671	0.224412604	6.342885687	0.819154257	967.0176488	0.002031996	0.001874687
South Central Coast	2020	OBUS	Aggregated	65	GAS	1890.751947	0.000429067	0.045178321	0.065534445	1.038440025	0.381496229	941.3953902	0.000775042	0.000712872
South Central Coast	2020	T6TS	Aggregated	65	GAS	4218.646186	0.000957335	0.10159568	0.148248178	2.464677924	0.782626452	945.4611628	0.001046927	0.000962611
South Central Coast	2020	T7IS	Aggregated	65	GAS	465.7391937	0.00010569	0.399564427	0.576099624	22.70359486	3.218056177	1558.140488	0.000780026	0.000719072
South Central Coast	2020	UBUS	Aggregated	65	GAS	222.7409499	5.05465E-05	0.202045173	0.294773369	2.912912707	1.006619159	942.8399359	0.000913972	0.000840388
							Composite	3.33E-02	4.46E-02	8.79E-01	1.21E-01	3.31E+02	1.57E-03	1.44E-03

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air Basin
Region: South Central Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
South Central Coast	2020	All Other Buses	Aggregated	65	DSL	1311.22884	0.000297557	0.025635331	0.029183873	0.09054711	2.420220382	1050.762568	0.014370205	0.013748557
South Central Coast	2020	LDA	Aggregated	65	DSL	30200.30711	0.006853341	0.020960103	0.023861684	0.22520406	0.153946476	295.6916546	0.014762644	0.014124019
South Central Coast	2020	LDT1	Aggregated	65	DSL	216.3535445	4.9097E-05	0.214101512	0.243740337	1.71703729	1.389620432	406.6219864	0.170990844	0.163593856
South Central Coast	2020	LDT2	Aggregated	65	DSL	1685.082004	0.000382395	0.010748715	0.012236698	0.093718897	0.054113913	374.7105733	0.006097193	0.005833431
South Central Coast	2020	LHD1	Aggregated	65	DSL	53421.05876	0.012122815	0.11716073	0.133379701	0.940871572	4.187352862	506.6067915	0.027262222	0.02608287
South Central Coast	2020	LHD2	Aggregated	65	DSL	20514.09992	0.004655255	0.078192915	0.089017435	0.608086999	2.59039089	532.3752569	0.019409499	0.018569852
South Central Coast	2020	MDV	Aggregated	65	DSL	9488.918095	0.002153316	0.011108216	0.012645965	0.141332408	0.062247348	494.0401547	0.007598469	0.007269762
South Central Coast	2020	MH	Aggregated	65	DSL	1192.193382	0.000270544	0.079411743	0.090404989	0.390266958	5.013607194	923.4008319	0.222208794	0.21259614
South Central Coast	2020	Motor Coach	Aggregated	65	DSL	571.8201781	0.000129763	0.04863433	0.055366482	0.201515527	3.557937046	1509.275478	0.021382375	0.020457383
South Central Coast	2020	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0	0	0
South Central Coast	2020	T6 Ag	Aggregated	65	DSL	594.9932391	0.000135022	0.341179002	0.388406323	0.887347992	5.116729879	1072.137071	0.24767418	0.236959904
South Central Coast	2020	T6 CAIRP heavy	Aggregated	65	DSL	50.74610853	1.15158E-05	0.014414865	0.016410227	0.063445318	0.967757838	999.7539364	0.006436889	0.006158432
South Central Coast	2020	T6 CAIRP small	Aggregated	65	DSL	155.7780287	3.53506E-05	0.033120536	0.037705209	0.164032803	0.801210814	1021.116455	0.042770449	0.040920218
South Central Coast	2020	T6 instate construction heavy	Aggregated	65	DSL	1096.074414	0.000248732	0.025530021	0.029063985	0.092059309	2.438082916	1037.035581	0.016662359	0.015941553
South Central Coast	2020	T6 instate construction small	Aggregated	65	DSL	2563.612041	0.000581759	0.05195929	0.059151697	0.255431201	1.341231315	1031.423093	0.072987877	0.069830453
South Central Coast	2020	T6 instate heavy	Aggregated	65	DSL	13585.08885	0.003082858	0.020600632	0.023452251	0.079956338	1.807115098	1011.378135	0.010898965	0.010427481
South Central Coast	2020	T6 instate small	Aggregated	65	DSL	34181.99451	0.007756903	0.059733828	0.068002416	0.295539056	1.451494401	1032.666959	0.086524991	0.082781958
South Central Coast	2020	T6 OOS heavy	Aggregated	65	DSL	29.07561307	6.59811E-06	0.014828345	0.016880942	0.065413364	1.027142334	1000.764751	0.007109287	0.006801742
South Central Coast	2020	T6 OOS small	Aggregated	65	DSL	89.25495604	2.02546E-05	0.033120536	0.037705209	0.164032803	0.801210814	1021.116455	0.042770449	0.040920218
South Central Coast	2020	T6 Public	Aggregated	65	DSL	929.2249913	0.000210869	0.026218043	0.029847246	0.08349754	4.008441975	1036.33649	0.022039622	0.021086198
South Central Coast	2020	T6 utility	Aggregated	65	DSL	158.3283808	3.59294E-05	0.007577135	0.008625991	0.03988355	0.238601574	1053.519295	0.00159796	0.001528833
South Central Coast	2020	T7 Ag	Aggregated	65	DSL	716.5951328	0.000162617	0.687094207	0.782204452	2.663877349	9.814598201	1569.121671	0.500391969	0.478745234
South Central Coast	2020	T7 CAIRP	Aggregated	65	DSL	12568.66467	0.002852201	0.043140361	0.049112017	0.205954473	2.662221166	1397.456536	0.014831644	0.014190034
South Central Coast	2020	T7 CAIRP construction	Aggregated	65	DSL	1096.081028	0.000248733	0.045576356	0.051885212	0.209948303	2.888113433	1432.115946	0.020054639	0.019187084
South Central Coast	2020	T7 NNOOS	Aggregated	65	DSL	15585.15983	0.003536733	0.026041142	0.029645858	0.143400793	0.911171621	1311.832833	0.006933427	0.00663349
South Central Coast	2020	T7 NOOS	Aggregated	65	DSL	4964.61884	0.001126619	0.043529289	0.049554782	0.20899036	2.71657058	1399.666542	0.015468226	0.014799077
South Central Coast	2020	T7 other port	Aggregated	65	DSL	3350.110184	0.000760239	0.053569975	0.060985339	0.205866798	3.895073462	1478.77177	0.018865131	0.018049034
South Central Coast	2020	T7 POLA	Aggregated	65	DSL	384.5270062	8.72605E-05	0.060708958	0.069112527	0.222401684	4.655787613	1499.164684	0.022362678	0.021395278
South Central Coast	2020	T7 Public	Aggregated	65	DSL	2181.48341	0.000495043	0.052103023	0.059315325	0.213411937	7.833093937	1522.234908	0.043544768	0.04166104
South Central Coast	2020	T7 Single	Aggregated	65	DSL	11786.50763	0.002674706	0.04967502	0.056551229	0.203603038	4.726540972	1502.726299	0.02740019	0.02621487
South Central Coast	2020	T7 single construction	Aggregated	65	DSL	2835.417405	0.00064344	0.039206919	0.044634093	0.168351168	3.323474244	1456.014933	0.018584119	0.017780178
South Central Coast	2020	T7 SWCV	Aggregated	65	DSL	0	0	0	0	0	0	0	0	0
South Central Coast	2020	T7 tractor	Aggregated	65	DSL	15525.18231	0.003523122	0.053037097	0.060378698	0.222184804	3.859790264	1416.41564	0.021088577	0.020176294
South Central Coast	2020	T7 tractor construction	Aggregated	65	DSL	2114.013241	0.000479732	0.056264725	0.064053107	0.242659254	4.175711446	1464.98031	0.028652928	0.027413415
South Central Coast	2020	T7 utility	Aggregated	65	DSL	131.6875851	2.98838E-05	0.015421182	0.017555842	0.091058497	0.441928236	1459.907124	0.002449018	0.002343075
South Central Coast	2020	UBUS	Aggregated	65	DSL	347.3296978	7.88194E-05	0.228290626	1.036857494	4.015606609	7.255180171	1469.401074	0.083839483	0.080212624
							Composite	3.47E-03	4.01E-03	2.32E-02	1.41E-01	4.87E+01	1.80E-03	1.72E-03

APPENDIX D

Health Risk Calculations

Table
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
30 Year Exposure Scenario / Maximum Residential Receptor at Ground Level

Source	Concentration		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints*									
	(ug/m^3)	(mg/m^3)			URF $(ug/m^3)^{-1}$	CPF $(mg/kg/day)^{-1}$	DOSE (mg/kg-day)	RISK	REL (ug/m^3)	RfD (mg/kg/day)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
Freeway	0.03223	3.2E-05	4.91E-01	Benzene	2.9E-05	1.0E-01	4.6E-06	4.7E-07	3.0E+00	8.6E-04	5.3E-03							
			3.17E-01	Formaldehyde	6.0E-06	2.1E-02	3.0E-06	6.2E-08	9.0E+00	2.6E-03	1.1E-03							
			2.00E-02	1,3-Butadiene	1.7E-04	6.0E-01	1.9E-07	1.1E-07	2.0E+00	5.7E-04	3.2E-04							
			5.70E-02	Acetaldehyde	2.7E-06	9.5E-03	5.3E-07	5.0E-09	1.4E+02	4.0E-02	1.3E-05							
			2.60E-02	Acrolein	0.0E+00	0.0E+00	2.4E-07	0.0E+00	3.5E-01	1.0E-04	2.4E-03							
			1.00E+00	Diesel Particulates	3.0E-04	1.1E+00	9.3E-06	9.8E-06	5.0E+00	1.4E-03	0.0E+00							
TOTAL								1.0E-05			9.1E-03							

* Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Dose = (Cair x DBR x A x EF x ED x CF) / AT

Note: Exposure factors used to calculate contaminant intake

EF	exposure frequency (days/year)	350
	exposure duration (years)	30
DBR	Daily Breathing Rate	302
	inhalation rate (L/kg-day))	20
A	inhalation absorption factor	1
ED	averaging time (years)	70
	fraction of time at home	1
	age sensitivity factor (third trimester to 2 years)	10
	breathing rate third trimester	361
	breathing rate 0-2	1090
	weighted breathing rate	20
AT	Averaging time period	25550
CF	Composite Conversion Factor	1.00E-06

MEIR Health Risk Calculations

Cancer Risk Computation

Cancer Risk	1.04E-05	FALSE
	1.00E-05	

Reduced Risk

Risk Reduction - Cancer risk * reduction potential

	%windows closed					Less than 1.00 E-05?		
Filtration	100%	75%	50%	25%	100%	75%	50%	25%
MERV 12	3.16E-06	4.98E-06	6.80E-06	8.62E-06	TRUE	TRUE	TRUE	TRUE
MERV 11	3.56E-06	5.28E-06	7.00E-06	8.72E-06	TRUE	TRUE	TRUE	TRUE
MERV 10	5.18E-06	6.50E-06	7.81E-06	9.13E-06	TRUE	TRUE	TRUE	TRUE
MERV 9	6.40E-06	7.41E-06	8.42E-06	9.43E-06	TRUE	TRUE	TRUE	TRUE

Reduction Assumptions:

1. Assumes 77% of day is spent indoors

2a. Sealed HVAC system with MERV 12 or higher rated filters (90% reduciton on particulates less than 0.3 microns or larger), effectiveness.

2b. Sealed HVAC system with MERV 11 or higher rated filters (80% reduction on particulates less than 0.3 microns or larger), effectiveness.

2c. Sealed HVAC system with MERV 10 or higher rated filters (65% reduction on particulates less than 0.3 microns or larger), effectiveness.

2d. Sealed HVAC system with MERV 9 or higher rated filters (50% reduction on particulates less than 0.3 microns or larger), effectiveness.

3. Institute tiered vegetation along the perimeter of the Project area.

Reduction		Time Windows Closed	
100%	75%	50%	25%
0.775	0.58125	0.3875	0.19375
0.9	0.9	0.9	0.9
0.85	0.85	0.85	0.85
0.65	0.65	0.65	0.65
0.5	0.5	0.5	0.5
N/A	N/A	N/A	NA

Total Percent Reduction 2a (1*2a)	0.6975	0.5231	0.3488	0.1744
Total Percent Reduction 2b (1*2b)	0.6588	0.4941	0.3294	0.1647
Total Percent Reduction 2c (1*2c)	0.5038	0.3778	0.2519	0.1259
Total Percent Reduction 2d (1*2d)	0.3875	0.2906	0.1938	0.0969

Hazard Index Computation

Resident Adult

Chronic hazard index

Inhalation chronic risk = Cair/Inhalation Chronic REL

Cair	0.876522	µg/m3	Increase in average annual PM10 concentration from air dispersion model at the MEI
REL	5	µg/m3	Reference exposure level for DPM
HQ	0.1753044		Hazard Quotient for DPM

Source

1 U.S. Department of Labor, Bureau of Labor Statistics. American Time Use Survey - 2012 Results, USLD-13-1178. Released June 20, 2013

2 National Air Filtration Association. User Guide for ANSI/ASHRAE Standard 52.2 - 1999 Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size. Retried from http://www.filtera-b2b.com/businessfilters/PDFfiles/NAFA_Filter_Guide.pdf

3 CARB, 2012. Status of Research on Potential Mitigation Concepts to Reduce Exposure to Nearby Traffic Pollution. August 23

Appendix C

Biological Assessment Report

BioResource Consultants Inc.
PO Box 1539, Ojai, CA 93023 805.646.9006

July 17, 2019

Tony Locacciato, Partner
Meridian Consultants
910 Hampshire Road, Suite V
Westlake Village, California 91361

RE: Biological Assessment Report for the Rio Urbana Mixed Use Project, Oxnard, California

Dear Mr. Locacciato:

This biological assessment documents and describes the existing conditions of biological resources associated with the Rio Urbana Mixed Use Project (Project). BioResource Consultants Inc., (BRC) has prepared this report for the analysis of biological resources, including the potential occurrence of special-status species and their habitats within the survey area.

PROJECT LOCATION

The Project is located within the City of Oxnard at 2741 East Vineyard Avenue, Ventura County, California (Figure 1). The Project area includes the entire El Rio Elementary School property, which was closed in 2008. The property is a 10.24 acres site that has undergone heavy use and disturbance.

PROJECT DESCRIPTION

The Project site consists of approximately 10.24 acres of developed land with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that were formerly the El Rio Elementary School campus. The school has been closed since 2008 and is currently utilized as a dispatch for school buses and storage. The proposed Project would include demolition of the existing facilities to allow for the construction of a new mixed-use development, which will include 182 condominium residential units and a 15,000-square-foot office building containing the Rio School District Administrative Offices.

METHODOLOGY

Prior to implementing biological surveys, standard database searches were conducted and previous surveys in the area were reviewed to obtain pertinent information regarding habitat types. The results of these preliminary database searches provided a basis for addressing the appropriate special-status species within the Project area.

Literature and Database Review

BRC performed a review of special-status species and habitats within the survey area using information obtained from the California Natural Diversity Database (CNDDB; CDFW 2017). The CNDDB search included the *Oxnard* and surrounding U.S. Geological Survey 7.5-minute quadrangles.

Additional literature and databases referenced include:

- California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2010)
- The Jepson Manual: Higher Plants of California (Baldwin 2012)
- A Manual of California Vegetation (Sawyer et al. 2009)
- The CalFlora Database (CalFlora 2017)
- eBird website (Cornell Lab of Ornithology and National Audubon Society, Inc., 2017)
- California Herps: A Guide to the Amphibians and Reptiles of California website (California Herps 2017)
- USFWS Critical Habitat Portal website (USFWS 2017)

FIGURE 1. RIO URBANA MIXED-USE PROJECT VICINITY MAP

FIGURE 2. RIO URBANA MIXED-USE PROJECT LOCATION MAP

Survey Methods

On July 7, 2017, BRC biologist Colleen Del Vecchio conducted reconnaissance-level surveys for special-status species at the Project site. Plant species were identified, either in the field or following collection for subsequent identification, using the identification keys described in Hickman (1993) and Baldwin (2012). Nomenclature generally follows Sawyer et al. (2009) for vegetation types and communities and Calflora (2017), Baldwin (2012), and current scientific data (e.g., scientific journals) for plant species. The survey procedure for wildlife species included searching for and identifying species' diagnostic signs, including audible calls prints, scat, nests, skeletal remains, burrows, and habitat features (i.e. rock or debris piles, cavities, and rock outcrops) that may attract and/or support special-status species. Taxonomy and nomenclature for wildlife generally follows Collins and Taggert (2009) for amphibians and reptiles, American Ornithologists Union (AOU 1998) for birds, and Baker et al. (2003) for mammals.

Special-Status Plants and Wildlife

Plants or wildlife may be considered to have special-status due to declining populations, vulnerability to habitat change, restricted distributions, or insufficient knowledge of the species' biological status.

Using information from the various listed sources and floral and faunal surveys of the area, the potential for special-status species documented to occur within three miles of the Project site was assessed as Occurs, Likely, Unlikely, or Does Not Occur based on the following criteria:

- Occurs – The species and/or conclusive sign was observed on-site during the survey.
- Likely – This species is expected to occur in the proposed survey areas based on presence of suitable habitat, and/or based on professional expertise specific to the site or species, and nearby, recent (in the last decade) recorded occurrences for the species.
- Unlikely – This species may have been recorded in the project vicinity, but the project is on the periphery of the species range, or there are older records (greater than 10 years) on/near the project site, but there is currently marginal suitable habitat on-site (habitat is highly disturbed, degraded, or limited).
- Does Not Occur – This species is not expected to occur in the proposed survey area. Suitable habitat was not observed in the survey area during the survey. The survey area is outside of the currently known range of the species.

Special-status plant and wildlife species that are known to occur or have the potential to occur in the survey area are listed in Attachment A, Table 1. Mapped CNDDB documented occurrences of special-status species within the vicinity of the survey area are provided in Figure 3.

EXISTING ENVIRONMENT

The Project is largely located in commercial and urban area dominated by ornamental and ruderal vegetation communities (Attachment B: Photos 1-14). There are no areas with strictly native vegetation and no drainages or waterways are present on the property. Elevation along the Project area is 88 feet above mean sea level (amsl). The entire property had been previously graded and the terrain is flat.

Vegetation within the survey area consists mainly of ruderal fields dominated by fox tail brome (*Bromus madritensis*), hairy crabgrass (*Digitaria sanguinalis*), and common Mediterranean grass (*Shismus barbatus*). The vegetation community is best described as a Red Brome or Mediterranean Grass Grasslands (*Bromus rubens - Schismus* [*arabicus, barbatus*] Herbaceous Semi-Natural Alliance; Sawyer 2009). Within this community, additional species varied depending on the area's past disturbance, such as stockpiling of materials (Attachment B, Photos 6, 7, 10, 11), or a field made for recreational baseball (Attachment B, Photo 9). These species include sweet white clover (*Meliotlus albus*), sow thistle (*Sonchus oleraceus*), yellow star thistle (*Centaurea solstitialis*), black medick (*Medicago lupulina*), red-stemmed filaree (*Erodium cicutarium*), and rattlesnake sandmat (*Cuphorbia albomarginata*).

Near the current school buildings, vegetation of ornamental shrubs border most fence lines, buildings, and parking lots. On the southeast border of the property, there is a row of tamarisk trees (*Tamarix ramosissima*); on the northeastern border is four o'clock (*Mirabilis jalapa*); on the western border are Canary Island pine trees (*Pinus canariensis*); and on the northwestern border are Chinese tallow trees (*Tridaica sebifera*).

Within the fielded areas, there are three Heritage trees as defined by the Ventura County Tree Protection Ordinance (VC 2014). Heritage trees can be a tree of any species that is 90 inches in circumference for a single trunk. Heritage trees within the Project area include a single coast live oak (*Quercus agrifolia*) and two velvet ash (*Fraxinus velutina*). All three of these trees are native and provide nesting habitat for birds. Northern mockingbird (*Mimus polyglottos*) fledglings were observed foraging in two of the Heritage trees, in addition to many other adult birds. The coast live oak (Figure 4, Heritage Tree 1) is 91 inches in circumference, approximately 27 feet wide, and 35 feet tall. The velvet ash (Figure 4, Heritage Tree 2) adjacent to the oak is 118 inches in circumference, approximately 25 feet wide, and 60 feet tall. The second velvet ash (Figure 4, Heritage Tree 3) is located adjacent to the front parking lot and is 184 inches in circumference, approximately 40 feet wide, and 80 feet tall.

Throughout the area with school buildings, house sparrows (*Passer domesticus*) were observed nesting. These birds are not protected by the Migratory Bird Act; moreover they commonly harass native birds and take over their active nests. Additionally, an inactive American crow (*Corvus brachyrhynchos*) nest was observed in the larger Heritage velvet ash tree. Courting behavior was observed in the field by Anna's hummingbirds (*Calypte anna*) and Cassin's kingbirds (*Tyrannus vociferans*). Nesting habitat does occur where tall, dense vegetation occurs on this property. However, due to the high disturbance in this urban area and disconnect this property has from any wildlife corridors, it is unlikely that a special-status bird would be nesting in this marginal habitat. Nesting raptors could occur adjacent to the property in eucalyptus trees along Rio School Lane on the northeast border.

FIGURE 3. RIO URBANA MIXED-USE PROJECT CNDDB MAP

Special-Status Biological Resources

The Project site is not located within any USFWS-designated critical habitat. A review of the CNDDB and other existing records within the vicinity of the proposed action area resulted in 116 species having previously been reported in the area (Attachment A, Table 3). Of these, 2 species have suitable habitat at the proposed action areas and will be discussed further.

Davidson's saltscale. Status: CRPR 1B.2. Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) is an annual herb native to California that blooms between April and October. Its habitat is described as coastal scrub or coastal bluff with alkaline soil at elevations ranging from 0 to 1,500 feet amsl (CDFW 2017, CNPS 2015). CNDDB Occurrence No. 35 is recorded within 0.20 miles of the Project area. This species was observed in a disturbed area alongside Ventura Boulevard north of the Ventura freeway. The exact location of this occurrence is unknown. The Project area has marginal habitat for this species to occur.

Monarch Overwintering Population 1. Status: California Special Animal (SA). Monarch butterflies (*Danaus plexippus* pop. 1) winter along the Californian coast from Mendocino County to Baja California, Mexico. The roosts are located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Two monarch butterflies were observed in the Project area. Along Rio School Lane on the northeast side of the property, there is a eucalyptus stand measuring approximately 300 feet long. These trees were observed to be unhealthy and potentially dying; however, they could provide marginal roosting habitat for this species in such an urban setting. CNDDB Occurrence No. 170 is recorded approximately 2.75 miles northwest of the Project site within a barranca.

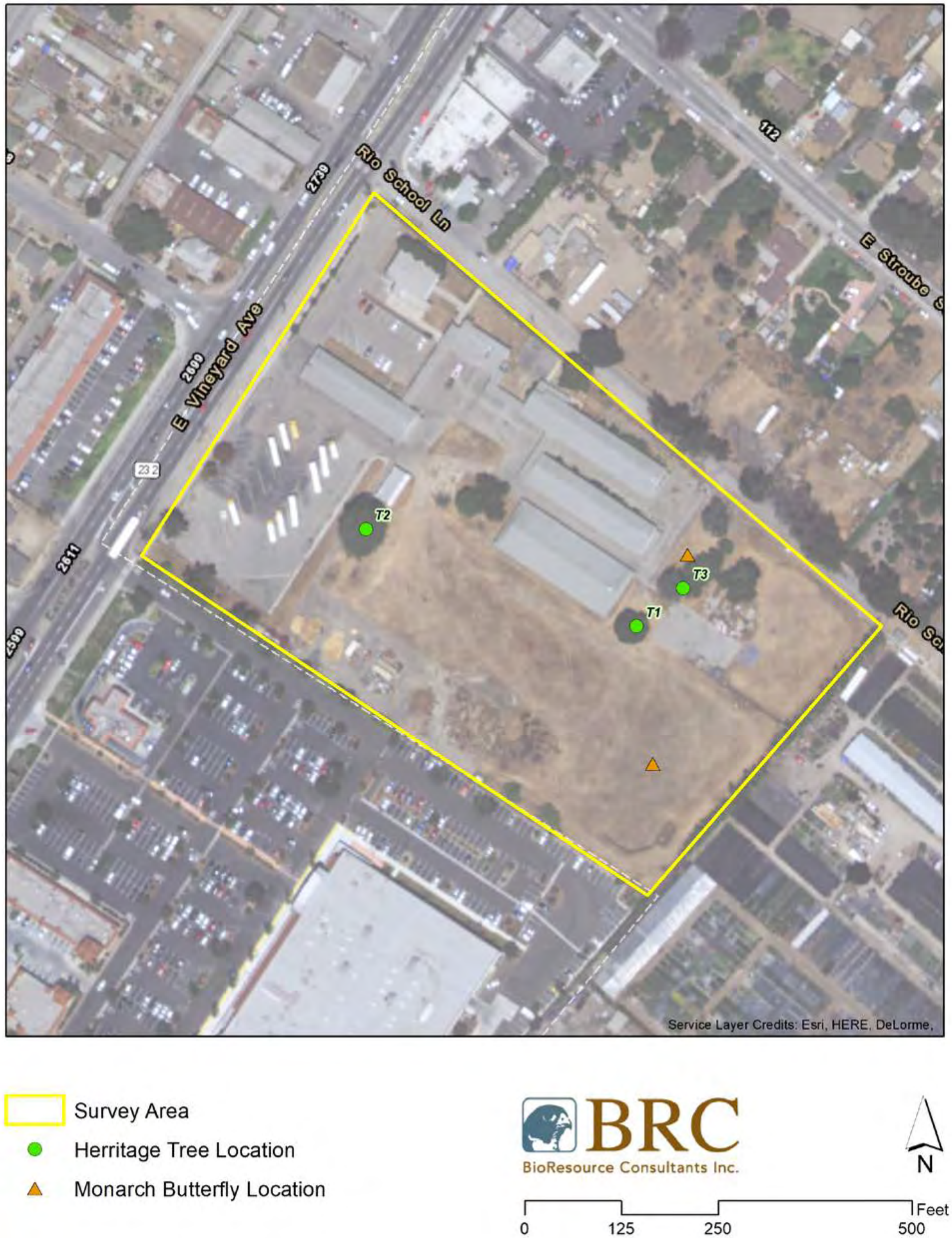

FIGURE 4. RIO URBANA MIXED-USE PROJECT SPECIAL-STATUS SPECIES OBSERVATION MAP

AVOIDANCE AND MINIMIZATION MEASURES

To minimize effects to special-status biological resources in general, the following avoidance and minimization measures should be implemented:

- If the proposed action is planned to occur within the general bird nesting season, a pre-construction nesting bird survey should be conducted by a qualified biologist. The nesting season is generally considered February 1 through August 31, with a peak from March to June; however, these dates vary by year depending on prey availability, weather, and other factors. In the event an active bird is observed in the habitats to be removed or in other habitats within 100 feet for songbirds and 500 feet for raptors of the construction work areas, the Project has the option of delaying all construction work in the suitable habitat or within 100 feet/500 feet of the suitable habitat until after September 1st, or continuing the surveys in order to locate any nests. If an active nest is found, clearing and construction within 100 feet/500 feet of the nest shall be postponed until the nest is vacated and juveniles have fledged, and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest site shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the ecological sensitivity of the area.
- Heritage trees are protected by the Ventura County Tree Protection Ordinance and can require surveying by a certified arborist, and/or special permitting for trimming, removal, or construction that may negatively impact the tree's health.
- Crews will enter and exit the project site via the same trail/footpath.
- Crews should avoid contact with any wildlife encountered and allow wildlife to escape the work area unharmed. All wildlife encounters and sightings shall be reported to the biological monitor.
- All trash shall be contained and removed from the proposed action area and properly disposed. Special attention should be given to leaving no micro-trash.

CONCLUSION

Marginal habitat is present for special-status plant and wildlife species within the Project area. However, as noted above, the Project area consists mainly of ruderal and ornamental vegetation. It provides suitable habitat for nesting birds, but other special-status species are unlikely to be present due to the high level of disturbance. Implementation of the avoidance and minimization measures listed above would reduce adverse impacts to special-status species and nesting birds as a result of the Project to an insignificant level.

Please let me know if you have any questions regarding this biological assessment.

Sincerely,

Colleen Del Vecchio, Biologist

cc: Brian E. Holly, Vice President, Senior Ecologist

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ATTACHMENT A:
Observed and Potential Species Occurrences
in the Project Vicinity

Table 1. California Natural Diversity Database occurrences within the Oxnard and surrounding USGS 7.5-minute quadrangles.

Common Name	Scientific Name	Status	Potential to Occur
Plants			
red sand-verbena	*Abronia maritima*	CRPR 4.2	Does Not Occur
aphanisma	*Aphanisma blitoides*	CRPR 1B.2	Does Not Occur
Braunton's milk-vetch	*Astragalus brauntonii*	FE, CRPR 1B.1	Does Not Occur
Ventura Marsh milk-vetch	*Astragalus pycnostachyus* var. *lanosissimus*	FE, SE, CRPR 1B.1	Does Not Occur
Coulter's saltbush	*Atriplex coulteri*	CRPR 1B.2	Does Not Occur
south coast saltscale	*Atriplex pacifica*	CRPR 1B.2	Does Not Occur
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	CRPR 1B.2	Unlikely
Catalina mariposa-lily	*Calochortus catalinae*	CRPR 4.2	Does Not Occur
late-flowered mariposa-lily	*Calochortus fimbriatus*	CRPR 1B.3	Does Not Occur
Plummer's mariposa-lily	*Calochortus plummerae*	CRPR 4.2	Does Not Occur
Peirson's morning-glory	*Calystegia peirsonii*	CRPR 4.2	Does Not Occur
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	CRPR 1B.1	Does Not Occur
salt marsh bird's-beak	*Chloropyron maritimum* ssp. *maritimum*	FE, SE, CRPR 1B.2	Does Not Occur
seaside cistanthe	*Cistanthe maritima*	CRPR 4.2	Does Not Occur
small-flowered morning-glory	*Convolvulus simulans*	CRPR 4.2	Does Not Occur
western dichondra	*Dichondra occidentalis*	CRPR 4.2	Does Not Occur
Blochman's dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*	CRPR 1B.1	Does Not Occur
Verity's dudleya	*Dudleya verityi*	FT, CRPR 1B.1	Does Not Occur
small spikerush	*Eleocharis parvula*	CRPR 4.3	Does Not Occur
conejo buckwheat	*Eriogonum crocatum*	CRPR 1B.2	Does Not Occur
island wallflower	*Erysimum insulare*	CRPR 1B.3	Does Not Occur
suffrutescent wallflower	*Erysimum suffrutescens*	CRPR 4.2	Does Not Occur
beach goldenaster	*Heterotheca sessiliflora* ssp. *sessiliflora*	CRPR 1B.1	Does Not Occur
southern California black walnut	*Juglans californica*	CRPR 4.2	Does Not Occur
southwestern spiny rush	*Juncus acutus* ssp. *leopoldii*	CRPR 4.2	Does Not Occur
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	CRPR 1B.1	Does Not Occur
fragrant pitcher sage	*Lepechinia fragrans*	CRPR 4.2	Does Not Occur
Mexican malacothrix	*Malacothrix similis*	CRPR 2A	Does Not Occur
white-veined monardella	*Monardella hypoleuca* ssp. *hypoleuca*	CRPR 1B.3	Does Not Occur
Gerry's curly-leaved monardella	*Monardella sinuata* ssp. *gerryi*	CRPR 1B.1	Does Not Occur
Ojai navarretia	*Navarretia ojaiensis*	CRPR 1B.1	Does Not Occur
white rabbit-tobacco	*Pseudognaphalium leucocephalum*	CRPR 2B.2	Does Not Occur

Common Name	Scientific Name	Status	Potential to Occur
chaparral ragwort	*Senecio aphanactis*	CRPR 2B.2	Does Not Occur
California seablite	*Suaeda californica*	FE, CRPR 1B.1	Does Not Occur
estuary seablite	*Suaeda esteroa*	CRPR 1B.2	Does Not Occur
woolly seablite	*Suaeda taxifolia*	CRPR 4.2	Does Not Occur
woven-spored lichen	*Texosporium sancti-jacobi*	CRPR 3	Does Not Occur
Invertebrates			
Crotch bumble bee	*Bombus crotchii*	SA	Does Not Occur
western tidal-flat tiger beetle	*Cicindela gabbii*	SA	Does Not Occur
sandy beach tiger beetle	*Cicindela hirticollis gravida*	SA	Does Not Occur
senile tiger beetle	*Cicindela senilis frosti*	SA	Does Not Occur
globose dune beetle	*Coelus globosus*	SA	Does Not Occur
monarch - California overwintering population	*Danaus plexippus* pop. 1	SA	Occurs
Trask shoulderband	*Helminthoglypta traskii traskii*	SA	Does Not Occur
wandering (=saltmarsh) skipper	*Panoquina errans*	SA	Does Not Occur
Santa Monica grasshopper	*Trimerotropis occidentiloides*	SA	Does Not Occur
mimic tryonia (=California brackishwater snail)	*Tryonia imitator*	SA	Does Not Occur
Fish			
Santa Ana sucker	*Catostomus santaanae*	FT	Does Not Occur
tidewater goby	*Eucyclogobius newberryi*	FE, SSC	Does Not Occur
resident threespine stickleback	*Gasterosteus aculeatus microcephalus*	SA	Does Not Occur
unarmored threespine stickleback	*Gasterosteus aculeatus williamsoni*	FE, SE, FP	Does Not Occur
arroyo chub	*Gila orcuttii*	SSC	Does Not Occur
steelhead - southern California DPS	*Oncorhynchus mykiss irideus*	FE	Does Not Occur
Amphibians			
arroyo toad	*Anaxyrus californicus*	FE, SSC	Does Not Occur
California red-legged frog	*Rana draytonii*	FT, SSC	Does Not Occur
Reptiles			
California legless lizard	*Anniella* sp. 1	SSC	Does Not Occur
southern California legless lizard	*Anniella stebbinsi*	SSC	Does Not Occur
San Bernardino ringneck snake	*Diadophis punctatus modestus*	SA	Does Not Occur
western pond turtle	*Emys marmorata*	SSC	Does Not Occur
two-striped gartersnake	*Thamnophis hammondii*	SSC	Does Not Occur
south coast gartersnake	*Thamnophis sirtalis* ssp.	SSC	Does Not Occur
coast horned lizard	*Phrynosoma blainvillii*	SSC	Does Not Occur
coastal whiptail	*Aspidoscelis tigris stejnegeri*	SSC	Does Not Occur

Common Name	Scientific Name	Status	Potential to Occur
Birds			
Cooper's hawk	*Accipiter cooperii*	WL	Does Not Occur
tricolored blackbird	*Agelaius tricolor*	SC, SSC	Does Not Occur
southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	WL	Does Not Occur
golden eagle	*Aquila chrysaetos*	FP ; WL	Does Not Occur
great egret	*Ardea alba*	SA	Does Not Occur
great blue heron	*Ardea herodias*	SA	Does Not Occur
long-eared owl	*Asio otus*	SSC	Does Not Occur
burrowing owl	*Athene cunicularia*	SSC	Does Not Occur
canvasback	*Aythya valisineria*	SA	Does Not Occur
oak titmouse	*Baeolophus inornatus*	SA	Does Not Occur
American bittern	*Botaurus lentiginosus*	SA	Does Not Occur
ferruginous hawk	*Buteo regalis*	WL	Does Not Occur
Vaux's swift	*Chaetura vauxi*	SSC	Does Not Occur
western snowy plover	*Charadrius alexandrinus nivosus*	FT, SSC	Does Not Occur
mountain plover	*Charadrius montanus*	SSC	Does Not Occur
northern harrier	*Circus cyaneus*	SSC	Does Not Occur
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT, SE	Does Not Occur
snowy egret	*Egretta thula*	SA	Does Not Occur
white-tailed kite	*Elanus leucurus*	FP	Does NotOccur
willow flycatcher	*Empidonax traillii*	SE	Does Not Occur
southwestern willow flycatcher	*Empidonax traillii extimus*	FE, SE	Does Not Occur
California horned lark	*Eremophila alpestris actia*	WL	Does Not Occur
prairie falcon	*Falco mexicanus*	WL	Does Not Occur
American peregrine falcon	*Falco peregrinus anatum*	FD, SD, FP	Does Not Occur
California condor	*Gymnogyps californianus*	FE, SE, FP	Does Not Occur
Caspian tern	*Hydroprogne caspia*	SA	Does Not Occur
yellow-breasted chat	*Icteria virens*	SSC	Does Not Occur
loggerhead shrike	*Lanius ludovicianus*	SSC	Does Not Occur
California gull	*Larus californicus*	WL	Does Not Occur
California black rail	*Laterallus jamaicensis coturniculus*	FP	Does Not Occur
black-crowned night heron	*Nycticorax nycticorax*	SA	Does Not Occur
ashy storm-petrel	*Oceanodroma homochroa*	SSC	Does Not Occur
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	SE	Does Not Occur
California brown pelican	*Pelecanus occidentalis californicus*	FP	Does Not Occur
double-crested cormorant	*Phalacrocorax auritus*	WL	Does Not Occur
yellow-billed magpie	*Pica nuttalli*	SA	Does Not Occur

Common Name	Scientific Name	Status	Potential to Occur
summer tanager	*Piranga rubra*	SSC	Does Not Occur
white-faced ibis	*Plegadis chihi*	WL	Does Not Occur
coastal California gnatcatcher	*Polioptila californica californica*	FT, SSC	Does Not Occur
vermilion flycatcher	*Pyrocephalus rubinus*	SSC	Does Not Occur
light-footed Ridgway's rail	*Rallus obsoletus levipes*	FE, SE, FP	Does Not Occur
bank swallow	*Riparia riparia*	ST	Does Not Occur
yellow warbler	*Setophaga petechia*	SSC	Does Not Occur
California least tern	*Sternula antillarum browni*	FE, SE, FP	Does Not Occur
least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Does Not Occur
Mammals			
pallid bat	*Antrozous pallidus*	SSC	Does Not Occur
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	SSC	Does Not Occur
Mexican long-tongued bat	*Choeronycteris mexicana*	SSC	Does Not Occur
western mastiff bat	*Eumops perotis californicus*	SSC	Does Not Occur
south coast marsh vole	*Microtus californicus stephensi*	SSC	Does Not Occur
Yuma myotis	*Myotis yumanensis*	SA	Does Not Occur
southern California saltmarsh shrew	*Sorex ornatus salicornicus*	SSC	Does Not Occur
American badger	*Taxidea taxus*	SSC	Does Not Occur

Status Key:
FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
FD = Federal Delisted
SE= California Endangered
ST= California Threatened
SD = California Delisted
SC = California Candidate for Listing
SSC = California Special Concern Species
SWL = California Watch List Species
SFP = California Fully Protected Species

California Rare Plant Ranks:
1B = Rare, Threatened or Endangered in California and elsewhere
2B = Rare, Threatened or Endangered in California, but more common elsewhere
3 = Plants about which more information is needed - A Review List
4 = Plants of limited distribution - A Watch List
.1 = seriously threatened in California
.2 = fairly threatened in California
. 3 = not very threatened in California

Table 2. Plants observed within the Project survey area.

Common Name	Scientific Name
amaranth	*Amaranth* sp.
hairy beggarticks	*Bidens pilosa*
bougainvillea	*Bougainvillea* sp.
black mustard	*Brassica negra*
fox tail brome	*bromus madritensis*
Cheatgrass	*bromus tectorum*
shepard's purse	*Casdsella bursa-pastoris*
yellow star thistle	*Centaurea solstitialis*
rattlesnake sandmat	*Cuphorbia albomarginata*
hairy crabgrass	*Digitaria sanguinalis*
Mexian tea	*Dysphania ambrosiodes*
Canada horseweed	*Erigeron canadensis*
red stemmed filaree	*Erodium cicutarium*
Coral tree	*Erythrina* sp.
euphorbia	*Euphorbia* sp.
velvet ash	*Fraxinus velutina*
English Ivy	*Hedera helix*
privet	*Lingustrum* sp.
cheeseweed	*Malva parviflora*
black medick	*Medicago lupulina*
white sweet clover	*Meliotlus albus*
four o'clock	*Mirabilis jalapa*
tree tobacco	*Nicotina glauca*
dallis grass	*Paspalum dilatatum*
Canary Island pine	*Pinus canariensis*
cudweed	*Pseudognaphalium* sp.
coast live oak	*Quercus agrifolia*
jointed charlock	*Raphanus raphanistrum*
castor bean	*Ricinus communis*
curly dock	*Rumex crispus*
thistle	*Salsola sp.*
common Mediterranean grass	*Shismus barbatus*
sow thistle	*Sonchus oleraceus*
tamarisk	*Tamarix ramosissima*
Chinese tallow	*Tridaica sebifera*
nasturtium	*Tropaeolum majus*
Chinese elm	*Ulmus parvifolia*

Table 3. Wildlife observed within the Project survey area.

Common Name	Scientific Name
Invertebrates	
monarch	***Danaus plexippus***
painted lady butterfly	*Cynthia* sp.
Reptiles	
coast range fence lizard	*Sceloporus occidentalis bocourtii*
Birds	
Anna's hummingbird	*Calypte anna*
American crow	*Corvus brachyrhynchos*
house finch	*Haemorhous mexicanus*
western gull	*Larus occidentalis*
northern mockingbird	*Mimus polyglottos*
house sparrow	*Passer domesticus*
bushtit	*Psaltriparus minimus*
black phoebe	*Sayornis nigricans*
Eurasian collared dove	*Streptopelia decaocto*
Cassin's kingbird	*Tyrannus vociferans*
Mammals	
domestic cat	*Felis catus*
California ground squirrel*	*Otospermophilus beecheyi*

***Only signs, tracks, or scats observed**

ATTACHMENT B:
Photographs of Proposed Project Area

Photo 1. Vegetation surrounding El Rio Elementary School buildings, facing southwest.

Photo 2. Vegetation along northeast border for Project area, facing southeast.

Photo 3. Dying stand of Eucalyptus along Rio School Lane.

Photo 4. Vegetation facing northwest from edge of Project boundary, velvet ash and coast live oak Heritage trees in photo.

Photo 5. Tamarisk stand along southeastern edge of Project area.

Photo 6. Rubbish pile in back field of Project area, facing northwest.

Photo 7. Old playground and stockpile of concrete/dirt, facing north.

Photo 8. Heritage velvet ash (center), adjacent to coast live oak (right), facing south.

Photo 9. Old baseball field, facing east toward tamarisk border.

Photo 10. Second stockpile of rubble and dirt on west side of property, facing north northwest.

Photo 11. Adjacent to the large stockpile of dirt is a stock yard with wood chips, fencing materials, storage containers and plastic tubing on concrete, facing west.

Photo 12. Stand of Canary island pine on west side of parking lot along border of Project area, facing, west.

Photo 13. Vegetation and concrete in side field, facing east.

Photo 14. Heritage velvet ash tree adjacent to front parking lot and school buildings, facing north.

Appendix D

Climate Change and Greenhouse Gas Study

Climate Change and Greenhouse Gas Study

for the

Rio Urbana Project

Prepared for:

The Pacific West Communities
430 E. State Street, Suite 100
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Prepared by:

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August 2017

Table of Contents

Figures

Tables

EXECUTIVE SUMMARY

This Greenhouse Gas (GHG) Study assesses and discusses the potential GHG impacts that may occur with implementation of the Rio Urbana Project ("Project"), located in Oxnard, California. The analysis estimates future emission levels at surrounding land uses resulting from construction and operation of the Project, and identifies the potential for significant impacts. An evaluation of the Project's contribution to potential cumulative GHG impacts is also provided. Air quality worksheets are provided in **Appendix A**.

This report also summarizes the potential for the Project to generate GHG emissions that may impact the environment; conflict with an applicable plan, policy, or regulation or with State goals for reducing GHG emissions in California; and contribute or be subject to potential secondary effects of climate change. The findings of the analysis are as follows:

- The Project's GHG emissions resulting from construction, motor vehicles, energy (i.e., electricity, natural gas), water conveyance, and waste sources would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment.
- The Project would be consistent with State-applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions.

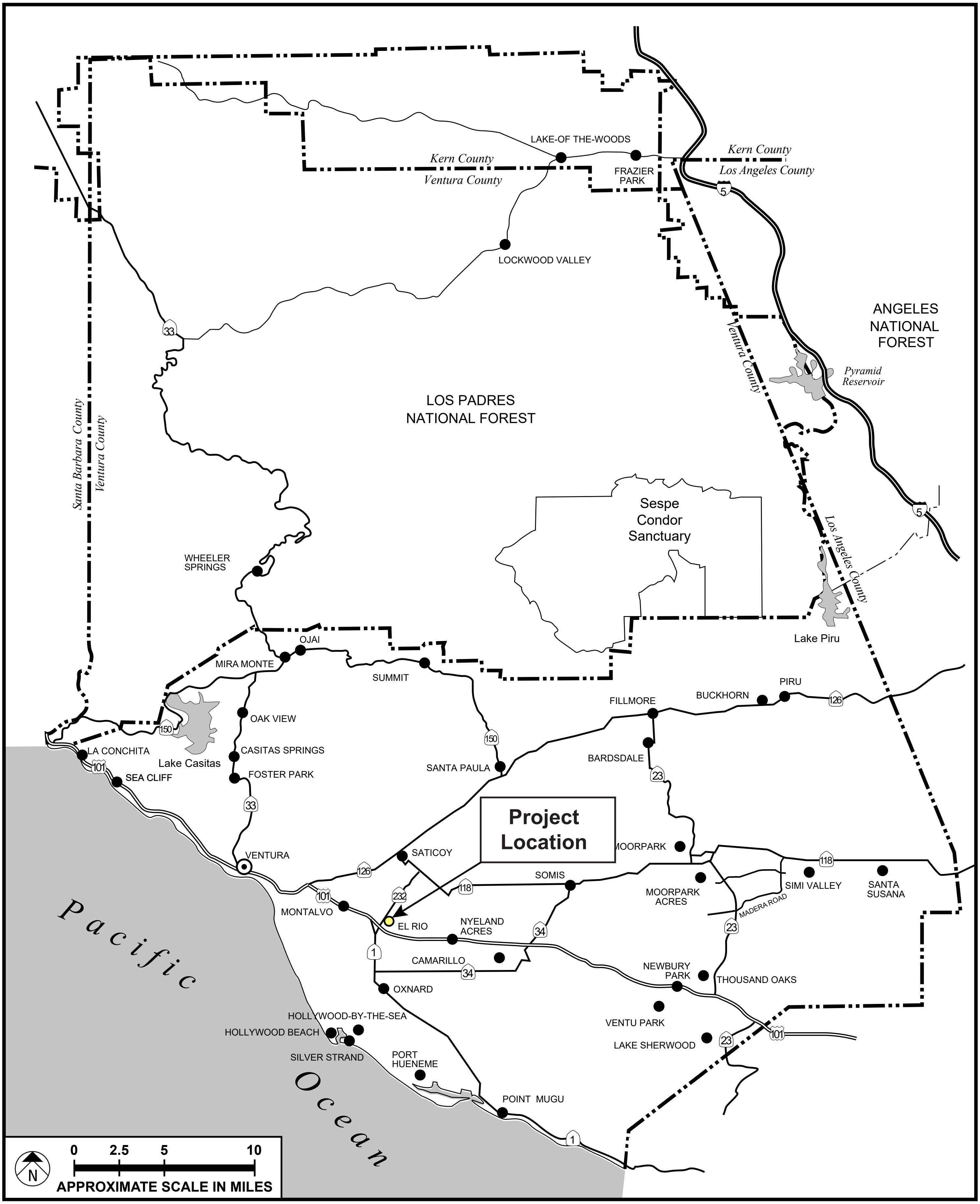
INTRODUCTION

The purpose of this Greenhouse Gas Study is to assess and discuss the impact of potential air quality impacts that may occur with the implementation of the Rio Urbana Project ("Project"), located in Oxnard, California. The regional location of the proposed Project is depicted in **Figure 1, Regional Location Map.** The Project site is located to the northeast of Ventura Freeway (US Route 101 [US 101]), within the Ventura County Air Pollution District (VCAPD). The Project site is located along E. Vineyard Avenue and bounded by Rio School Lane to the north (refer to **Figure 2, Project Site Aerial**). This report includes an analysis of GHGs that would result from Project implementation.

Project Description

The Project site consists of approximately 10.24 acres of developed land with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that was formerly the El Rio Elementary School campus. The school has been closed since 2008 and is currently utilized as a dispatch for school buses and storage. The proposed Project would include demolition of the existing uses to allow the construction of a new mixed-use development that would include 182 condominium residential units and a 15,000-square-foot office building containing the Rio School District Administrative offices.

The surrounding environment includes residential development to the north and west; commercial development to the south; and industrial uses to the east. Regional access to the Project site is provided by US Highway 101 (US 101) to the south.



SOURCE: Meridian Consultants, LLC - August 2017

FIGURE 1

Meridian Consultants

Regional Location Map

174-001-17

SOURCE: Google Earth - 2017

FIGURE **2**

Meridian Consultants

Project Site Aerial

174-001-17

EXISTING CONDITIONS

Climate change is a change in the average climatic conditions on Earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes that have occurred in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) considered six alternative future GHG scenarios that would stabilize global temperatures and climate change impacts. The IPCC predicted that global mean temperature change from 1990 to 2100, for the six scenarios considered, could range from 1.5 degrees Celsius (°C) to 2.0°C. Global average temperatures and sea levels are expected to rise under all scenarios.[1]

In California, climate change may result in consequences such as the following:

- A reduction in the quality and supply of water to the State from the Sierra snowpack
- Increased risk of large wildfires
- Reductions in the quality and quantity of certain agricultural products
- Exacerbation of air quality problems
- A rise in sea levels, resulting in the displacement of coastal businesses and residences
- Damage to marine ecosystems and the natural environment
- An increase in infections, disease, asthma, and other health-related problems
- A decrease in the health and productivity of California's forests

GHGs are gases that trap heat in the atmosphere; the effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide (CO2), methane (CH4), nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. The presence of these GHGs in the atmosphere affects the earth's surface temperature, which would be about 34°C cooler without the natural heat-trapping effect of GHGs.[2] Both natural processes and human

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1 Intergovernmental Panel on Climate Change, "Summary for Policymakers," in *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,*. (Cambridge University Press: Cambridge, UK and New York,.

2 California Environmental Protection Agency, Climate Action Team, *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*, http://www.energy.ca.gov/2010publications/CAT-1000-2010-005/CAT-1000-2010-005.PDF, (December 2010), accessed July 27, 2017.

activities emit GHGs. However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. The GWP compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide. A GWP is calculated over a specific time interval, commonly 20, 100, or 500 years. GWP is expressed as a factor of carbon dioxide (whose GWP is standardized to 1). For example, the 100-year GWP of methane is 21, which means that if the same mass of methane and carbon dioxide were introduced into the atmosphere, that methane will trap 21 times more heat than the carbon dioxide over the next 100 years.[3] A summary of the atmospheric lifetime and GWP of selected gases is presented in **Table 1, Atmospheric Lifetimes and Global Warming Potentials of GHGs.** As indicated, GWP ranges from 1 to 23,900.

Table 1
Atmospheric Lifetimes and Global Warming Potentials of GHGs

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon dioxide (CO2)	50–200	1
Methane (CH4)	12 (+/-3)	21
Nitrous oxide	114	310
HFC-23	270	11,700
HFC-134a	14	1,300
HFC-152a	1.4	140
PFC: Tetraflouromethane (CF4)	50,000	6,500
PFC: Hexaflouromethane (C2F6)	10,000	9,200
Sulfur Hexaflouride (SF6)	3,200	23,900

Source: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2013.

Individual GHG compounds have varying GWP and atmospheric lifetimes. The calculation of the carbon dioxide equivalent (CO2e) is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent metric. Methane's warming potential of 21 indicates that methane has a warming effect that is 21 times greater than carbon dioxide on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its GWP.

3 Working Group, *Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013.

The GHGs of most concern are identified in **Table 2, Greenhouse Gases.** Of the two primary sources of GHG in CO2 and methane, CO2 would be generated by sources associated with the Project, while methane would not be generated in any substantial amount.

Table 2
Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Carbon dioxide (CO2)	Carbon dioxide is an odorless, colorless, natural GHG. GWP = 1.	Carbon dioxide is emitted from natural and anthropogenic sources. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The concentration in 2005 was 379 ppm, which is an increase of about 1.4 ppm per year since 1960.
Haloalkanes	Haloalkanes (also known as halogenoalkanes or alkyl halides) are colorless, relatively odorless, and hydrophobic.	Mostly human produced, haloalkanes include flame retardants, fire extinguishants, refrigerants, propellants, solvents, and pharmaceuticals. Nonartificial-source haloalkanes do occur, mostly through enzyme-mediated synthesis by bacteria, fungi, and especially sea microalgae (seaweeds).
Methane (CH4)	Methane is a flammable gas and is the main component of natural gas. GWP = 21.	Methane is produced naturally by the anaerobic decay of organic matter and is extracted from geological deposits (natural gas fields). Other sources are from landfills, fermentation of manure, and cattle.
Nitrous oxide (N2O)	Nitrous oxide is also known as laughing gas and is a colorless GHG. GWP = 310.	Nitrous oxide is produced by microbial processes in soil and water, fuel combustion, and industrial processes.
Perfluorocarbons (PFCs)	Perfluorocarbons liquids are colorless with high density, up to more than twice that of water. It is also an odorless, nonflammable, unreactive gas.	PFCs are man-made compounds containing just fluorine and carbon. They are used mainly in the electronics sector in semiconductor manufacture, with significant usage as refrigerants.
Sulfur hexafluoride (SF6)	Sulfur hexafluoride is an inorganic, colorless, odorless, non-flammable, extremely potent GHG that is an excellent electrical insulator. GWP = 23,900	Sulfur hexafluoride emissions are virtually all of anthropogenic origin including electricity sector, magnesium industry, electronics industry, and adiabatic property.

Source: Intergovernmental Panel on Climate Change, Summary for Policymakers, Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge University Press: Cambridge, United Kingdom and New York, NY, USA).
Notes: ppm = parts per million; ppt = parts per trillion (measure of concentration in the atmosphere); GWP = global warming potential.

Emissions Inventory and Trends

The California Air Resources Board (CARB) Statewide inventory of GHGs for the most recent data available is shown in **Table 3, California GHG Inventory 2010–2015.** As shown in **Table 3,** California produced 440.36 million metric tons of carbon dioxide equivalents (MMTCO2e), including imported electricity and excluding combustion of international fuels and carbon sinks or storage. The major source of GHGs in California is transportation, contributing to 37 percent of the State's total GHG emissions. Industrial generation is the second largest source, contributing to 21 percent of the State's GHG emissions.

Table 3
California GHG Inventory 2010–2015

Main Sector	2010	2011	2012	2013	2014	2015
Transportation[a]	163.01	159.68	159.44	158.14	160.03	164.63
Industrial[b,e]	91.01	90.65	90.90	93.48	93.77	91.71
Electric power	90.34	88.06	95.09	89.65	88.24	83.67
Commercial and Residential	45.05	45.50	42.89	43.54	37.37	37.92
Agriculture	34.64	35.28	36.42	34.93	36.03	34.65
High GWP[c,d]	13.64	14.74	15.74	16.82	17.82	19.05
Recycling and Waste	8.37	8.47	8.49	8.52	8.59	8.73
Total Emissions	446.06	442.38	448.97	445.08	441.85	440.36

Source: California Air Resources Board (CARB), California Greenhouse Gas Inventory for 2000–2015 by Category as Defined in the 2008 Scoping Plan, https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-15.pdf.
[a] Includes equipment used in construction, mining, oil drilling, industrial and airport ground operations.
[b] Reflects emissions from combustion of natural gas, diesel, and lease fuel plus fugitive emissions.
[c] These categories are listed in the Industrial sector of CARB's GHG Emission Inventory sectors.
[d] This category is listed in the Electric Power sector of CARB's GHG Emission Inventory sectors.
[e] The exceptional Aliso Canyon natural gas leak even released 1.96 MMTCO2e of unanticipated emission in calendar year 2015 and an additional 0.52 MMTCO2e in 2016. These emissions will be mitigated in the future according to legal settlement and are presented alongside but tracked separately from routine inventory emissions.

GREENHOUSE GAS STANDARDS

VCAPCD Greenhouse Gas Emission Guidance

For GHG emissions and global warming, there is not, at this time, one established, universally agreed-upon "threshold of significance" by which to measure an impact. While the CARB published some draft thresholds several years ago, they were never adopted, and the CARB recommended that local air districts and lead agencies adopt their own thresholds for GHG impacts.

The City of Oxnard ("City") relies on the expert guidance of the VCAPCD regarding the methodology and thresholds of significance for the evaluation of air quality impacts within Ventura County. GHG emissions are air pollutants that are subject to local control by the VCAPCD. As such, the City looks to the VCAPCD for guidance in the evaluation of GHG impacts.

In September 2011, the Ventura County Air Pollution Control Board requested that VCAPCD staff report back on possible GHG significance thresholds for evaluating GHG impacts of land use projects in Ventura County under CEQA. VCAPCD staff responded to this request by preparing a report titled *Greenhouse Gas Thresholds of Significance Options for Land Use Development Projects in Ventura County*. This report presents a number of options for GHG significance thresholds and summarizes the most prominent approaches and options either adopted or being considered by all other air districts throughout California. Similar to other air districts, VCAPCD staff members are considering a tiered approach, with the main components involving consistency with a locally adopted GHG reduction plan followed by a bright-line threshold for land use projects that would capture 90 percent of project GHG emissions. VCAPCD staff members are also exploring an efficiency-based metric (e.g., GHG emissions per capita) for land use projects and plans.

California Air Pollution Control Officers Association

In its January *2008 CEQA and Climate Change* white paper, the California Air Pollution Control Officers Association (CAPCOA) identified a number of potential approaches for determining the significance of GHG emissions in CEQA documents. CAPCOA suggests making significance determinations on a case-by-case basis when no significance thresholds have been formally adopted by a lead agency. Although GHG emissions can be quantified, CARB, the South Coast Air Quality Management District (SCAQMD), and the City of Oxnard have yet to adopt project-level significance thresholds for GHG emission that would be applicable to the Project. Assessing the significance of a project's contribution to cumulative global climate change involves (1) evaluating the project's sources of GHG emissions; and (2) considering project consistency with applicable emission reduction strategies and goals, such as those set forth by the lead agency or other regional or State agency.

Local and regional agencies and the State recommended general policies and measures to minimize and reduce GHG emissions from land use development projects. Thus, if the Project were designed in accordance and not in conflict with applicable policies and measures, it would be consistent with the strategies and actions to reduce GHG emission.

METHODOLOGY

Greenhouse Gas Emission Modeling

For modeling purposes, the Project was assumed to start construction in 2018 and be operational in 2020. Operational emissions would be generated by both area and mobile sources due to normal day-to-day activities. Area source emissions would be generated by the consumption of natural gas for space and water-heaters. Area source emissions are based on emission factors contained in CalEEMod. Mobile emissions would be generated by motor vehicles traveling to and from the Project area. Based on the traffic study,[4] the Project would generate 1,232 total trips.

The Project would also result in indirect GHG emissions due to electricity demand, water consumption, and waste generation. The emission factor for CO2 due to electrical demand from Southern California Edison was selected in the CalEEMod model. Electricity consumption was based on default data found in CalEEMod for the respective land use types. In addition, the Project would also result in indirect GHG emissions due to water consumption, wastewater treatment, and solid waste generation.

Assumptions

The following assumptions were made in the CalEEMod computer program:

Land Uses

Existing

- 44,637 square feet of building to be demolished
- 147,667 square feet of other surface (concrete, asphalt, awnings) to be demolished

Proposed

- 15,100-square-foot office building
- 182-unit condo/townhouse
- 463 parking spaces

4 Associated Transportation Engineers, *Rio Urbana Residential and Office Development Traffic and Circulation Study* (July 25, 2017).

Construction

Construction would occur over six phases for beginning the first quarter of 2018: (1) demolition, which would last approximately 20 days; (2) site preparation, which would last approximately 3 days; (3) grading, which would last approximately 6 days; (4) building construction, which would last approximately 220 days; (5) architectural coating, which would last approximately 30 days; and (6) paving, which would last approximately 10 days.

Each phase of construction would result in vary levels of intensity and number of construction personnel. The construction workforce would consist of 13 worker trips per day and 875 total hauling trips during demolition; 8 worker trips per day during site preparation; 10 worker trips per day and 2,125 total hauling trips during grading; 214 worker trips per day and 54 vendor trips per day during building construction; 43 worker trips per day during architectural coating; and 15 worker trips per day during paving.

Project Design Features

The following Project Design Features will be incorporated to the Project:

PDF-1: Residential units will be supplied with demand response thermostats and Energy Star appliances

PDF-2: Office building will be solar ready; solar not anticipated on residential units due to limited availability of suitable mounting locations as a result of sloped tile roofs

PDF-3: Low-flow plumbing fixtures and high-efficiency lighting compliant with the latest Title 24 requirements

PDF-4: Low-e window glazing

PDF-5: Bioswale components in landscape design at paved areas (parking courts)

Greenhouse Gas Analysis

The CARB, VCAPCD, and the City have yet to formally adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects). Ventura County is adjacent to the SCAQMD jurisdiction and is part of the Southern California Association of Governments (SCAG) region. As such, VCAPCD staff believes it makes sense to set local GHG emission thresholds of significance for land use developments projects at levels consistent with those set by the SCAQMD and SCAG. Given the lack of a formally adopted VCAPCD numerical significance threshold applicable to this Project, the significance of the Project is evaluated based on the SCAQMD proposed screening level of 3,000 MTCO2e per year. Also, Project characteristics were compared to applicable State, regional and local policies aimed at GHG emission reduction. These policies include the 2030 General Plan, Climate Action Team (CAT) strategies, Attorney General–recommended reduction measures, and SCAG's Sustainable Communities Strategy (SCS).

GREENHOUSE GAS EMISSION MODELING RESULTS

The current accepted method for accounting for the construction GHG emissions within a project area is to annualize these emissions over a project's operational lifetime, which is generally defined as 30 years for analysis purposes. Emissions were calculated to determine the Project's annual GHG emissions inventory. A summary of the GHG emissions for the construction phases is provided in **Table 4, Construction GHG Emissions.** As shown, total construction emissions would be approximately 713.5 MTCO2e per year. Construction emissions amortized over 30 years would be approximately 23.8 MTCO2e per year.

Table 4
Construction GHG Emissions

Year	CO2e Emissions (Metric Tons per Year)
2018	672.5
2019	41.0
Total Construction GHG Emissions	713.5
Annualized over Project's Lifetime	23.8

*Refer to **Appendix A (Annual),** Section 2.1, Overall Construction.*

As described above, the CARB, VCAPCD, and the City have yet to formally adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects). Ventura County is adjacent to the SCAQMD jurisdiction and is part of the SCAG region. As such, VCAPCD staff believes it makes sense to set local GHG emission thresholds of significance for land use developments projects at levels consistent with those set by the SCAQMD and the SCAG region. Given the lack of a formally adopted VCAPCD numerical significance threshold applicable to this Project, the significance of the Project is evaluated based on the SCAQMD's proposed screening level of 3,000 MTCO2e per year.

The annual GHG emissions associated with the operation of the Project site are provided in **Table 5, Estimated Greenhouse Gas Emissions**. As shown in **Table 5,** the GHG emissions associated with the Project would result in 2,184.7 MTCO2e per year, below the SCAQMD-recommended screening level threshold of 3,000 MTCO2e per year and an efficiency target of 4.8 MTCO2e per year per service population. In addition, the Project would have an increase of 557 residents. The per service population emissions would equal to 3.1 MTCO2e per year, below the SCAQMD-recommended Tier 4 efficiency target of 4.8 MTCO2e per year per service population.

Table 5
Estimated Greenhouse Gas Emissions

GHG Emissions Source	Emissions (MTCO2e/year)
Construction (amortized)	23.8
Operational (Mobile) sources[a]	1,125.2
Area sources	2.3
Energy	889.5
Waste	49.2
Water	94.7
Annual Total	2,184.7
Per Service Population (557 residents)	3.1

Notes: Emissions calculations are provided in ***Appendix A,*** *Section 2.2, Overall Operational.*
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
The emissions of the Project represent the net difference between the existing GHG emissions generated by existing uses that would be removed and the Project GHG emissions.
[a] N2O emissions account for 0.05 MTCO2e/year.

CONSISTENCY ANALYSIS

The CAPCOA suggests making significance determinations on a case-by-case basis when no significance threshold have been formally adopted by a lead agency. This includes evaluating a project's sources of GHG emissions and considering project consistency with applicable emission reduction strategies and goals. The following plans all apply to the Project and are all intended to reduce GHG emission to meet the Statewide targets set forth in Assembly Bill (AB) 32.

City of Oxnard 2030 General Plan

The Sustainable Communities chapter addresses energy issues of climate change mitigation and adaptation, sea level rise, and energy conservation and generation ("green" buildings). Furthermore, the chapter includes goals and policies for incorporation into an Oxnard Climate Action and Adaptation Plan. The applicable goals and consistency with this Project are shown in **Table 6, City of Oxnard 2030 General Plan Consistency**. As shown, the Project would be consistent with the policies identified in the City's General Plan.

Table 6
City of Oxnard 2030 General Plan Consistency

Goal/Policy	Consistency
Goal SC-3: Energy efficiency performance standards and generation from renewable sources	
Policy SC-3.4: Alternative Energy for Public Buildings	**Consistent.** As described in **PDF-2**, the Rio School District Administrative office would be equipped with solar ready panels.
Goal SC-4: Implementation of the California Green Building Code	
Policy SC-4.1: Green Building Code Implementation	**Consistent.** As described in **PDF-1** through **PDF-5**, the Project would implement features consistent with the latest requirements of the 2016 California Green Building Code.

Source: City of Oxnard, 2030 General Plan Goals & Policies, adopted October 2011, amended December 2016.

California Climate Action Team (CAT) Strategies

The CAT report provides recommendations for specific emission reduction strategies for reducing GHG emissions and reaching the targets established in AB 32, Executive Order (EO) S-3-05, and EO B-30-15. Recent studies have shown that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies do not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrate that various combinations of policies could allow the Statewide emission levels to remain very low through 2050, suggesting that the combination of new technologies, regulations, and strategies not analyzed in the studies could allow the State to meet the 2030 and 2050 targets.[5] A discussion of the Project's consistency with these strategies for reducing GHG emissions is provided in **Table 7, Project's Consistency with Recommendations Presented in the Climate Action Team Report.** Therefore, the Project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets and EO S-3-05 and EO B-30-15.

5 Greenblatt, Jeffrey, "Modeling California Impacts on Greenhouse Gas Emissions," *Energy Policy* 78: 158–72.

Table 7
Project's Consistency with Recommendations Presented in the Climate Action Team Report

Strategies for Reducing GHG Emissions	Project Conformance
Diesel Anti-Idling	
Reduce GHG emissions from diesel-fueled commercial motor vehicle idling, by reducing idling times and electrifying truck stops	Consistent with Sections 2485 in Title 13 of the California Code of Regulations, the idling of all diesel fueled commercial vehicles (weighing more than 10,000 pounds) during construction shall be limited to 5 minutes at any location.
Alternative Fuels: Biodiesel Blends and Ethanol	
Increase the use of alternative fuels that are less GHG intensive by adopting regulations to require the use of biodiesel to displace California diesel fuel, increasing the number of flexible fueled vehicles present in California, and increasing the percentage of ethanol used in gasoline.	While this requirement would be implemented at the State level through regulatory adoption, the Project, as required by the Los Angeles Green Building Code, would include a minimum number of EV-ready parking spaces equal to 5 percent of the total number of parking spaces.
Achieve 50 Percent Statewide Recycling Goal	
Achieve California's 50 percent waste diversion mandate (AB 939, Integrated Waste Management Act of 1989) to reduce GHG emissions associated with virgin material extraction. AB 939 required each city or county plan to include an implementation schedule that showed 50 percent diversion of all solid waste by January 1, 2000, through source reduction, recycling, and composting.	The Project will be consistent with the applicable regulations associated with solid waste. Specifically, the Project would provide adequate storage areas in accordance with the City of Los Angeles Space Allocation Ordinance (Ordinance No. 171,687), which requires that developments include a recycling area or room of specified size on the Project site. Furthermore, as part of the Project, construction materials would be recycled in accordance with the City of Oxnard Building Code, which requires a minimum construction waste reduction of approximately 50 percent. The Project would also promote compliance with AB 939, AB 341, and City waste diversion goals by providing clearly marked, source-sorted receptacles to facilitate recycling. Thus, the Project would support the City's achievement of goals of the California Integrated Waste Management Act.
Water-Use Efficiency	
Implement efficient water management practices and incentives, as saving water saves energy and GHG emissions.	The Project includes several design features to support water conservation, including the use of low-flow plumbing fixtures as described in **PDF-3** and installation of bioswale components in the landscape as design as described in **PDF-5**.
Building Energy Efficiency Standards in Place and in Progress	
Reduce GHG emissions from electricity by reducing energy demand. The California Energy Commission updates building energy efficiency standards that apply to newly constructed buildings and additions to and alterations to existing buildings. Both the Energy Action Plan and the Integrated Energy Policy Report call for ongoing updating of the standards.	As described in **PDF-3**, the Project would comply with the latest Tittle 24 standard requirements for energy efficiency.

Note: Climate Action Team strategies not listed are not applicable to this Project.

California Attorney General–Recommended Reduction Measures

In addition to the measures listed in the Scoping Plan, other State offices have provided recommended measures that would assist lead agencies in determining consistency with the State's GHG reduction goals. The California Attorney General's Office (AGO) has stated that lead agencies can play an important role in helping to "move the State away from 'business as usual' and toward a low-carbon future."[6] The AGO has released a guidance document that provides information to lead agencies that may be helpful in carrying out their duties under CEQA with respect to GHGs and climate change impacts. Provided in the document are measures that can be included as project design features, required changes to the project, or mitigation measures at the project level and at the general-plan level. The measures are not intended to be exhaustive and are not applicable to every project or general plan. The AGO affirms that "the decision of whether to approve a project—as proposed or with required changes or mitigation—is for the local agency, exercising its informed judgment in compliance with the law and balancing a variety of public objectives."[7]

The Project as proposed is considered consistent with the goals of AB 32. The Project would incorporate energy reduction and water conservation measures, identified in the City's General Plan, that reduce GHG emissions compared to a conventional project of similar size and scope. These measures and features are consistent with existing recommendations to reduce GHG emissions.

Southern California Association of Governments' Sustainable Communities Strategy

SCAG's most recent population forecast was adopted in April 2016 as part of the *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016 RTP/SCS). The 2016 SCAG growth forecast projects a population in Oxnard of 200,100 people for 2012 and 237,300 people for 2040.[8] The population increase of 557 that could result from the construction of the new residential housing and employment opportunities associated with the Project, in addition, the existing population is within SCAG's most recent growth projections for the City of Oxnard. As such, the growth forecast is also within the population growth parameters considered in the Air Quality Management Plan (AQMP), which is updated by the VCAPCD to manage air emissions in the County of Ventura in accordance with local, State, and federal

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6 California Office of the Attorney General, "Addressing Global Warming Impacts at the Local Agency Level" (January 2010), http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf.

7 California Office of the Attorney General, "Addressing Global Warming Impacts" (January 2010), http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf.

8 Southern California Association of Government, *2016-2040 Regional Transportation Plan/Sustain Communities Strategy* (April 2016).

standards. Development of the Project will not obstruct implementation of the AQMP or attainment of State or federal air quality standards. Therefore, the Project would be consistent with the 2016 RTP/SCS.

CUMULATIVE ANALYSIS

Climate change is a cumulative impact from various global sources of activities that incrementally contribute to global GHG concentrations. Individual projects provide a small addition to total concentrations but contribute cumulatively to a global phenomenon. According to CAPCOA, GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective.[9] The goal of AB 32 is to require GHG emission reductions from existing conditions. As a result, cumulative GHG and climate change impacts must be analyzed from the perspective of whether they would impede the State's ability to meet its emission reduction goals.

To achieve Statewide goals, CARB is in the process of implementing regulations to reduce Statewide GHG emissions. However, currently, no applicable significance thresholds, specific reduction targets, and approved policies or guidance are in place to assist in determining significance at the project or cumulative level. Additionally, currently no generally accepted methodology exists to determine whether GHG emissions associated with a specific project represent new emissions or existing and/or displaced emissions.

In conformance with City of Oxnard goals and policies, GHG emissions reductions would be achieved through energy-efficient lighting, installation of low-flow appliances, and water conservation. The methods used to establish this relative reduction are consistent with the approach used in the CARB's Scoping Plan for the implementation of AB 32 through 2020. The Project's design features and GHG reduction measures make the Project consistent with the goals of AB 32.

The Project is consistent with the approach outlined in the CARB's Scoping Plan, particularly its emphasis on the identification of emissions reduction opportunities that promote economic growth while achieving greater energy efficiency and accelerating the transition to a low-carbon economy. The location and design of the Project reflect and support these core objectives. In addition, as recommended by CARB's Scoping Plan, the Project would use green building features as a framework for achieving crosscutting emissions reductions.

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9 CAPCOA, *Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (January 2008).

APPENDIX A

CalEEMod Air Quality and Greenhouse Gas Emissions Files

Rio Urbana Mixed Use (Proposed)

Ventura County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.10	1000sqft	0.18	15,100.00	0
Enclosed Parking with Elevator	463.00	Space	0.00	185,200.00	0
Condo/Townhouse	182.00	Dwelling Unit	2.64	182,000.00	557

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction to be completed 2020.

Land Use - Total Project are = 10.49 acres
Lot coverage: School office = 7,830 sq. ft.; apartment = 115,026 sq. ft.

Construction Phase - Architectural coating to take place intermittently towards the tail end of building construction

Off-road Equipment - No Cranes

Grading - +/- 17,000 cy of import

Vehicle Trips - Based on Traffic Study

Energy Use -

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2

Compliance with VCAPCD Rule 55 - Fugitive Dust

Area Mitigation -

Energy Mitigation - Project will include high efficiency lighting compliant with latest Title 24 requirements.

Water Mitigation -

Demolition - Existing Buildings: 44,637 sq. ft.
Other surfaces (concrete, asphalt, awnings): 147,667 sq. ft.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentRegulatoryCompliance	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	PhaseEndDate	2/12/2019	1/25/2019
tblConstructionPhase	PhaseStartDate	1/30/2019	12/15/2018
tblGrading	MaterialImported	0.00	17,000.00
tblLandUse	LotAcreage	0.35	0.18
tblLandUse	LotAcreage	4.17	0.00
tblLandUse	LotAcreage	11.38	2.64
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	WD_TR	11.03	11.65

2.0 Emissions Summary

2.1 Overall Construction

Baseline Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.9037	3.7752	2.8825	7.3800e-003	0.3646	0.1616	0.5261	0.0913	0.1543	0.2456	0.0000	670.3661	670.3661	0.0848	0.0000	672.4864
2019	0.7682	0.2234	0.2187	4.6000e-004	0.0153	0.0113	0.0265	4.1100e-003	0.0107	0.0148	0.0000	40.8830	40.8830	6.0300e-003	0.0000	41.0339

Maximum	0.9037	3.7752	2.8825	7.3800e-003	0.3646	0.1616	0.5261	0.0913	0.1543	0.2456	0.0000	670.3661	670.3661	0.0848	0.0000	672.4864

Regulatory Compliance Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.6749	3.6525	2.8597	7.3800e-003	0.2919	0.1054	0.3973	0.0760	0.1049	0.1810	0.0000	670.3658	670.3658	0.0848	0.0000	672.4861
2019	0.7554	0.2498	0.2250	4.6000e-004	0.0153	8.5700e-003	0.0239	4.1100e-003	8.5500e-003	0.0127	0.0000	40.8830	40.8830	6.0300e-003	0.0000	41.0339
Maximum	**0.7554**	**3.6525**	**2.8597**	**7.3800e-003**	**0.2919**	**0.1054**	**0.3973**	**0.0760**	**0.1049**	**0.1810**	**0.0000**	**670.3658**	**670.3658**	**0.0848**	**0.0000**	**672.4861**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**14.46**	**2.41**	**0.53**	**0.00**	**19.12**	**34.05**	**23.79**	**16.02**	**31.22**	**25.65**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Baseline ROG + NOX (tons/quarter)	Maximum Regulatory Compliance ROG + NOX (tons/quarter)
1	2-1-2018	4-30-2018	1.4114	1.2881
2	5-1-2018	7-31-2018	1.0488	0.9625
3	8-1-2018	10-31-2018	1.0517	0.9654
4	11-1-2018	1-31-2019	2.1309	2.0881
		Highest	2.1309	2.0881

2.2 Overall Operational

Baseline Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.9397	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Energy	0.0212	0.1818	0.0802	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	984.4889	984.4889	0.0360	0.0105	988.5078
Mobile	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188
Waste						0.0000	0.0000		0.0000	0.0000	19.8444	0.0000	19.8444	1.1728	0.0000	49.1637
Water						0.0000	0.0000		0.0000	0.0000	4.6135	92.6165	97.2300	0.4777	0.0120	112.7416
Total	**1.5447**	**1.1782**	**7.1796**	**0.0136**	**1.1894**	**0.0329**	**1.2223**	**0.3174**	**0.0322**	**0.3496**	**24.4579**	**2,202.5556**	**2,227.0134**	**1.7640**	**0.0225**	**2,277.8019**

Regulatory Compliance Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8821	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Energy	0.0189	0.1615	0.0712	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	885.9115	885.9115	0.0325	9.4000e-003	889.5223
Mobile	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188
Waste						0.0000	0.0000		0.0000	0.0000	19.8444	0.0000	19.8444	1.1728	0.0000	49.1637
Water						0.0000	0.0000		0.0000	0.0000	3.6908	78.5810	82.2717	0.3823	9.6200e-003	94.6971
Total	**1.4848**	**1.1579**	**7.1705**	**0.0135**	**1.1894**	**0.0313**	**1.2206**	**0.3174**	**0.0306**	**0.3480**	**23.5352**	**2,089.9426**	**2,113.4777**	**1.6651**	**0.0190**	**2,160.7719**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**3.88**	**1.72**	**0.13**	**0.96**	**0.00**	**4.98**	**0.13**	**0.00**	**5.09**	**0.47**	**3.77**	**5.11**	**5.10**	**5.61**	**15.28**	**5.14**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2018	2/28/2018	5	20	
2	Site Preparation	Site Preparation	3/1/2018	3/5/2018	5	3	
3	Grading	Grading	3/6/2018	3/13/2018	5	6	
4	Building Construction	Building Construction	3/14/2018	1/15/2019	5	220	
5	Paving	Paving	1/16/2019	1/29/2019	5	10	
6	Architectural Coating	Architectural Coating	12/15/2018	1/25/2019	5	30	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 368,550; Residential Outdoor: 122,850; Non-Residential Indoor: 22,650; Non-Residential Outdoor: 7,550; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	8.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	214.00	52.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0958	0.0000	0.0958	0.0145	0.0000	0.0145	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2436	0.1511	2.4000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297
Total	**0.0248**	**0.2436**	**0.1511**	**2.4000e-004**	**0.0958**	**0.0144**	**0.1102**	**0.0145**	**0.0134**	**0.0279**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8300e-003	0.1400	0.0277	3.4000e-004	7.5000e-003	7.5000e-004	8.2400e-003	2.0600e-003	7.2000e-004	2.7700e-003	0.0000	33.1966	33.1966	3.2600e-003	0.0000	33.2781
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	4.1000e-004	4.2400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9532	0.9532	3.0000e-005	0.0000	0.9539
Total	**4.3900e-003**	**0.1405**	**0.0319**	**3.5000e-004**	**8.5500e-003**	**7.6000e-004**	**9.3000e-003**	**2.3400e-003**	**7.3000e-004**	**3.0600e-003**	**0.0000**	**34.1498**	**34.1498**	**3.2900e-003**	**0.0000**	**34.2320**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0374	0.0000	0.0374	5.6600e-003	0.0000	5.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8600e-003	0.2121	0.1542	2.4000e-004		7.1800e-003	7.1800e-003		7.1800e-003	7.1800e-003	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297

Total	**8.8600e-003**	**0.2121**	**0.1542**	**2.4000e-004**	**0.0374**	**7.1800e-003**	**0.0446**	**5.6600e-003**	**7.1800e-003**	**0.0128**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8300e-003	0.1400	0.0277	3.4000e-004	7.5000e-003	7.5000e-004	8.2400e-003	2.0600e-003	7.2000e-004	2.7700e-003	0.0000	33.1966	33.1966	3.2600e-003	0.0000	33.2781
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	4.1000e-004	4.2400e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9532	0.9532	3.0000e-005	0.0000	0.9539
Total	**4.3900e-003**	**0.1405**	**0.0319**	**3.5000e-004**	**8.5500e-003**	**7.6000e-004**	**9.3000e-003**	**2.3400e-003**	**7.3000e-004**	**3.0600e-003**	**0.0000**	**34.1498**	**34.1498**	**3.2900e-003**	**0.0000**	**34.2320**

3.3 Site Preparation - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8500e-003	0.0354	0.0191	4.0000e-005		1.4300e-003	1.4300e-003		1.3200e-003	1.3200e-003	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851
Total	**2.8500e-003**	**0.0354**	**0.0191**	**4.0000e-005**	**2.3900e-003**	**1.4300e-003**	**3.8200e-003**	**2.6000e-004**	**1.3200e-003**	**1.5800e-003**	**0.0000**	**3.3590**	**3.3590**	**1.0500e-003**	**0.0000**	**3.3851**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0880	0.0880	0.0000	0.0000	0.0881
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0880**	**0.0880**	**0.0000**	**0.0000**	**0.0881**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9000e-004	0.0300	0.0205	4.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	3.3590	3.3590	1.0500e-003	0.0000	3.3851
Total	**9.9000e-004**	**0.0300**	**0.0205**	**4.0000e-005**	**9.3000e-004**	**7.5000e-004**	**1.6800e-003**	**1.0000e-004**	**7.5000e-004**	**8.5000e-004**	**0.0000**	**3.3590**	**3.3590**	**1.0500e-003**	**0.0000**	**3.3851**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0880	0.0880	0.0000	0.0000	0.0881
Total	**5.0000e-005**	**4.0000e-005**	**3.9000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0880**	**0.0880**	**0.0000**	**0.0000**	**0.0881**

3.4 Grading - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0209	0.0000	0.0209	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4500e-003	0.0729	0.0311	6.0000e-005		3.5000e-003	3.5000e-003		3.2200e-003	3.2200e-003	0.0000	5.6539	5.6539	1.7600e-003	0.0000	5.6979
Total	**6.4500e-003**	**0.0729**	**0.0311**	**6.0000e-005**	**0.0209**	**3.5000e-003**	**0.0244**	**0.0103**	**3.2200e-003**	**0.0135**	**0.0000**	**5.6539**	**5.6539**	**1.7600e-003**	**0.0000**	**5.6979**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2900e-003	0.3401	0.0672	8.2000e-004	0.0182	1.8200e-003	0.0200	4.9900e-003	1.7400e-003	6.7300e-003	0.0000	80.6203	80.6203	7.9200e-003	0.0000	80.8182
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	9.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2200	0.2200	1.0000e-005	0.0000	0.2201
Total	**9.4200e-003**	**0.3402**	**0.0682**	**8.2000e-004**	**0.0184**	**1.8200e-003**	**0.0203**	**5.0500e-003**	**1.7400e-003**	**6.8000e-003**	**0.0000**	**80.8402**	**80.8402**	**7.9300e-003**	**0.0000**	**81.0384**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.1300e-003	0.0000	8.1300e-003	4.0100e-003	0.0000	4.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8800e-003	0.0543	0.0364	6.0000e-005		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003	0.0000	5.6539	5.6539	1.7600e-003	0.0000	5.6979
Total	**1.8800e-003**	**0.0543**	**0.0364**	**6.0000e-005**	**8.1300e-003**	**1.4600e-003**	**9.5900e-003**	**4.0100e-003**	**1.4600e-003**	**5.4700e-003**	**0.0000**	**5.6539**	**5.6539**	**1.7600e-003**	**0.0000**	**5.6979**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2900e-003	0.3401	0.0672	8.2000e-004	0.0182	1.8200e-003	0.0200	4.9900e-003	1.7400e-003	6.7300e-003	0.0000	80.6203	80.6203	7.9200e-003	0.0000	80.8182
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	9.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2200	0.2200	1.0000e-005	0.0000	0.2201
Total	**9.4200e-003**	**0.3402**	**0.0682**	**8.2000e-004**	**0.0184**	**1.8200e-003**	**0.0203**	**5.0500e-003**	**1.7400e-003**	**6.8000e-003**	**0.0000**	**80.8402**	**80.8402**	**7.9300e-003**	**0.0000**	**81.0384**

3.5 Building Construction - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3044	2.1640	1.6426	2.6100e-003		0.1314	0.1314		0.1259	0.1259	0.0000	220.8646	220.8646	0.0476	0.0000	222.0541
Total	**0.3044**	**2.1640**	**1.6426**	**2.6100e-003**		**0.1314**	**0.1314**		**0.1259**	**0.1259**	**0.0000**	**220.8646**	**220.8646**	**0.0476**	**0.0000**	**222.0541**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0248	0.6965	0.1904	1.4100e-003	0.0362	6.1300e-003	0.0423	0.0104	5.8700e-003	0.0163	0.0000	136.6102	136.6102	0.0123	0.0000	136.9180
Worker	0.0968	0.0704	0.7299	1.8200e-003	0.1803	1.3300e-003	0.1817	0.0479	1.2300e-003	0.0491	0.0000	163.9697	163.9697	5.2100e-003	0.0000	164.1000
Total	**0.1216**	**0.7669**	**0.9203**	**3.2300e-003**	**0.2165**	**7.4600e-003**	**0.2240**	**0.0583**	**7.1000e-003**	**0.0654**	**0.0000**	**300.5799**	**300.5799**	**0.0175**	**0.0000**	**301.0180**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0990	2.0949	1.6102	2.6100e-003		0.0855	0.0855		0.0855	0.0855	0.0000	220.8644	220.8644	0.0476	0.0000	222.0539

Total	0.0990	2.0949	1.6102	2.6100e-003		0.0855	0.0855		0.0855	0.0855	0.0000	220.8644	220.8644	0.0476	0.0000	222.0539

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0248	0.6965	0.1904	1.4100e-003	0.0362	6.1300e-003	0.0423	0.0104	5.8700e-003	0.0163	0.0000	136.6102	136.6102	0.0123	0.0000	136.9180
Worker	0.0968	0.0704	0.7299	1.8200e-003	0.1803	1.3300e-003	0.1817	0.0479	1.2300e-003	0.0491	0.0000	163.9697	163.9697	5.2100e-003	0.0000	164.1000
Total	**0.1216**	**0.7669**	**0.9203**	**3.2300e-003**	**0.2165**	**7.4600e-003**	**0.2240**	**0.0583**	**7.1000e-003**	**0.0654**	**0.0000**	**300.5799**	**300.5799**	**0.0175**	**0.0000**	**301.0180**

3.5 Building Construction - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0141	0.1040	0.0839	1.4000e-004		6.0000e-003	6.0000e-003		5.7500e-003	5.7500e-003	0.0000	11.5365	11.5365	2.4000e-003	0.0000	11.5965
Total	**0.0141**	**0.1040**	**0.0839**	**1.4000e-004**		**6.0000e-003**	**6.0000e-003**		**5.7500e-003**	**5.7500e-003**	**0.0000**	**11.5365**	**11.5365**	**2.4000e-003**	**0.0000**	**11.5965**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1900e-003	0.0345	9.2800e-003	7.0000e-005	1.9000e-003	2.8000e-004	2.1800e-003	5.5000e-004	2.7000e-004	8.1000e-004	0.0000	7.1549	7.1549	6.3000e-004	0.0000	7.1705
Worker	4.6700e-003	3.2800e-003	0.0345	9.0000e-005	9.4900e-003	7.0000e-005	9.5600e-003	2.5200e-003	6.0000e-005	2.5800e-003	0.0000	8.3962	8.3962	2.5000e-004	0.0000	8.4023
Total	**5.8600e-003**	**0.0378**	**0.0438**	**1.6000e-004**	**0.0114**	**3.5000e-004**	**0.0117**	**3.0700e-003**	**3.3000e-004**	**3.3900e-003**	**0.0000**	**15.5510**	**15.5510**	**8.8000e-004**	**0.0000**	**15.5728**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.2100e-003	0.1103	0.0847	1.4000e-004		4.5000e-003	4.5000e-003		4.5000e-003	4.5000e-003	0.0000	11.5365	11.5365	2.4000e-003	0.0000	11.5965
Total	**5.2100e-003**	**0.1103**	**0.0847**	**1.4000e-004**		**4.5000e-003**	**4.5000e-003**		**4.5000e-003**	**4.5000e-003**	**0.0000**	**11.5365**	**11.5365**	**2.4000e-003**	**0.0000**	**11.5965**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1900e-003	0.0345	9.2800e-003	7.0000e-005	1.9000e-003	2.8000e-004	2.1800e-003	5.5000e-004	2.7000e-004	8.1000e-004	0.0000	7.1549	7.1549	6.3000e-004	0.0000	7.1705
Worker	4.6700e-003	3.2800e-003	0.0345	9.0000e-005	9.4900e-003	7.0000e-005	9.5600e-003	2.5200e-003	6.0000e-005	2.5800e-003	0.0000	8.3962	8.3962	2.5000e-004	0.0000	8.4023
Total	**5.8600e-003**	**0.0378**	**0.0438**	**1.6000e-004**	**0.0114**	**3.5000e-004**	**0.0117**	**3.0700e-003**	**3.3000e-004**	**3.3900e-003**	**0.0000**	**15.5510**	**15.5510**	**8.8000e-004**	**0.0000**	**15.5728**

3.6 Paving - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2300e-003	0.0628	0.0593	9.0000e-005		3.6500e-003	3.6500e-003		3.3600e-003	3.3600e-003	0.0000	7.9208	7.9208	2.4600e-003	0.0000	7.9823
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.2300e-003**	**0.0628**	**0.0593**	**9.0000e-005**		**3.6500e-003**	**3.6500e-003**		**3.3600e-003**	**3.3600e-003**	**0.0000**	**7.9208**	**7.9208**	**2.4600e-003**	**0.0000**	**7.9823**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.1000e-004	2.2000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5350	0.5350	2.0000e-005	0.0000	0.5354
Total	**3.0000e-004**	**2.1000e-004**	**2.2000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5350**	**0.5350**	**2.0000e-005**	**0.0000**	**0.5354**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6700e-003	0.0781	0.0649	9.0000e-005		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003	0.0000	7.9208	7.9208	2.4600e-003	0.0000	7.9823
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.6700e-003**	**0.0781**	**0.0649**	**9.0000e-005**		**2.7900e-003**	**2.7900e-003**		**2.7900e-003**	**2.7900e-003**	**0.0000**	**7.9208**	**7.9208**	**2.4600e-003**	**0.0000**	**7.9823**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.1000e-004	2.2000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5350	0.5350	2.0000e-005	0.0000	0.5354
Total	**3.0000e-004**	**2.1000e-004**	**2.2000e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5350**	**0.5350**	**2.0000e-005**	**0.0000**	**0.5354**

3.7 Architectural Coating - 2018

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6400e-003	0.0110	0.0102	2.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	1.4043	1.4043	1.3000e-004	0.0000	1.4076
Total	**0.4287**	**0.0110**	**0.0102**	**2.0000e-005**		**8.3000e-004**	**8.3000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.3000e-004**	**0.0000**	**1.4076**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.4000e-004	7.7200e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7341	1.7341	6.0000e-005	0.0000	1.7354
Total	**1.0200e-003**	**7.4000e-004**	**7.7200e-003**	**2.0000e-005**	**1.9100e-003**	**1.0000e-005**	**1.9200e-003**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.7341**	**1.7341**	**6.0000e-005**	**0.0000**	**1.7354**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	6.3000e-004	0.0129	0.0101	2.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.4043	1.4043	1.3000e-004	0.0000	1.4076
Total	**0.4277**	**0.0129**	**0.0101**	**2.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.3000e-004**	**0.0000**	**1.4076**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	7.4000e-004	7.7200e-003	2.0000e-005	1.9100e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7341	1.7341	6.0000e-005	0.0000	1.7354
Total	**1.0200e-003**	**7.4000e-004**	**7.7200e-003**	**2.0000e-005**	**1.9100e-003**	**1.0000e-005**	**1.9200e-003**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.7341**	**1.7341**	**6.0000e-005**	**0.0000**	**1.7354**

3.7 Architectural Coating - 2019

Baseline Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5300e-003	0.0174	0.0175	3.0000e-005		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	2.4256	2.4256	2.0000e-004	0.0000	2.4307
Total	**0.7401**	**0.0174**	**0.0175**	**3.0000e-005**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**2.4256**	**2.4256**	**2.0000e-004**	**0.0000**	**2.4307**

Baseline Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1400e-003	0.0120	3.0000e-005	3.2900e-003	2.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9141	2.9141	9.0000e-005	0.0000	2.9162
Total	**1.6200e-003**	**1.1400e-003**	**0.0120**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3200e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.9141**	**2.9141**	**9.0000e-005**	**0.0000**	**2.9162**

Regulatory Compliance Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0224	0.0174	3.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004	0.0000	2.4256	2.4256	2.0000e-004	0.0000	2.4307
Total	**0.7387**	**0.0224**	**0.0174**	**3.0000e-005**		**9.0000e-004**	**9.0000e-004**		**9.0000e-004**	**9.0000e-004**	**0.0000**	**2.4256**	**2.4256**	**2.0000e-004**	**0.0000**	**2.4307**

Regulatory Compliance Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1400e-003	0.0120	3.0000e-005	3.2900e-003	2.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9141	2.9141	9.0000e-005	0.0000	2.9162
Total	**1.6200e-003**	**1.1400e-003**	**0.0120**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3200e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.9141**	**2.9141**	**9.0000e-005**	**0.0000**	**2.9162**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Regulatory Compliance	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188
Baseline	0.5838	0.9807	5.7407	0.0124	1.1894	0.0108	1.2001	0.3174	0.0100	0.3275	0.0000	1,123.2342	1,123.2342	0.0754	0.0000	1,125.1188

4.2 Trip Summary Information

	Average Daily Trip Rate			Baseline	Regulatory Compliance
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,057.42	1,031.94	880.88	2,841,986	2,841,986
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	175.92	37.15	15.86	318,375	318,375
Total	1,233.34	1,069.09	896.74	3,160,361	3,160,361

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Enclosed Parking with Elevator	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194
Condo/Townhouse	0.572490	0.044826	0.170628	0.127143	0.022859	0.006230	0.012809	0.005255	0.000798	0.000322	0.029094	0.000351	0.007194

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Regulatory Compliance						0.0000	0.0000		0.0000	0.0000	0.0000	699.2320	699.2320	0.0289	5.9700e-003	701.7335
Electricity Baseline						0.0000	0.0000		0.0000	0.0000	0.0000	774.3982	774.3982	0.0320	6.6100e-003	777.1686
NaturalGas Regulatory Compliance	0.0189	0.1615	0.0712	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	186.6794	186.6794	3.5800e-003	3.4200e-003	187.7888
NaturalGas Baseline	0.0212	0.1818	0.0802	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	210.0907	210.0907	4.0300e-003	3.8500e-003	211.3392

5.2 Energy by Land Use - NaturalGas

Baseline

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	3.79833e+006	0.0205	0.1750	0.0745	1.1200e-003		0.0142	0.0142		0.0142	0.0142	0.0000	202.6935	202.6935	3.8800e-003	3.7200e-003	203.8980
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	138618	7.5000e-004	6.8000e-003	5.7100e-003	4.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	7.3972	7.3972	1.4000e-004	1.4000e-004	7.4411
Total		**0.0212**	**0.1818**	**0.0802**	**1.1600e-003**		**0.0147**	**0.0147**		**0.0147**	**0.0147**	**0.0000**	**210.0907**	**210.0907**	**4.0200e-003**	**3.8600e-003**	**211.3392**

Regulatory Compliance

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	3.37917e+006	0.0182	0.1557	0.0663	9.9000e-004		0.0126	0.0126		0.0126	0.0126	0.0000	180.3254	180.3254	3.4600e-003	3.3100e-003	181.3969
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	119071	6.4000e-004	5.8400e-003	4.9000e-003	4.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3541	6.3541	1.2000e-004	1.2000e-004	6.3918
Total		**0.0189**	**0.1616**	**0.0712**	**1.0300e-003**		**0.0130**	**0.0130**		**0.0130**	**0.0130**	**0.0000**	**186.6794**	**186.6794**	**3.5800e-003**	**3.4300e-003**	**187.7888**

5.3 Energy by Land Use - Electricity

Baseline

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Condo/Townhouse	965683	307.6873	0.0127	2.6300e-003	308.7880
Enclosed Parking with Elevator	1.24825e+006	397.7186	0.0164	3.4000e-003	399.1414
General Office Building	216534	68.9924	2.8500e-003	5.9000e-004	69.2392
Total		**774.3982**	**0.0320**	**6.6200e-003**	**777.1686**

Regulatory Compliance

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	933022	297.2809	0.0123	2.5400e-003	298.3444
Enclosed Parking with Elevator	1.06629e+006	339.7425	0.0140	2.9000e-003	340.9580
General Office Building	195243	62.2086	2.5700e-003	5.3000e-004	62.4312
Total		**699.2320**	**0.0289**	**5.9700e-003**	**701.7335**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Regulatory Compliance	0.8821	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Baseline	0.9397	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700

6.2 Area by SubCategory

Baseline

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7818					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0415	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Total	**0.9397**	**0.0157**	**1.3587**	**7.0000e-005**		**7.4800e-003**	**7.4800e-003**		**7.4800e-003**	**7.4800e-003**	**0.0000**	**2.2160**	**2.2160**	**2.1600e-003**	**0.0000**	**2.2700**

Regulatory Compliance

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7242					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0415	0.0157	1.3587	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2160	2.2160	2.1600e-003	0.0000	2.2700
Total	**0.8821**	**0.0157**	**1.3587**	**7.0000e-005**		**7.4800e-003**	**7.4800e-003**		**7.4800e-003**	**7.4800e-003**	**0.0000**	**2.2160**	**2.2160**	**2.1600e-003**	**0.0000**	**2.2700**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Regulatory Compliance	82.2717	0.3823	9.6200e-003	94.6971
Baseline	97.2300	0.4777	0.0120	112.7416

7.2 Water by Land Use

Baseline

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	11.858 / 7.47572	79.4214	0.3895	9.7700e-003	92.0708
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.68378 / 1.6449	17.8086	0.0882	2.2100e-003	20.6709
Total		**97.2300**	**0.4777**	**0.0120**	**112.7416**

Regulatory Compliance

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	9.48643 / 7.0197	67.2155	0.3118	7.8500e-003	77.3482
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.14702 / 1.54456	15.0562	0.0706	1.7700e-003	17.3489
Total		**82.2717**	**0.3823**	**9.6200e-003**	**94.6971**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Regulatory Compliance	19.8444	1.1728	0.0000	49.1637
Baseline	19.8444	1.1728	0.0000	49.1637

8.2 Waste by Land Use

Baseline

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	83.72	16.9944	1.0043	0.0000	42.1029
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.04	2.8500	0.1684	0.0000	7.0607
Total		**19.8444**	**1.1728**	**0.0000**	**49.1637**

Regulatory Compliance

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Condo/Townhouse	83.72	16.9944	1.0043	0.0000	42.1029
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.04	2.8500	0.1684	0.0000	7.0607
Total		**19.8444**	**1.1728**	**0.0000**	**49.1637**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix E

Phase I Cultural Resource Assessment and Paleontological Resource Assessment

Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Project, Ventura County, California

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August 2017

National Archaeological Database (NADB)
Type of Study: Literature and Records Search, Cultural Resources Assessment
Key Words: Rio Urbana Mixed Use, Oxnard, Records Search and Literature Review, El Rio School.

MANAGEMENT SUMMARY

Pacific West Communities proposes construction of a mixed-use development on the former El Rio Elementary School Campus near the city of Oxnard, Ventura County, California. Applied EarthWorks, Inc. (Æ) was retained to conduct a cultural resource investigation of the Rio Urbana Mixed Use Project (Project) in accordance with the California Environmental Quality Act (CEQA).

An archaeological literature and records search conducted at the South Central Coastal Information Center (SCCIC) indicated that eight cultural resources are present within a 1-mile radius of the Project area; however, no previously documented resources are located within the Project limits. Æ also requested a search of the Sacred Lands File from the Native American Heritage Commission (NAHC), which found that no Native American cultural resources are known to exist within the immediate Project area. Native American individuals and organizations were contacted to elicit information regarding cultural resource issues related to the proposed Project. Of the six groups and/or individuals contacted, the Santa Ynez Band of Chumash Indians is the only tribal group to respond to date. The Santa Ynez Band of Chumash Indians deferred to the local tribes in the Oxnard area.

Æ archaeologist Gena Granger performed an intensive cultural resource pedestrian survey of the Project area by on August 10, 2017. As part of the Project, Æ documented the El Rio School Campus and evaluated its significance and eligibility for listing on the California Register of Historical Resources (CRHR). The El Rio School Campus is not recommended eligible for listing on the CRHR and, as such, no further cultural resource management is recommended for the resource. The cultural resource survey of the Project area did not identify any prehistoric or historical archaeological resources; however, the records search indicated a potential to uncover such resources below the surface in the immediate vicinity of the Project area and, as such, cultural resource monitoring is recommended during any Project-related ground-disturbing activity.

Field notes documenting the current investigation are on file at Æ's Pasadena office. A copy of this report will be placed on file at the SCCIC of the California Historical Resources Information System, housed at California State University, Fullerton.

CONTENTS

FIGURES

TABLES

1
INTRODUCTION

The Pacific West Communities proposes to develop a new mixed-use development which includes 182 condominium residential units and a 15,000-square foot office building containing the Rio School District Administrative Offices on the former El Rio Elementary School Campus near the city of Oxnard, Ventura County, California. Applied EarthWorks, Inc. (Æ) was retained by Meridian Consultants, LLC, to conduct a cultural resource investigation of the Rio Urbana Mixed Use Project (hereafter "Project"). The study consisted of records searches, Native American coordination, a Phase I survey of the Project area, and documentation and evaluation of the El Rio Elementary School Campus. The Project requires discretionary approval from the City of Oxnard thus is subject to compliance with the California Environmental Quality Act (CEQA), as amended. This report summarizes the methods and results of the cultural resource study and provides Project-specific management recommendations.

1.1 PROJECT DESCRIPTION AND LOCATION

The Project is located in the community of El Rio within the City of Oxnard Sphere of Influence. It is situated along East Vineyard Avenue, northeast of U.S. Route 101 and southwest of Rio School Lane, approximately one mile east of the Santa Clara River (Figure 1-1). Specifically, the Project is mapped within portions of the Santa Clara del Norte Landgrant on the Oxnard, CA 7.5-minute U.S. Geological Survey quadrangle. (Figure 1-2); elevations range from approximately 87 to 92 feet above mean sea level (amsl).

The Project site, formerly the El Rio Elementary School Campus, consists of approximately 10.24 acres of developed land with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings). The school has been closed since 2008 and is currently utilized as a dispatch for school buses and storage. The proposed Project would include demolition of the existing buildings and structures to allow construction of the new mixed-use development.

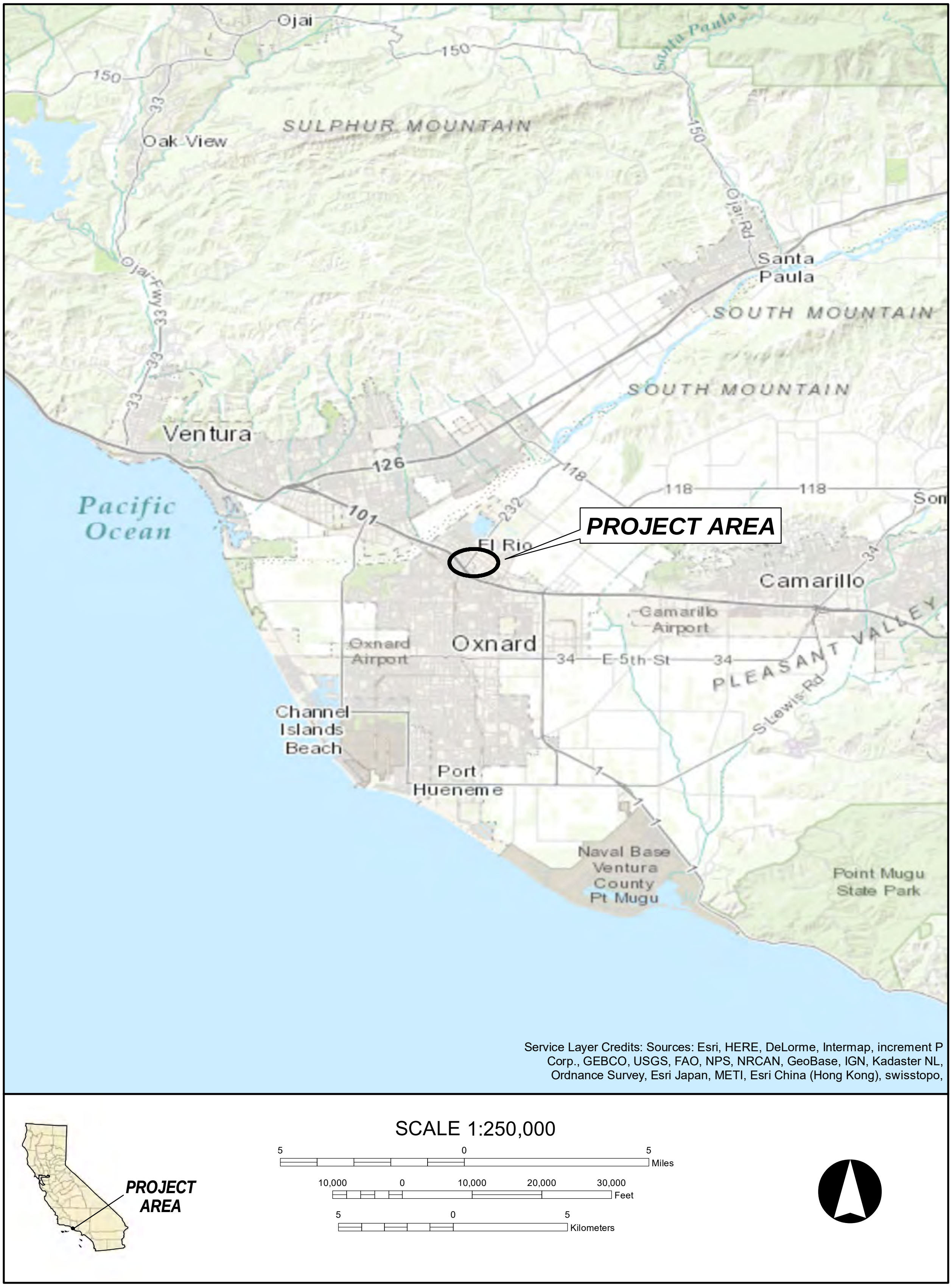

Figure 1 Project vicinity map.

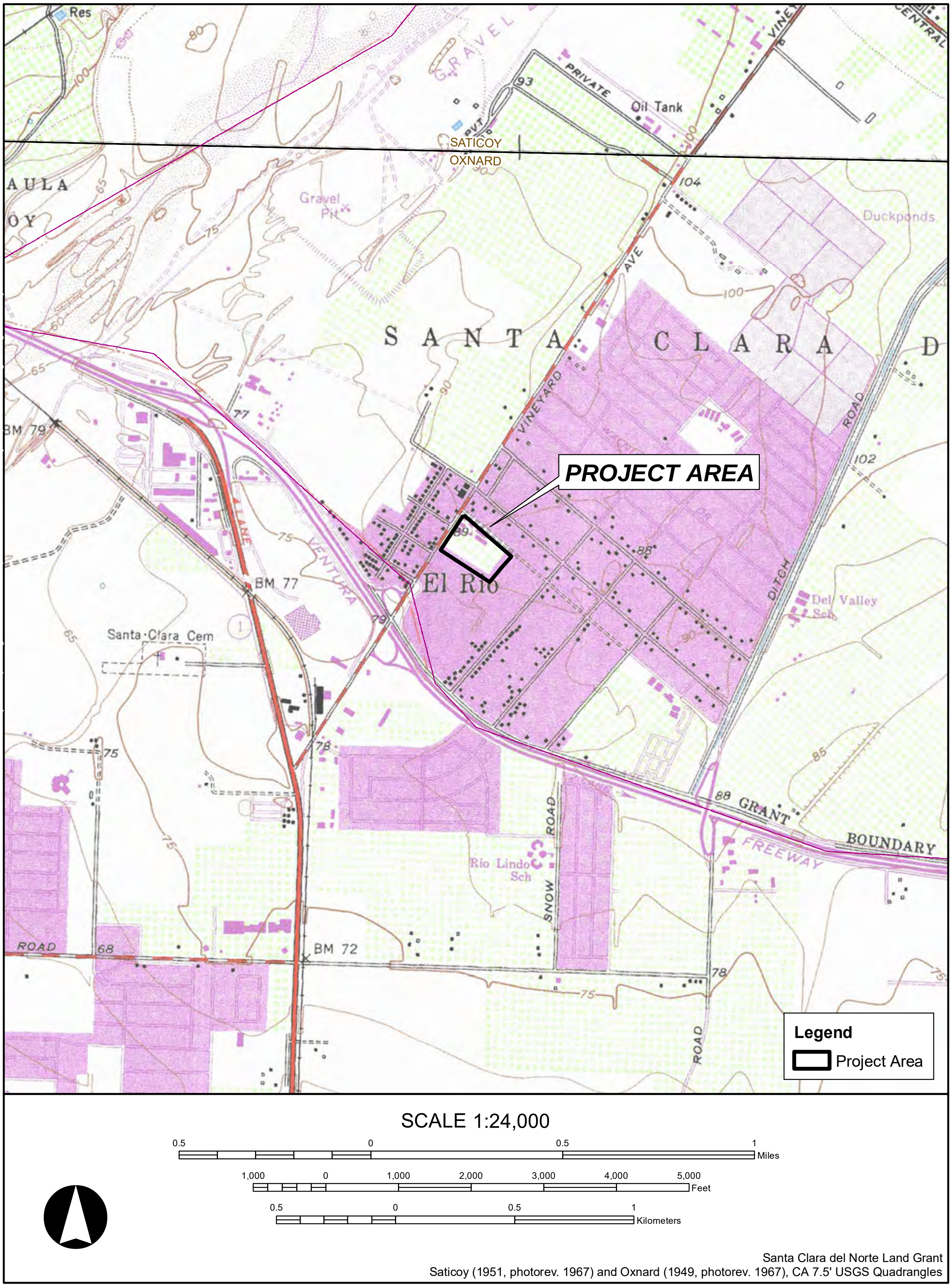

Figure 2 Project location map.

1.2 REGULATORY CONTEXT

1.2.1 California Environmental Quality Act

The Project is subject to compliance with the CEQA, as amended. The CEQA Statutes and Guidelines (Title 14 California Code of Regulations [CCR] Section [§] 15064.5), direct lead agencies to determine whether a project will have a significant impact on significant historical resources. Generally, a cultural resource shall be considered historically significant if the resource is 45 years old or older; possesses integrity of location, design, setting, materials, workmanship, feeling, and association; and meets the requirements for listing in the California Register of Historical Resources (CRHR) under any one of the following criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2) Is associated with the lives of persons important in our past;

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,

4) Has yielded, or may be likely to yield, information important in prehistory or history [14 CCR § 15064.5].

The cited statutes and guidelines specify how cultural resources are to be managed in the context of proposed projects, such as the Rio Urbana Mixed Use Project. Briefly, archival and field surveys must be conducted, and identified cultural resources must be inventoried and evaluated in prescribed ways. Prehistoric and historical archaeological sites, as well as standing structures and other built-environment features deemed historically significant, must be considered in project planning and development. A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (Public Resources Code [PRC] § 21084.1).

1.2.1.1 Other State Statutes and Regulations

California Assembly Bill 52

Signed into law in September 2014, California Assembly Bill 52 (AB 52) created a new class of resources – tribal cultural resources – for consideration under CEQA. Tribal cultural resources may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are included or determined to be eligible for inclusion in the California Register of Historical Resources, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing on the California Register of Historical Resources. AB 52 requires that the lead CEQA agency consult in good faith with California Native American tribes that have requested a consultation for projects that may affect tribal cultural resources. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to impact a tribal cultural resource such that it would cause a substantial adverse change constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

Native American Heritage Commission

PRC § 5097.91 established the Native American Heritage Commission (NAHC), whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. PRC § 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

1.3 REPORT ORGANIZATION

This report documents the results of Æ's intensive cultural resource investigation for the proposed Project. Chapter 1 has described the project and outlined the governing regulatory context. Chapter 2 synthesizes the natural and cultural setting of the Project area and surrounding region. Chapter 3 presents the results of the background research, which included a literature review and records search at the South Central Coastal Information Center (SCCIC), of the California Historical Resource Information System (CHRIS), housed at California State University, Fullerton. Chapter 4 details the Sacred Lands File search with the Native American Heritage Commission (NAHC), and Native American correspondence. The cultural resource survey methods employed during this investigation as well as findings are outlined in Chapter 5. The resource evaluation is presented in Chapter 6, with management recommendations provided in Chapter 7. This is followed by bibliographic references and appendices.

2
SETTING

This chapter describes the environmental and cultural setting of the region to provide a context for understanding the types, nature, and significance of cultural resources identified within the Project area. Environmental data are derived from field observations, background research, and from numerous cultural resource studies conducted in the area. The Project is within the territory traditionally used by the Chumash Native American group, and the ethnographic cultural setting discusses pertinent aspects of this group.

2.1 ENVIRONMENTAL SETTING

The Project area is on the Oxnard coastal plain within the Transverse Ranges geomorphic province of California (Norris and Webb 1976). The Transverse Ranges extend approximately 275 miles west to east from Point Arguello in Santa Barbara County to the Anacapa-Santa Monica Hollywood-Raymond-Cucamonga fault zone and the San Bernardino Mountains (Yerkes and Campbell 2005). Geographic features of the Transverse Ranges in the vicinity of the Project area include the Santa Susana and Topatopa Mountains and the low-lying Camarillo Hills; the Ventura Basin — a folded and faulted region of thick Cenozoic sediment and petroliferous deposits beneath the Oxnard coastal plain; the Santa Clara River; and the Channel Islands (Keller 1995; Winterer and Durham 1962). Specifically, the Project area is located adjacent to the Santa Clara River, which drains the northern Transverse Ranges and flows westward between the Santa Susana and Topatopa Mountains towards the Oxnard coastal plain and out into the Pacific Ocean. The dominant plant community in the vicinity is a coastal sage scrub, characterized by low-growing, drought-deciduous shrubs that have adapted to the semi-arid Mediterranean climate of coastal lowlands of Southern California. Common flora found within a coastal sage scrub community consist of California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), California buckwheat (*Eriogonum fasciculatum*), coast brittle-bush (*Encelia californica*), golden yarrow (*Eriophyllum confertifolium*), and lemonade berry (*Rhus integrifolia*).

2.2 PREHISTORIC SETTING

Recent decades have witnessed the publication of many compilations and syntheses of prehistory in the central and south-central coast regions of California (e.g., Altschul and Grenda 2002; Arnold et al. 2004; Chartkoff and Chartkoff 1984; Erlandson 1994; Erlandson and Colten 1991; Erlandson and Glassow 1997; Fagan 2003; Glassow et al. 2007; Jones 1992; Jones et al. 2007; Moratto 1984; Raab and Jones 2004). These overviews provide a context for interpreting the archaeological record of Ventura County.

The cultural sequence in use today in the Chumash country originated with the research of David Banks Rogers during the early decades of the twentieth century (Rogers 1929) and has subsequently been expanded and refined. Olson (1930), Wallace (1955), and Greenwood (1972), among others, confirmed the applicability of Rogers' original cultural sequence to a broad area extending along the coast between Los Angeles and Monterey counties (although local variations were acknowledged). Warren (1968) established a new prehistoric chronology for coastal southern and south-central California based upon cultural traditions and their adaptations to changing environments over time.

The most widely used chronological sequence in the Chumash area distinguishes Early, Middle, and Late periods. It was initially outlined by King (1981) and later revised to include additional radiocarbon dates (King 1990) and to incorporate refinements in our understanding of cultural developments (Arnold 1992). An overview of Late Holocene prehistory for the Santa Monica Mountains area has been compiled by Gamble and Russell (2002).

The prehistory of California's central coast spans the entire Holocene and may extend back to late Pleistocene times. In Malibu and in the Santa Barbara Channel region, the discovery of fluted projectile points indicates human use of the area possibly as early as 13,000 years ago (Erlandson et al. 1996; Stickel 2010), while sites on San Miguel and Santa Rosa islands have yielded radiocarbon dates older than 10,000 years (Erlandson 1991; Johnson et al. 2001). Although few known sites date to this earliest period (i.e., pre-10,000 years before present [B.P.]), they tend to be located on elevated landforms, and their presence on the Northern Channel Islands indicates early knowledge and use of marine resources.

Moratto (1984) refers to these early occupations as Paleocoastal. Population densities were probably low, judging from the limited number of sites dated to this period. Diagnostic tools associated with this time period have not been identified, although similarities with the San Dieguito Complex in Southern California (Wallace 1978; Warren 1967) have been suggested (Erlandson 1994). Cultural assemblages have few of the grinding implements common to subsequent periods. These sites are characterized by a strong maritime orientation and an apparent reliance on shellfish. Occupants are thought to have lived in small groups that had a relatively egalitarian social organization and a forager-type land-use strategy (Erlandson 1994; Glassow 1996; Greenwood 1972; Moratto 1984).

In San Luis Obispo County, excavations at CA-SLO-2 in Diablo Canyon revealed an occupation older than 9,000 years (Greenwood 1972), and investigations at CA-SLO-1797 indicate initial occupations as early as 10,300 B.P. (Fitzgerald 1998, 2000). Occupations within the area of what is now Vandenberg Air Force Base began by at least 9,000 years ago (Glassow 1990, 1996; Lebow et al. 2001, 2007). Beginning shortly after 9,000 years ago, sites are characterized by abundant milling tools, and the subsistence regime is broad, including plant foods, terrestrial animals, and shellfish (Glassow 1996; Glassow et al. 1988; Sutton and Gardner 2010). Populations during this time appear to have gradually increased, comprising small, dispersed groups with comparatively generalized tool kits, and a mixed subsistence regime that included heavy reliance on shellfish and a lesser emphasis on nearshore fish and terrestrial food sources (Erlandson 1991, 1994, 1997).

Site densities throughout the central coast are higher during the subsequent periods, suggesting increased population size and possibly better site preservation. Sites dating between about 8,000 and 6,500 years ago often have relatively high densities of manos and milling slabs that are typically associated with processing seeds. Such milling stones are diagnostic of this period (Moratto 1984; Sutton and Gardner 2010; Wallace 1955). Shellfish appears to have remained a dietary staple throughout the central coast (Erlandson 1994; Glassow and Wilcoxon 1988). However, terrestrial mammals composed a larger portion of the diet in the Vandenberg Air Force

Base area during this period than during any other time (Glassow 1996). Fish were a larger part of the diet than shellfish at Morro Bay in San Luis Obispo County, although shellfish were better represented during this period than during subsequent periods (Jones et al. 1994).

Early scholars associated sites of this age with inland knolls and terraces (e.g., Rogers 1929), but subsequent investigations revealed that coastal environments also were used (e.g., Glassow et al. 1988). Well-developed middens at many sites suggest a more sedentary and stable settlement system (Breschini et al. 1983). Glassow (1990, 1996) infers that occupants of Vandenberg Air Force Base sites during this time were sedentary and had begun using a collector-type (i.e., logistically mobile) land-use strategy. Burial practices suggest that society was primarily egalitarian (Glassow 1996).

Population densities appear to have decreased substantially between 6500 and 5000 B.P. throughout the region, and little is known about this period. It is possible that arid conditions associated with the Altithermal (a mid-Holocene period of predominantly warm/dry climate) degraded the environment to the point that only low population densities were possible (Glassow 1996; Glassow and Wilcoxon 1988).

After 5000 B.P., population densities increased to pre-6500 B.P. levels as conditions became cooler and moister. Between 5000 and 3000 B.P., mortars and pestles became increasingly common throughout the region, suggesting intensified use of acorns (Basgall 1987), although these implements may have been associated with processing pulpy roots or tubers (Glassow 1997). Along the Santa Barbara Channel coastline, use of shellfish declined as other animal foods became more important. Use of more diverse environmental settings is suggested (Erlandson 1997). At sites on Vandenberg Air Force Base, fish and sea mammals composed a larger part of the diet during this period. Large side-notched and stemmed projectile points became more prevalent in the archaeological record, presumably reflecting increased hunting, although Glassow (1996) suggests that proportions of terrestrial mammals do not surpass the pre-6500 B.P. levels. However, higher proportions of terrestrial mammals in archaeological assemblages are associated with this period in San Luis Obispo County. Increased logistical organization is suggested in this area (Jones et al. 1994; Jones and Waugh 1995). Proportions of obsidian (indicating exchange with other regions) increased after about 5000 B.P., particularly in San Luis Obispo County (Jones et al. 1994; Jones and Waugh 1995).

Cultural complexity appears to have increased around 3000–2500 B.P. Based on mortuary data from the Santa Barbara area, King (1990) suggests a substantial change in the social organization and political complexity about 3,000 years ago. According to King, high-status positions became hereditary and individuals began to accumulate wealth and control exchange systems. Arnold (1991, 1992) proposes that this evolutionary step in socioeconomic complexity occurred around 700–800 years ago. The period between 2,500 and 800 years ago is marked by increased cultural complexity and technological innovation. Fishing and sea mammal hunting became increasingly important, corresponding to development of the *tomol* (plank canoe), single-piece shell fishhooks, and harpoons (Glassow 1996; King 1990). The bow and arrow were also introduced during this period (Glenn 1990, 1991). Sites in San Luis Obispo County suggest that use of terrestrial mammals remained high. Proportions of imported obsidian continued to increase during this period (Jones et al. 1994).

Arnold (1992) proposes that the complex Chumash sociopolitical system known at historic contact evolved substantially during a brief period between A.D. 1150 and 1300, which she terms the Middle-Late Transitional Period. Arnold infers that decreased marine productivity caused by elevated sea-surface temperatures resulted in subsistence stress that allowed an elite population to control critical resources, labor, and key technologies, resulting in the hierarchical social organization and a monetary system. Although the issue of elevated sea-surface temperatures has been questioned and the inference of marine degradation and subsistence stress has been challenged (e.g., Raab et al. 1995), the full emergence of Chumash cultural complexity around this time is generally accepted.

The predecessors of the ethnographic Chumash, which Rogers (1929) termed Canaliño, are associated with a diverse material culture that included triangular projectile points and elaborate industries related to the production of flaked stone tools, steatite vessels, shell beads and ornaments, and plank canoes. This recent prehistoric period saw a gradual increase in the use of marine resources, fish and sea mammals, and the development of more complex political and economic systems, including a money economy, during the Middle and Late periods of Channel area prehistory (Arnold 1992; King 1990; Landberg 1965; Rogers 1929; Wallace 1955). Thus, there is clear evidence for long-term, in-place cultural development in the Santa Barbara Channel region.

2.3 ETHNOGRAPHIC SETTING

The Project lies within traditional Chumash Indian territory, which extended along the coast from roughly Malibu Canyon, northward to San Luis Obispo, and from the Northern Channel Islands eastward to the edge of the San Joaquin Valley (Grant 1978a:505). The term Chumash came into use during the twentieth century when Kroeber (1925) extended its linguistics-derived use to include ethnic territory (Johnson and McLendon 1999; Klar et al. 1999). The Project area falls within the range of the Ventureño Chumash (Grant 1978b:518–519), comprising the southernmost range of the Chumash and encompassing much of present-day Ventura County and adjacent southwestern Los Angeles County (see Grant 1978a:Fig. 1).

Initial direct European contact with the Chumash began in 1542 during Juan Rodriguez de Cabrillo's explorations along the coast (Heizer 1972). In addition to accounts of this and other early expeditions, sources of information about the contact-era Chumash include analyses of mission records, ethnographic and linguistic records made during the nineteenth and early twentieth centuries, and archaeological investigations of sites occupied around the time of European contact (Grant 1978a, 1978b).

Early Spanish expeditions to the Santa Barbara Channel mainland described large coastal villages with as many as 800 to 1,000 residents and characterized by sweat lodges, semi-subterranean houses, communal dance areas, cemeteries, and other features that have also been documented archaeologically (Erlandson 1993; Gamble 1991). Interior mainland areas were less densely populated, but also included a number of larger communities (Johnson 1988).

Contact-era hunter-gatherer Chumash culture included a wide array of subsistence foods; well-developed technology and elaborate crafts; and an active exchange system linking island, mainland coast, and interior zones (King 1976). The ocean-going plank canoe, or *tomol*, figured prominently in subsistence and cross-channel transportation. Specialists in canoe building techniques and other crafts belonged to one of the guild-like fraternal organizations that linked ritual and occupational specialists (Arnold 2001). Chumash political traditions were centered on permanent, largely autonomous settlements. The strength of inter-village ties varied and appears to have depended at least in part on the community's size, geographical position relative to trade routes and social networks, and the level of personal influence wielded by individual political leaders. Shifting patterns of inter-village animosities and alliances are also recorded (Johnson and McLendon 1999:29–35).

The material culture of the Chumash included a wide array of utilitarian items such as fishing nets, woven mats, baskets, shell and bone fishhooks, cooking slabs (some imported from Catalina Island), digging stick weights, and projectile points; finely made ornaments and bead types used in a variety of social, economic, and political contexts; and charmstones and other objects used for ritual and ceremonial purposes. Stone bowls, mortars, and other utilitarian objects were sometimes decorated with asphaltum inlaid with shell beads (Hudson and Blackburn 1982–1987).

Contact-era villages in the vicinity of the Project area were long-term, permanent settlements, many of which have been correlated with particular archaeological sites. This inland area was first visited by non-Indians in 1770 when the Portolá expedition was making its return trip, southward from the San Francisco Bay and Monterey areas, to San Diego. Additionally, most mission baptisms of Chumash from this area are recorded at San Buenaventura (founded in 1782) and San Fernando (founded in 1797).

Introduced European diseases took heavy tolls on the Native American populations. After 1770, survivors from some towns left to join larger communities associated with cattle ranches of Spanish settlers. Ventureño Chumash of the Santa Monica Mountains were among the last mainland populations to join the missions. However, by 1809, a majority of them had relocated to the missions at San Buenaventura and San Fernando (King and Johnson 1999).

2.4 HISTORICAL SETTING

Members of the Portolá expedition in 1770 were among the earliest Europeans to travel through the area and record their observations, ushering in the historic era for this region. The mission system was established by the Catholic Church in cooperation with the Spanish government as a program of settlement and development (colonization) that spread from Baja California to Alta California (Starr 2005). The San Buenaventura Mission was constructed in 1782 as the ninth of 21 missions in Alta California, and is the closest mission to the community of El Rio. The missions were situated one-day's travel apart and were connected by El Camino Real, or the "Kings Highway."

Mexico achieved independence from Spain in 1821. The mission system was continued under Mexican rule until 1833, when the Secularization Act was passed (Cleland 1978). Under this act, mission ownership was withdrawn from the Catholic Church, and land grants, also known as *ranchos*, were distributed amongst the prominent and wealthy families of Mexico and to reward soldiers for their service during the revolution. The agricultural-based economy established under the Spanish/Catholic Church regime continued to prosper. Between 1835 and 1846, more than 600 land grants in Alta California were recorded with the Mexican government. Juan M. Sanchez received a land grant in 1837, which included the Project area, creating the Rancho Santa Clara del Norte. The Rancho Santa Clara del Norte extended from the Santa Clara River south to present-day Camarillo.

Following the 1848 transfer of California to the United States with the Treaty of Guadeloupe Hidalgo, *rancho* life continued relatively undisturbed in the general region of the Project area. Expansion of farming began in the 1870s with introduced new crops such as lima beans, sugar beets, fruit and nut trees, berries, cut flowers, and landscape nurseries.

Community of El Rio

El Rio is an unincorporated community in Ventura County initially founded as the town of New Jerusalem in 1876. Simon Cohn, a Jewish immigrant from Germany, acquired a seven-acre parcel of land at the intersection of the Conejo Road (later to be called Ventura Boulevard/ State Route 101) and the Hueneme and Saticoy Road (later to be called Vineyard Avenue) from Christian Borchard in 1876. Cohn had initially come to the region with his brother, Morris Cohn, and had worked at his brother's general store in the nearby town of Saticoy before building his own store on his newly acquired land (San Buenaventura Research Associates 2014).

When Simon Cohn opened his first store, no other commercial buildings were located in the area, just scattered farmhouses. Cohn gradually acquired land on three of the four corners at the intersection of Vineyard Avenue and Ventura Boulevard. Two of Cohn's brothers built businesses at this intersection as well. The town began to grow through the 1870s and into the 1880s. In 1882 the first post office was opened in New Jerusalem with Simon Cohn serving as the postmaster. In 1895, the post office shortened the name of the town to Jerusalem, and a few months later in the same year, the name was changed to Elrio (all one word). In 1905 the post office name was finally changed to El Rio. While the post office closed in 1911, the community had adopted the name El Rio (San Buenaventura Research Associates 2014).

El Rio School

The Rio School District was formed in 1885 with the establishment of a school building at Schiappa Prieta Ranch. Between two and eight students first attended the school, but enrollment quickly grew. By 1895 the local demand for schooling outgrew the building, which had been relocated and expanded, and a two-acre site was purchased to build a new school. The building was expanded in 1929, but no new schools were built within the district until the construction of the Neyland Acres School in 1941. In 1949 El Rio School was constructed. The Neyland Acres School and El Rio School were the only two schools within the district until the Rio Plaza School was constructed in 1954 and the Rio Real School was constructed in 1957. The school district now has nine campuses that include elementary and middle schools; average enrollment is 500-700 students in the elementary schools and 700 students in the middle schools (Rio School District 2017).

El Rio School was constructed in 1949 to address the growing enrollment needs of the El Rio School District. The campus was expanded in 1952 and 1953 with the addition of more classrooms, a multi-purpose building, and other renovations and additions. By 1967 the campus was comprised of six buildings (NETROnline 2017). One of the classroom buildings was destroyed by a fire in 1984, but was replaced the following year with a larger building at a different location on the campus (Rio School District 2017). The location of the destroyed classroom building was repurposed as a parking lot. The school was closed in 2007 to be used as office space for Rio School District Maintenance staff (Leung 2014).

3
CULTURAL RESOURCE LITERATURE AND RECORDS SEARCH

A cultural resource literature and records search was conducted on July 25, 2017 at the SCCIC, housed at the California State University, Fullerton. The records search included the entire Project area plus a 1-mile search radius (referred to as the Project "study area"). The objective of this records search was to determine whether any prehistoric or historical cultural resources have been recorded previously within the study area. Additional sources consulted during the archaeological literature and records search include the National Register of Historic Places, the Office of Historic Preservation Archaeological Determinations of Eligibility, and the Office of Historic Preservation Directory of Properties in the Historic Property Data File. There are no listed historic properties, historical resources, or historic landmarks recorded within the Project study area.

3.1 PREVIOUS INVESTIGATIONS

Results of this search indicate that no less than 37 investigations have been conducted previously within the Project study area; one of the previous investigations (VN-1102) encompassed the entire Project area (Table 3-1).

Table 3-1
Previous Cultural Studies within the Project Study Area

SCCIC Document #	Date	Author(s)	Title
VN-00082	1977	Lopez, Robert	An Archaeological Survey of a Proposed Subdivision of the Bowman Merritt Ranch, Upper Ojai, Ventura County, California
VN-00347	1981	Hawthorne, Janice G.	Cultural Resource Reconnaissance and Impact Evaluation of a 14+ Mile Route for the Proposed Pumping Trough Pipeline and Lower Aquifer System Wells, County of Ventura, California
VN-00458	1985	Bissell, Ronald M.	Cultural Resources Evaluation. Oxnard Town Center Site, Ventura County, California
VN-00466	1985	Bissell, Ronald M.	The Cultural Resources of the Rose-Santa Clara Corridor Property, City of Oxnard, Ventura County, California
VN-00572	1988	Dames and Moore	Phase 1 Cultural Resources Survey Fiber Optic Cable Project, Burbank to Santa Barbara, California for Us Sprint Communications Company
VN-00860	1976	Lopez, Robert	An Archaeological Survey of the Area of the Proposed Vineyard Office Building El Rio, Ventura County, California
VN-00958	1991	Becker, Kenneth M.	A Cultural Resources Reconnaissance of the Del Norte Blending Station Pipeline, Approximately Seven Linear Miles in Oxnard and Camarillo, Ventura County, California
VN-00972	1990	Singer, Clay A. and John E. Atwood	Cultural Resources Survey and Impact Assessment for the Rose Avenue/Highway 101 in Terchange El Rio, Ventura County California

Table 3-1
Previous Cultural Studies within the Project Study Area

SCCIC Document #	Date	Author(s)	Title
VN-00974	1990	Singer, Clay A., J. E. Atwood, K. M. F. Laustsen, and J. SUMAMAIT	Archaeological Monitoring for a Buried Telephone Conduit Along Vineyard Avenue in the Community of El Rio, Ventura County, California
VN-01040	1982	Stelle, Kenneth and Albert Gallardo	For Improvement of the Operational Characteristics of Route 101, the Ventura Freeway in Los Angeles and Ventura Counties, Between Route 405 in Los Angeles, and the Santa Clara River in Oxnard
VN-01102*	1977	Singer, Clay A.	Preliminary Cultural Resource Survey and Potential Impact Assessment for Thirteen Areas in Southern Ventura County, California
VN-01153	1991	Peak and Associates, Inc.	Class 3 Cultural Resource Assessment of the Proposed Carpinteria and Southern Reroutes, Santa Barbara, Ventura, and Los Angeles Counties, California
VN-01265	1992	Reed, L.W.	Consolidated Report: Cultural Resources Studies for the Proposed Pacific Pipeline Project
VN-01323	1994	Whitley, David S. and Joseph M. Simon	Phase 1 Archaeological Survey and Cultural Resources Assessment for the North El Rio Drain Project, Ventura County, California
VN-01520	1982	Romani, John F.	Archaeological Survey Report for the 07-LA/VEN 101 Project P.M. 17.1-38.2/0.0-22.7 07351 - 076620
VN-01539	1978	Huey, Gene	Phase 1 Archaeological Survey VEN 101 P.m. 4.1/23.0 Freeway Widening and Pavement Reconstruction
VN-01711	1993	Romani, John F.	Improvements to US Highway 101 Between Vineyard Avenue and Johnson Drive, in the Cities of Oxnard and San Buenaventura, Ventura County, Ca Supplemental Archaeological Survey Report
VN-01730	1989	Bissell, Ronald M.	Historic Property Survey Report US Highway 101 Improvements Between Vineyard Avenue in Oxnard to Johnson Drive in Ventura
VN-01878	2000	Iverson, Gary	Proposed Bridge Replacement on Interstate Route 101: Vineyard Avenue to Johnson Drive
VN-01925	2000	Maki, Mary K.	Phase I Archaeological Survey of Approximately 15.8 Linear Miles for the El Rio Sewer Project, El Rio, Ventura Co.
VN-02006	2002	Lopez, Robert	An Archaeological Reconnaissance of the Three Acres Involved in the Proposed Expansion of the Honda of Oxnard Automobile Agency Within the City of Oxnard, Ventura County, California
VN-02007	2001	Mason, Roger D.	Cultural Resources Record Search and Literature Review Report for an AT&T Telecommunications Facility: Number Ov71 Esplanade Drive City of Oxnard Ventura County, California
VN-02012	1999	W & S Consultants	Phase I Archaeological Survey for the Rio Del Valle Middle School Gymnasium Study Area, Ventura County, California
VN-02402	2006	Billat, Lorna	SCE Gonzales Substation/la-0902a
VN-02431	2003	Simon, Joseph M.	Phase I Archaeological Survey for 300 West Straube Street, Oxnard, Ventura County, California

Table 3-1
Previous Cultural Studies within the Project Study Area

SCCIC Document #	Date	Author(s)	Title
VN-02440	2005	Shepard, Richard S.	Phase I Cultural Resources Assessment: Santa Clara Mortuary and Mausoleum Project, Oxnard, Ventura County, California
VN-02458	2003	Maki, Mary K.	Phase I Archaeological Survey of Approximately 1.5 Linear Miles for the Oxnard Boulevard Bicycle and Pedestrian Facilities Project Oxnard, Ventura County, California
VN-02464	2002	Simon, Joseph M.	Phase I Archaeological Survey of 1701 Auto Center Drive, City of Oxnard, Ventura County, California
VN-02504	2006	Arrington, Cindy and Nancy Sikes	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and Ii
VN-02831	2010	Schmidt, James J.	SCE Maulhardt 16kV DSP Project Archaeological Monitoring Program: Southwest Corner of Vineyard Avenue and Myrtle Street, City of Oxnard, California
VN-02933	2011	Toren, A. George	Phase I Archaeological Investigation for the City of Oxnard Recycled Water Project New Alignment
VN-02978	2004	Sharpe, Jim and Durio, Lori	Groundwater Recovery Enhancement and Treatment (GREAT) Program, Cultural Resources Inventory Report
VN-02986	2004	Unknown	Environmental Analysis Onshore Component of BHP Billiton LNG International Inc. Cabrillo Port Project
VN-03094	2002	Foster, John A.	Historic Resource Evaluation Report- Mason Avenue At-Grade Crossing and Safety Improvements Project, Los Angeles City, California
VN-03102	2009	Stewart, Noah	relinquish State-owned right of way to the City of Oxnard - State Route 1 (VEN1) from Pleasant Valley Road (PM 15.1) to the intersection of VEN 1 and US 101
VN-03111	2012	Bonner, Wayne and Crawford, Kathleen	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00267A (VY201 City National Bank), 500 East Esplanade Drive, Oxnard, Ventura County, California
VN-03241	2010	Anonymous	Summary of the Artifact Assemblage from Site P-56-001304, Shea Homes Riverpark Project, City of Oxnard, Ventura County, California

* - Previous studies that intersect the Project area

3.2 RESOURCES REPORTED WITHIN 1 MILE OF THE PROJECT AREA

The records search also indicated that eight cultural resources have been identified previously within the study area, including one prehistoric archaeological site (a partial, isolated burial) and seven built-environment resources (single family residences, commercial properties, and a bridge). None of the previously identified cultural resources are within the Project area. A brief description of each of the resources is provided in Table 3-2 below.

Table 3-2
Cultural Resources within the Project Study Area

Primary	Trinomial	Resource Type	Description
56-001304	CA-VEN-1304	Archaeological Site	Partial, isolated prehistoric Native American burial
56-150007		Built-environment	Doud House, single family residence constructed in 1919; 1671 Ventura Blvd
56-152253		Built-environment	Single family residence constructed circa 1935; 301 Myrtle Street
56-152254		Built-environment	Single family residence constructed circa 1935; Fattarelli property; 266 Myrtle Street
56-152869		Built-environment	Commercial property constructed circa 1965; 2611 Wagon Wheel Road
56-152870		Built-environment	Single family residence constructed circa 1950; 2432 Colonia
56-152871		Built-environment	Wagon Wheel Motel and Restaurant, commercial property constructed circa 1945; 2751 Wagon Wheel Road
56-153062		Built-environment	El Rio Underpass; bridge

4
NATIVE AMERICAN CONSULTATION

Æ contacted the NAHC on August 2, 2017, for a review of the Sacred Lands File to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity) are present within or adjacent to the Project area. The NAHC responded on August 4, 2017, stating that the records search failed to indicate the presence of Native American traditional cultural places within the immediate Project area. The NAHC suggested that six Native American individuals and organizations be contacted to solicit information regarding cultural resource issues related to the proposed Project. These individuals and organizations were contacted by email or letter on August 11, 2017, with the exception of one individual whose contact information only included a phone.

Individuals/organizations contacted at the recommendation of the NAHC include:

- Kenneth Kahn, Chairperson of the Santa Ynez Band of Chumash Indians
- Julie Lynn Tumamait-Stenslie, Chair of the Barbareno/Ventureno Band of Mission Indians
- Patrick Tumamait (Chumash)
- Mia Lopez (Coastal Band of Chumash Nation)
- Eleanor Arrellanes, Barbareno/Ventureno Band of Mission Indians
- Raudel Joe Banuelos, Jr., Barbareno/Ventureno Band of Mission Indians

The NAHC did not provide a mailing address or email address for Ms. Mia Lopez. As such, Ms. Lopez was contacted by telephone on August 14, 2017. A message was left for Ms. Lopez requesting to speak with her regarding the Project. The Sacred Lands File search request letter, the response from the NAHC including the list of suggested contacts, an example of the request for information letter, and the responses received are included in Appendix A.

Æ conducted follow-up telephone calls with the Native American groups and individuals on August 29, 2017. As a result of this effort, a response was received from only one tribal group, the Santa Ynez Band of Chumash Indians. The Santa Ynez Band of Chumash Indians deferred to the tribes local to the Oxnard area, specifically the Barbareno/Ventureno Band of Mission Indians.

A table of responses summarizing consultation with Native American groups and/or individuals consulted is presented in Appendix A.

5
SURVEY METHODS AND RESULTS

5.1 SURVEY METHODS

Æ archaeologist Gena Granger performed an intensive pedestrian survey of the approximately 10-acre Project area on August 10, 2017. The survey was conducted by walking parallel transects spaced at 10- to 15-meter (33- to 50-feet) intervals, when possible. All areas likely to contain or exhibit archaeologically or historically sensitive cultural resources were inspected carefully to ensure that visible, potentially significant cultural resources were discovered and documented. Additionally, the surveyor investigated any unusual landforms, contours, soil changes, features (e.g., road cuts, drainages), and other potential cultural site markers. A Daily Work Record was completed that documented survey personnel, hours worked, weather, ground surface visibility, vegetation, soils, exposure/slope, topography, natural depositional environments, and any evidence of cultural materials.

For purposes of this study, *cultural resources* are defined as any location that contains material culture greater than 45 years old. *Built-environment resources* are those that are associated with buildings (e.g., house, barns, or sheds), structures (e.g., roads, canals, or transmission lines), and objects (e.g., boundary markers). An archaeological *site* is generally a locus of previous human activity at which the preponderance of evidence suggests repeated and patterned use over time, or multiple classes of activities. In contrast, an *isolated find* refers to one or more culturally modified and transportable objects representing a single activity, locus, or event that is not found in the context of a site as defined above. In order for the material culture to be considered important and/or significant from an archaeological perspective, the material culture should retain some degree of integrity, as the contextual information is paramount in providing valuable insight and/or advancements in our understanding of prehistoric and historical human culture.

5.2 SURVEY RESULTS

The Project area consists of the former El Rio Elementary School campus and includes eight standing buildings, paved walkways, two parking lots, and a large vacant field that appears to have been previously utilized as a playground and ball field for the school. Ground visibility in the immediate vicinity of the structures and parking lots was limited due to the existing hardscapes. In contrast, ground visibility within the vacant field was very good and was composed of silty, gray soils which were likely imported fill deposits; no native soils were observed within the area.

One built-environment resource, the El Rio School campus, was identified and documented within the Project area. A description of the school campus is provided below and the Department of Parks and Recreation (DPR) forms that document the resource are attached in Appendix B. No historical or prehistoric archaeological materials or features were noted within the survey area.

Figure 5-1 Overview of the Project area (school buildings in the distance); view to the northwest

Figure 5-2 School Building in the Project area; view to the southeast

5.2.1 El Rio School Campus

The El Rio School campus is comprised of five academic and administrative buildings located on APN 145-0-232-010. The campus was initially constructed in 1949 with a second major phase of construction between 1950 and 1952. The campus has undergone several changes over time, including the loss of a building due to fire and the construction of additional buildings. Building A, Building B, Building C, Building D, and Building F were all erected between 1949 and 1952. In addition to the historic period buildings, the property includes athletic fields, covered walkways, landscape elements such as paved walkways and benches, and non-historic buildings including the 1998 classroom wing (Building E).

The buildings are all utilitarian in design and display no distinctive features. The campus features mature trees, landscaped vegetation, athletic fields, covered walkways, and hardscape elements including parking lots and sidewalks. The following are historic-period buildings that are potential contributors to the district:

Building A is a one-story utilitarian style administrative building constructed between 1949 and 1952. The concrete building features a flat roof and a rectangular plan. The primary entrance is on the west elevation beneath a covered walkway that connects to Building F (Figure 5-3). The north elevation features double hung and multi-pane windows with security bars. The east elevation features no fenestration or doors.

Figure 5-3 North and west elevations of Building A, facing southeast.

Building B is a two-story utilitarian style cafeteria/auditorium constructed of concrete between 1949 and 1952. It has an irregular plan with a low pitched front gabled roof and a large decorative grid pattern. The west elevation features no fenestration. An off-center entrance on the south elevation is recessed beneath a cantilevered overhang. An off-center entrance on the north elevation is similarly recessed beneath a cantilevered overhang A building extension is located on the south elevation. A portion of the extension is two stories then steps down to one story. The extension is constructed of concrete and features a flat roof. The south elevation of the extension features entrance doors, a band of double-hung windows with security bars, and exhaust vents on the second story. The east elevation features three picture windows on the extension, three picture windows with security bars and double entrance doors beneath a flat roof overhang supported by posts (Figure 5-2).

Building C is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation (Figure 5-4). A flat-roofed one-story pop out on the northwest corner of the building forms a partial cantilevered overhang. There are two entrance doors and windows covered with plywood. Above the flat roof on the main building is a band of windows with security bars. The remainder of the north elevation features regularly spaced doors. The east elevation features a flat roof overhang supported by posts and two sets of windows on the second floor. The south elevation features regularly spaced doors and windows beneath the overhang and a covered walkway that connects to Building D.

Figure 5-4 South and east elevations of Building C, facing northwest.

Building D is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. The north elevation features regularly spaced doors. The east and west elevations feature flat roof overhangs supported by posts and two sets of windows on the second floor; the east elevation features a covered walkway that connects to Building C. The south elevation features regularly spaced doors and windows beneath the overhang.

Building F is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. The north elevation features regularly spaced doors and windows and a covered walkway that connects to Building A (Figure 5-6). The west elevation features a flat roof overhang supported by posts and two sets of windows on the second floor. The south elevation features regularly spaced doors and windows beneath the overhang.

Figure 5-5 North and east elevations of Building F, facing southwest.

Building E is a non-historic building constructed in 1985. Additional non-historic elements include a portable classroom and a utility shed.

6
RESOURCE EVALUATION

This study identified and documented one historical cultural resource, the former El Rio School campus, within the Project area. To evaluate the significance of this cultural resource, data obtained during the fieldwork were supplemented with archival information on the property. Generally, a cultural resource is considered historically significant if it is 45 years old or older, meets the requirements for listing on the CRHR under any one of the criteria defined in 14 CCR § 15064.5 (see Section 1.2.1), and possesses integrity of location, design, setting, materials, workmanship, feeling, and association.

6.1 EL RIO SCHOOL CAMPUS

The El Rio School campus was initially constructed in 1949 with a second major phase of construction between 1950 and 1952. The campus has undergone several changes over time, including the loss of a building due to fire and the construction of additional buildings.

While the school was initially founded in 1949, it is not the earliest school constructed by the Rio School District or among the earliest schools constructed in the area. Research has yielded no information to suggest that significant events related to the history of the United States, California, or Oxnard are directly associated with this school, nor are any significant changes to education or school administration. As such, no information has been found to suggest that the school is directly associated with historical events of importance in local, state, or national history (CRHR Criterion 1).

While many students have attended the school, and there have been many faculty members over the years, the research does not suggest that any are persons of historical significance or that the campus is directly associated with people of state and national significance (CRHR Criterion 2).

The school campus is utilitarian in design and is essentially similar to other schools constructed in the mid-twentieth century throughout the United States. The design and layout of the school do not represent any dramatic departure from traditional school design, and research has yielded no information regarding the architect or builder of the campus; however, it is unlikely that this represents the work of a master (CRHR Criterion 3).

Finally, the El Rio School campus has not yielded and is unlikely to yield archaeological information important to the study of local, state, or national history (CRHR Criterion 4). Given these considerations, the El Rio School campus meets none of the CRHR significance criteria and is not considered a historical resource under CEQA.

7
MANAGEMENT RECOMMENDATIONS

Æ conducted an intensive pedestrian survey of the Project area and identified and documented one historical cultural resource. As noted in the previous section, the El Rio School campus, is not considered eligible for listing on the CRHR. No further management is recommended for this resource, as it does not meet criteria for listing on the CRHR.

The intensive pedestrian survey of the Project area failed to identify any prehistoric or historic archaeological resources; however, the records search indicated that an isolated, partial burial was uncovered while excavating for a storm drain adjacent to Vineyard Avenue less than a quarter mile from the Project area (Kirkish 2010). As such, there is potential to encounter subsurface cultural deposits within the Project area. Given the potential to discover archaeological deposits in subsurface contexts, Æ recommends that a qualified archaeologist monitor all Project-related ground-disturbing activities.

In the unlikely event that potentially significant archaeological materials are encountered during construction, all work must be halted in the vicinity of the discovery until a qualified archaeologist can visit the site and assess the significance of the finds. As well, Health and Safety Code § 7050.5, State CEQA Guidelines 15064.5(e), and Public Resources Code (PRC) § 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, the Ventura County Coroner must be notified within 24 hours of the discovery of potentially human remains. The Coroner must then determine within two working days if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she must contact the NAHC by phone within 24 hours. The NAHC then designates a Most Likely Descendant (MLD) with respect to the human remains within 48 hours of notification. The MLD will then have the opportunity to recommend to the Project proponent means for treating or disposing of, with appropriate dignity, the human remains and associated grave goods within 24 hours of notification. Finally, if the Project area is expanded to include areas not covered by this or other recent cultural resource investigations, additional cultural resource studies may be required.

8
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APPENDIX A

Native American Coordination

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

August 4, 2017

Roberta Thomas
Applied EarthWorks

Email to: rthomas@appliedearthworks.com

RE: Meridian – Rio Urbana Mixed Use Project, Ventura County

Dear Ms. Thomas,

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not preclude the presence of cultural resources in any project area. Other sources for cultural resources should also be contacted for information regarding known and/or recorded sites.

Enclosed is a list of Native Americans tribes who may have knowledge of cultural resources in the project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn

Steven Quinn
Program Analyst

Native American Heritage Commission
Native American Contacts
8/4/2017

Santa Ynez Band of Chumash Indians
Kenneth Kahn, Chairperson
P.O. Box 517 — Chumash
Santa Ynez , CA 93460
kkahn@santaynezchumash.org
(805) 688-7997
(805) 686-9578 Fax

Barbareno/Ventureno Band of Mission Indians
Julie Lynn Tumamait-Stennslie, Chair
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Ojai , CA 93023
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(805) 646-6214

Barbareno/Ventureno Band of Mission Indians
Patrick Tumamait
992 El Camino Corto — Chumash
Ojai , CA 93023
(805) 216-1253 Cell

Coastal Band of the Chumash Nation
Mia Lopez
, — Chumash
(805) 324-0135

Barbareno/Ventureno Band of Mission Indians
Eleanor Arrellanes
P.O. Box 5687 — Chumash
Ventura , CA 93005
(805) 701-3246

Barbareno/Ventureno Band of Mission Indians
Raudel Joe Banuelos, Jr.
331 Mira Flores Court — Chumash
Camarillo , CA 93012
(805) 427-0015

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessments for the proposed
Meridian – Rio Urbana Mixed Use Project, Ventura County.

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Date: August 2, 2017

Project: Meridian – Rio Urbana Mixed Use Project (AE #3721)

County: Ventura

USGS Quadrangle Name: Oxnard

Township __ Range __ Section(s) (sections? Landgrants?) Santa Clara del Norte and Rio de Santa Clara Landgrants

Company/Firm/Agency: Applied EarthWorks, Inc.

Contact Person: Roberta Thomas

Street Address: 133 N. San Gabriel Blvd., Suite 201

City: Pasadena Zip: 91107

Phone: (626) 578-0119

Fax:

Email: rthomas@appliedearthworks.com

Project Description:

The proposed Project would include demolition of the existing uses (former location of El Rio Elementary School Campus) to allow the construction of a new mixed-use development which includes 182 condominium residential units and a 15,000-square foot office building containing the Rio School District Administrative Offices. There will be ground disturbance associated with the Project. Applied EarthWorks, Inc. has been retained to conduct a cultural resource investigation of the Rio Urbana Mixed Use Project in accordance with the California Environmental Quality Act.

Applied EarthWorks Inc.

133 N. San Gabriel Blvd., Suite 201
Pasadena, CA 91107-3414
(626) 578-0119

August 11, 2017

Kenneth Kahn, Chairperson
Santa Ynez Band of Chumash Indians
P.O. Box 517
Santa Ynez, CA 93460
Transmitted via email to kkahn@santaynezchumash.org

Re: Cultural Resource Investigation for the Rio Urbana Mixed Use Development Project, Ventura County, California

Dear Mr. Kahn,

On behalf of Meridian Consultants, LLC, Applied EarthWorks, Inc. (Æ) is conducting a cultural resource study, in compliance with the California Environmental Quality Act (CEQA), for the proposed Rio Urbana Mixed Use Development Project (Project) near the city of Oxnard, in Ventura County, California. The Project proposes to develop a new mixed-use development which includes residential units and an office building containing the Rio School District Administrative Offices. The Project area is depicted on the Oxnard, Calif. 7.5' USGS quadrangle map, within the Santa Clara del Norte and Rio de Santa Clara Landgrants (see attached map).

A cultural resource literature review and records search conducted at the South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton, indicates that no less than 37 cultural resource studies have been conducted within a one-mile radius of the Project area; one of these studies encompasses the entire Project area. The records search also indicated that eight cultural resources have been identified within a one-mile radius of the Project area; none of which have been recorded within the Project boundaries. These eight resources consist of seven historic-period built-environment resources and one prehistoric archaeological resource. The prehistoric archaeological resource is a partial, isolated burial.

Æ performed a cultural resource survey of the Project area on August 11, 2017. Close attention was paid to soils, vegetation, and natural and human-modified landforms. Naturally occurring rocks were inspected for any indication of prehistoric or historic human modification. During the survey, one historic-period built-environment resource (the former El Rio Elementary School campus) was identified. No prehistoric archaeological resources were identified as a result of the survey.

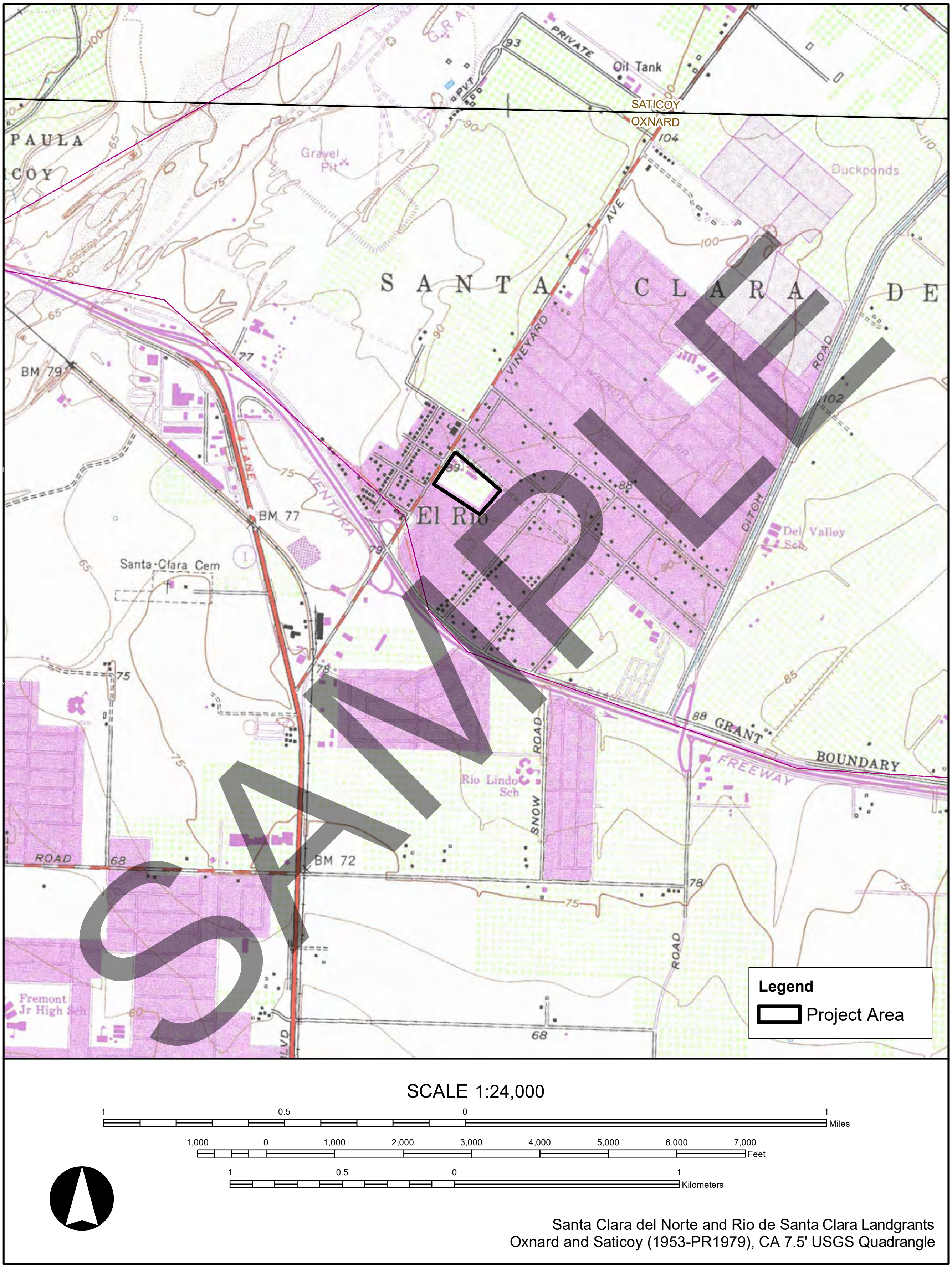
As part of the cultural resource assessment of the Project area, Æ requested a search of the Native American Heritage Commission's (NAHC's) *Sacred Lands File* on August 2, 2017. The NAHC responded on August 4, 2017 indicating that no Native American cultural resources were identified within the immediate Project vicinity. However, should your records show that cultural properties exist within or near the Project area shown on the enclosed map, please contact me at (626) 578-0119 (ext. 116) or via e-mail at rthomas@appliedearthworks.com. If I do not hear from you within in the next two weeks, I will contact you with a follow-up phone call or email.

Your comments are very important to us, and to the successful completion of this Project. I look forward to hearing from you in the near future. Thank you, in advance, for taking the time to review this request.

Respectfully yours,

Roberta Thomas

Roberta Thomas, M.A., RPA
Associate Archaeologist
Applied EarthWorks, Inc.



Records Search location map for the ***Rio Urbana Mixed-Use Project - AE3721*****.**

LIST OF NATIVE AMERICAN CONTACTS AND RECORD OF RESPONSES

Name	Date & Time of Correspondence	Responses
Kenneth Kahn Chairperson Santa Ynez Band of Chumash Indians	August 11, 2017 August 29, 2017	Scoping letter sent via email. Transferred to Freddy Romero as he is the one that usually responds to cultural resource inquiries. Mr. Romero asked if local tribes (specifically the Barbareno/Ventureno Band of Mission Indians) have been contacted and indicated that the Tribe defers to the local tribes in the Oxnard area unless those tribes specifically request their involvement.
Julie Lynn Tumamait-Stennslie Chairperson Barbareno/Ventureno Band of Mission Indians	August 11, 2017 August 29, 2017	Scoping letter sent via email. Voicemail message left on the number provided. No response received to date.
Patrick Tumamait Barbareno/Ventureno Band of Mission Indians	August 11, 2017 August 29, 2017	Scoping letter sent via USPS standard mail. Voicemail message left on the number provided. No response received to date.
Mia Lopez Coastal Band of Chumash Nation	August 14, 2017 August 29, 2017	No mailing or email address was provided for Ms. Lopez. A phone call was made and a voicemail message was left regarding the Project. Voicemail message left on the number provided. No response received to date.
Eleanor Arrellanes Barbareno/Ventureno Band of Mission Indians	August 11, 2017 August 29, 2017	Scoping letter sent via USPS standard mail. Voicemail message left on the number provided. No response received to date.
Raudel Joe Banuelos, Jr. Barbareno/Ventureno Band of Mission Indians	August 11, 2017 August 29, 2017	Scoping letter sent via USPS standard mail. Voicemail message left on the number provided. No response received to date.

APPENDIX B

Non-confidential DPR Form

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** (Assigned by recorder) El Rio School

P1. Other Identifier:
P2. Location: a. County Ventura □ Not for Publication ☒ Unrestricted
b. USGS 7.5' **Quad** Oxnard **Date** 1952 (photorevised 1979)
T. 2N , R. 22W; NE **¼ of** SE **¼ of** **Sec.** 27
c. Address: 2714 E. Vineyard Avenue **City** Oxnard **Zip** 93036
d. Zone 11S 300201 **mE/** 3790381 **mN/**
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Assessor's Parcel Number (APN) is listed as 145-0-232-010

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
The El Rio School campus is comprised of five academic and administrative buildings. The campus was initially constructed in 1949 with a second major phase of construction between 1950 and 1952. The campus has undergone several changes over time, including the loss of a building due to fire and the construction of additional buildings. Building A, Building B, Building C, Building D, and Building F were all constructed between 1949 and 1952. In addition to the historic period buildings, the property includes athletic fields, covered walkways, landscape elements such as paved walkways and benches, and non historic buildings including a 1998 classroom wing (Building E). The non historic period building is a non-contributing element to a possible district.

P3b. Resource Attributes (List all attributes and codes): HP15: Educational Buildings

P4. Resources Present: ☒ Building □ Structure □ Object □ Site ☒ District □ Element of District □ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) Photographs taken August 10, 2017. See continuation sheets for photographs.

P6. Date Constructed/Age and Source: 1949-1952
□ Prehistoric ☒ Historic □ Both

P7. Owner and Address: Rio School District, 2500 E. Vineyard Avenue, #100, Oxnard CA 93036

P9. Date Recorded: August 2017

P10. Type of Survey: ☒ Intensive □ Reconnaissance □ Other
Describe:

P11. Report Citation (Provide full citation or enter "none"): Roberta Thomas and Justin Castells. *Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Development Project*, Ventura County, California; Prepared by Applied EarthWorks, Inc., Pasadena, CA, for Meridian Consultants, LLC. 2017

Attachments: □ None ☒ Location Map _☒ Site Map ☒ Continuation Sheet □ Building, Structure, and Object Record □ Archaeological Record ☒ District Record □ Linear Feature Record □ Milling Station Record □ Rock Art Record □ Artifact Record □ Photograph Record Other:

***Resource Name or #:** (Assigned by recorder) El Rio School

D1. Historic Name: El Rio School **D2.Common Name:** El Rio Elementary School

***D3. Detailed Description** (Discuss overall coherence of the district, its setting, visual characteristics, and minor features. List all elements of district.):

El Rio School is located on APN 145-0-232-010 within the community of El Rio within the City of Oxnard's Sphere of Influence in Ventura County, CA. The potential district is comprised of several buildings. The buildings are all utilitarian in design and display with no distinctive features. The campus contains mature trees, landscaped vegetation, athletic fields, covered walkways, and hardscape elements including parking lots and sidewalks. The following are historic-period buildings that are potential contributors to the district:

Building A

Building A is a one-story utilitarian style administrative Building constructed between 1949 and 1952. The concrete building features a flat roof and a rectangular plan. The primary entrance is on the west elevation beneath a covered walkway that connects to Building F. The north elevation features double hung and multi-pane windows with security bars. The east elevation features no fenestration or doors.

Building B

Building B is a two-story utilitarian style cafeteria/auditorium constructed of concrete between 1949 and 1952. It has an irregular plan with a low pitched front gabled roof and a large decorative grid pattern. The west elevation features no fenestration. An off-center entrance on the south elevation is recessed beneath a cantilevered overhang. An off-center entrance on the north elevation is similarly recessed beneath a cantilevered overhang A building extension is located on the south elevation. A portion of the extension is two stories then steps down to one story. The extension is constructed of concrete and features a flat roof. The south elevation of the extension features entrance doors, a band of double-hung windows with security bars, and exhaust vents on the second story. The east elevation features three picture windows on the extension, three picture windows with security bars and double entrance doors beneath a flat roof overhang supported by posts.

Building C

Building C is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. A flat-roofed one-story pop out on the northwest corner of the building forms a partial cantilevered overhang. There are two entrance doors and windows covered with plywood. Above the flat roof on the main building is a band of windows with security bars. The remainder of the north elevation features regularly spaced doors. The east elevation features a flat roof overhang supported by posts and two sets of windows on the second floor. The south elevation features regularly spaced doors and windows beneath the overhang and a covered walkway that connects to Building D.

Building D

Building D is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. The north elevation features regularly spaced doors. The east and west elevations feature flat roof overhangs supported by posts and two sets of windows on the second floor; the east elevation features a covered walkway that connects to Building C. The south elevation features regularly spaced doors and windows beneath the overhang.

Building F

Building F is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. The north elevation features regularly spaced doors and windows and a covered walkway that connects to Building A. The west elevation features a flat roof overhang supported by posts and two sets of windows on the second floor. The south elevation features regularly spaced doors and windows beneath the overhang.

Building E is a non-historic building constructed in 1985. Additional non-historic elements include a portable classroom and a utility shed.

***D4. Boundary Description** (Describe limits of district and attach map showing boundary and district elements.):
El Rio School is entirely located within APN 145-0-232-010.

***D5. Boundary Justification:**
No buildings or structures associated with El Rio School are located outside the boundaries of APN 145-0-232-010.

D6. Significance: Theme Educational facilities **Area:** El Rio, CA

Period of Significance 1949-1967 **Property Type** school **Applicable Criteria** N/A
(Discuss district's importance in terms of its historical context as defined by theme, period of significance, and geographic scope. Also address the integrity of the district as a whole.)

Community of El Rio

El Rio is an unincorporated community in Ventura County initially founded as the town of New Jerusalem in 1876. Simon Cohn, a Jewish immigrant from Germany, acquired a seven acre parcel of land at the intersection of the Conejo Road (later to be called Ventura Boulevard/ State Route 101) and the Hueneme and Saticoy Road (later to be called Vineyard Avenue) from Christian Borchard in 1876. Cohn had initially came to the region with his brother, Morris Cohn, and had worked at his brother's general store in the nearby town of Saticoy before building his own store on his newly acquired land (San Buenaventura Research Associates 2014).

When Simon Cohn opened his first store, no other commercial buildings were located in the area, just scattered farmhouses. Cohn gradually acquired land on three of the four corners at the intersection of Vineyard Avenue and Ventura Boulevard. Two of Cohn's brothers built businesses at this intersection as well. The town began to grow through the 1870s and into the 1880s. In 1882 the first post office was opened in New Jerusalem with Simon Cohn serving as the postmaster. In 1895, the post office shortened the name of the town to Jerusalem, and a few months later in the same year, the name was changed to Elrio (all one word). In 1905 the post office name was finally changed to El Rio. While the post office closed in 1911, the community had adopted the name El Rio (San Buenaventura Research Associates 2014).

El Rio Elementary School

The Rio School District was formed in 1885 with the establishment of a school building at Schiappa Prieta Ranch. Between two and eight students first attended the school, but enrollment quickly grew. By 1895 the local demand for schooling outgrew the building, which had been relocated and expanded, and a two-acre site was purchased to build a new school. The building was expanded in 1929, but no new schools were built within the district until the construction of the Neyland Acres School in 1941. In 1949 El Rio School was constructed. The Neyland Acres School and El Rio School were the only two schools within the district until the Rio Plaza School was constructed in 1954 and the Rio Real School was constructed in 1957. The school district now has nine campuses that include elementary and middle schools; average enrollment is 500-700 students in the elementary schools and 700 students in the middle schools (Rio School District 2017).

El Rio School was constructed in 1949 to address the growing enrollment needs of the El Rio School District. The campus was expanded in 1952 and 1952 with the addition of more classrooms, a multi-purpose building, and other renovations and additions. By 1967 the campus was comprised of six buildings (NETROnline 2017). One of the classroom buildings was destroyed by a fire in 1984, but was replaced the following year with a larger building at a different location on the campus (Rio School District 2017). The location of the destroyed classroom building was repurposed as a parking lot. The school was closed in 2007 to be used as office space for Rio School District Maintenance staff (Leung 2014).

Evaluation

CRHR Criterion 1: No information has been found to suggest that El Rio School is directly associated with historical events of importance in local, state, or national history under CRHR Criterion 1. While the school was initially founded in 1949, it is not the earliest school constructed by the Rio School District or among the earliest schools constructed in the area. Research has yielded no information to suggest that significant events related to the history of the United States, California, or Oxnard are directly associated with this school, nor are any significant changes to education or school administration. The design and layout of the school does not represent any dramatic departure from traditional school design. Therefore, El Rio School is not eligible for inclusion of CRHR under Criterion 1.

CRHR Criterion 2: No information has been found to suggest that El Rio School is directly associated with the productive life of a person of importance in local, state, or national history under CRHR Criterion 2. While there have been many students to attend the school and many faculty members over the years, the research conducted does not suggest that any are persons of historical significance or that the campus is directly associated with people of state and national significance. Therefore, El Rio School is not eligible for inclusion of CRHR under Criterion 2.

CRHR Criterion 3: El Rio School does not appear to embody the distinctive characteristics of a type, period, region, or method of construction; represent the work of an important creative individual, or possess high artistic value. The school is utilitarian in design and is essentially similar to other schools constructed in the mid-twentieth century throughout the United States. Research has yielded no information regarding the architect or builder of the campus, however; it is unlikely that this represent the work of a master. Therefore, El Rio School is not eligible for inclusion of CRHR under Criterion 3.

CRHR Criterion 4: El Rio School does not meet CRHR Criterion 4 since it has not yielded and is unlikely to yield information important in prehistory or history. This criterion is typically reserved for archaeological resources, ruins, or rare built-environments resources of which little is already known, that are considered to be the sole sources of historical data. Therefore, El Rio School is not eligible for inclusion of CRHR under Criterion 4.

***D7. References** (Give full citations including the names and addresses of any informants, where possible.):

Leung, Wendy
2014 "Rio Board to Pick Developer for Old School Site." Ventura County Star, May 27, 2014.

NETROnline
2017 Historic Aerials, 1967, 1978, 1994, 2005. https://www.historicaerials.com/viewer. Accessed 8.3.17.

Rio School District
2017 "About Rio School District." http://rioschools.org/district/district-history/. Accessed 8.3.17.

San Buenaventura Research Associates
2014 *Historic Context Statement and Reconnaissance Survey for the Eastern Oxnard Plain of Ventura County, CA*. Prepared for the County of Ventura Planning Division, December 2014

***D8. Evaluator:** Justin Castells, Applied EarthWorks, Inc., 3550 E. Florida Ave., Suite H, Hemet, CA 92544
Date of Evaluation: August 2017

State of California — The Resources Agency **DEPARTMENT OF PARKS AND RECREATION** **PRIMARY RECORD**		**Primary #** **HRI #** **Trinomial** **NRHP Status Code**
	Other Listings **Review Code** **Reviewer**	**Date**

Page 5 **of** 16 ***Resource Name or #:** (Assigned by recorder) Building A

P1. Other Identifier:

P2. Location: a. County Ventura ☐ Not for Publication ☒ Unrestricted

b. USGS 7.5' **Quad** Oxnard **Date** 1952 (photorevised 1979)

T. 2N , R. 22W; NE ¼ **of** SE ¼ **of** **Sec.** 27

c. Address: 2714 E. Vineyard Avenue **City** Oxnard **Zip** 93036

d. Zone 11S 300201 **mE/** 3790417 **mN/**

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Assessor's Parcel Number (APN) is listed as 145-0-232-010

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

Building A is a one-story utilitarian style administrative Building constructed between 1949 and 1952. The concrete building features a flat roof and a rectangular plan. The primary entrance is on the west elevation beneath a covered walkway that connects to Building F. The north elevation features double hung and multi-pane windows with security bars. The east elevation features no fenestration or doors.

P3b. Resource Attributes (List all attributes and codes): HP15: Educational Buildings

P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) Photographs taken August 10, 2017. See continuation sheets for photographs.

P6. Date Constructed/Age and Source: Between 1949 and 1952
☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address: Rio School District, 2500 E. Vineyard Avenue, #100, Oxnard CA 93036

P9. Date Recorded: August 2017

P10. Type of Survey: ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

P11. Report Citation (Provide full citation or enter "none"): Roberta Thomas and Justin Castells. *Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Development Project*, Ventura County, California; Prepared by Applied EarthWorks, Inc., Pasadena, CA, for Meridian Consultants, LLC. 2017

Attachments: ☐ None ☐ Location Map ☐ Site Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

North and west elevations of Building A, facing southeast

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 ***Resource Name or #:** (Assigned by recorder) Building B

P1. Other Identifier:

P2. Location: a. County Ventura ☐ Not for Publication ☒ Unrestricted
b. USGS 7.5' **Quad** Oxnard **Date** 1952 (photorevised 1979)
T. 2N , R. 22W; NE ¼ **of** SE ¼ **of** **Sec.** 27
c. Address: 2714 E. Vineyard Avenue **City** Oxnard **Zip** 93036
d. Zone 11S 300175 **mE/** 3790444 **mN/**
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Assessor's Parcel Number (APN) is listed as 145-0-232-010

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

Building B is a two-story utilitarian style cafeteria/auditorium constructed of concrete between 1949 and 1952. It has an irregular plan with a low pitched front gabled roof and a large decorative grid pattern. The west elevation features no fenestration. An off-center entrance on the south elevation is recessed beneath a cantilevered overhang. An off-center entrance on the north elevation is similarly recessed beneath a cantilevered overhang A building extension is located on the south elevation. A portion of the extension is two stories then steps down to one story. The extension is constructed of concrete and features a flat roof. The south elevation of the extension features entrance doors, a band of double-hung windows with security bars, and exhaust vents on the second story. The east elevation features three picture windows on the extension, three picture windows with security bars and double entrance doors beneath a flat roof overhang supported by posts.

P3b. Resource Attributes (List all attributes and codes): HP15: Educational Buildings

P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) Photographs taken August 10, 2017. See continuation sheets for photographs.

P6. Date Constructed/Age and Source: Between 1949 and 1952
☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address: Rio School District, 2500 E. Vineyard Avenue, #100, Oxnard CA 93036

P9. Date Recorded: August 2017

P10. Type of Survey: ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

P11. Report Citation (Provide full citation or enter "none"): Roberta Thomas and Justin Castells. *Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Development Project*, Ventura County, California; Prepared by Applied EarthWorks, Inc., Pasadena, CA, for Meridian Consultants, LLC. 2017

Attachments: ☐ None ☐ Location Map _☐ Site Map ☒ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

***Resource Name or #:** (Assigned by recorder) Building B

South and west elevations of Building B, facing northeast

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** (Assigned by recorder) Building C

P1. Other Identifier:

P2. Location: a. County Ventura ☐ Not for Publication ☒ Unrestricted
b. USGS 7.5' **Quad** Oxnard **Date** 1952 (photorevised 1979)
T. 2N , R. 22W; NE ¼ **of** SE ¼ **of** **Sec.** 27
c. Address: 2714 E. Vineyard Avenue **City** Oxnard **Zip** 93036
d. Zone 11S 300244 **mE/** 3790381 **mN/**
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Assessor's Parcel Number (APN) is listed as 145-0-232-010

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

Building C is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. A flat-roofed one-story pop out on the northwest corner of the building forms a partial cantilevered overhang. There are two entrance doors and windows covered with plywood. Above the flat roof on the main building is a band of windows with security bars. The remainder of the north elevation features regularly spaced doors. The east elevation features a flat roof overhang supported by posts and two sets of windows on the second floor. The south elevation features regularly spaced doors and windows beneath the overhang and a covered walkway that connects to Building D.

P3b. Resource Attributes (List all attributes and codes): HP15: Educational Buildings

P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) Photographs taken August 10, 2017. See continuation sheets for photographs.

P6. Date Constructed/Age and Source: Between 1949 and 1952
☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address: Rio School District, 2500 E. Vineyard Avenue, #100, Oxnard CA 93036

P9. Date Recorded: August 2017

P10. Type of Survey: ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

P11. Report Citation (Provide full citation or enter "none"): Roberta Thomas and Justin Castells. *Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Development Project*, Ventura County, California; Prepared by Applied EarthWorks, Inc., Pasadena, CA, for Meridian Consultants, LLC. 2017

Attachments: ☐ None ☐ Location Map ☐ Site Map ☒ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

South and east elevations of Building C, facing northwest

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**		**Primary #** **HRI #** **Trinomial** **NRHP Status Code**
	Other Listings **Review Code** **Reviewer**	**Date**

Page 11 **of** 16 ***Resource Name or #:** (Assigned by recorder) Building D

P1. Other Identifier:

P2. Location: a. County Ventura ☐ Not for Publication ☒ Unrestricted

b. USGS 7.5' **Quad** Oxnard **Date** 1952 (photorevised 1979)

T. 2N , R. 22W; NE ¼ **of** SE ¼ **of** **Sec.** 27

c. Address: 2714 E. Vineyard Avenue **City** Oxnard **Zip** 93036

d. Zone 11S 300245 **mE/** 3790356 **mN/**

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Assessor's Parcel Number (APN) is listed as 145-0-232-010

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

Building D is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. The north elevation features regularly spaced doors. The east and west elevations feature flat roof overhangs supported by posts and two sets of windows on the second floor; the east elevation features a covered walkway that connects to Building C. The south elevation features regularly spaced doors and windows beneath the overhang.

P3b. Resource Attributes (List all attributes and codes): HP15: Educational Buildings

P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) Photographs taken August 10, 2017. See continuation sheets for photographs.

P6. Date Constructed/Age and Source: Between 1949 and 1952
☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address: Rio School District, 2500 E. Vineyard Avenue, #100, Oxnard CA 93036

P9. Date Recorded: August 2017

P10. Type of Survey: ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

P11. Report Citation (Provide full citation or enter "none"): Roberta Thomas and Justin Castells. *Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Development Project*, Ventura County, California; Prepared by Applied EarthWorks, Inc., Pasadena, CA, for Meridian Consultants, LLC. 2017

Attachments: ☐ None ☐ Location Map ☐ Site Map ☒ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

North and east elevations of Building D, facing southwest

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

***Resource Name or #:** (Assigned by recorder) Building F

P1. Other Identifier:

P2. Location: a. County Ventura ☐ Not for Publication ☒ Unrestricted

b. USGS 7.5' **Quad** Oxnard **Date** 1952 (photorevised 1979)

T. 2N , R. 22W; NE ¼ **of** SE ¼ **of** **Sec.** 27

c. Address: 2714 E. Vineyard Avenue **City** Oxnard **Zip** 93036

d. Zone 11S 300201 **mE/** 3790381 **mN/**

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Assessor's Parcel Number (APN) is listed as 145-0-232-010

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

Building F is a two-story utilitarian style classroom building constructed between 1949 and 1952. The concrete building has a rectangular plan and a medium pitched gabled roof that extends into a covered walkway supported by posts on the south elevation. The north elevation features regularly spaced doors and windows and a covered walkway that connects to Building A. The west elevation features a flat roof overhang supported by posts and two sets of windows on the second floor. The south elevation features regularly spaced doors and windows beneath the overhang.

P3b. Resource Attributes (List all attributes and codes): HP15: Educational Buildings

P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) Photographs taken August 10, 2017. See continuation sheets for photographs.

P6. Date Constructed/Age and Source: 1959
☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address: Rio School District, 2500 E. Vineyard Avenue, #100, Oxnard CA 93036

P9. Date Recorded: August 2017

P10. Type of Survey: ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

P11. Report Citation (Provide full citation or enter "none"): Roberta Thomas and Justin Castells. *Phase I Cultural Resource Assessment for the Rio Urbana Mixed Use Development Project*, Ventura County, California; Prepared by Applied EarthWorks, Inc., Pasadena, CA, for Meridian Consultants, LLC. 2017

Attachments: ☐ None ☐ Location Map ☐ Site Map ☒ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

North and east elevations of Building F, facing southwest

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** (Assigned by recorder) El Rio School

***Drawn by:** J. Castells ***Scale:** 1 inch equals 150 feet ***Date of map:** August 2017

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

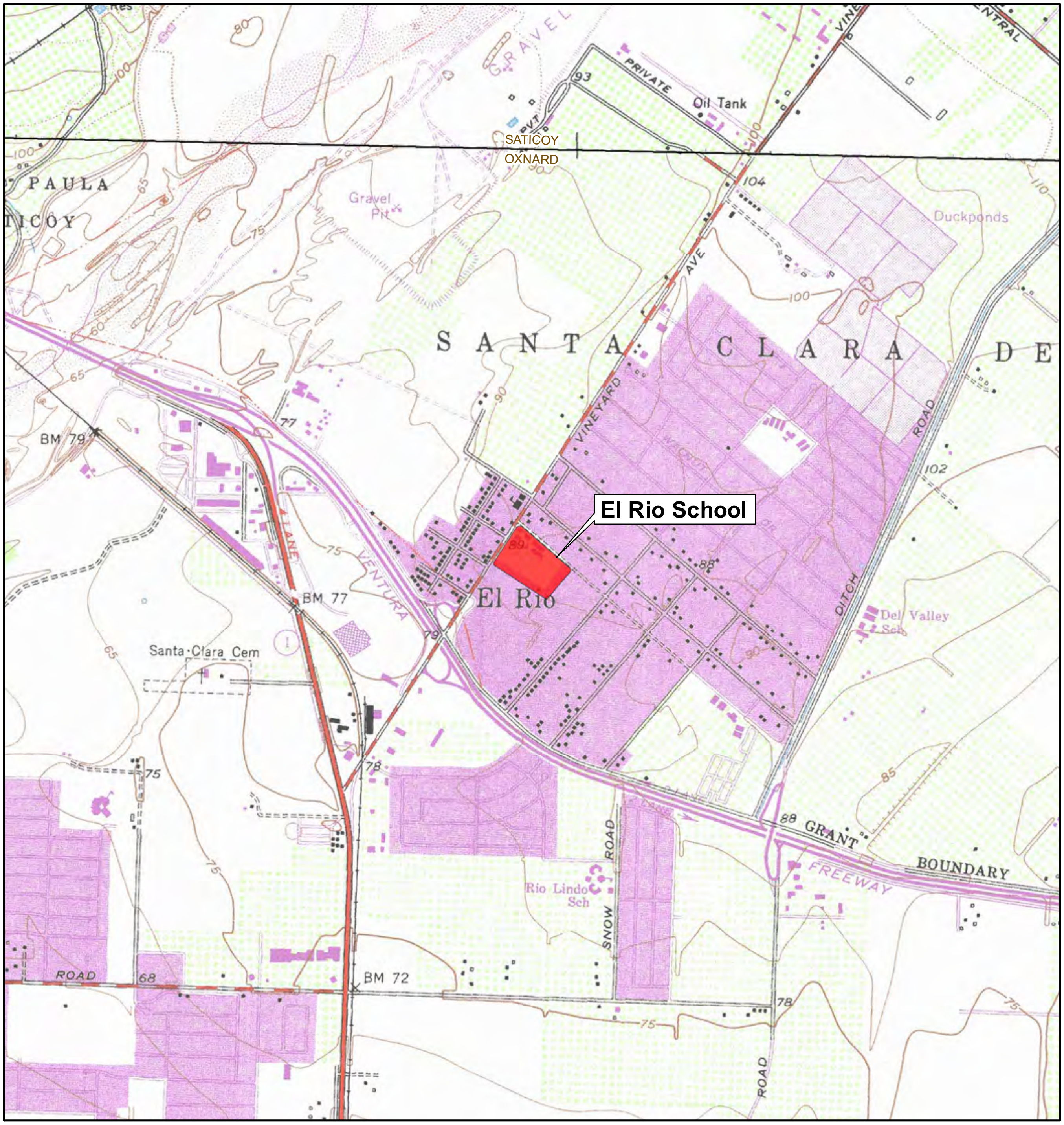
Primary #
HRI#
Trinomial

Resource Name or #: El Rio School

Scale: 1:24,000

Map Name: Saticoy (1951, photorevised 1967) and Oxnard (1949, photorevised 1967), CA, USGS 7.5' quadrangles

Date: 2017



SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

TRUE NORTH

Applied EARTHWORKS Inc.

133 N. San Gabriel Blvd., Suite 201
Pasadena, CA 91107-3414
(626) 578-0119

August 17, 2017

Mr. Christ Kirikian
Senior Environmental Scientist
Meridian Consultants, LLC.
910 Hampshire Road, Suite V
Westlake Village, California 91361

RE: Paleontological Resource Assessment for the Rio Urbana Mixed-Use Project, Ventura County, California

Dear Mr. Kirikian:

At the request of Meridian Consultants, LLC, Applied EarthWorks, Inc. (Æ) performed a paleontological resource assessment for the Rio Urbana Mixed-Use Project (Project) in Ventura County, California. The scope of work included a museum records search, a literature and geologic map review, and preparation of this technical memorandum (memo). This memo, which serves as a summary of our findings, was written in accordance with the guidelines set forth by the Society of Vertebrate Paleontology (SVP) (2010) and will satisfy the requirements of the California Environmental Quality Act (CEQA).

Project Description and Background

The Project is located in the Community of El Rio within the City of Oxnard Sphere of Influence. It is situated along East Vineyard Avenue, northeast of U.S. Route 101 and southwest of Rio School Lane, approximately one mile east of the Santa Clara River (Attachment 1). Specifically, the Project is mapped within portions of the Santa Clara del Norte Landgrant on the Oxnard CA 7.5-minute U.S. Geological Survey quadrangle. The Project area consists of approximately 10.24 acres of developed land with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that was formerly the El Rio Elementary School (closed since 2008). The Project would include demolition of the existing buildings to allow for the construction of a new mixed-use development which includes 182 condominium residential units and a 15,000 square foot office building containing the Rio School District Administrative Offices.

Regulatory Context

Paleontological resources cannot be replaced once they are destroyed. Therefore, paleontological resources are considered nonrenewable scientific resources and are protected under the CEQA. Specifically, in Section V(c) of Appendix G of the CEQA Guidelines, the “Environmental Checklist Form,” the question is posed: “Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?” In order to determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Therefore, mitigation of adverse impacts to paleontological resources is mandated by CEQA. Paleontological resources are also addressed under the Resources Section in the Goals, Policies, and Procedures of the Ventura County General Plan, which state the following:

> **Goal 1.** Identify, inventory, preserve and protect the paleontological and cultural resources of Ventura County (including archaeological, historical and Native American resources) for their scientific, educational and cultural value.
>
> **Goal 2.** Enhance cooperation with cities, special districts, other appropriate organizations, and private landowners in acknowledging and preserving the County's paleontological and cultural resources.
>
> **Policy 1.** Discretionary developments shall be assessed for potential paleontological and cultural resource impacts, except when exempt from such requirements by CEQA. Such assessments shall be incorporated into a countywide paleontological and cultural resource database.
>
> **Policy 2.** Discretionary development shall be designed or re-designed to avoid potential impacts to significant paleontological or cultural resources whenever possible. Unavoidable impacts, whenever possible, shall be reduced to a less than significant level and/or shall be mitigated by extracting maximum recoverable data. Determinations of impacts, significance and mitigation shall be made by qualified archaeological (in consultation with recognized local Native American groups), historical or paleontological consultants, depending on the type of resource in question.
>
> **Policy 3.** Mitigation of significant impacts on cultural or paleontological resources shall follow the Guidelines of the State Office of Historic Preservation, the State Native American Heritage Commission, and shall be performed in consultation with professionals in their respective areas of expertise [County of Ventura, 2013:23].

The Project area is located within the City of Oxnard Sphere of Influence; as such, development of the Project is subject to the protection and preservation of paleontological resources as described in the Environmental Resources section of the City of Oxnard General Plan (2009), which states:

> **Goal ER-11.** Identification, protection, and enhancement of the City's archaeological, historical, and paleontological resources.
>
> **Goal ER-11.1 Identification of Archaeological Resources.** In the event that archaeological/paleontological resources are discovered during site excavation, continue to require that grading and construction work on the project site is suspended until the significance of the features can be determined by a qualified archaeologist/paleontologist. [City of Oxnard, 2009:5-9].

Paleontological Resource Potential

Absent specific agency guidelines, most professional paleontologists in California adhere to the guidelines set forth by the SVP (2010) to determine the course of paleontological mitigation for a given project. These guidelines establish protocols for the assessment of the paleontological resource potential of underlying geologic units and outline measures to mitigate adverse impacts that could result from project development. Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a Project area can be assigned to one of four categories defined by the SVP (2010). These categories include high, undetermined, low, and no paleontological resource potential.

Methodology

In order to assess whether a particular project area has the potential to contain significant fossil resources at the subsurface, it is necessary to review published geologic mapping to determine the geology and stratigraphy of the area. Geologic units are considered to be “sensitive” for paleontological resources if they are known to contain significant fossils anywhere in their extent. Therefore, a search of pertinent local and regional museum repositories for paleontological localities within and nearby the project area is necessary to determine whether or not fossil localities have been previously discovered within a particular rock unit. For this Project, a museum records search was conducted at the Los Angeles County Museum of Natural History (LACM) on July 19, 2017.

Resource Context

The Project area is situated on the Oxnard coastal plain within the Transverse Ranges geomorphic province of California (Norris and Webb, 1976). A geomorphic province is a region of unique topography and geology that is distinguished from other regions based on its landforms and diastrophic history. The Transverse Ranges extend approximately 275 miles west to east from Point Arguello in Santa Barbara County to the Anacapa-Santa Monica Hollywood-Raymond-Cucamonga fault zone and the San Bernardino Mountains (Yerkes and Campbell, 2005). The Transverse Ranges are primarily composed of pre-Cenozoic intrusive igneous and metamorphic bedrock with overlying Cenozoic volcanic, marine, and terrestrial sedimentary deposits. Geographic features of the Transverse Ranges in the vicinity of the Project area include the Santa Susana and Topatopa Mountains and the low-lying Camarillo Hills; the Ventura Basin — a folded and faulted region of thick Cenozoic sediment and petroliferous deposits beneath the Oxnard coastal plain; the Santa Clara River; and the Channel Islands (Keller, 1995; Winterer and Durham, 1962). Specifically, the Project area is located adjacent to the Santa Clara River, which drains the northern Transverse Ranges and flows westward between the Santa Susana and Topatopa Mountains towards the Oxnard coastal plain and out into the Pacific Ocean. Major faults near the Project area include the Oak Ridge thrust and the Simi fault (Southern California Earthquake Data Center, 2017). In general, active uplift and erosion in the Transverse Ranges has produced steep canyons, rugged topography, numerous landslides, and extensive alluvial sedimentation (Morton and Miller, 2006).

According to the California Geological Survey *Geologic Map of the Oxnard 7.5’ Quadrangle* (Clahan, 2003), the Project area is directly underlain by Quaternary alluvial deposits of late Holocene age (Qa) (Attachment 1). This unit was generally derived as overbank fluvial material from the nearby Santa Clara River and is composed of unconsolidated, poorly sorted, fine-to medium-grained sand, clay, and fine gravel. The Quaternary alluvial deposits exhibit typical unidirectional flow sedimentary structures, including scour and incised channel features. Local stream terrace deposits are common in the unit. Holocene alluvial deposits such as these are typically too young to contain fossilized material; however, these deposits may be underlain at an unknown depth by older, finer-grained Pleistocene alluvial deposits that may be sensitive for paleontological resources (McLeod, 2017). Similar Pleistocene sedimentary deposits have proven to yield scientifically significant paleontological resources throughout southern California from the coastal areas to the inland valleys (Springer et al., 2009). Near Pierpont Bay, north of the mouth of the Santa Clara River in the City of Ventura, approximately six miles from the Project area, previous excavations yielded fossil specimens of Pleistocene bison, horse, and seal. In addition, several fossil specimens of mammoth were identified in the vicinity of the Project area near Camarillo (UCMP online database, 2017). These specimens were identified within Pleistocene age marine to nonmarine deposits similar to those that likely underlie the Project area at an unknown depth.

Records Search Results

The LACM reports that there are no previously recorded vertebrate fossil localities in the Project area or in the immediate vicinity from within the Quaternary alluvial deposits. However, LACM museum collections identify at least two vertebrate localities (LACM 3204 and [CIT] 211) that were recorded nearby from within older fine-grained Pleistocene sedimentary deposits. According to McLeod (2017), these Pleistocene sedimentary deposits are likely similar to older deposits that underlie the younger Quaternary alluvial deposits at an unknown depth within the Project area. Locality LACM 3204 was identified southwest of the Project area in Harmon Canyon and yielded a vertebrate fossil specimen of horse (*Equus* sp.), depth of recovery not reported. Locality LACM [CIT] 211 was identified further northwest of the Project area and yielded a specimen of sea duck (*Chendytes lawi*) from Pleistocene marine sedimentary deposits (McLeod, 2017).

Findings and Recommendations

Based on the literature review and museum records search results, the paleontological sensitivity was determined in accordance with the SVP's (2010) sensitivity scale. The Quaternary alluvium mapped at the surface of the Project area is determined to have a low paleontological resource potential because the deposits are likely too young to contain fossilized material. Therefore, impacts to paleontological resources are not anticipated as a result of the Project and further paleontological resource management is not recommended. However, should Project-related ground-disturbing activities extend into buried sensitive Pleistocene age alluvial deposits, then further paleontological resource consultation may be required. In the event an unanticipated fossil discovery is made during the course of Project development, then in accordance with SVP (2010) guidelines, a qualified professional Paleontologist should be retained in order to examine the find and to determine if further paleontological resources mitigation is warranted.

It has been a pleasure assisting you with this Project. If you have any questions, please do not hesitate to me at hclifford@appliedearthworks.com or (626) 578-0119.

Sincerely,

Heather Clifford

Heather Clifford
Associate Paleontologist/Geologist
Applied EarthWorks, Inc.

References

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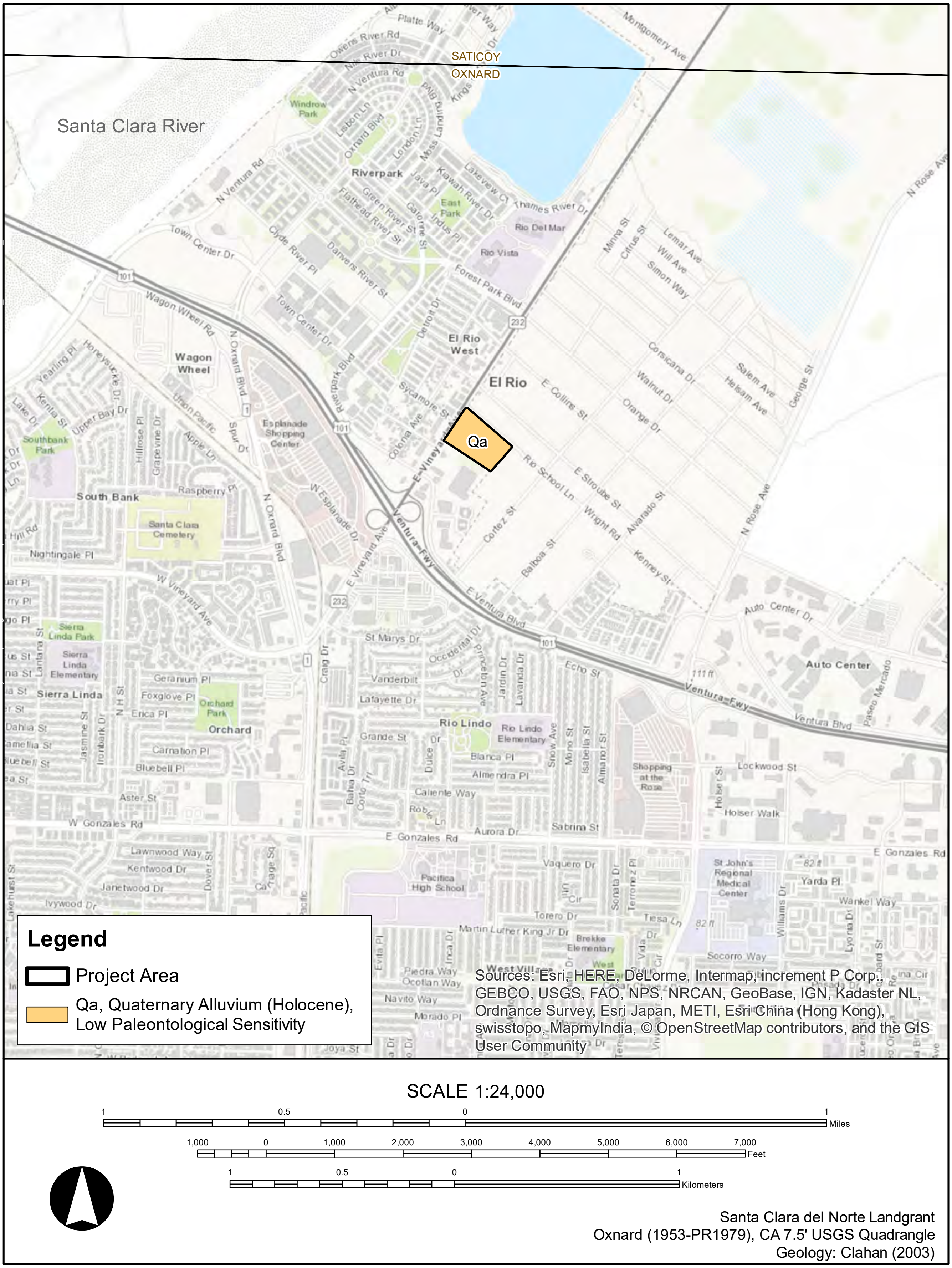


Attachment 1 - Geologic Units and Paleontological Sensitivity in the Rio Urbana Mixed-Use Project Area

Appendix F

MS4 Compliance and Onsite Drainage Letter

1672 Donlon Street
Ventura, CA 93003
Local 805 654-6977
Fax 805 654-6979
www.jdscivil.com

Delivering excellence through experience

ALD01.5659
January 10, 2017
Revised March 25, 2019

City of Oxnard
Paul Wendt
305 West Third Street
Oxnard, CA 93030

Subject: Rio Urbana Apartments, Vineyard Ave. and Rio School Lane

Dear Paul:

A 167 unit single family residence is being proposed on the 9.9 acre site located on the corner of Vineyard Ave and Rio School Lane. The site is currently located within the County of Ventura, but will be annexed into the City of Oxnard. Rio School Lane will be annexed as well and made into a private street owned by Pacific Co. With the inclusion of Rio School Lane the proposed site will be 10.5 acres. 1.1 acres of the 10.5 acre site will be dedicated to the Rio School District and both the 1.1 acre lot and 9.4 acre lot will have an infiltration system and drain to the City of Oxnard Storm Drain located in Vineyard Ave. This letter addresses the MS4 stormwater compliance and the onsite drainage.

Drainage Patterns

Currently 4.3 acres of the site is open space or lawn that allows runoff to flow overland in a southeast direction. Flow in this area ponds in various low spots throughout the site, while high flows runoff from the site and are eventually captured in the City of Oxnard storm drain located in Vineyard Avenue. The remaining 5.6 acres is paved parking and school buildings. All runoff in this area is directed to the surface opening for the Vineyard Ave Storm Drain through surface flow. Rio School Lane is currently crowned and runs off towards both sides of the street. Runoff on the north side of the street drains northeast towards the adjacent properties and ponds in various locations onsite.

In the developed condition stormwater runoff will be directed to multiple inlets throughout the site that connect to the onsite drainage system. Rio School Lane will drain towards inlets on the south side of the street, while the adjacent properties will continue to drain away from the street. Both the 1.1 acre and 9.4 acre lots will have individual drainage systems, a CDS unit and an infiltration basin. Low flows entering the inlets will be routed through a CDS unit before entering an infiltration basin. High flows that exceed the required volume of infiltration will be routed through the infiltration basin and released to the 54” City of Oxnard storm drain located in Vineyard Ave.

Storm Water Flows

Storm water flows for the undeveloped condition were calculated using the City of Oxnard Cook's Method. The Cook's method was used on the entire paved area and grass area and a weighted average was used. The calculations, included herein, show the undeveloped runoff per acre to be q_{10}= 1.56 cfs/ac, q_{50}= 2.65 cfs/ac, and q_{100}= 3.12 cfs/ac. The total calculated runoff from the entire project is summarized in the table below.

Undeveloped Conditions Storm Water Flows

Area (acres)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
10.5	16.4	27.8	32.8

Storm water flows in the developed condition were calculated using the City of Oxnard's Cook's Method for the entire area of the project site. The calculations, included herein, show the developed runoff per acre to be q_{10}=2.07 cfs/ac, q_{50}= 3.52 cfs/ac, and q_{100}= 4.14 cfs/ac. The total calculated runoff from the entire project is summarized in the table below.

Developed Conditions Storm Water Flows

Area (acres)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
10.5	21.6	36.8	43.3

Infiltration

Since land disturbing activities on this site encompass more than 5,000 square feet of impervious area, the proposed improvements need to comply with the County of Ventura's MS4 stormwater requirements. The overall disturbed area exceeds 50% of the entire site, therefore infiltration is required for the entire project property. Infiltration will be accommodated in the proposed underground basin.

Preliminary sizing for the infiltration aspect of the underground basin has been performed per the County of Ventura Technical Guidance Manual and percolation testing results provided by Workman Engineering. Four percolation tests were performed throughout the site at a depth of 5 feet. To be conservative the lowest rate of 5.14 in/hr was used in our calculations. Using a combined safety factor of 4.5, the design percolation rate was calculated at 1.14 in/hr. With our design percolation rate the max depth of infiltration is 6.85', only 5.5' of infiltration is being used.

Within the residential 9.4 acre lot the minimum infiltration volume is 23,618 CF. Using underground perforated CMP surrounded by crushed rock, 24,900 CF of infiltration is being proposed, 1,282 CF more than the minimum. The proposed excess storage at this stage is to provide room for adjustments during final design, at which point infiltration will not be provided beyond what is required. Pretreatment requirements within the City of Oxnard require the entire infiltration volume and 80% of the 50-micron particle size to be pretreated before infiltration. To achieve these standards a CDS unit sized by Contech is being proposed. Within the 1.1 acre lot that will be dedicated to the Rio School District a minimum of 2,763 CF of infiltration is required.

Similar CMP will be used to achieve an infiltration volume of 2,905 CF, 142 CF more than required. A CDS unit will also be utilized to achieve pretreatment requirements.

Subarea A and B is proposed porous pavement that will capture and treat the runoff from the entrances. Runoff from this area will not be captured in the private system.

Detention

The proposed site will drain to the City of Oxnard 54” storm drain located in Vineyard Ave. As-Builts for the storm drain (1985-022A) show a Q10 capacity of 99 cfs and a “future” Q10 of 25 cfs. The “future” Q10 value is believed to be the current Q10 that resulted from the construction of the Stroube Drain. The runoff that was tributary to this drain prior to the Stroube drain and no longer is tributary, resulted in an excess of capacity for the drain. Due to the capacity, we propose to release the entire Q10 (21.6 cfs) to the City storm drain. The resulting Q10 increase on the site is 5.2 cfs which will result in a Q10 for the public storm drain of roughly 30 cfs. The public storm drain in Vineyard Avenue will still have the capacity for an additional 69 cfs. Due to the available accommodation of the public storm drain, no on-site detention is being proposed.

The FEMA flood map shows the site is not within the at risk flood zone. Finished floor elevations will be set so that they are at least one foot above the Q100 water surface elevation.

The intent of this preliminary study is to show that the design of this project meets the current City of Oxnard requirements. This study will be used as a basis for final design.

Sincerely,
Jensen Design & Survey, Inc.

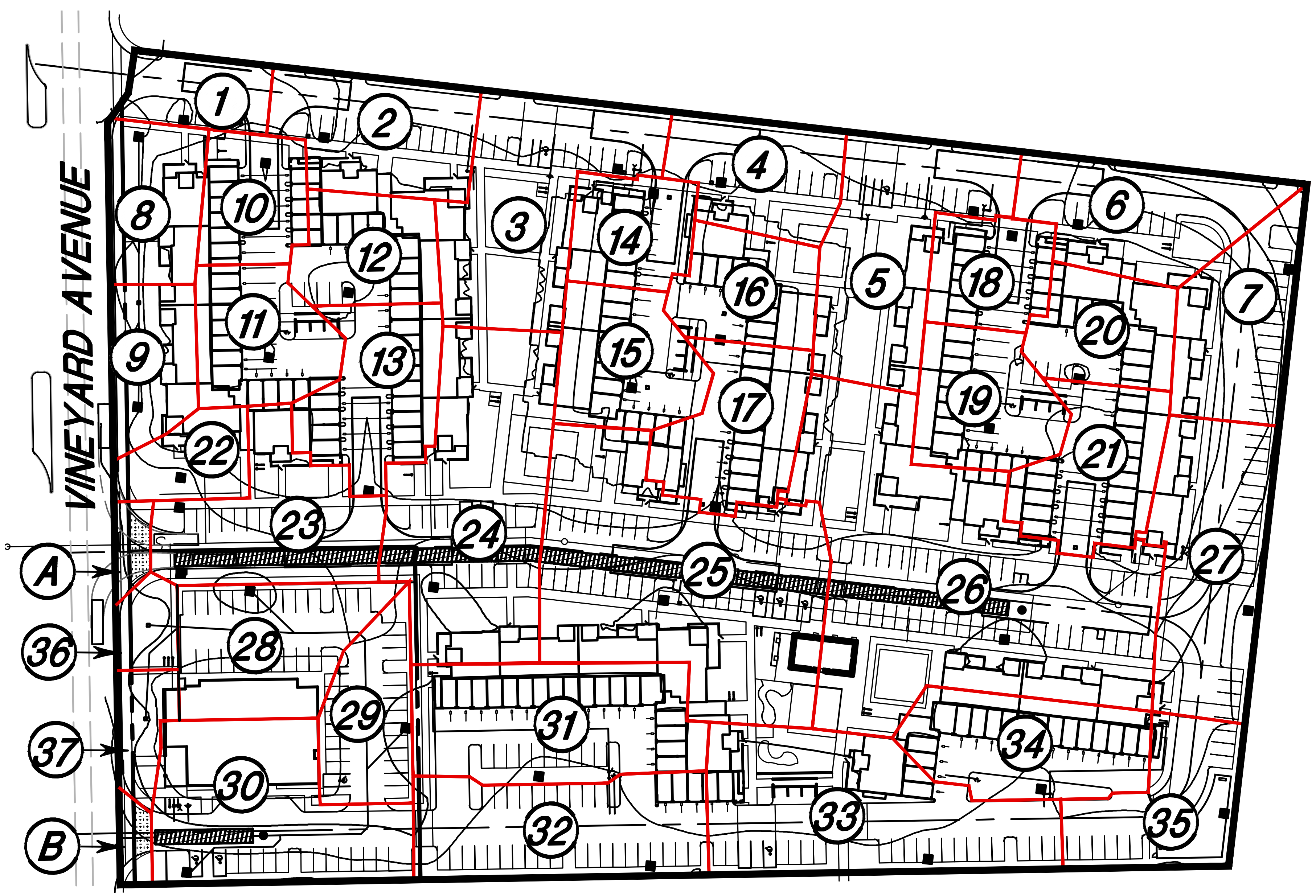
Jim McCoskey, P.E.
Senior Civil Engineer

List of Enclosures

Hydrology
- Drainage Exhibit
- Cook’s Method Calculations

Water Quality/Infiltration
- SQDV Calculations
- Infiltration Area Calculations
- Percolation Test Results
- CDS – Stormwater Treatment Detail.
- Vineyard Storm Drain As-Builts

Hydrology



50' 0' 100'

SCALE: 1"=100'

Porous Pavement					
A	1557	0.04	0.07	0.13	0.15
B	1331	0.03	0.06	0.11	0.13

Onsite Drainage					
Subarea	Area (ft)	Area (ac.)	Q_{10} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
1	5272	0.12	0.25	0.43	0.50
2	11450	0.26	0.54	0.93	1.09
3	17372	0.40	0.83	1.40	1.65
4	9269	0.21	0.44	0.75	0.88
5	16205	0.37	0.77	1.31	1.54
6	12368	0.28	0.59	1.00	1.18
7	10873	0.25	0.52	0.88	1.03
8	8752	0.20	0.42	0.71	0.83
9	7723	0.18	0.37	0.62	0.73
10	6837	0.16	0.32	0.55	0.65
11	8998	0.21	0.43	0.73	0.86
12	7818	0.18	0.37	0.63	0.74
13	10491	0.24	0.50	0.85	1.00
14	6748	0.15	0.32	0.55	0.64
15	9418	0.22	0.45	0.76	0.90
16	7818	0.18	0.37	0.63	0.74
17	10149	0.23	0.48	0.82	0.96
18	6748	0.15	0.32	0.55	0.64
19	9418	0.22	0.45	0.76	0.90
20	7818	0.18	0.37	0.63	0.74
21	10148	0.23	0.48	0.82	0.96
22	5448	0.13	0.26	0.44	0.52
23	13298	0.31	0.63	1.07	1.26
24	23484	0.54	1.12	1.90	2.23
25	31247	0.72	1.48	2.53	2.97
26	41015	0.94	1.95	3.31	3.90
27	16242	0.37	0.77	1.31	1.54
28	13080	0.30	0.62	1.06	1.24
29	9612	0.22	0.46	0.78	0.91
30	16807	0.39	0.80	1.36	1.60
31	16989	0.39	0.81	1.37	1.61
32	14913	0.34	0.71	1.21	1.42
33	21057	0.48	1.00	1.70	2.00
34	11908	0.27	0.57	0.96	1.13
35	9955	0.23	0.47	0.80	0.95
36	2701	0.06	0.13	0.22	0.26
37	3235	0.07	0.15	0.26	0.31
Total	449636.00	10.5	21.6	36.8	43.3

LEGEND

- ■ DRAIN INLET
- (1) SUB-AREA NUMBER
- WATERSHED AREA BOUNDARY
- WATERSHED SUB-AREA BOUNDARY
- PROPOSED CDS UNIT
- PROPOSED INFILTRATION AREAS

Undeveloped Conditions Storm Water Flows			
Area (acres)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
10.5	16.4	27.8	32.8

Developed Conditions Storm Water Flows			
Area (acres)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
10.5	21.6	36.8	43.3

q (cfs/ac)	
Q_{10}	1.79
Q_{50}	3.04
Q_{100}	3.58

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HYDROLOGY EXHIBIT

RIO URBANA

SHEET 1 OF 1

Mar 25, 2019

MODIFIED COOKS- UNDEVELOPED GRASS AREA

Project:	**Admin**	Job No.	**1ADMN.0001.ADM**	Sheet:	**1** of **1**
Watershed:	**5**	Designed:	**Robert Harvey**	Date:	**Jan 18,2018**
Concentration Point:		Checked		Date:	
	Undeveloped				

Watershed Constants:

Drainage Area	**4.3**	Acres			
Length	**455**	Feet	Fall	**1**	Feet
Width	**411.67**	Feet	Slope	**0.22**	%
Length/Width	**1.11**		Shape Correction Factor	**114.8**	
Soil Type	**5**		RI-Correction Factor	**123**	%

Computation of "C"

Type of Development	"C" Factor	Present	Future
Undeveloped	40-45	100%	
Residential	60		0%
Commercial & Industrial	70		0%

Composite "C" Factor (Plate 62 Oxnard Standards)

Runoff: Q (from Curve): **2.55** x L/W Factor **1.15** x RI Factor **1.23**

Frequency		Frequency Factor	Q		q	
20%	Q_5	65%	2.34	cfs	0.54	cfs/ac
10%	Q_{10}	100%	**3.60**	cfs	0.84	cfs/ac
4%	Q_{25}	135%	4.86	cfs	1.13	cfs/ac
2%	Q_{50}	170%	6.12	cfs	1.42	cfs/ac
1%	Q_{100}	200%	7.20	cfs	1.67	cfs/ac

MODIFIED COOKS- UNDEVELOPED PAVED AREA

Project: **Admin** Job No. **1ADMN.0001.ADM** Sheet: **1** of **1**
Watershed: **5** Designed: **Robert Harvey** Date: **Jan 18,2018**
Concentration Point: Checked Date:
Commercial & Industrial

Watershed Constants:

Drainage Area	**6.2**	Acres			
Length	**540**	Feet	Fall	**1**	Feet
Width	**500.13**	Feet	Slope	**0.19**	%
Length/Width	**1.08**		Shape Correction Factor	**114.8**	
Soil Type	**5**		RI-Correction Factor	**123**	%

Computation of "C"

Type of Development	"C" Factor	Present	Future
Undeveloped	40-45	100%	
Residential	60		0%
Commercial & Industrial	70		100%

Composite "C" Factor (Plate 62 Oxnard Standards)
Runoff: Q (from Curve): **9.07** x L/W Factor **1.15** x RI Factor **1.23**

Frequency		Frequency Factor	Q		q	
20%	Q_5	65%	8.33	cfs	1.34	cfs/ac
10%	Q_{10}	100%	**12.81**	cfs	2.07	cfs/ac
4%	Q_{25}	135%	17.29	cfs	2.79	cfs/ac
2%	Q_{50}	170%	21.78	cfs	3.51	cfs/ac
1%	Q_{100}	200%	25.62	cfs	4.13	cfs/ac

Weighted Average:
Q10=4.3ac/10.5ac x 0.84 cfs/ac + 6.2ac/10.5ac x 2.07 cfs/ac = 1.56 cfs/ac
Q50=4.3ac/10.5ac x 1.42 cfs/ac + 6.2ac/10.5ac x 3.51cfs/ac = 2.65 cfs/ac
Q100=4.3ac/10.5ac x 1.67 cfs/ac + 6.2ac/10.5ac x 4.13 cfs/ac = 3.12 cfs/ac

MODIFIED COOKS- PROPOSED HYDROLOGY CALCULATIONS

Project:	**Admin**	Job No.	**1ADMN.0001.ADM**	Sheet:	**1** of **1**
Watershed:	**12**	Designed:	**Robert Harvey**	Date:	**Jan 18,2018**
Concentration Point:		Checked		Date:	
	Commercial & Industrial				

Watershed Constants:

Drainage Area	**10.5**	Acres			
Length	**835**	Feet	Fall	**1**	Feet
Width	**547.76**	Feet	Slope	**0.12**	%
Length/Width	**1.52**		Shape Correction Factor	**112.0**	
Soil Type	**5**		RI-Correction Factor	**123**	%

Computation of "C"

Type of Development	"C" Factor	Present	Future
Undeveloped	40-45	100%	
Residential	60		0%
Commercial & Industrial	70		100%

Composite "C" Factor (Plate 62 Oxnard Standards)

Runoff: Q (from Curve): **14.11** x L/W Factor **1.12** x RI Factor **1.23**

Frequency		Frequency Factor	Q		q	
20%	Q_5	65%	12.63	cfs	1.20	cfs/ac
10%	Q_{10}	100%	**19.43**	cfs	1.85	cfs/ac
4%	Q_{25}	135%	26.23	cfs	2.50	cfs/ac
2%	Q_{50}	170%	33.03	cfs	3.15	cfs/ac
1%	Q_{100}	200%	38.86	cfs	3.70	cfs/ac

Water Quality/Infiltration

JENSEN DESIGN & SURVEY, INC

PROJECT: Rio Urbana J.N. ALD01.5659

DESCRIPTION: SQDV Calculations DATE: 01/22/2018

Urban Runoff Quality Management

$$P_0 = a C P_6$$

$$a_{48HR} = 1.963$$

$$P_6 = 0.60" \text{ (per Figure 5.3)}$$

$$C = 0.858(0.79)^3 - 0.78(0.79)^2 + 0.774(0.79) + 0.04$$

$$C = 0.558$$

$$P_0 = (1.963)(0.558)(0.60") = 0.692"$$

9.4 Acre Site:

$$SQDV = 0.692" \cdot 9.4\ AC \cdot \frac{1\ ft}{12\ in} \cdot \frac{43560\ ft^2}{1\ AC}$$

$$SQDV = 23{,}618\ ft^3$$

$$\text{Pipe Area} = 41.5\ SF$$

$$\text{Pipe Length} = \frac{23{,}618\ ft^3}{41.5\ ft^2} = 569\ LF$$

1.1 Acre Site:

$$SQDV = 0.692" \cdot 1.1\ AC \cdot \frac{1\ ft}{12\ in} \cdot \frac{43{,}560\ ft^2}{1\ AC}$$

$$SQDV = 2{,}763\ ft^3$$

$$\text{Pipe Length} = \frac{2{,}763\ ft^3}{41.5\ ft^2} = 67\ LF$$

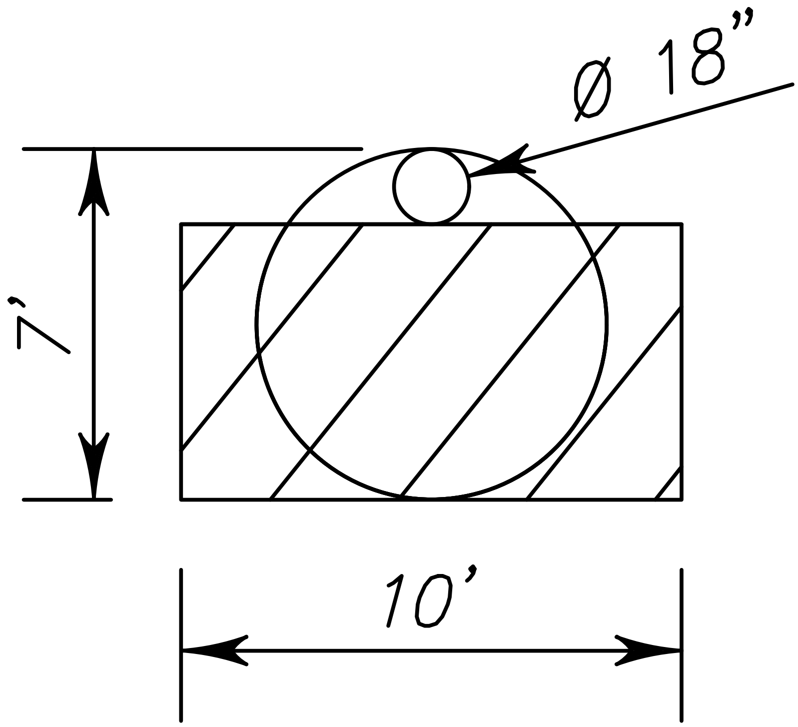
Table 6.4 - Infiltration Facility Safety Factor Determination Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w*v
A	Suitability Assessment	Soil Assessment Method	0.25	2	0.5
		Predominant Soil texture	0.25	2	0.5
		Soil Variability	0.25	2	0.5
		Depth to groundwater / impervious layer	0.25	2	0.5
		Suitability Assessment Safety Factor S_A =			**2**
B	Design	Tributary Area Size	0.25	2	0.5
		Level of pre-treatment / expected sediment loads	0.25	2	0.5
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	2	0.5
		Design Safety Factor S_B =			**2.25**

Combined Safety Factor = S_A * S_B = 4.5

Step 2: Determine the design percolation rate				
2-1	Enter measured soil percolation rate (in/hr) 0.5 in/hr minimum. $P_{measured}$	$P_{measured}$=	5.14	in/hr
2-2	Determine percolation rate correction factor, S_A based on suitability assessment (see Section 6 INF-1, Table 6-2)	S_A =	2	
2-3	Determine percolation rate correction factor, S_B based on design (see Section 6 INF-1)	S_B =	2.25	
2-4	Calculate Combine safety factor, $S = S_A * S_B$	S =	4.5	
2-5	Calculate the design percolation rate (in/hr) $P_{design} = P_{measured}/S$	P_{design} =	1.142	in/hr
Step 3: Calculate the surface area				
3-1	Enter required drain time (hours, 72 hours max, t	t =	72	hr
3-2	Calculate max. depth of runoff that can be infiltrated within the t (ft), $d_{max} = P_{design}*t/12$	d_{max} =	6.853	ft
3-3	For Basins, Select ponding depth dp such that $d_p <= d_{max}$	d_p =	5.5	ft
3-6	Enter the time to fill infiltration basin with water (use 2 hours for most designs), T	T =	2	hrs
3-7	Calculate Infiltrating surface area for infiltration basin $A_b = SQDV/(TP_{design}/12+d_p)$	A_b =	485.6	sf

Step 2: Determine the design percolation rate				
2-1	Enter measured soil percolation rate (in/hr) 0.5 in/hr minimum. $P_{measured}$	$P_{measured}$=	5.14	in/hr
2-2	Determine percolation rate correction factor, S_A based on suitability assessment (see Section 6 INF-1, Table 6-2)	S_A =	2	
2-3	Determine percolation rate correction factor, S_B based on design (see Section 6 INF-1)	S_B =	2.25	
2-4	Calculate Combine safety factor, $S = S_A * S_B$	S =	4.5	
2-5	Calculate the design percolation rate (in/hr) $P_{design} = P_{measured}/S$	P_{design} =	1.142	in/hr
Step 3: Calculate the surface area				
3-1	Enter required drain time (hours, 72 hours max, t	t =	72	hr
3-2	Calculate max. depth of runoff that can be infiltrated within the t (ft), $d_{max} = P_{design}*t/12$	d_{max} =	6.853	ft
3-3	For Basins, Select ponding depth dp such that $d_p <= d_{max}$	d_p =	5.5	ft
3-6	Enter the time to fill infiltration basin with water (use 2 hours for most designs), T	T =	2	hrs
3-7	Calculate Infiltrating surface area for infiltration basin $A_b = SQDV/(TP_{design}/12+d_p)$	A_b =	4150.5	sf



USABLE PIPE AREA= 32.4 SF
STONE AREA= 22.6 SF
USABLE STONE AREA (40%)= 9.1 SF
TOTAL AREA= 41.5 SF
MIN. LENGTH OF PIPE= 569.1 FT

USABLE AREA

41.5 SF * 600' = 24,900 CF

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

INFILTRATION AREA EXHIBIT

RIO URBANA APARTMENTS

SHEET 1 OF 1
Jan 18, 2018

J:\ALD15659\Planning\1Ref Images\INFILTRATION AREA.dwg Jan 18, 2018, 1:04pm rharvey

ORKMAN NGINEERING & ONSULTING

3639 Harbor Boulevard - Suite 116 Ventura, CA 93001 805-302-9381 markworkmanpe@yahoo.com

December 8, 2016
Revised: January 11, 2017
File No. WE14-080340

Pacific West Communities
430 E. State Street, Suite 100
Eagle, Idaho 83616

Storm Water Detention Infiltration Test Report
182-Unit Multi-Family Residential and Commercial Development,
Proposed Rio Urbana, Vineyard Avenue and Rio School Lane,
City of Oxnard.

In accordance with your authorization, we have prepared this infiltration test report for use in determining the absorption rate for design of the storm water detention system for the proposed Rio Urbana residential and commercial development project on the subject property. This report presents the results of our field infiltration testing. Our scope of services included (1) visiting the site to perform field infiltration testing, (2) reviewing the results of the field infiltration testing, and (3) preparing this report to document our efforts and conclusions.

Field Infiltration Testing

Field infiltration testing was performed by a representative of this firm on December 7, 2016 to determine the absorption rate of the subsurface soils for design of the proposed storm water detention system. Eight 12 inch by 12 inch wide test pits were excavated at variable depths (see Test Pit Log, Plate 2). The infiltration testing was performed in accordance with MS4 requirements and Appendix C of the Technical Guidance Manual for Stormwater Quality Control Measures. Readings were taken at 30-minute intervals for a period of 4 hours in the test pits. The test results are included below.

Test Pit Number	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	TP-7	TP-8
Depth (Feet)	1	1	1	1	5	5	5	5
Stabilized Rate (Inches / Hour / Square Foot)	2.35	3.22	4.15	4.15	5.14	11.94	8.53	11.94

Groundwater

Groundwater was encountered in the exploratory boring at a depth of 35 feet, and stabilized at 33 feet, below the existing ground surface. Mapping of historically shallowest groundwater included within the Seismic Hazard Zone Report of the Oxnard 7.5-Minute Quadrangle (CGS, 2002) indicates the depth to groundwater is approximately 20 feet below grade.

Conclusions

Based on the infiltration tests, a design absorption capacity of 2.35 inch per hour per square foot should be used in evaluation of the absorption capacity of the landscape areas, bio swale area (if any), permeable pavement areas (if any), and a design absorption capacity of 5.14 inches per hour per square foot should be used in evaluation of the absorption capacity of subsurface storm water infiltration systems.

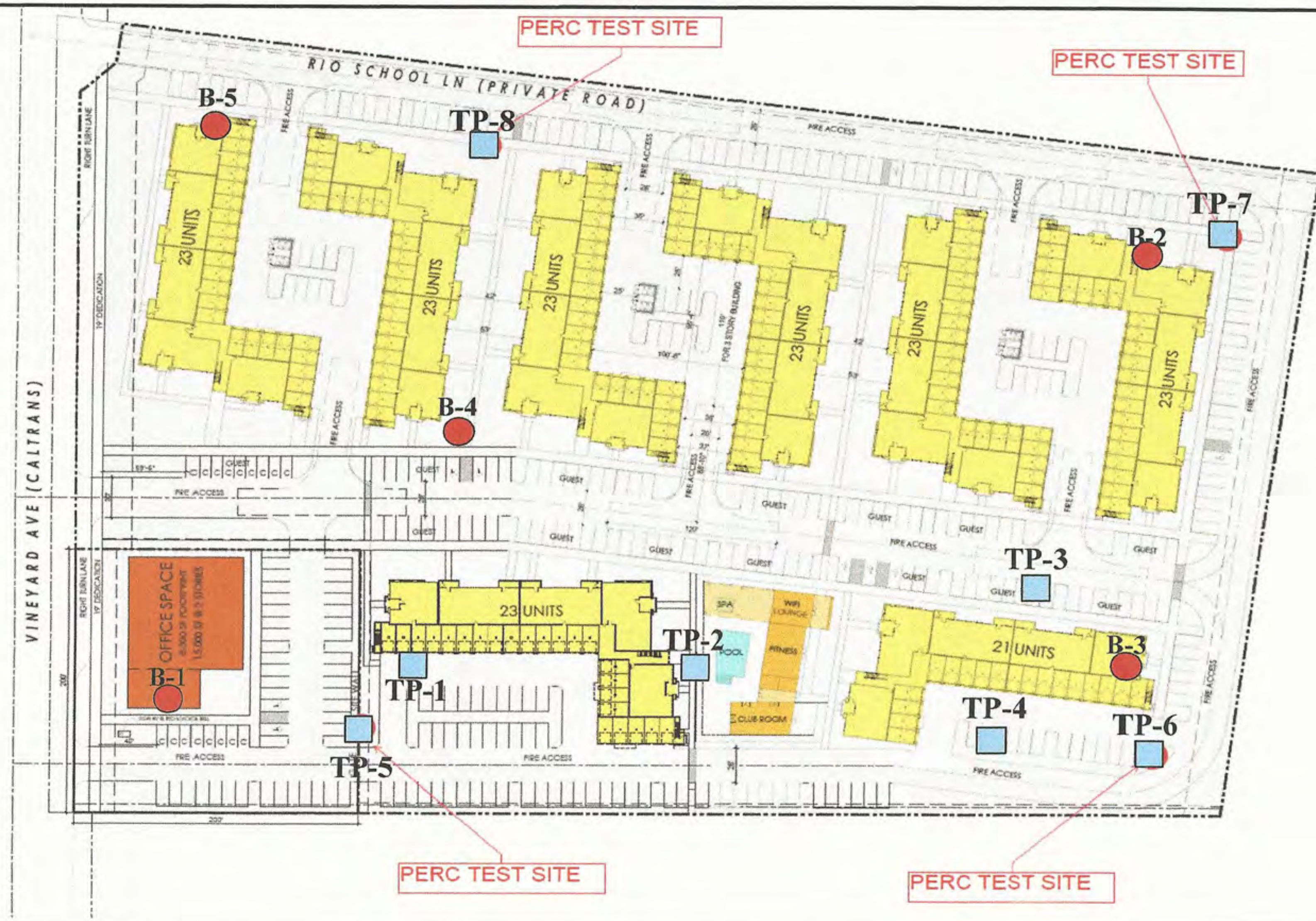
Remarks

If you have any questions, or if we may be of any further assistance, please do *not* hesitate to call. Thank you for the opportunity to be of professional service. We look forward to being of continued service.

Respectfully submitted,
WORKMAN ENGINEERING & CONSULTING

R. Mark Workman Jr., RCE 68557

REGISTERED CIVIL ENGINEER
R. MARK WORKMAN JR.
No. 68557
EXP. 09/30/17
CIVIL
STATE OF CALIFORNIA



LEGEND

- TP-8 Approximate Location of Infiltration Test Pit
- B-5 Approximate Location of Exploratory Boring

NORTH
not to scale

Reference: Base Map Provided by KTGY Architecture and Planning

Workman Engineering	**PLOT PLAN**	**Aldersgate** **El Rio School, Oxnard**
		FILE NO. WE14-080340 / **Plate 1**

PROJECT : Aldersgate Investments, LLC TEST PIT LOG : TP-1 – TP-8

FILE NO : WE14-080340 DATE : 12/7/16

LOCATION : El Rio School, Oxnard LOGGED BY : MW

1. **Artificial Fill (Af):** Light brown fine grained silty sand, well compacted, dry.

2. **Native Soil (Ns):** Light brown fine grained silty sand, locally porous, medium dense, dry.

3. **Alluvium (Qa):** Light brown well graded sand with small cobbles, dense, dry.

SCALE: 1" = 5'

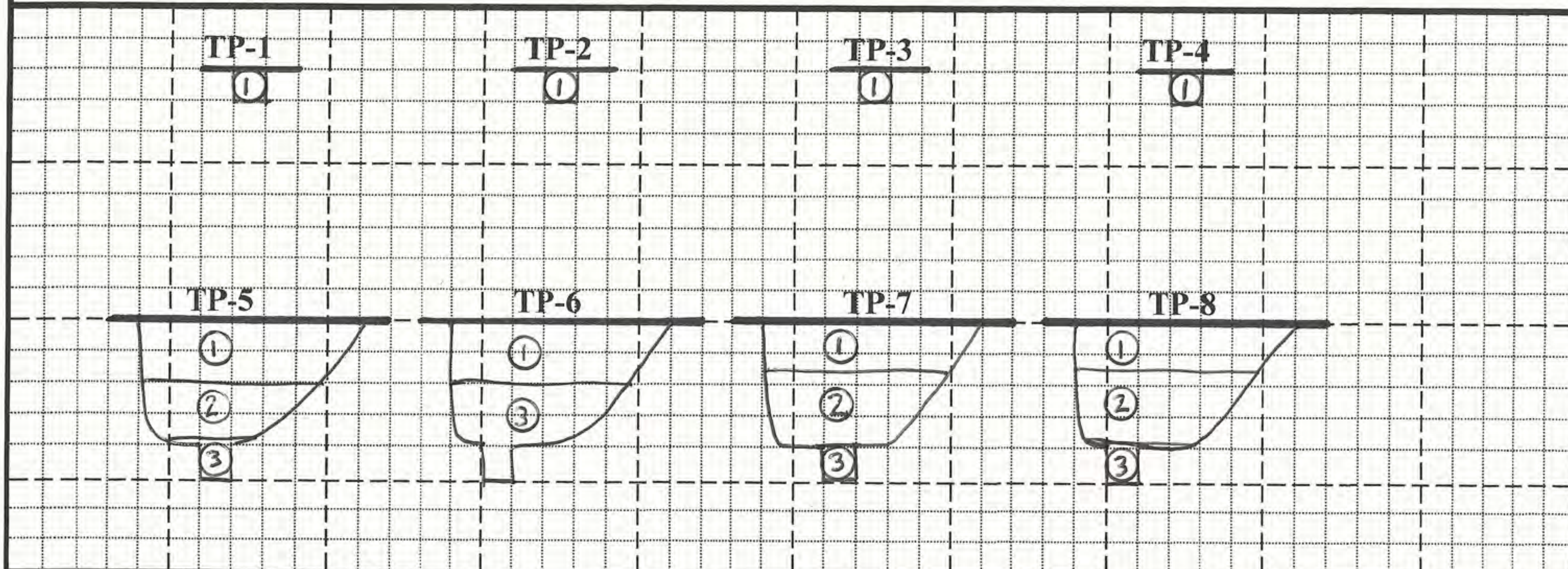


PLATE 2.1

3639 Harbor Blvd., Suite 116, Ventura, CA 93001

WORKMAN ENGINEERING & CONSULTING

3639 Harbor Boulevard – Suite 116 Ventura, CA 93001 805.302.9381 markworkmanpe@yahoo.com

PERFORMANCE TEST DATA WORKSHEET

TP-1 - TP-8

JOB ADDRESS: El Rio School, Oxnard
CLIENT NAME: Aldersgate
DATE/TIME PRESATURATED: 12/6/16
DATE TESTED: 12/7/16

FILE NO.: WE14-080340
TEST CONDUCTED BY: AR
TEMPERATURE: Warm
WEATHER CONDITIONS: Sunny

TP-1

Stabilized Rate (in/hr): 6.00

EXCAVATION DEPTH: 0'
TESTED DEPTH: 1.0'
DIAMETER OF TEST HOLE: 12"
TEST HOLE NO.: TP-1
TIME INTERVAL: 0:30
INITIAL HEIGHT(IN.): 12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:25 AM	****	12.000	****	****	INITIAL FILL
10:55 AM	30	8.500	3.500	7.00	
	****	12.000	****	****	REFILL
11:25 AM	30	8.750	3.250	6.50	
	****	12.000	****	****	REFILL
11:55 AM	30	9.000	3.000	6.00	
	****	12.000	****	****	REFILL
12:25 PM	30	9.500	2.500	5.00	
	****	12.000	****	****	REFILL
12:55 PM	30	9.000	3.000	6.00	
	****	12.000	****	****	REFILL
01:25 PM	30	9.000	3.000	6.00	
	****	12.000	****	****	REFILL
01:55 PM	30	9.000	3.000	6.00	

$$Rf = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 2.55556

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 2.34783

TP-2

Stabilized Rate (in/hr): 8.00

EXCAVATION DEPTH: 0'	DIAMETER OF TEST HOLE: 12"	TIME INTERVAL: 0:30
TESTED DEPTH: 1.0'	TEST HOLE NO.: TP-2	INITIAL HEIGHT(IN.): 12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:30 AM	****	12.000	****	****	INITIAL FILL
11:00 AM	30	7.000	5.000	10.00	
	****	12.000	****	****	REFILL
11:30 AM	30	7.250	4.750	9.50	
	****	12.000	****	****	REFILL
12:00 PM	30	7.500	4.500	9.00	
	****	12.000	****	****	REFILL
12:30 PM	30	7.500	4.500	9.00	
	****	12.000	****	****	REFILL
01:00 PM	30	8.000	4.000	8.00	
	****	12.000	****	****	REFILL
01:30 PM	30	8.000	4.000	8.00	
	****	12.000	****	****	REFILL
02:00 PM	30	8.000	4.000	8.00	

$$\text{Rf} = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 2.48148

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 3.22388

TP-3

Stabilized Rate (in/hr): 10.00

EXCAVATION DEPTH: 0'	DIAMETER OF TEST HOLE: 12"	TIME INTERVAL:	0:30
TESTED DEPTH: 1.0'	TEST HOLE NO.: TP-3	INITIAL HEIGHT(IN.):	12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:35 AM	****	12.000	****	****	INITIAL FILL
11:05 AM	30	6.000	6.000	12.00	
	****	12.000	****	****	REFILL
11:35 AM	30	6.000	6.000	12.00	
	****	12.000	****	****	REFILL
12:05 PM	30	6.500	5.500	11.00	
	****	12.000	****	****	REFILL
12:35 PM	30	6.500	5.500	11.00	
	****	12.000	****	****	REFILL
01:05 PM	30	7.000	5.000	10.00	
	****	12.000	****	****	REFILL
01:35 PM	30	7.000	5.000	10.00	
	****	12.000	****	****	REFILL
02:05 PM	30	7.000	5.000	10.00	

$$\mathrm{Rf} = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 2.40741

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 4.15385

TP-4

Stabilized Rate (in/hr): 10.00

EXCAVATION DEPTH: 0'		DIAMETER OF TEST HOLE:	12"	TIME INTERVAL:	0:30
TESTED DEPTH: 1.0'		TEST HOLE NO.: TP-4		INITIAL HEIGHT(IN.):	12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:40 AM	****	12.000	****	****	INITIAL FILL
11:10 AM	30	6.000	6.000	12.00	
	****	12.000	****	****	REFILL
11:40 AM	30	6.000	6.000	12.00	
	****	12.000	****	****	REFILL
12:10 PM	30	6.250	5.750	11.50	
	****	12.000	****	****	REFILL
12:40 PM	30	6.250	5.750	11.50	
	****	12.000	****	****	REFILL
01:10 PM	30	7.000	5.000	10.00	
	****	12.000	****	****	REFILL
01:40 PM	30	7.000	5.000	10.00	
	****	12.000	****	****	REFILL
02:10 PM	30	7.000	5.000	10.00	

$$Rf = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 2.40741

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 4.15385

TP-5

Stabilized Rate (in/hr): 12.00

EXCAVATION DEPTH: 4.0'	DIAMETER OF TEST HOLE:	12"	TIME INTERVAL:	0:30
TESTED DEPTH: 5.0'	TEST HOLE NO.: TP-5		INITIAL HEIGHT(IN.):	12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:45 AM	****	12.000	****	****	INITIAL FILL
11:15 AM	30	0.000	12.000	24.00	
	****	12.000	****	****	REFILL
11:45 AM	30	4.000	8.000	16.00	
	****	12.000	****	****	REFILL
12:15 PM	30	5.000	7.000	14.00	
	****	12.000	****	****	REFILL
12:45 PM	30	5.500	6.500	13.00	
	****	12.000	****	****	REFILL
01:15 PM	30	6.000	6.000	12.00	
	****	12.000	****	****	REFILL
01:45 PM	30	6.000	6.000	12.00	
	****	12.000	****	****	REFILL
02:15 PM	30	6.000	6.000	12.00	

$$Rf = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 2.33333

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 5.14286

TP-6

Stabilized Rate (in/hr): 23.00

EXCAVATION DEPTH: 4.0'	DIAMETER OF TEST HOLE: 12"	TIME INTERVAL: 0:30
TESTED DEPTH: 5.0'	TEST HOLE NO.: TP-6	INITIAL HEIGHT(IN.): 12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:50 AM	****	12.000	****	****	INITIAL FILL
11:20 AM	30	0.000	12.000	24.00	
	****	12.000	****	****	REFILL
11:50 AM	30	0.250	11.750	23.50	
	****	12.000	****	****	REFILL
12:20 PM	30	0.250	11.750	23.50	
	****	12.000	****	****	REFILL
12:50 PM	30	0.500	11.500	23.00	
	****	12.000	****	****	REFILL
01:20 PM	30	0.500	11.500	23.00	
	****	12.000	****	****	REFILL
01:50 PM	30	0.500	11.500	23.00	
	****	12.000	****	****	REFILL
02:20 PM	30	0.500	11.500	23.00	

$$Rf = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 1.92593

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 11.9423

TP-7

Stabilized Rate (in/hr): 18.00

EXCAVATION DEPTH: 4.0'	DIAMETER OF TEST HOLE:	12"	TIME INTERVAL:	0:30
TESTED DEPTH: 5.0'	TEST HOLE NO.: TP-7		INITIAL HEIGHT(IN.):	12.00

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:55 PM	****	12.000	****	****	INITIAL FILL
11:25 PM	30	0.000	12.000	24.00	
	****	12.000	****	****	REFILL
11:55 PM	30	2.250	9.750	19.50	
	****	12.000	****	****	REFILL
12:25 AM	30	2.500	9.500	19.00	
	****	12.000	****	****	REFILL
12:55 AM	30	2.500	9.500	19.00	
	****	12.000	****	****	REFILL
01:25 AM	30	3.000	9.000	18.00	
	****	12.000	****	****	REFILL
01:55 AM	30	3.000	9.000	18.00	
	****	12.000	****	****	REFILL
02:25 AM	30	3.000	9.000	18.00	

$$Rf = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 2.11111

Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 8.52632

TP-8

Stabilized Rate (in/hr): 23.00

EXCAVATION DEPTH: 4.0'		DIAMETER OF TEST HOLE: 12"		TIME INTERVAL: 0:30	
TESTED DEPTH: 5.0'		TEST HOLE NO.: TP-8		INITIAL HEIGHT(IN.): 12.00	

TIME	TIME INTERVAL	HEIGHT	DROP	PERC RATE	REMARKS
10:55 PM	****	12.000	****	****	INITIAL FILL
11:25 PM	30	0.000	12.000	24.00	
	****	12.000	****	****	REFILL
11:55 PM	30	0.000	12.000	24.00	
	****	12.000	****	****	REFILL
12:25 AM	30	0.250	11.750	23.50	
	****	12.000	****	****	REFILL
12:55 AM	30	0.250	11.750	23.50	
	****	12.000	****	****	REFILL
01:25 AM	30	0.500	11.500	23.00	
	****	12.000	****	****	REFILL
01:55 AM	30	0.500	11.500	23.00	
	****	12.000	****	****	REFILL
02:25 AM	30	0.500	11.500	23.00	

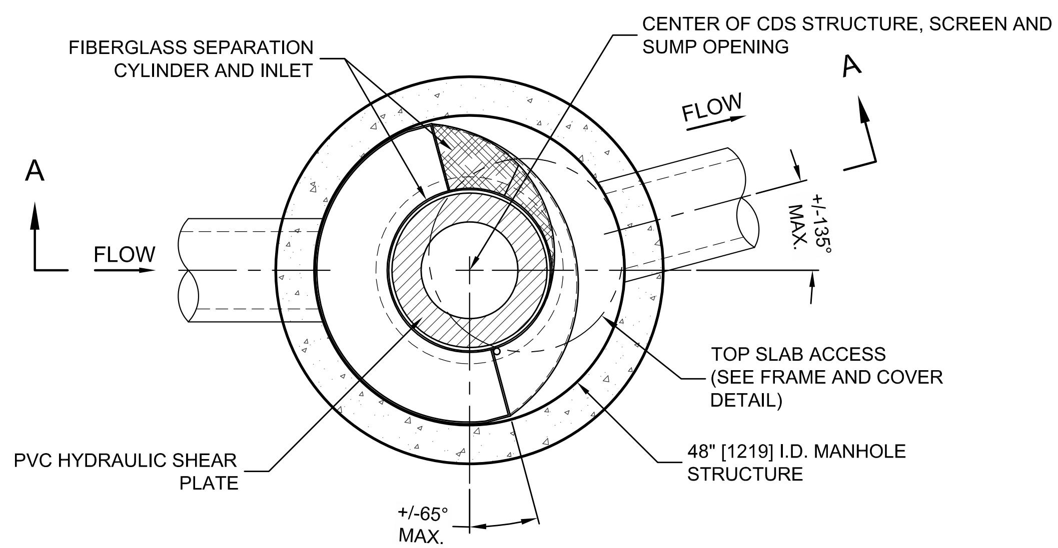
$$Rf = \frac{(2*d1-\Delta d)}{13.5} + 1$$

Rf = 1.92593

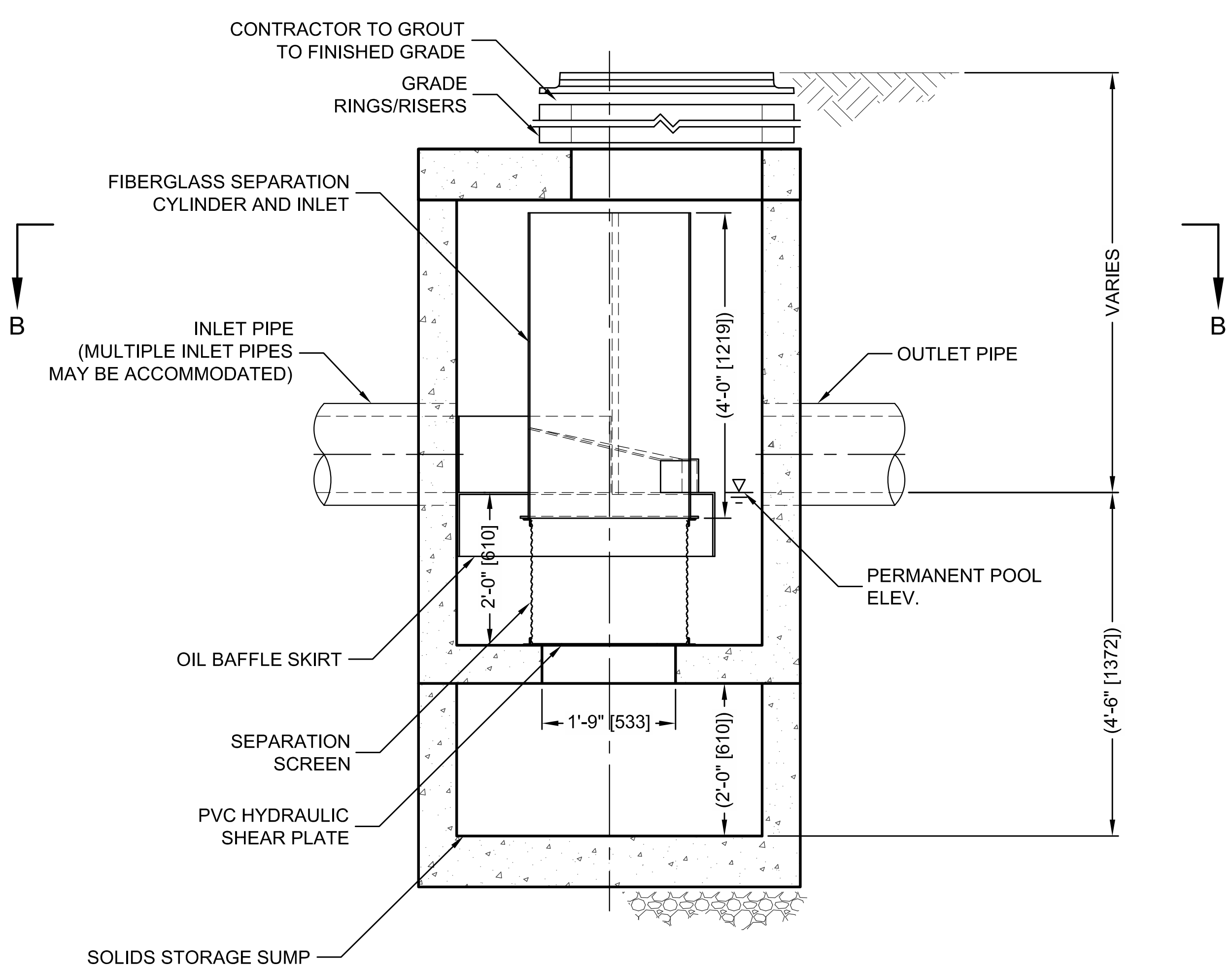
Design Infiltration Rate = Measured Percolation Rate / Rf

Design Infiltration Rate = 11.9423

1.1 ACRE SITE CDS UNIT



PLAN VIEW B-B
N.T.S.



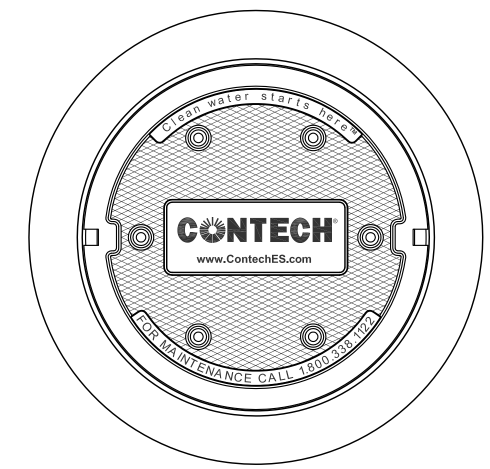
ELEVATION A-A
N.T.S.

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 0.7 CFS [19.8 L/s], OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 10.0 CFS [283 L/s]. IF THE SITE CONDITIONS EXCEED 10.0 [283 L/s] CFS, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

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3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

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CDS2015-4-C
INLINE CDS
STANDARD DETAIL

I:\STORMWATER\COMMOPS\22 CDS\40 STANDARD DRAWINGS\INLINE (CDS-C)\DWG\CDS2015-4-C-DTL.DWG 5/13/2014 5:52 PM

CONTECH ENGINEERED SOLUTIONS

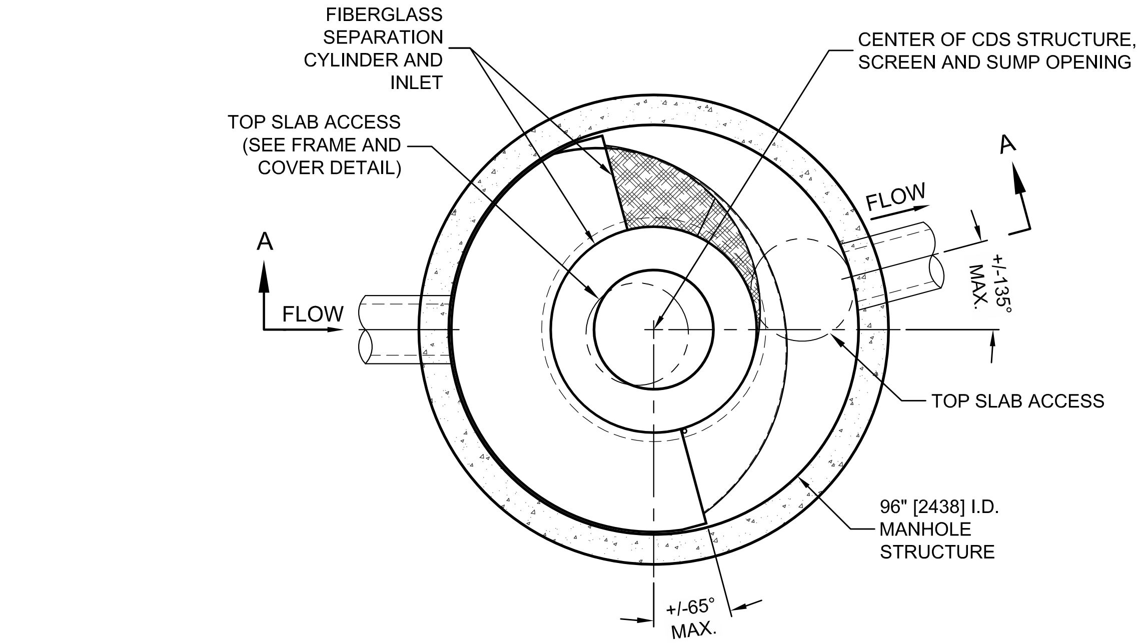
CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON AN AVERAGE PARTICLE SIZE OF 50 MICRONS
Vineyard Avenue and Rio School Lane - Site 1
Oxnard, CA

Area	1.1	acres	Rainfall Station #	23	
Weighted C	0.89		(select from Rainfall Data column D)		
Tc	5	minutes	Particle size	50	microns
CDS Model	2015-4	(select from pulldown)	CDS Treatment Capacity	0.7	cfs
Diameter			CDS Hydraulic Capacity	10.0	cfs

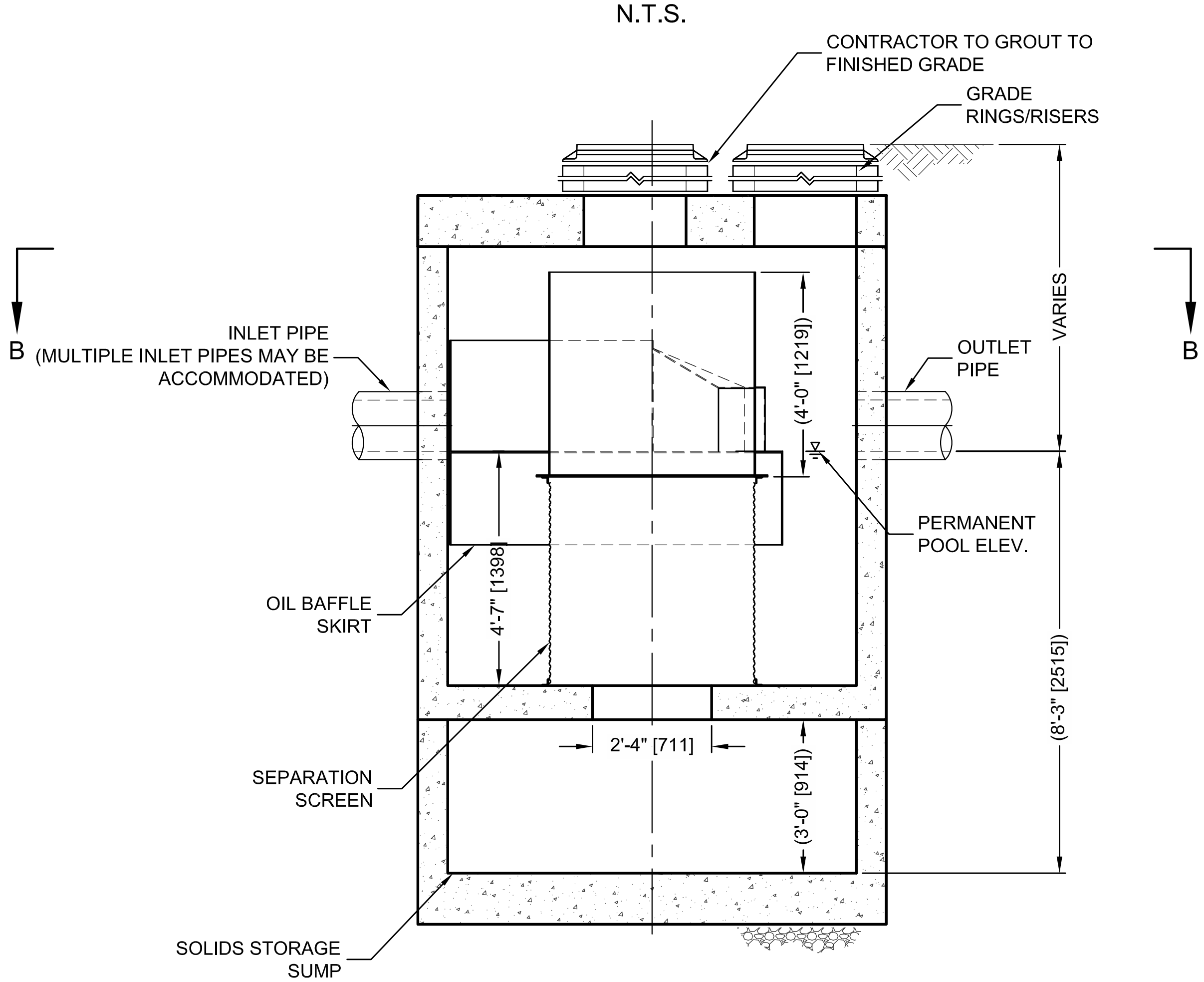
Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.04	9.9%	9.9%	0.04	0.04	5.59	95.3	9.4
0.08	19.8%	29.7%	0.08	0.08	11.19	93.4	18.5
0.12	14.0%	43.7%	0.12	0.12	16.78	91.5	12.8
0.16	10.1%	53.9%	0.16	0.16	22.38	89.6	9.1
0.20	7.8%	61.7%	0.20	0.20	27.97	87.7	6.9
0.24	6.4%	68.1%	0.23	0.23	33.57	85.8	5.5
0.28	5.6%	73.6%	0.27	0.27	39.16	83.9	4.7
0.32	4.1%	77.8%	0.31	0.31	44.75	82.0	3.4
0.36	3.6%	81.4%	0.35	0.35	50.35	80.1	2.9
0.40	2.9%	84.3%	0.39	0.39	55.94	78.2	2.3
0.44	2.5%	86.8%	0.43	0.43	61.54	76.3	1.9
0.48	1.7%	88.5%	0.47	0.47	67.13	74.4	1.3
0.52	2.1%	90.6%	0.51	0.51	72.73	72.4	1.5
0.56	1.4%	92.0%	0.55	0.55	78.32	70.5	1.0
0.60	0.6%	92.6%	0.59	0.59	83.91	68.6	0.4
0.64	0.1%	92.7%	0.63	0.63	89.51	66.7	0.1
0.68	0.9%	93.7%	0.67	0.67	95.10	64.8	0.6
0.72	0.3%	94.0%	0.70	0.70	100.00	63.2	0.2
0.76	0.9%	94.9%	0.74	0.70	100.00	63.2	0.5
0.80	0.6%	95.5%	0.78	0.70	100.00	63.2	0.4
							84.5
						Removal Efficiency Adjustment[2] =	0.0%
						Predicted % Annual Rainfall Treated =	97.3%
						Predicted Net Annual Load Removal Efficiency =	**84.5%**

1 - Based on 10 years of 15-minute rainfall data from NCDC Station 9666 in Los Angeles County, CA
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

9.4 ACRE CDS UNIT



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

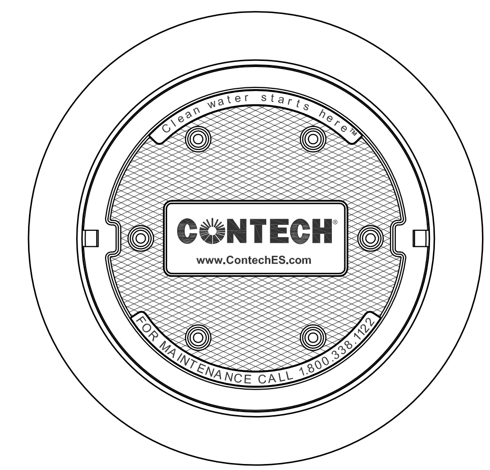
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,848; 6,641,720; 6,511,595; 6,581,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS4040-8-C DESIGN NOTES

CDS4040-8-C RATED TREATMENT CAPACITY IS 6.0 CFS [169.9 L/s], OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 30.0 CFS [850 L/s]. IF THE SITE CONDITIONS EXCEED 30.0 CFS [850 L/s], AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS4040-8-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*

NOTES/SPECIAL REQUIREMENTS:

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CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON AN AVERAGE PARTICLE SIZE OF 50 MICRONS
Vineyard Avenue and Rio School Lane - Site 2
Oxnard, CA

Area	9.4	acres	Rainfall Station #	23	
Weighted C	0.89		(select from Rainfall Data column D)		
Tc	5	minutes	Particle size	50	microns
CDS Model	4040	(select from pulldown)	CDS Treatment Capacity	6.0	cfs
Diameter			CDS Hydraulic Capacity	30.0	cfs

Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.04	9.9%	9.9%	0.31	0.31	5.22	95.4	9.4
0.08	19.8%	29.7%	0.63	0.63	10.44	93.7	18.6
0.12	14.0%	43.7%	0.94	0.94	15.66	91.9	12.9
0.16	10.1%	53.9%	1.25	1.25	20.89	90.1	9.1
0.20	7.8%	61.7%	1.57	1.57	26.11	88.3	6.9
0.24	6.4%	68.1%	1.88	1.88	31.33	86.5	5.5
0.28	5.6%	73.6%	2.19	2.19	36.55	84.8	4.7
0.32	4.1%	77.8%	2.51	2.51	41.77	83.0	3.4
0.36	3.6%	81.4%	2.82	2.82	46.99	81.2	2.9
0.40	2.9%	84.3%	3.13	3.13	52.21	79.4	2.3
0.44	2.5%	86.8%	3.45	3.45	57.43	77.7	1.9
0.48	1.7%	88.5%	3.76	3.76	62.66	75.9	1.3
0.52	2.1%	90.6%	4.07	4.07	67.88	74.1	1.5
0.56	1.4%	92.0%	4.39	4.39	73.10	72.3	1.0
0.60	0.6%	92.6%	4.70	4.70	78.32	70.5	0.4
0.64	0.1%	92.7%	5.01	5.01	83.54	68.8	0.1
0.68	0.9%	93.7%	5.33	5.33	88.76	67.0	0.6
0.72	0.3%	94.0%	5.64	5.64	93.98	65.2	0.2
0.76	0.9%	94.9%	5.95	5.95	99.21	63.4	0.6
0.80	0.6%	95.5%	6.27	6.00	100.00	63.2	0.4
							85.2
						Removal Efficiency Adjustment[2] =	0.0%
						Predicted % Annual Rainfall Treated =	97.5%
						Predicted Net Annual Load Removal Efficiency =	**85.2%**

1 - Based on 10 years of 15-minute rainfall data from NCDC Station 9666 in Los Angeles County, CA
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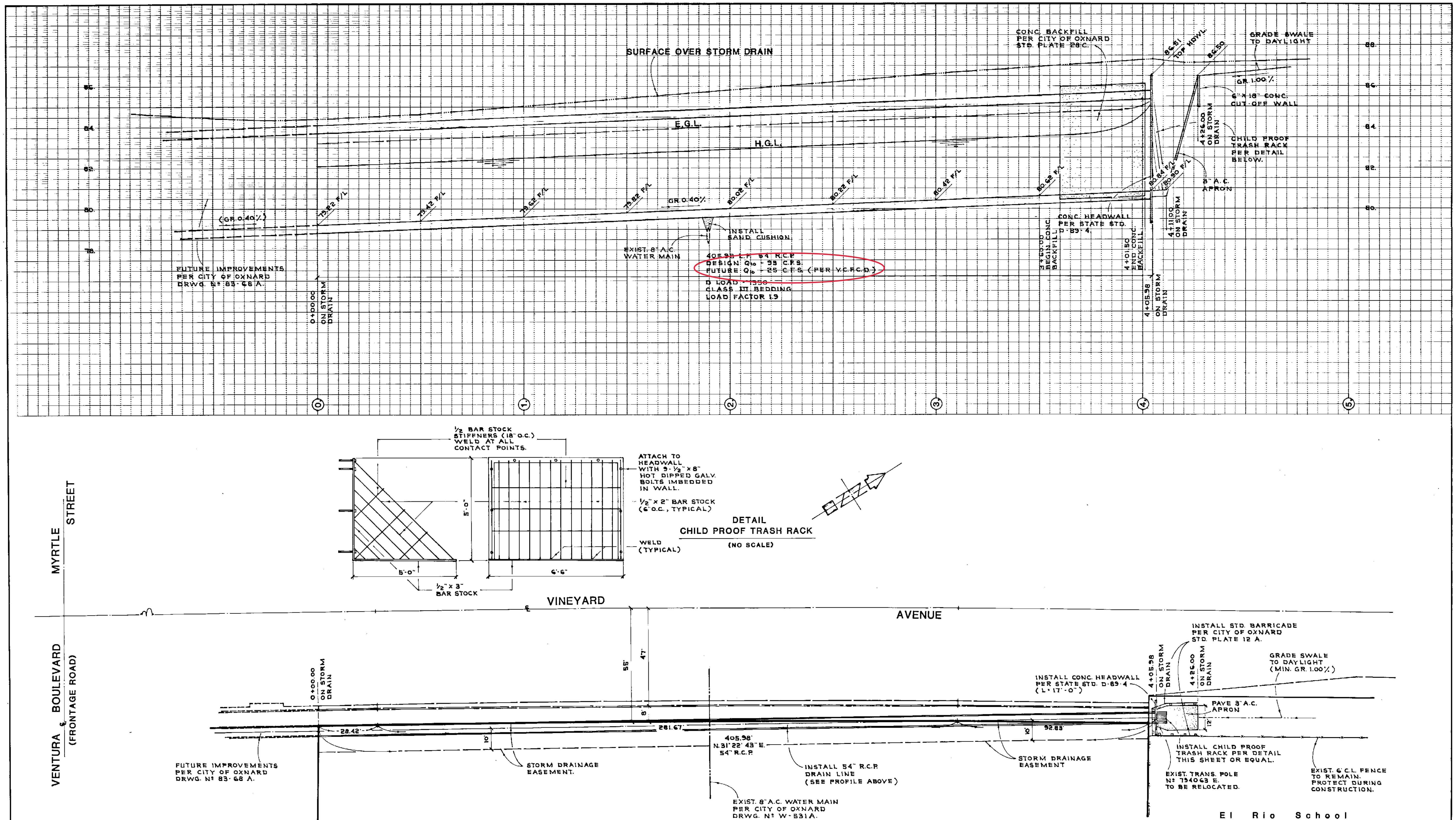


GRAPHIC SCALE:
HOR. 1"=20'
VERT. 1"=2'

THESE PLANS HAVE BEEN REVIEWED FOR POSSIBLE CONSTRUCTION CONFLICTS:			
UTILITY CO.	SIGNATURE	TITLE	DATE
SO. CAL. GAS			
EDISON	[signature]	Service Planner	4-24-85
G. T. E.	[signature] for R. Mohr	Eng. Supv	4-24-85
CABLE T.V.	Joe Aguilera	Const. Coordinator	4-22-85

CAL-TRANS ENCROACHMENT PERMIT
NO. ____________

PREPARED BY:
Robert Martin & Associates
ENGINEERS & SURVEYORS
VENTURA, CALIFORNIA
ROBERT E. MARTIN R.C.E. 11822 DATE:

P.D. NO. 417

REVISIONS			
MARK	DATE	DESCRIPTION	BY

APPROVAL RECOMMENDED BY
Robert L. Ra[illegible] R.C.E. 20209 DATE 4-25-85

CITY OF OXNARD, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

PARCEL MAP NO. 85-2
STORM DRAIN PLAN & PROFILE
VINEYARD AVENUE

APPROVED BY Benjamin J. Wong, ASST. PUBLIC WORKS DIR., R.C.E. 19356, DATE 4-25-85
APPROVED BY ____ PUBLIC WORKS DIR. R.C.E. DATE

SCALE HORIZ. 1"=20' VERT. 1"=2'
SHEET NO. 2 OF 4
DRAWN BY B. W.
CHECKED BY
DRAWING NUMBER 85-22A

(F-2630 D-3638)

85-22A
SHEET 2/4

Appendix G

Noise Study

Noise Study

for the

Rio Urbana Project

Prepared for

The Pacific West Communities
430 E. State Street, Suite 100
Eagle, Idaho 83616

Prepared by

Meridian Consultants LLC
910 Hampshire Road, Suite V
Westlake Village, CA 91361

August 2017

Table of Contents

Figures

Tables

1. EXECUTIVE SUMMARY

This Noise Study assesses and discusses the potential noise and vibration impacts that may occur with the implementation of the Rio Urbana Project ("Project"), located in Oxnard, California. The analysis describes the existing environment in the Project area, estimates future noise and vibration levels at surrounding land uses resulting from construction and operation of the Project, and identified the potential for significant impacts. An evaluation of the Project's contribution to potential cumulative noise impacts is also provided. The study summarizes the potential for the Project to conflict with applicable noise and vibration regulations, standards, and thresholds. The findings of the analyses are as follows:

- Construction activities would potentially result in short-term and temporary noise impacts to nearby noise-sensitive receptors due to on-site construction equipment and activities. Implementation of noise attenuation techniques and placement of the construction-staging area and earthmoving equipment away from noise-sensitive sites would lower construction noise levels.
- Construction of the Project would generate sporadic, temporary vibration effects adjacent to the Project area but would not be expected to exceed the significance thresholds.
- Operation of the Project would generate noise from Project-related traffic or from on-site sources (parking structure, loading dock area, refuse collection area, mechanical equipment) that would not exceed the significance thresholds.
- Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual project and compliance with locally adopted and enforced noise ordinances. Given that construction activities would be required to comply with the City's allowable hours and would be temporary, construction-related noise would not be significant.
- Noise associated with cumulative operational sources would not be significant.
- Due to the rapid attenuation characteristics of ground-borne vibration and distance of the cumulative projects to the Project site, no potential exists for cumulative construction- or operational-period impacts with respect to ground-borne vibration.

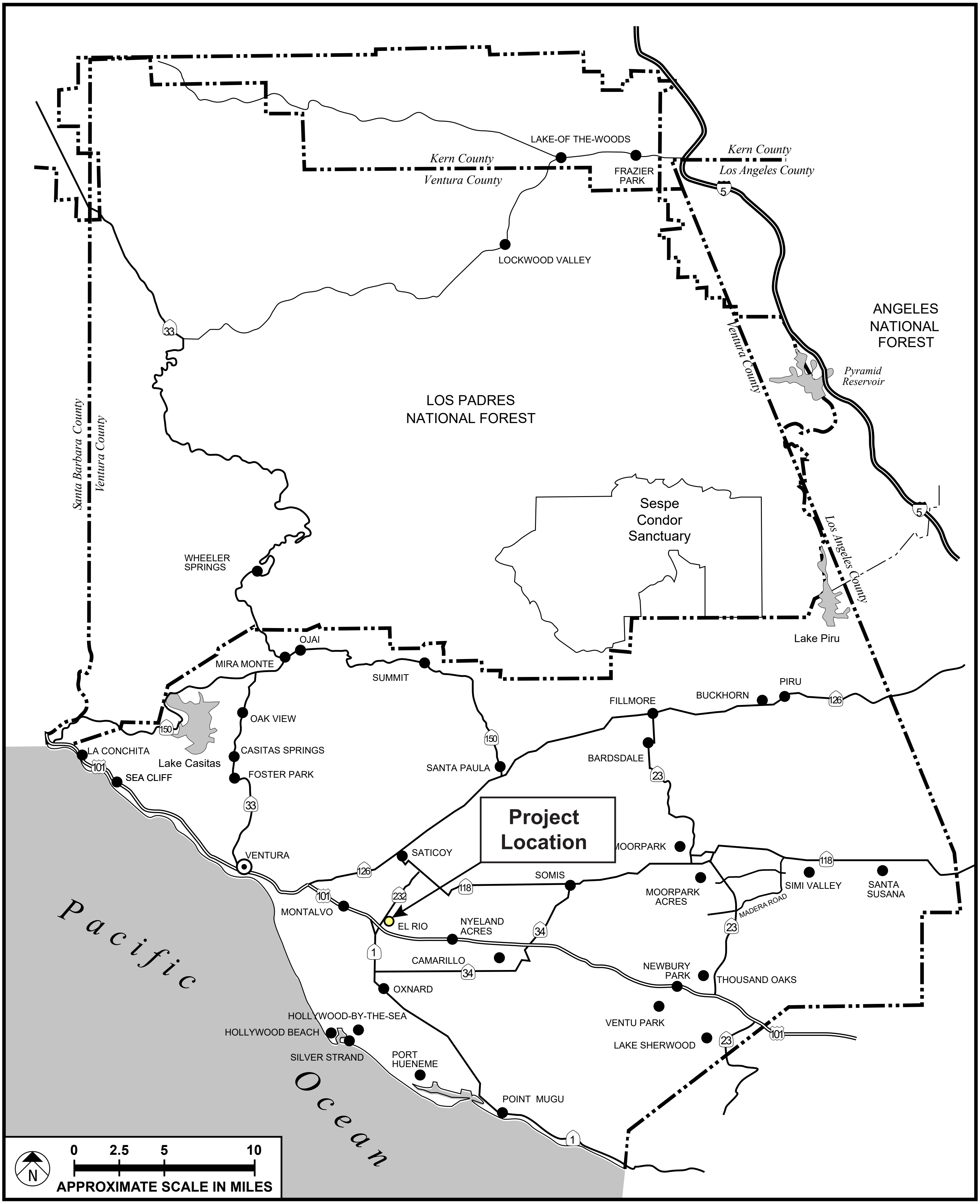
2. INTRODUCTION

The purpose of this noise report is to assess and discuss the impact of potential noise impacts that may occur with the implementation of the Rio Urbana Project ("Project"), located in Oxnard, California. The regional location of the proposed Project is depicted in **Figure 1, Regional Location Map**. The noise report analyzes short-term noise and ground-borne vibration impacts associated with the Project. The report also discusses the applicable, federal, State, and local noise and vibration regulations; the applicable noise and vibration thresholds; the methodology used to analyze potential noise and vibration impacts; and the modeled roadway noise.

Project Description

The Project site consists of approximately 10.24 acres of developed land with numerous vacant buildings (cafeteria, administration, classrooms, and two portable buildings) that was formerly the El Rio Elementary School campus. The school has been closed since 2008 and is currently utilized as a dispatch for school buses and storage. The proposed Project would include demolition of the existing uses to allow the construction of a new mixed-use development that includes 182 condominium residential units and a 15,000-square-foot office building containing the Rio School District Administrative offices.

The surrounding environment includes residential development to the north and west, commercial development to the south, and general commercial uses to the east. Regional access to the Project site is provided by Highway US 101 (US 101) to the south.



SOURCE: Meridian Consultants, LLC - August 2017

FIGURE 1

Meridian Consultants

Regional Location Map

174-001-17

SOURCE: Google Earth - 2017

FIGURE **2**

Meridian Consultants

Project Site Aerial

174-001-17

3. NOISE DESCRIPTORS

Fundamentals of Sound

Because the human ear does not respond uniformly to sounds at all frequencies, sound-pressure level alone is not a reliable indicator of loudness. For example, the human ear is less sensitive to low and high frequencies than to the medium frequencies that more closely correspond to human speech. In response to the sensitivity of the human ear to certain sound frequencies, the A-weighted noise level, referenced in units of dBA, was developed to better correspond with people's subjective judgment of sound levels. To support assessing a community reaction to noise, scales have been developed that average sound-pressure levels over time and quantifies the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels. The equivalent sound level (Leq) is the average A-weighted sound level measured over a given time interval. Leq can be measured over any period but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.

Table 1, Noise Descriptors, identifies various noise descriptors developed to measure sound levels over different periods of time.

Table 1
Noise Descriptors

Term	Definition
Decibel (dB	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measure sound to a reference pressure.
A-weighted decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Hertz (Hz)	The frequency of the pressure vibration, which is measured in cycles per second.
Kilo hertz (kHz)	One thousand cycles per second.
Equivalent sound level (Leq)	The sound level containing the same total energy as a time varying signal over a given time period. The Leq is the value that expresses the time averaged total energy of a fluctuating sound level. Leq can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.
Community noise equivalent level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments add 5 dBA for the evening, 7:00 PM to 10:00 PM, and add 10 dBA for the night, 10:00 PM to 7:00 AM. The 5 and 10 dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour Leq measurements typically results in a CNEL measurement that is within approximately 3 dBA of the peak-hour Leq.[a]
Nighttime (Lnight)	Lnight is the average noise exposure during the hourly periods from 10:00 PM to 7:00 AM.
Sound pressure level	The sound pressure is the force of sound on a surface area perpendicular to the direction of the sound. The sound pressure level is expressed in dB.
Ambient noise	The level of noise that is all encompassing within a given environment, being usually a composite of sounds from many and varied sources near to and far from the observer. No specific source is identified in the ambient environment.

[a] *California Department of Transportation, Technical Noise Supplement; A Technical Supplement to the Traffic Noise Analysis Protocol, (Sacramento, California: November 2009, pp. N51–N54).*

A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. In general, changes in a noise level of less than 3 dBA are not noticed by the human ear.[1] Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. An increase of greater than 5 dBA is readily noticeable, while the human ear perceives a 10 dBA increase in sound level to be a doubling of sound volume.

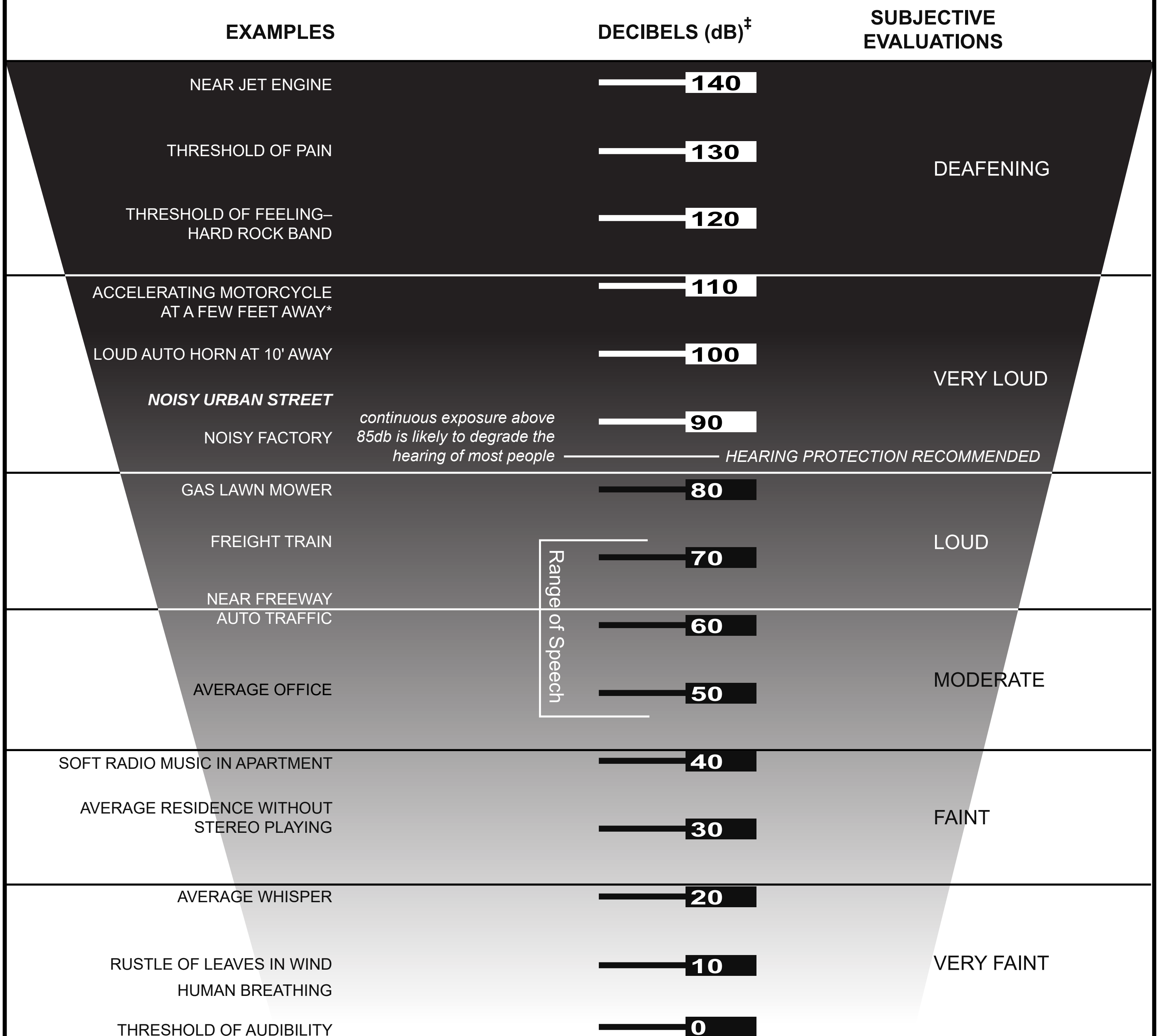
Noise sources can generally be categorized in two types: (1) point sources, such as stationary equipment; and (2) line sources, such as a roadway. Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dBA for each doubling of distance from the source to the receptor at acoustically hard sites, and at a rate of 7.5 dBA at acoustically soft sites.[2] A hard, or reflective, site consists of asphalt, concrete, or very hard-packed soil, which does not provide any excess ground-effect attenuation. An acoustically soft or absorptive site is characteristic of normal earth and most ground with vegetation. As an example, a 60 dBA noise level measured at 50 feet from a point source at an acoustically hard site would be 54 dBA at 100 feet from the source and would be 48 dBA at 200 feet from the source. Noise from the same point source at an acoustically soft site would be 52.5 dBA at 100 feet and 45 dBA at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling of distance from the source to the receptor for hard and soft sites, respectively.[3] Noise levels generated by a variety of activities are shown in **Figure 3, Common Noise Levels**. Manmade or natural barriers can also attenuate sound levels, as illustrated in **Figure 4, Noise Attenuation by Barriers**.

---

1 US Department of Transportation, Federal Highway Administration, *Fundamentals and Abatement of Highway Traffic Noise* (Springfield, VA: Author, September 1980), 81.

2 US Department of Transportation, *Fundamentals and Abatement* (September 1980), 97.

3 US Department of Transportation, *Fundamentals and Abatement* (September 1980), 97.



** NOTE: 50' from motorcycle equals noise at about 2000' from a four-engine jet aircraft.*

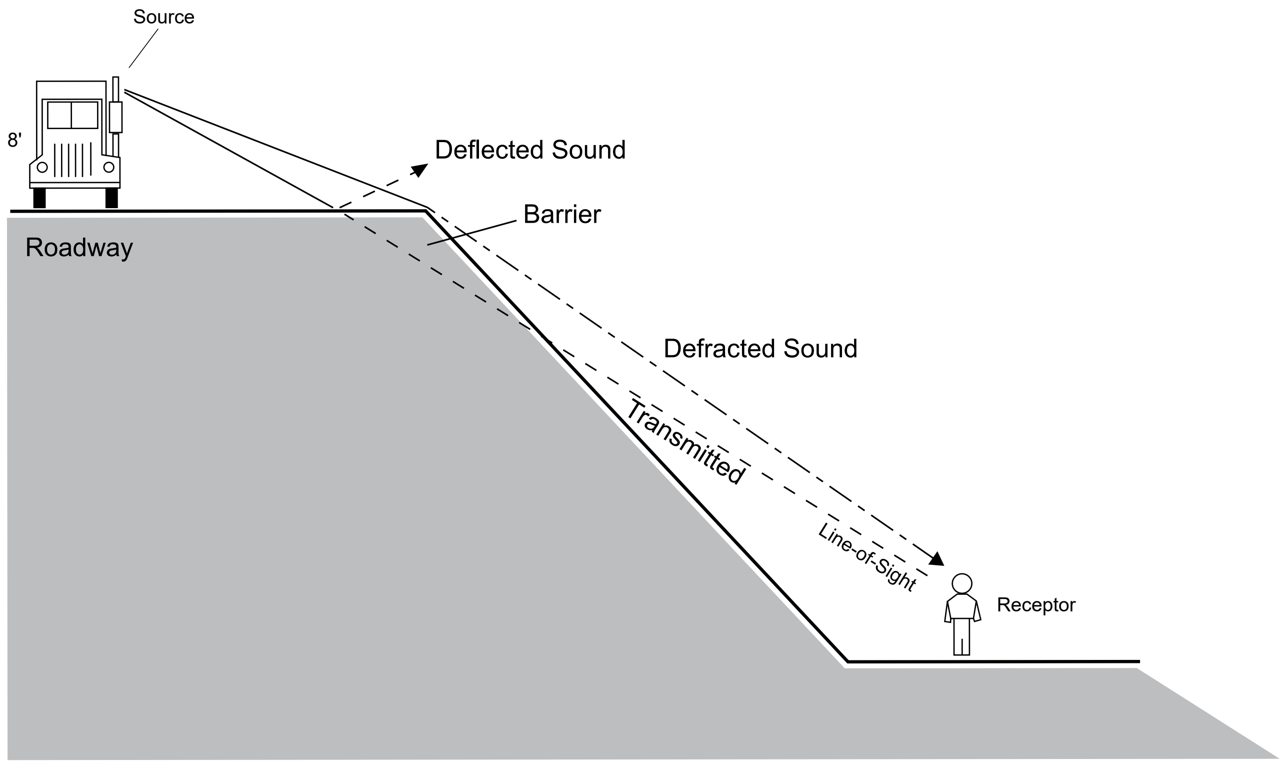
‡NOTE: dB are "average" values as measured on the A–scale of a sound–level meter.

FIGURE 3

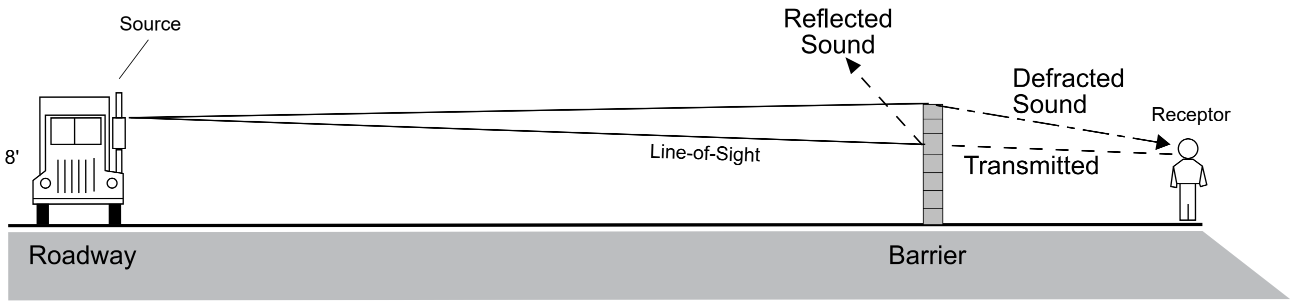
Meridian Consultants

Common Noise Levels

174-001-17



"Barrier Effect" Resulting from Differences in Elevation.



"Barrier Effect" Resulting from Typical Soundwall.

FIGURE 4

Meridian Consultants

Noise Attenuation by Barriers

Fundamentals of Vibration

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root-mean-square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response to ground-borne vibration. The RMS vibration velocity level can be presented in inches per second or in VdB (a decibel unit referenced to 1 microinch per second). Commonly, ground-borne vibration generated by man-made activities (i.e., road traffic, construction activity) attenuates rapidly with distance from the source of the vibration.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

4. METHODOLOGY

Construction Scenario

Project construction is estimated to begin the first quarter of 2018 and end on or around mid-2020. Construction would occur over six phases: (1) demolition, which would last approximately 20 days; (2) site preparation which would last approximately 3 days; (3) grading which would last approximately 6 days; (4) building construction which would last approximately 220 days; (5) architectural coating which would last approximately 30 days; and (6) paving which would last approximately 10 days.

Roadway Noise

Traffic noise levels were modeled using the Federal Highway Administration (FHWA) Noise Prediction Model. That model calculates the average noise level in dBA CNEL along a given roadway segment based on traffic volumes, vehicle mix, posted speed limits, roadway geometry, and site conditions. The model calculates noise associated with a specific line source and the results characterize noise generated by motor vehicle traffic along the specific roadway segment. The noise model assumes a "hard" site condition (i.e., providing for the minimum amount of sound attenuation allowed by the traffic noise model), a 6.0 dBA noise reduction per doubling of distance, and no barriers between the roadway and receivers.

The model incorporates an alpha factor that characterizes the surface conditions of the area. An acoustically hard site uses an alpha factor of zero, while an acoustically soft site uses an alpha factor of 0.5. The greater the alpha factor, the greater the noise attenuates with increasing distance. Average vehicle noise rates utilized in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation ("Caltrans"). According to data collected by Caltrans, California automobile noise is 0.8 to 1.0 dBA louder than national levels, while medium and heavy truck noise is 0.3 to 3.0 dBA quieter than national levels. Roadway traffic data were obtained from the traffic impact study for the proposed Project. Noise levels were evaluated with respect to the following modeled traffic scenarios:

- Existing (2017)
- Existing (2017) with Project
- Cumulative
- Cumulative with Project

Ambient Noise Measurements

Noise level monitoring was conducted by Meridian Consultants on July 6, 2017, at 5 locations within the Project area vicinity, as shown in **Figure 5, Noise Monitoring Locations.** Noise level monitoring was conducted for 15-minute intervals at each location using a Larson Davis Model 831 sound-level meter. This meter satisfies the American National Standards Institute (ANSI) standard for general environmental noise measurement instrumentation. The ANSI specifies several types of sound-level meters according to their precision. Types 1, 2, and 3 are referred to as "precision," "general-purpose," and "survey" meters, respectively. Most measurements carefully taken with a Type 1 sound-level meter will have a margin of error not exceeding 1 dB.

The Larson Davis Model 831 is a Type 1 precision sound-level meter. This meter meets all requirements of ANSI S1.4-1983 and ANSI1.43-1997 Type 1 standards, as well as International Electrotechnical Commission (IEC) IEC61672-1 Ed. 1.0, IEC60651 Ed 1.2, and IEC60804 Type 1, Group X standards.

The sound-level meter was located approximately 5 feet above ground and was covered with a Larson Davis windscreen. The sound-level meter was field calibrated with an external calibrator prior to operation.

SOURCE: Google Earth - 2017

FIGURE 5

Meridian Consultants

Noise Monitoring Locations

174-001-17

5. NOISE STANDARDS

Federal Transit Administration Standards

The Federal Transit Administration (FTA) has recommended noise criteria related to traffic-generated noise, as shown in **Table 2, Significance of Changes in Operational Roadway Noise Exposure**. These recommendations can be used as guidance to determine whether or not a change in traffic would result in "substantial" permanent increase in noise. The allowable noise exposure increase is reduced with increasing ambient existing noise exposure, such that higher ambient noise levels have a lower allowable noise exposure increase.

Table 2
Significance of Changes in Operational Roadway Noise Exposure

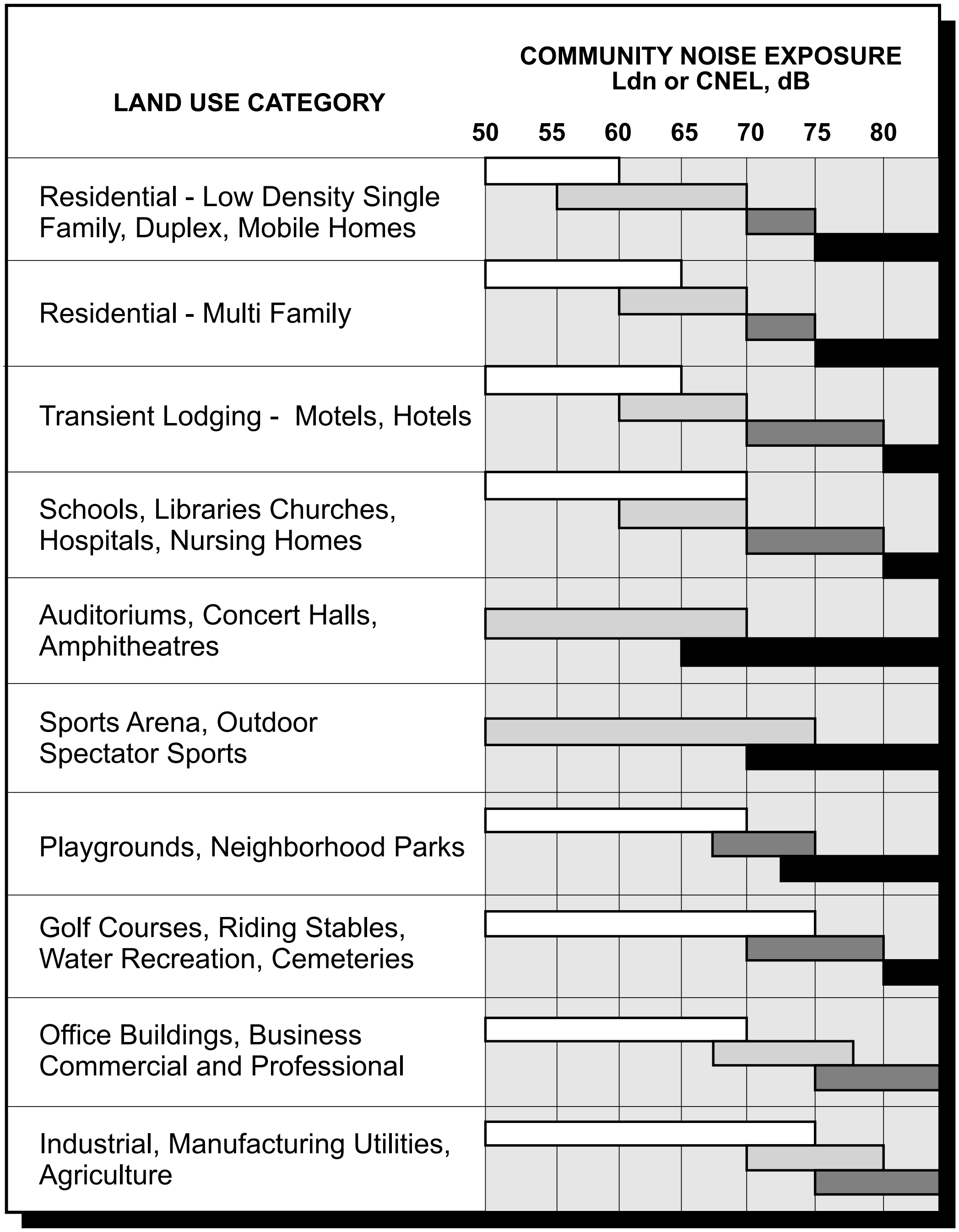
Existing Noise Exposure (dBA Ldn or Leq)	Allowable Noise Exposure Increase (dBA Ldn or Leq)
45–49	7
50–54	5
55–59	3
60–64	2
65–74	1
75+	0

Source: Federal Transit Administration (2006).

State of California Noise Standards

The State of California, Office of Planning and Research has published, with regard to community noise exposure, recommended guidelines for land use compatibility. These guidelines rate land use compatibility in terms of being *normally acceptable, normally unacceptable,* and *clearly unacceptable*. Each jurisdiction is required to consider these guidelines when developing a General Plan Noise Element and when determining acceptable noise levels within its community. These guidelines are representative of various land uses that include residential, commercial/mixed-use, industrial, and public facilities. **Figure 6, State Land Use Compatibility to Noise,** identifies the acceptable limit of noise exposure for various land use categories within the State. Noise exposure for mult-family uses is "normally acceptable" when the CNEL at exterior residential locations is between 50 and 65 dBA; "conditionally acceptable" when the CNEL is between 60 and 70 dBA; and "normally unacceptable" when the CNEL exceeds 70 dBA. These guidelines apply to noise sources such as vehicular traffic, aircraft, and rail movements.

In addition, the California Commission of Housing and Community Development officially adopted interior noise standards in 1974. In 1988, the Building Standards Commission approved revisions to the standards (Title 24, Part 2, California Code of Regulations). As revised, Title 24 establishes an interior noise standard of 45 dBA CNEL for residential space.



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise reduction features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

SOURCE: California Governor's Office of Planning and Research, State of California General Plan Guidelines, Appendix C: Guidelines for the Preparation and Content of Noise Elements of the General Plan, October 2003.

FIGURE **6**

Meridian Consultants

State Land Use Compatibility Guidelines for Noise

City of Oxnard 2030 General Plan

The City's General Plan establishes a number of goals and policies to provide an acceptable noise environment for noise-sensitive developments within the City.[4] The implementation measures for the Noise Element policies include but are not limited to noise study triggers, site design considerations, traffic-calming measures, and coordination with other local agencies, regional agencies, state agencies, and federal agencies. The applicable goals include:

- Goal SH-5: A quiet and safe residential and working environment in terms of exposure to and/or generation of noise;
- Goal SH-6: Consideration of noise levels and impacts in the land use planning and development process

Noise Ordinance

As party of the City's Noise Ordinance, properties within the City are assigned a noise zone based on their corresponding land use, as shown in **Table 3, Exterior Noise Standards**, which identified the allowable exterior sound standards and corresponding time of day for each of the noise zones identified in the City's noise ordinance. Residential properties are designated as Noise Zone I, commercial properties are designated as Noise Zone II, and industrial districts are designated as Noise Zone III. According to the City of Oxnard Land Use Designation Map,[5] the existing Project site is designated for school use. However, the General Plan Amendment would change the land use designation from School to Residential Medium and Commercial Office Building. As such, the exterior noise standards for Zone I and Zone II would apply for this Project.

4 City of Oxnard, *2030 General Plan Goals & Policies* (adopted October 2011).
5 *City of Oxnard 2030 General Plan* Map, https://www.oxnard.org/wp-content/uploads/2016/03/203020GENERAL20PLAN2030x402009.14V3-1.pdf.

Table 3
Exterior Noise Standards

Zone	Designated Zone	Time Interval	Allowable Exterior Sound Level (CNEL)
Zone I	Residential	7:00 AM–10:00 PM	55
		10:00 PM–7:00 AM	50
Zone II	Commercial	7:00 AM–10:00 PM	65
		10:00 PM–7:00 AM	60
Zone III	Industrial	Anytime	70
Zone IV	Near Railroad/US 101	Anytime	70

Source: City of Oxnard, Noise Ordinance, art. IX, sec. 7-185.

In addition, with respect to residential uses, the interior sound level may not exceed 45 dBA between the hours of 10:00 PM and 7:00 AM and 50 dBA between 7:00 AM and 10:00 PM for a period of 5 or minutes in any hour. Furthermore, the allowable interior level plus 5 dBA cannot be exceeded for more than one minute in an hour and the allowable interior level plus 10 dBA cannot be exceeded for any period of time.

6. EXISTING CONDITIONS

Ambient Noise Levels

Short-term sound monitoring was conducted at five locations to measure the ambient sound environment in the Project vicinity. (See **Appendix A** for the data sheets.) Measurements were taken over 15-minute intervals at each location between the hours of 7:57 AM and 9:27 AM, as indicated in **Table 4, Ambient Noise Measurements**. **Figure 5** depicts locations where ambient noise measurements were conducted. As shown in **Table 4,** ambient noise levels ranged from a low of 53.4 dBA along Rio School Lane (Site 1) to a high of 73.3 dBA on the corner of E. Vineyard Avenue and Rio School Lane (Site 2). Higher ambient noise levels were located along E. Vineyard Avenue due to heavy vehicular traffic.

Table 4
Ambient Noise Measurements

Location Number/Description		Time Period	Noise Source	dBA Leq
1	Along Rio School Lane; northeast portion of the site	12:28 PM–12:43 PM	Light vehicular traffic along Rio School Lane	53.4
2	Corner of E. Vineyard Avenue and Rio School Lane; northwest portion of the site	12:08 PM–12:23 PM	Heavy vehicular traffic along E. Vineyard Avenue	73.3
3	Along E. Vineyard Avenue; southwest portion of the site	11:50 AM–12:05 PM	Heavy vehicular traffic along E. Vineyard Avenue	71.3
4	Southeast portion of the site	11:31 AM–11:46 AM	Pedestrian and parking lot activity	55.2
5	Across E. Vineyard Avenue	12:54 PM – 1:09 PM	Heavy vehicular traffic along E. Vineyard Avenue	72.1

Source: Refer to ***Appendix A*** *for noise monitoring data sheets.*
Note: dBA = A-weighted decibels; Leq = average equivalent sound level.

Existing Off-Site Roadway Noise Levels

The average daily trips (ADTs) for local roadway segments were obtained from the traffic impact analysis for the Project prepared by Associated Transportation Engineers.[6] The estimated existing roadway noise levels are provided in **Table 5, Existing Roadway Noise Levels**. As indicated in **Table 5**, the existing modeled vehicle-generated noise levels along roadway segments near the proposed Project site range from a low of 31.9 dBA CNEL at Stroube Street, west of Vineyard Avenue (Intersection 2), to a high of 67.5 dBA CNEL at Vineyard Avenue, south of the US 101 SB off-ramp (Intersection 5).

6 Associated Transportation Engineers, *Rio Urbana Residential and Office Development Traffic and Circulation Study*, July 25, 2017.

Table 5
Existing Roadway Noise Levels

Intersection #	Roadway Segment	Time Period	Roadway Noise Level (dBA CNEL)
Vineyard Avenue			
1	North of E. Stroube Street	AM	65.0
		PM	65.3
Vineyard Avenue			
1	South of E. Stroube Street	AM	65.2
		PM	65.2
2	North of Rio School Lane	AM	65.6
		PM	65.0
Stroube Street			
1	East of Vineyard Avenue	AM	49.6
		PM	48.1
Stroube Street			
1	West of Vineyard Avenue	AM	47.0
		PM	46.8
Vineyard Avenue			
2	South of Rio School Lane	AM	65.6
		PM	65.0
3	North of River Park Boulevard	AM	65.5
		PM	65.7
Stroube Street			
2	East of Vineyard Avenue	AM	39.9
		PM	34.5
Stroube Street			
2	West of Vineyard Avenue	AM	35.6
		PM	31.9
Vineyard Avenue			
3	South of River Park Boulevard	AM	67.1
		PM	67.0
4	North of US 101 NB off-ramp	AM	67.1
		PM	66.9
River Park Boulevard			
3	East of Vineyard Avenue	AM	59.2
		PM	59.1

Intersection #	Roadway Segment	Time Period	Roadway Noise Level (dBA CNEL)
River Park Boulevard			
3	West of Vineyard Avenue	AM	59.5
		PM	58.3
Vineyard Avenue			
4	South of US 101 NB off-ramp	AM	67.2
		PM	66.9
5	North of US 101 SB off-ramp	AM	67.3
		PM	67.0
US 101 NB Off-Ramp			
4	East of Vineyard Avenue	AM	54.0
		PM	53.2
US 101 NB Off-Ramp			
4	West of Vineyard Avenue	AM	48.8
		PM	49.8
Vineyard Avenue			
5	South of US 101 SB off-ramp	AM	67.5
		PM	67.3
6	North of Esplanade Drive	AM	67.9
		PM	67.4
US 101 SB Off-Ramp			
5	East of Vineyard Avenue	AM	51.8
		PM	53.6
US 101 SB Off-Ramp			
5	West of Vineyard Avenue	AM	52.5
		PM	54.2
Vineyard Avenue			
6	South of Esplanade Drive	AM	67.5
		PM	66.8
Esplanade Drive			
6	East of Vineyard Avenue	AM	53.8
		PM	52.0
Esplanade Drive			
6	West of Vineyard Avenue	AM	55.6
		PM	64.2
Rose Avenue			
7	North of W. Stroube Street	AM	64.3
		PM	64.3

Intersection #	Roadway Segment	Time Period	Roadway Noise Level (dBA CNEL)
W. Stroube Street			
7	West of Rose Avenue	AM	47.9
		PM	49.7
Rose Avenue			
7	South of W. Stroube Street	AM	64.8
		PM	65.0
8	North of River Park Boulevard	AM	64.7
		PM	65.0
River Park Boulevard			
8	East of Rose Avenue	AM	62.8
		PM	58.9
River Park Boulevard			
8	West of Rose Avenue	AM	52.9
		PM	50.9
Rose Avenue			
8	South of River Park Boulevard	AM	67.3
		PM	66.1
9	North US 101 NB off-ramp	AM	67.3
		PM	66.2
US 101 NB Off-Ramp			
9	East of Rose Avenue	AM	55.8
		PM	55.4
US 101 NB Off-Ramp			
9	West of Rose Avenue	AM	51.1
		PM	47.5
Rose Avenue			
9	South of US 101 NB off-ramp	AM	68.2
		PM	67.5
10	North of US 101 SB off-ramp	AM	68.0
		PM	67.4
US 101 SB Off-Ramp			
10	East of Rose Avenue	AM	50.2
		PM	51.5
US 101 SB Off-Ramp			
10	West of Rose Avenue	AM	55.4
		PM	54.7

Intersection #	Roadway Segment	Time Period	Roadway Noise Level (dBA CNEL)
Rose Avenue			
10	South of US 101 SB off-ramp	AM	68.9
		PM	68.3

Source: Traffic noise model results are provided in ***Appendix B****.*
Note: Roadway noise levels are modeled 75 feet from the center of the roadway.

Vibration Conditions

Based on field observations, the primary source of existing ground-borne vibration in the vicinity of the Project Site is vehicle traffic on local roadways. According to the FTA,[7] typical road traffic–induced vibration levels are unlikely to be perceptible by people. Trucks and buses typically generate ground-borne vibration velocity levels of approximately 63 VdB (at a 50-foot distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. A vibration level of 72 VdB is above the 60 VdB level of perceptibility.

7. NOISE ANALYSIS

Construction

Construction Noise

Construction activities that would occur during the construction phases (demolition, site preparation, grading, building construction, architectural coating, and paving) would generate both steady-state and episodic noise that would be heard both on and off the Project site. Estimated noise levels associated with the Project could occur as close as 90 feet from the nearest residence. Typical maximum noise levels and duty cycles of representative types of equipment are presented in **Table 6, Typical Maximum Noise Levels for Construction Equipment.** Construction equipment noise would not be constant because of the variations of power, cycles, and equipment locations. For maximum noise events, this analysis considers equipment operating at the edge of the property line of the Project site.

7 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment* (2004).

Table 6
Typical Maximum Noise Levels for Construction Equipment

Equipment Description	Noise Level at 50 feet (dBA)	Typical Duty Cycle (%)
Auger drill rig	84	20
Backhoe	78	40
Chain saw	84	20
Compressor (air)	78	40
Concrete mixer truck	79	40
Concrete pump truck	81	20
Concrete/Industrial saw	90	20
Crane	81	16
Dozer	82	40
Dump truck	76	40
Excavator	81	40
Front end loader	79	40
Generator (25 kVA or less)	73	50
Generator (more than 25 kVA)	81	50
Grader	85	40
Paver	77	50
Pneumatic tool	85	50
Pump	81	50
Rock drill	81	20
Scraper	84	40
Tractor	84	40
Vacuum excavator (vac-truck)	85	40
Vibratory concrete mixer	80	20

Source: U.S. DOT, FHWA Construction Equipment and Noise Level Ranges.
Note: kVA = kilovolt-ampere

As mentioned previously, sound generated by the construction noise source typically diminishes at a rate of 6 dBA over hard surfaces, such as asphalt, and 7.5 dBA over soft surfaces, such as vegetation, for each doubling of distance. Barriers—such as walls, berms, or buildings, and elevation differences—can also reduce sound levels by up to 20 dBA.[8]

The potential noise impact generated during construction depends on the phase of construction and the percentage of time the equipment operates over the workday. Building construction would be the noisiest

8 Caltrans, *Technical Noise Supplement* (1998), pp. 33–40, 123–131.

phase of construction, lasting approximately 5 months at various locations throughout the Project site. However, construction noise estimates used for the analysis are representative of worst-case conditions because it is very unlikely that all the equipment contained on site would operate simultaneously.

The noise levels at the various distances from construction activity are shown in **Table 7, Construction Noise Estimates.** Construction equipment operates at its nosiest levels for certain percentages of time during operation. Equipment such as excavators, graders, and loaders would operate at different percentages over the course of an hour.[9] Standard exhaust mufflers for all equipment and the break in line of sight to a house or apartment would reduce construction noise levels approximately 7 dBA.

Table 7
Construction Noise Estimates

Receptor ID	Distance from Project Site (feet)[a]	Estimated Construction Noise Levels by Phase						Ambient Noise Leq (dBA)	Maximum Noise Exceedance, Leq (dBA)
		Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating		
REC-1	95	79.7	78.4	78.2	81.0	76.1	68.4	72.1	+9.4
REC-2	90	80.2	78.9	78.7	81.5	76.6	68.9	73.3	+8.8
REC-3	195	73.5	72.2	72.0	74.8	69.9	62.2	53.4	+21.4

*Source: Construction noise data sheets are provided in **Appendix C.***
Note: dBA = A-weighted decibel; Leq = equivalent sound level.
[a] Distance to source is the closest piece of operating equipment to the receptors that are closest to construction activities occurring at the Project site. As such, other receptors would experience lower levels of noise than those estimated for these receptors.

Equipment estimates and noise levels used for the analysis during the construction phases (demolition, site preparation, grading, building construction, paving, and architectural coating) are representative of worst-case conditions because it is very unlikely that all the equipment contained on the Project site would operate simultaneously. Construction activities would be limited to Monday through Friday between 7:00 AM and 7:00 PM; Saturday between 8:00 AM and 5:00 PM; and at no time on Sundays or holidays.

Receptor 1 (REC-1) is a single-family residential unit located 95 feet to the southwest of the Project boundary across E. Vineyard Avenue (as shown in **Figure 5**). When all pieces of equipment are operating at the same time at the edge of the Project boundary, which is a conservative estimate, construction noise levels at this site would increase ambient noise levels by approximately 9.4 dB.

9 Federal Highway Administration, *Traffic Noise Model* (2006).

Receptor 2 (REC-2) is a single-family residential unit located 90 feet to the west of the Project boundary across E. Vineyard Avenue (as shown in **Figure 5**). When all pieces of equipment are operating at the same at the edge of the Project boundary, which is a conservative estimate, construction noise levels at this site would increase ambient noise levels by 8.8 dB.

Receptor 3 (REC-3) is a single-family residential unit located 195 feet to the north of the Project boundary across Rio School Lane (as shown in **Figure 5**). It is important to note these residences are facing toward E. Stroube Street, and are shielded by trees and other vegetation. As such, when all pieces of equipment are operating at the same time at the edge of the Project boundary without any noise-shielding reductions, which is a conservative estimate, construction noise levels at this site would increase ambient noise levels by 21.4 dB.

With implementation of the recommended **Mitigation Measure N-1,** construction activities would include the use of a sound curtain, which would result in a minimum of 15 dBA reduction. For instance, a sound curtain with a sound transmission classification rating of 25 could reduce noise levels from 15 to 22 dBA on both side of the equipment where the curtain is installed.[10] Furthermore, standard exhaust mufflers for all equipment and the break in line of sight to a sensitive receptor would reduce construction noise levels by approximately 7 dBA. As such, with implementation of these recommended measures, construction noise impacts would not be considered significant.

Construction Traffic

In addition to equipment-generated noise associated with construction activities, construction traffic would generate noise along access routes to the Project site. The major pieces of heavy equipment would be moved on to the site only one time for each construction activity.

Each phase of construction would result in varying levels of intensity and the number of construction personnel. The construction workforce would consist of approximately 13 worker trips per day and 875 total hauling trips during demolition (removal of approximately 192,304 square feet of building and concrete material); 8 worker trips per day during site preparation; 10 worker trips per day and 2,125 total hauling trips during grading (import of approximately 17,000 cubic yards); 214 worker trips per day and 52 total vendor trips during building construction; 15 worker trips per day during paving; and 43 worker trips per day during architectural coating.

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10 Behrens and Associates Environmental Noise Control, "Temporary Compressor Sound Walls," http://www.drillingnoisecontrol.com/tempcompressor.html.

Construction Vibration

Table 8, Construction Vibration Levels Estimates, lists the vibration source levels at varying distances of the assumed construction equipment to be used for during construction. As shown in **Table 8**, dozers are capable of producing approximately 0.021 inches per second PPV and would not generate vibration levels in excess of 0.5 inches per second PPV. As such, the single-family residential units (REC-1, REC-2, REC-3) located nearest to the Project site with regard to construction vibration activities would not be affected as a result of attenuation of ground-borne vibration. Furthermore, construction activities would be restricted to daytime hours when people are the least sensitive to vibration intrusions.

Table 8
Construction Vibration Levels Estimates

Equipment	Inches per Second PPV at Adjusted Distance		
	90 feet	95 feet	195 feet
Air compressor	0.013	0.012	0.004
Backhoe	0.018	0.016	0.006
Cement and mortar mixer	0.006	0.005	0.000
Concrete saw	0.003	0.002	0.001
Crane	0.008	0.008	0.003
Dozer	0.021	0.019	0.007
Forklift	0.006	0.005	0.002
Grader	0.010	0.010	0.003
Generator	0.003	0.002	0.001
Paver	0.009	0.009	0.003
Roller	0.006	0.005	0.002
Scraper	0.008	0.008	0.003
Welder	0.006	0.005	0.002

Source: Office of Planning and Environment, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06 (May 2006), 12-9.

Operation

Roadway Noise

Roadway noise levels were modeled to determine if operation of the proposed Project would result in exceedance of the City's interior and exterior noise standards for residential and commercial uses along utilized roadways. In addition, roadway noise levels were modeled to determine if operation of the proposed Project would increase roadway noise levels greater than 5 dBA or more along residential uses when post-Project noise levels are less than 60 dBA; 3 dBA or more when post-Project noise levels are between 60 and 65 dBA; and 1.5 dBA or more when post-Project noise levels are greater than 65 dBA. The model considers roadway noise levels from local street segments that would have an increase or decrease in vehicle traffic as a result of the proposed Project.

Existing plus Project

Table 9, Existing plus Project, illustrates the change in CNEL from existing traffic volumes and existing plus project traffic volumes. The difference in traffic noise between existing conditions and Project conditions represents the increase in noise attributable to Project-related traffic. As shown in **Table 9**, maximum noise level increases along roadways adjacent to residential and commercial uses by traffic from the proposed Project would range from a low of 0.0 dBA (several locations throughout the vicinity of the Project area) to a high of 8.1 dBA at Stroube Street, east of Vineyard Avenue (Intersection 2). The roadway noise level along Stroube Street would be 42.6 dBA CNEL, and would fall below the residential and commercial exterior noise level standard.

The proposed Project interior noise levels by traffic would be attenuated by 25 dBA from outdoor noise levels. Roadway noise levels at Rose Avenue, south of the US 101 SB off-ramp (Intersection 10) would be 68.9 dBA CNEL, similar to existing conditions. Based on attenuation from outdoor to indoor noise levels, interior noise levels would be 43.0 dBA, below the 45 dBA threshold for residential and commercial uses.

Table 9
Existing plus Project

			Existing	Existing plus Project	Change
Intersection #	**Roadway Segment**	**Time Period**	**dBA CNEL**		
Vineyard Avenue					
1	North of E. Stroube Street	AM	65.0	65.1	0.1
		PM	65.3	65.4	0.1
Vineyard Avenue					
1	South of E. Stroube Street	AM	65.2	65.3	0.1
		PM	65.2	65.3	0.1
2	North of Rio School Lane	AM	65.6	65.6	0.0
		PM	65.0	65.1	0.1
Stroube Street					
1	East of Vineyard Avenue	AM	49.6	49.8	0.2
		PM	48.1	48.3	0.2
Stroube Street					
1	West of Vineyard Avenue	AM	47.0	47.0	0.0

Intersection #	Roadway Segment	Time Period	Existing	Existing plus Project	Change
			dBA CNEL		
		PM	46.8	46.8	0.0
Vineyard Avenue					
2	South of Rio School Lane	AM	65.6	65.7	0.1
		PM	65.0	65.1	0.1
3	North of River Park Boulevard	AM	65.5	65.6	0.1
		PM	65.7	65.8	0.1
Stroube Street					
2	East of Vineyard Avenue	AM	39.9	44.4	4.5
		PM	34.5	42.6	8.1
Stroube Street					
2	West of Vineyard Avenue	AM	35.6	35.6	0.0
		PM	31.9	31.9	0.0
Vineyard Avenue					
3	South of River Park Boulevard	AM	67.1	67.2	0.1
		PM	67.0	67.1	0.1
4	North of US 101 NB off-ramp	AM	67.1	67.2	0.1
		PM	66.9	67.0	0.1
River Park Boulevard					
3	East of Vineyard Avenue	AM	59.2	59.2	0.0
		PM	59.1	59.1	0.0
River Park Boulevard					
3	West of Vineyard Avenue	AM	59.5	59.5	0.0
		PM	58.3	58.3	0.0
Vineyard Avenue					
4	South of US 101 NB off-ramp	AM	67.2	67.3	0.1
		PM	66.9	66.9	0.0
5	North of US 101 SB off-ramp	AM	67.3	67.4	0.1
		PM	67.0	67.1	0.1
US 101 NB Off-Ramp					
4	East of Vineyard Avenue	AM	54.0	54.0	0.0
		PM	53.2	53.2	0.0
US 101 NB Off-Ramp					
4	West of Vineyard Avenue	AM	48.8	49.0	0.2
		PM	49.8	50.1	0.3
Vineyard Avenue					
5	South of US 101 SB off-ramp	AM	67.5	67.6	0.1

Intersection #	Roadway Segment	Time Period	Existing	Existing plus Project	Change
			dBA CNEL		
		PM	67.3	67.4	0.1
6	North of Esplanade Drive	AM	67.9	67.9	0.0
		PM	67.4	67.4	0.0
US 101 SB Off-Ramp					
5	East of Vineyard Avenue	AM	51.8	51.8	0.0
		PM	53.6	53.6	0.0
US 101 SB Off-Ramp					
5	West of Vineyard Avenue	AM	52.5	52.7	0.2
		PM	54.2	54.3	0.1
Vineyard Avenue					
6	South of Esplanade Drive	AM	67.5	67.5	0.0
		PM	59.9	59.9	0.0
Esplanade Drive					
6	East of Vineyard Avenue	AM	53.8	53.8	0.0
		PM	52.0	52.0	0.0
Esplanade Drive					
6	West of Vineyard Avenue	AM	59.7	59.7	0.0
		PM	55.6	55.6	0.0
Rose Avenue					
7	North of W. Stroube Street	AM	64.3	64.3	0.0
		PM	64.3	64.4	0.1
W. Stroube Street					
7	West of Rose Avenue	AM	47.9	48.2	0.3
		PM	49.7	49.9	0.2
Rose Avenue					
7	South of W. Stroube Street	AM	64.8	64.8	0.0
		PM	65.0	65.0	0.0
8	North of River Park Boulevard	AM	64.7	64.7	0.0
		PM	65.0	65.0	0.0
River Park Boulevard					
8	East of Rose Avenue	AM	62.8	62.8	0.0
		PM	58.9	58.9	0.0
River Park Boulevard					
8	West of Rose Avenue	AM	52.9	52.9	0.0
		PM	50.9	50.9	0.0
Rose Avenue					

Intersection #	Roadway Segment	Time Period	Existing	Existing plus Project	Change
			dBA CNEL		
8	South of River Park Boulevard	AM	67.3	67.3	0.0
		PM	66.1	66.1	0.0
9	North US 101 NB off-ramp	AM	67.3	67.3	0.0
		PM	66.2	66.2	0.0
US 101 NB Off-Ramp					
9	East of Rose Avenue	AM	55.8	55.8	0.0
		PM	55.4	55.4	0.0
US 101 NB Off-Ramp					
9	West of Rose Avenue	AM	51.1	51.1	0.0
		PM	47.5	47.5	0.0
Rose Avenue					
9	South of US 101 NB off-ramp	AM	68.2	68.2	0.0
		PM	67.5	67.5	0.0
10	North of US 101 SB off-ramp	AM	68.0	68.1	0.1
		PM	67.4	67.4	0.0
US 101 SB Off-Ramp					
10	East of Rose Avenue	AM	50.2	50.2	0.0
		PM	51.5	51.5	0.0
US 101 SB Off-Ramp					
10	West of Rose Avenue	AM	55.4	55.5	0.1
		PM	54.7	54.7	0.0
Rose Avenue					
10	South of US 101 SB off-ramp	AM	68.9	68.9	0.0
		PM	68.3	68.3	0.0

Source: Traffic noise model results are provided in ***Appendix B****.*
Note: Roadway noise levels are modeled 75 feet from the center of the roadway.

HVAC Systems

The Project would introduce various stationary noise sources, including HVAC systems, which would be located either on the roof, the side of a structure or on the ground. Typically, this type of equipment produces noise levels of approximately 56.0 dBA. This equipment would be screened and integrated in architectural design of the building and would further attenuate sound emanating from the HVAC systems. As the sound distance doubles to 100 feet from the equipment, sound levels would be 50 dBA. As such, the use of such equipment would not generate levels that would substantially elevate the ambient noise environment.

8. GENERAL PLAN CONSISTENCY

Table 10, City of Oxnard 2030 General Plan Applicable Goals & Policies evaluates the Project's consistency with the applicable goals provided in the City's General Plan to determine whether the Project will result in adverse impacts to noise. Based on the evaluation, the Project would be consistent with all feasible and applicable goals listed in the City's General Plan.

Table 10
City of Oxnard 2030 General Plan Applicable Goals & Policies

Goal	Policy	Consistency
SH-5: A quiet and safe residential and working environment in terms of exposure to and/or generation of noise.	SH-5.2: State Noise Insulation Standards. Continue to enforce State Noise Insulation Standards for projects in high noise environments and require developers to comply with noise mitigation measures, designed by an acoustical engineer.	**Consistent.** The Project would be compliant with the latest Title 24 requirements which includes standards for new construction of, and additions and alterations to, residential and non-residential buildings. As discussed above, interior noise levels would be below the 45 dBA threshold for the residential and commercial uses.
SH-6: Consideration of noise levels and impacts in the land use planning and development process.	SH-6.1: Construction Noise Control. Provide best practices guidelines to developers for reducing potential noise impacts on surrounding land uses.	**Consistent.** Implementation of noise-attenuation techniques would ensure that noise remains as low as possible during construction.
	SH-6.2: Limiting Construction Activities. Continue to limit construction activities to the hours of 7:00 AM to 7:00 PM, Monday through Saturday. No construction shall occur after hours, on Sundays, or national holidays without permission from the City	**Consistent.** Implementation of noise-attenuation techniques would ensure that noise remains as low as possible during construction. More specifically, recommended noise attenuation measure would schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses.
	SH-6.3. Buffering of Sensitive Receptors. Require noise buffering and/or other construction treatments in development located near major streets, highways, the airport, railroad tracks, or other significant noise sources as recommended by a noise analysis.	**Consistent.** Roadway noise levels would fall below the residential and commercial exterior noise level standard. Interior noise levels would fall below the 45 dBA threshold for residential and commercial uses.
	SH-6.4. New Development Noise Compatibility. Require that proposed development projects not generate more noise than that classified as "satisfactory" based on CEQA Thresholds of significance on nearby property.	**Consistent.** Implementation of noise-attenuation techniques would ensure that noise remains as low as possible during construction. In addition, roadway noise levels would fall below the residential and commercial exterior noise level standard. Stationary noise sources, including HVAC systems, would be screened and integrated in architectural design of the building; thus the equipment would not generate levels

Goal	Policy	Consistency
		that would substantially elevate the ambient noise environment.
	SH-6.13. Noise Acceptable for Open Windows and Patios. Continue to require noise analysis of proposed development projects as part of the environmental review process and the required mitigation measures to reduce noise impacts to acceptable levels within outside activity areas and within residential structures without relying on mechanical ventilation, if feasible.	**Consistent.** As discussed above, roadway noise levels would fall below the residential and commercial exterior noise level standard. In addition, interior noise levels would fall below the 45 dBA threshold for residential and commercial uses. As such, noise would be acceptable for open windows and patios.

9. CUMULATIVE NOISE ANALYSIS

For purposes of this analysis, development of the related projects will be considered to contribute to cumulative noise impacts. Noise by definition is a localized phenomenon, and drastically reduces as distance from the source increases. As a result, only project and growth in the general area of the Project site would contribute to cumulative noise impacts.

Construction

Noise impacts are localized in nature and decrease with distance. Cumulative construction noise impacts have the potential to occur when multiple construction projects in the local area generate noise within the same time frame and contribute to the local ambient noise environment. The nearest related projects (Oakmont Senior Living, The Village, Wagon Wheel) are located approximately 0.6 miles to the east. Based on the noise levels generated by construction activities associated with the Project site, the duration of construction activities (intermittently over 18 months), and the proximity of the sensitive receptors, construction noise from the Project would contribute to the cumulative noise environment. It is expected that, as with the Project, the related projects would implement best management practices, which would minimize any noise-related nuisances during construction. Therefore, the combined construction noise impact of the related projects and the Project's contribution would not cause a significant cumulative impact.

Related projects are not located close enough to the Project site (approximately 0.6 miles) to result in vibration impacts from concurrent construction. Therefore, the combined vibration impact of the related projects and the Project's contribution would not cause a significant cumulative impact.

Operation

The Project would not result in significant cumulative impacts during operation. Cumulative development from related projects would not result in significant cumulative impacts in terms of a substantial permanent increase in ambient noise levels. A substantial permanent increase is most likely to originate from an increase in noise levels due to roadway traffic. For the purposes of this analysis, an increase of 3 dBA at any roadway location is considered a significant impact, and the resulting noise level increase above 3 dBA would exceed the land use compatibility criteria.

Traffic-Related Noise

A substantial permanent increase is most likely to originate from an increase in noise levels due to roadway traffic. **Table 11, Cumulative plus Project**, illustrates the change in CNEL from cumulative traffic volumes and cumulative plus Project traffic volumes. As shown in **Table 11**, maximum cumulative noise level increases along roadways adjacent to residential and commercial uses by traffic from the proposed Project would range from a low of 0.0 dBA (several locations throughout the vicinity of the Project area) to a high of 0.3 dBA at Stroube Street, west of Rose Avenue (Intersection 7).

The proposed Project interior noise levels by attributed by roadway traffic would be attenuated by 25 dBA from outdoor noise levels. Roadway noise levels at Rose Avenue, south of the US 101 SB off-ramp (Intersection 10), would be 69.1 dBA CNEL, similar to existing conditions. Based on attenuation from outdoor to indoor noise levels, interior noise levels would be 44.1 dBA, below the 45 dBA threshold for residential and commercial uses.

Table 11
Cumulative plus Project

Intersection #	Roadway Segment	Time Period	Cumulative	Cumulative plus Project	Change
			dBA CNEL		
Vineyard Avenue					
1	North of E. Stroube Street	AM	65.2	65.2	0.0
		PM	65.5	65.5	0.0
Vineyard Avenue					
1	South of E. Stroube Street	AM	65.4	65.4	0.0
		PM	65.4	65.4	0.0
2	North of Rio School Lane	AM	65.8	65.8	0.0
		PM	65.1	65.1	0.0
Stroube Street					
1	East of Vineyard Avenue	AM	49.8	49.8	0.0

Intersection #	Roadway Segment	Time Period	Cumulative	Cumulative plus Project	Change
			dBA CNEL		
		PM	48.3	48.3	0.0
Stroube Street					
1	West of Vineyard Avenue	AM	47.0	47.0	0.0
		PM	46.8	46.8	0.0
Vineyard Avenue					
2	South of Rio School Lane	AM	65.8	65.8	0.0
		PM	65.1	65.1	0.0
3	North of River Park Boulevard	AM	65.8	65.8	0.0
		PM	65.9	65.9	0.0
Stroube Street					
2	East of Vineyard Avenue	AM	43.3	43.3	0.0
		PM	41.7	41.7	0.0
Stroube Street					
2	West of Vineyard Avenue	AM	35.6	35.6	0.0
		PM	31.9	31.9	0.0
Vineyard Avenue					
3	South of River Park Boulevard	AM	67.3	67.3	0.0
		PM	67.2	67.2	0.0
4	North of US 101 NB off-ramp	AM	67.3	67.3	0.0
		PM	67.2	67.2	0.0
River Park Boulevard					
3	East of Vineyard Avenue	AM	59.2	59.2	0.0
		PM	59.2	59.2	0.0
River Park Boulevard					
3	West of Vineyard Avenue	AM	59.7	59.7	0.0
		PM	58.5	58.5	0.0
Vineyard Avenue					
4	South of US 101 NB off-ramp	AM	67.6	67.6	0.0
		PM	67.4	67.4	0.0
5	North of US 101 SB off-ramp	AM	67.7	67.7	0.0
		PM	67.4	67.5	0.1
US 101 NB Off-Ramp					
4	East of Vineyard Avenue	AM	54.7	54.7	0.0
		PM	54.4	54.4	0.0
US 101 NB Off-Ramp					
4	West of Vineyard Avenue	AM	49.1	49.1	0.0

Intersection #	Roadway Segment	Time Period	Cumulative	Cumulative plus Project	Change
			dBA CNEL		
		PM	50.1	50.1	0.0
Vineyard Avenue					
5	South of US 101 SB off-ramp	AM	68.7	68.7	0.0
		PM	67.9	67.9	0.0
6	North of Esplanade Drive	AM	68.2	68.2	0.0
		PM	67.7	67.7	0.0
US 101 SB Off-Ramp					
5	East of Vineyard Avenue	AM	54.2	54.2	0.0
		PM	53.8	53.8	0.0
US 101 SB Off-Ramp					
5	West of Vineyard Avenue	AM	54.4	54.4	0.0
		PM	54.6	54.7	0.1
Vineyard Avenue					
6	South of Esplanade Drive	AM	68.1	68.1	0.0
		PM	67.2	67.2	0.0
Esplanade Drive					
6	East of Vineyard Avenue	AM	56.0	56.0	0.0
		PM	54.4	54.4	0.0
Esplanade Drive					
6	West of Vineyard Avenue	AM	60.5	60.5	0.0
		PM	57.0	57.0	0.0
Rose Avenue					
7	North of W. Stroube Street	AM	64.9	65.0	0.1
		PM	64.7	64.7	0.0
W. Stroube Street					
7	West of Rose Avenue	AM	47.9	48.2	0.3
		PM	49.7	49.9	0.2
Rose Avenue					
7	South of W. Stroube Street	AM	65.4	65.4	0.0
		PM	65.3	65.4	0.0
8	North of River Park Boulevard	AM	65.3	65.4	0.1
		PM	65.6	65.6	0.0
River Park Boulevard					
8	East of Rose Avenue	AM	63.3	63.3	0.0
		PM	60.3	60.3	0.0

Intersection #	Roadway Segment	Time Period	Cumulative	Cumulative plus Project	Change
			dBA CNEL		
River Park Boulevard					
8	West of Rose Avenue	AM	53.9	53.9	0.0
		PM	52.5	52.5	0.0
Rose Avenue					
8	South of River Park Boulevard	AM	67.7	67.7	0.0
		PM	66.5	66.5	0.0
9	North of US 101 NB off-ramp	AM	67.7	67.7	0.0
		PM	66.6	66.6	0.0
US 101 NB Off-Ramp					
9	East of Rose Avenue	AM	56.2	56.2	0.0
		PM	55.7	55.7	0.0
US 101 NB Off-Ramp					
9	West of Rose Avenue	AM	51.3	51.3	0.0
		PM	47.8	47.8	0.0
Rose Avenue					
9	South of US 101 NB off-ramp	AM	68.5	68.5	0.0
		PM	67.8	67.8	0.0
10	North of US 101 SB off-ramp	AM	68.3	68.3	0.0
		PM	67.7	67.7	0.0
US 101 SB Off-Ramp					
10	East of Rose Avenue	AM	50.3	50.3	0.0
		PM	51.6	51.6	0.0
US 101 SB Off-Ramp					
10	West of Rose Avenue	AM	55.7	55.7	0.0
		PM	55.2	552	0.0
Rose Avenue					
10	South of US 101 SB off-ramp	AM	69.1	69.1	0.0
		PM	68.6	68.6	0.0

Source: Traffic noise model results are provided in ***Appendix B****.*
Note: Roadway noise levels are modeled 75 feet from the center of the roadway.

Stationary Noise

With regard to stationary sources, cumulative significant noise impacts may result from cumulative development. Stationary sources of noise that could be introduced in the area by cumulative projects could include mechanical equipment, loading docks, and parking lots. Since these projects would be required to adhere to the City of Oxnard noise standards, all the stationary sources would be required to provide shielding or other noise abatement measures so as not to cause a substantial increase in ambient noise levels. Moreover, due to distance, it is unlikely that noise from multiple cumulative projects would interact to create a significant combined noise impact. As such, it is not anticipated that a significant cumulative increase in permanent ambient noise levels would occur.

10. RECOMMENDATIONS

The following noise attenuation measures are provided to reduce noise impacts during construction activities.

N-1: For all construction-related activities, noise-attenuation techniques shall be employed as needed to ensure that noise remains as low as possible during construction, specifically at REC-1 through REC-3. The following noise-attenuation techniques shall be incorporated into contract specifications to reduce the impact of construction noise:

- Ensure that construction equipment is properly muffled according to industry standards and in good working condition.
- Place noise-generating construction equipment and locate construction-staging areas away from sensitive uses, where feasible.
- Schedule high noise-producing activities between the hours of 7:00 AM and 5:00 PM to minimize disruption on sensitive uses.
- Implement noise attenuation measures to the extent feasible, which may include but are not limited to temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
- All stationary construction equipment (e.g., air compressors, generators, impact wrenches, etc.) shall be operated as far away from residential uses as possible and shall be shielded with temporary sound barriers, sound aprons, or sound skins.
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes.
- Clearly post construction hours, allowable workdays, and the phone number of the job superintendent at all construction entrances to allow for surrounding owners to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

APPENDIX A

Noise Monitoring Data Sheets

Appendix A.1

Site 1

Summary

File Name on Meter	831_Data.006
File Name on PC	SLM_0003006_831_Data_006.00.ldbin
Serial Number	0003006
Model	Model 831
Firmware Version	2.313
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2017-07-06 12:28:13
Stop	2017-07-06 12:44:14
Duration	00:16:01.1
Run Time	00:16:00.4
Pause	00:00:00.7
Pre Calibration	2017-07-06 11:26:26
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRM831			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Low			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	Bin Max			
Gain	20.0	dB		
Overload	123.4	dB		
	A	**C**	**Z**	
Under Range Peak	**56.0**	53.0	58.0	dB
Under Range Limit	**24.6**	25.0	32.0	dB
Noise Floor	15.5	15.9	20.7	dB

Results

LA_{eq}	53.4	dB	
LAE	83.2	dB	
EA	22.969	µPa²h	
EA8	688.775	µPa²h	
EA40	3.444	mPa²h	
$LA_{peak\ (max)}$	2017-07-06 12:42:16	82.7	dB
LAS_{max}	2017-07-06 12:28:13	65.6	dB
LAS_{min}	2017-07-06 12:42:45	49.8	dB
SEA	-99.9	dB	
LAS > 65.0 dB (Exceedance Counts / Duration)	0	0.0	s
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0	s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	53.3	53.3	-99.9	53.3	53.3	-99.9	-99.9	dB

LC_{eq}	64.7	dB
LA_{eq}	53.3	dB
LC_{eq} - LA_{eq}	11.3	dB
LAI_{eq}	54.9	dB
LA_{eq}	53.3	dB
LAI_{eq} - LA_{eq}	1.6	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	53.3		64.7		72.3	
$L_{S(max)}$	65.6	2017/07/06 12:28:13	69.8	2017/07/06 12:28:13	85.5	2017/07/06 12:33:21
$L_{F(max)}$	64.4	2017/07/06 12:29:35	71.4	2017/07/06 12:38:06	90.2	2017/07/06 12:33:21
$L_{I(max)}$	74.0	2017/07/06 12:28:13	75.7	2017/07/06 12:28:13	92.3	2017/07/06 12:33:21
$L_{S(min)}$	49.8	2017/07/06 12:42:45	61.5	2017/07/06 12:37:07	65.3	2017/07/06 12:37:11
$L_{F(min)}$	49.0	2017/07/06 12:42:44	60.1	2017/07/06 12:37:22	63.0	2017/07/06 12:37:44
$L_{I(min)}$	49.3	2017/07/06 12:42:44	62.2	2017/07/06 12:37:06	66.9	2017/07/06 12:32:14
$L_{Peak(max)}$	82.7	2017/07/06 12:42:16	83.5	2017/07/06 12:42:16	94.5	2017/07/06 12:33:21

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	6.0	
OBA Overload Duration	14.3	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results			
Dose	-99.9	-99.9	%
Projected Dose	-99.9	-99.9	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	38.6	38.6	dB

Statistics		
LAS5.00	55.4	dB
LAS10.00	54.9	dB
LAS33.30	53.6	dB
LAS50.00	52.9	dB
LAS66.60	52.4	dB
LAS90.00	51.5	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**
PRM831	2017-07-06 11:26:26	-26.1	51.8	66.2	58.9	64.4	67.0	54.6	64.4	60.7	60.2	73.5	64.8	60.2	58.8	56.8	52.5	51.1	51.3	47.7
PRM831	2017-07-05 10:50:32	-26.0	46.5	43.4	55.7	63.8	59.3	51.2	50.2	47.9	48.2	46.9	39.2	46.9	53.1	68.0	49.7	73.9	73.5	64.7
PRM831	2017-07-05 10:50:17	-26.0	42.5	50.4	51.8	42.3	57.2	49.2	50.1	49.1	42.1	49.6	48.7	47.1	46.9	48.1	46.9	47.2	43.8	37.8
PRM831	2017-06-21 13:26:03	-25.9	45.5	56.2	49.1	49.7	45.8	60.8	61.8	51.3	50.8	56.9	56.1	58.1	54.0	55.0	52.9	54.4	45.2	41.6
PRM831	2017-06-21 08:45:40	-25.8	27.9	44.4	42.5	37.4	44.0	45.2	57.8	49.3	49.6	52.7	52.5	53.6	52.8	63.0	41.2	44.9	47.5	48.9
PRM831	2017-06-21 08:37:13	-26.0	30.9	35.0	21.8	25.9	33.5	30.4	32.5	30.2	24.7	21.1	23.7	19.3	29.8	26.4	16.2	23.4	26.4	23.7
PRM831	2017-06-21 06:00:37	-26.0	12.5	11.6	9.3	10.2	4.5	4.1	4.3	6.1	5.9	0.6	-1.9	4.4	4.6	-2.8	-4.5	-5.8	-7.9	-3.0

Preamp	**Date**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRM831	2017-07-06 11:26:26	43.4	43.8	41.5	35.3	114.0	49.0	28.3	64.9	30.2	59.2	34.0	33.9	34.3	35.8	36.8	38.1	39.0	40.8
PRM831	2017-07-05 10:50:32	66.3	64.3	62.0	48.6	114.0	49.3	31.7	65.1	30.5	59.0	33.7	33.7	34.5	35.9	37.1	38.0	38.8	40.9
PRM831	2017-07-05 10:50:17	43.2	39.5	31.2	31.4	113.9	49.0	28.9	64.9	30.2	59.0	33.5	33.8	34.4	35.5	36.5	37.5	39.0	40.8
PRM831	2017-06-21 13:26:03	34.5	35.1	27.1	30.6	113.9	48.9	28.2	65.9	30.2	57.8	33.3	33.5	34.7	35.2	36.8	37.7	38.9	40.7
PRM831	2017-06-21 08:45:40	53.0	39.8	32.5	30.5	114.2	49.2	28.3	64.2	29.6	55.7	32.2	32.0	31.9	32.0	32.0	31.4	30.5	29.5
PRM831	2017-06-21 08:37:13	28.4	26.8	26.7	27.8	29.2	30.2	30.5	31.8	32.9	35.2	34.9	56.2	37.7	38.4	39.5	41.2	41.5	42.6
PRM831	2017-06-21 06:00:37	-3.8	-4.8	-2.9	-2.2	-3.3	-4.2	-2.1	-1.4	-0.4	0.0	1.2	1.7	3.5	3.4	4.6	5.9	7.5	9.1

Appendix A.2

Site 2

Summary

File Name on Meter	831_Data.004
File Name on PC	SLM_0003006_831_Data_004.00.ldbin
Serial Number	0003006
Model	Model 831
Firmware Version	2.313
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2017-07-06 12:08:31
Stop	2017-07-06 12:24:32
Duration	00:16:01.2
Run Time	00:16:00.6
Pause	00:00:00.6
Pre Calibration	2017-07-06 11:26:26
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRM831			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Low			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	Bin Max			
Gain	20.0			dB
Overload	123.4			dB
	A	**C**	**Z**	
Under Range Peak	**56.0**	53.0	58.0	dB
Under Range Limit	**24.6**	25.0	32.0	dB
Noise Floor	15.5	15.9	20.7	dB

Results

LA_{eq}	73.3 dB		
LAE	103.1 dB		
EA	2.255 mPa²h		
EA8	67.593 mPa²h		
EA40	337.967 mPa²h		
$LA_{peak\ (max)}$	2017-07-06 12:20:20	104.9	dB
LAS_{max}	2017-07-06 12:20:21	91.2	dB
LAS_{min}	2017-07-06 12:19:23	55.9	dB
SEA	-99.9 dB		
LAS > 65.0 dB (Exceedance Counts / Duration)	14	881.0	s
LAS > 85.0 dB (Exceedance Counts / Duration)	3	6.4	s
LA_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0	s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	73.2	73.2	-99.9	73.2	73.2	-99.9	-99.9	dB

LC_{eq}	80.1 dB
LA_{eq}	73.2 dB
LC_{eq} - LA_{eq}	6.9 dB
LAI_{eq}	75.4 dB
LA_{eq}	73.2 dB
LAI_{eq} - LA_{eq}	2.2 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	73.2		80.1		84.6	
$L_{S(max)}$	91.2	2017/07/06 12:20:21	93.8	2017/07/06 12:20:21	96.6	2017/07/06 12:20:21
$L_{F(max)}$	94.4	2017/07/06 12:20:21	96.7	2017/07/06 12:20:21	100.8	2017/07/06 12:20:21
$L_{I(max)}$	95.3	2017/07/06 12:20:21	97.6	2017/07/06 12:20:21	103.0	2017/07/06 12:18:36
$L_{S(min)}$	55.9	2017/07/06 12:19:23	66.7	2017/07/06 12:09:49	69.7	2017/07/06 12:09:50
$L_{F(min)}$	54.9	2017/07/06 12:19:22	65.5	2017/07/06 12:09:49	67.2	2017/07/06 12:09:49
$L_{I(min)}$	55.4	2017/07/06 12:19:22	67.0	2017/07/06 12:09:49	70.4	2017/07/06 12:09:50
$L_{Peak(max)}$	104.9	2017/07/06 12:20:20	108.5	2017/07/06 12:20:20	110.8	2017/07/06 12:20:21

# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	50.0
OBA Overload Duration	812.5 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.00	0.02 %
Projected Dose	0.07	0.75 %
TWA (Projected)	37.4	54.7 dB
TWA (t)	12.9	30.2 dB
Lep (t)	58.5	58.5 dB

Statistics

LAS5.00	77.6 dB
LAS10.00	76.1 dB
LAS33.30	72.6 dB
LAS50.00	71.0 dB
LAS66.60	69.0 dB
LAS90.00	64.1 dB

Calibration History

Preamp	Date	dB re. 1V/Pa	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800
PRM831	2017-07-06 11:26:26	-26.1	51.8	66.2	58.9	64.4	67.0	54.6	64.4	60.7	60.2	73.5	64.8	60.2	58.8	56.8	52.5	51.1	51.3	47.7	43.4	43.8	41.5	35.3
PRM831	2017-07-05 10:50:32	-26.0	46.5	43.4	55.7	63.8	59.3	51.2	50.2	47.9	48.2	46.9	39.2	46.9	53.1	68.0	49.7	73.9	73.5	64.7	66.3	64.3	62.0	48.6
PRM831	2017-07-05 10:50:17	-26.0	42.5	50.4	51.8	42.3	57.2	49.2	50.1	49.1	42.1	49.6	48.7	47.1	46.9	48.1	46.9	47.2	43.8	37.8	43.2	39.5	31.2	31.4
PRM831	2017-06-21 13:26:03	-25.9	45.5	56.2	49.1	49.7	45.8	60.8	61.8	51.3	50.8	56.9	56.1	58.1	54.0	55.0	52.9	54.4	45.2	41.6	34.5	35.1	27.1	30.6
PRM831	2017-06-21 08:45:40	-25.8	27.9	44.4	42.5	37.4	44.0	45.2	57.8	49.3	49.6	52.7	52.5	53.6	52.8	63.0	41.2	44.9	47.5	48.9	53.0	39.8	32.5	30.5
PRM831	2017-06-21 08:37:13	-26.0	30.9	35.0	21.8	25.9	33.5	30.4	32.5	30.2	24.7	21.1	23.7	19.3	29.8	26.4	16.2	23.4	26.4	23.7	28.4	26.8	26.7	27.8
PRM831	2017-06-21 06:00:37	-26.0	12.5	11.6	9.3	10.2	4.5	4.1	4.3	6.1	5.9	0.6	-1.9	4.4	4.6	-2.8	-4.5	-5.8	-7.9	-3.0	-3.8	-4.8	-2.9	-2.2

Preamp	Date	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
PRM831	2017-07-06 11:26:26	114.0	49.0	28.3	64.9	30.2	59.2	34.0	33.9	34.3	35.8	36.8	38.1	39.0	40.8
PRM831	2017-07-05 10:50:32	114.0	49.3	31.7	65.1	30.5	59.0	33.7	33.7	34.5	35.9	37.1	38.0	38.8	40.9
PRM831	2017-07-05 10:50:17	113.9	49.0	28.9	64.9	30.2	59.0	33.5	33.8	34.4	35.5	36.5	37.5	39.0	40.8
PRM831	2017-06-21 13:26:03	113.9	48.9	28.2	65.9	30.2	57.8	33.3	33.5	34.7	35.2	36.8	37.7	38.9	40.7
PRM831	2017-06-21 08:45:40	114.2	49.2	28.3	64.2	29.6	55.7	32.2	32.0	31.9	32.0	32.0	31.4	30.5	29.5
PRM831	2017-06-21 08:37:13	29.2	30.2	30.5	31.8	32.9	35.2	34.9	56.2	37.7	38.4	39.5	41.2	41.5	42.6
PRM831	2017-06-21 06:00:37	-3.3	-4.2	-2.1	-1.4	-0.4	0.0	1.2	1.7	3.5	3.4	4.6	5.9	7.5	9.1

Appendix A.3

Site 3

Summary

File Name on Meter	831_Data.003
File Name on PC	SLM_0003006_831_Data_003.00.ldbin
Serial Number	0003006
Model	Model 831
Firmware Version	2.313
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2017-07-06 11:50:26
Stop	2017-07-06 12:06:28
Duration	00:16:01.5
Run Time	00:16:00.9
Pause	00:00:00.6
Pre Calibration	2017-07-06 11:26:26
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRM831			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Low			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	Bin Max			
Gain	20.0	dB		
Overload	123.4	dB		
	A	**C**	**Z**	
Under Range Peak	**56.0**	53.0	58.0	dB
Under Range Limit	**24.6**	25.0	32.0	dB
Noise Floor	15.5	15.9	20.7	dB

Results

LA_{eq}	71.3	dB	
LAE	101.2	dB	
EA	1.471	mPa²h	
EA8	44.086	mPa²h	
EA40	220.428	mPa²h	
$LA_{peak\ (max)}$	2017-07-06 11:58:15	101.4	dB
LAS_{max}	2017-07-06 12:03:30	83.8	dB
LAS_{min}	2017-07-06 12:06:24	54.8	dB
SEA	-99.9	dB	
LAS > 65.0 dB (Exceedance Counts / Duration)	21	685.7	s
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0	s
LA_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0	s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	71.4	71.4	-99.9	71.4	71.4	-99.9	-99.9	dB

LC_{eq}	81.0	dB
LA_{eq}	71.4	dB
LC_{eq} - LA_{eq}	9.6	dB
LAI_{eq}	73.1	dB
LA_{eq}	71.4	dB
LAI_{eq} - LA_{eq}	1.7	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	71.4		81.0		86.4	
$L_{S(max)}$	83.8	2017/07/06 12:03:30	97.0	2017/07/06 11:56:18	98.5	2017/07/06 11:52:40
$L_{F(max)}$	86.9	2017/07/06 11:58:15	99.6	2017/07/06 11:56:17	102.7	2017/07/06 11:53:22
$L_{I(max)}$	89.3	2017/07/06 11:58:15	100.6	2017/07/06 11:56:17	105.1	2017/07/06 11:53:22
$L_{S(min)}$	54.8	2017/07/06 12:06:24	66.9	2017/07/06 12:02:56	70.5	2017/07/06 12:04:33
$L_{F(min)}$	54.2	2017/07/06 12:06:24	65.3	2017/07/06 12:02:56	68.1	2017/07/06 12:02:56
$L_{I(min)}$	54.7	2017/07/06 12:06:23	67.9	2017/07/06 12:02:56	71.3	2017/07/06 12:04:33
$L_{Peak(max)}$	101.4	2017/07/06 11:58:15	108.6	2017/07/06 11:58:15	109.7	2017/07/06 12:01:58

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	46.0	
OBA Overload Duration	838.7	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.9	0.02 %
Projected Dose	-99.9	0.46 %
TWA (Projected)	-99.9	51.2 dB
TWA (t)	-99.9	26.6 dB
Lep (t)	56.6	56.6 dB

Statistics

LAS5.00	77.0 dB
LAS10.00	75.2 dB
LAS33.30	70.3 dB
LAS50.00	67.6 dB
LAS66.60	64.7 dB
LAS90.00	60.0 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**
PRM831	2017-07-06 11:26:26	-26.1	51.8	66.2	58.9	64.4	67.0	54.6	64.4	60.7	60.2	73.5	64.8	60.2	58.8	56.8	52.5	51.1	51.3	47.7
PRM831	2017-07-05 10:50:32	-26.0	46.5	43.4	55.7	63.8	59.3	51.2	50.2	47.9	48.2	46.9	39.2	46.9	53.1	68.0	49.7	73.9	73.5	64.7
PRM831	2017-07-05 10:50:17	-26.0	42.5	50.4	51.8	42.3	57.2	49.2	50.1	49.1	42.1	49.6	48.7	47.1	46.9	48.1	46.9	47.2	43.8	37.8
PRM831	2017-06-21 13:26:03	-25.9	45.5	56.2	49.1	49.7	45.8	60.8	61.8	51.3	50.8	56.9	56.1	58.1	54.0	55.0	52.9	54.4	45.2	41.6
PRM831	2017-06-21 08:45:40	-25.8	27.9	44.4	42.5	37.4	44.0	45.2	57.8	49.3	49.6	52.7	52.5	53.6	52.8	63.0	41.2	44.9	47.5	48.9
PRM831	2017-06-21 08:37:13	-26.0	30.9	35.0	21.8	25.9	33.5	30.4	32.5	30.2	24.7	21.1	23.7	19.3	29.8	26.4	16.2	23.4	26.4	23.7
PRM831	2017-06-21 06:00:37	-26.0	12.5	11.6	9.3	10.2	4.5	4.1	4.3	6.1	5.9	0.6	-1.9	4.4	4.6	-2.8	-4.5	-5.8	-7.9	-3.0

Date	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
2017-07-06 11:26:26	43.4	43.8	41.5	35.3	114.0	49.0	28.3	64.9	30.2	59.2	34.0	33.9	34.3	35.8	36.8	38.1	39.0	40.8
2017-07-05 10:50:32	66.3	64.3	62.0	48.6	114.0	49.3	31.7	65.1	30.5	59.0	33.7	33.7	34.5	35.9	37.1	38.0	38.8	40.9
2017-07-05 10:50:17	43.2	39.5	31.2	31.4	113.9	49.0	28.9	64.9	30.2	59.0	33.5	33.8	34.4	35.5	36.5	37.5	39.0	40.8
2017-06-21 13:26:03	34.5	35.1	27.1	30.6	113.9	48.9	28.2	65.9	30.2	57.8	33.3	33.5	34.7	35.2	36.8	37.7	38.9	40.7
2017-06-21 08:45:40	53.0	39.8	32.5	30.5	114.2	49.2	28.3	64.2	29.6	55.7	32.2	32.0	31.9	32.0	32.0	31.4	30.5	29.5
2017-06-21 08:37:13	28.4	26.8	26.7	27.8	29.2	30.2	30.5	31.8	32.9	35.2	34.9	56.2	37.7	38.4	39.5	41.2	41.5	42.6
2017-06-21 06:00:37	-3.8	-4.8	-2.9	-2.2	-3.3	-4.2	-2.1	-1.4	-0.4	0.0	1.2	1.7	3.5	3.4	4.6	5.9	7.5	9.1

Appendix A.4

Site 4

Summary

File Name on Meter	831_Data.002
File Name on PC	SLM_0003006_831_Data_002.00.ldbin
Serial Number	0003006
Model	Model 831
Firmware Version	2.313
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2017-07-06 11:31:32
Stop	2017-07-06 11:47:35
Duration	00:16:03.4
Run Time	00:16:02.2
Pause	00:00:01.2
Pre Calibration	2017-07-06 11:26:26
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRM831			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Low			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	Bin Max			
Gain	20.0 dB			
Overload	123.4 dB			
	A	**C**	**Z**	
Under Range Peak	**56.0**	53.0	58.0	dB
Under Range Limit	**24.6**	25.0	32.0	dB
Noise Floor	15.5	15.9	20.7	dB

Results

L_{Aeq}	55.2 dB		
LAE	85.2 dB		
EA	36.506 µPa²h		
EA8	1.093 mPa²h		
EA40	5.463 mPa²h		
$L_{Apeak\ (max)}$	2017-07-06 11:32:57	92.5	dB
L_{ASmax}	2017-07-06 11:46:48	69.3	dB
L_{ASmin}	2017-07-06 11:35:34	52.3	dB
SEA	-99.9 dB		
LAS > 65.0 dB (Exceedance Counts / Duration)	1	2.0	s
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0	s
L_{Apeak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0	s
L_{Apeak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0	s
L_{Apeak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0	s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	55.3	55.3	-99.9	55.3	55.3	-99.9	-99.9	dB

L_{Ceq}	67.3 dB
L_{Aeq}	55.3 dB
L_{Ceq} - L_{Aeq}	11.9 dB
L_{AIeq}	58.8 dB
L_{Aeq}	55.3 dB
L_{AIeq} - L_{Aeq}	3.5 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	55.3		67.3		75.2	
$L_{S(max)}$	69.3	2017/07/06 11:46:48	77.2	2017/07/06 11:39:47	87.2	2017/07/06 11:32:11
$L_{F(max)}$	77.2	2017/07/06 11:46:48	79.5	2017/07/06 11:34:28	92.2	2017/07/06 11:38:09
$L_{I(max)}$	81.2	2017/07/06 11:46:48	82.5	2017/07/06 11:34:28	95.0	2017/07/06 11:38:09
$L_{S(min)}$	52.3	2017/07/06 11:35:34	63.8	2017/07/06 11:47:07	66.0	2017/07/06 11:33:13
$L_{F(min)}$	51.5	2017/07/06 11:33:07	61.9	2017/07/06 11:38:30	64.2	2017/07/06 11:33:13
$L_{I(min)}$	52.0	2017/07/06 11:35:32	64.2	2017/07/06 11:47:06	66.9	2017/07/06 11:33:13
$L_{Peak(max)}$	92.5	2017/07/06 11:32:57	91.5	2017/07/06 11:33:00	97.7	2017/07/06 11:38:09

# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	27.0
OBA Overload Duration	74.8 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results			
Dose	-99.9	-99.9	%
Projected Dose	-99.9	-99.9	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	40.6	40.6	dB

Statistics		
LAS5.00	57.1	dB
LAS10.00	56.2	dB
LAS33.30	55.1	dB
LAS50.00	54.7	dB
LAS66.60	54.3	dB
LAS90.00	53.6	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**
PRM831	2017-07-06 11:26:26	-26.1	51.8	66.2	58.9
PRM831	2017-07-05 10:50:32	-26.0	46.5	43.4	55.7
PRM831	2017-07-05 10:50:17	-26.0	42.5	50.4	51.8
PRM831	2017-06-21 13:26:03	-25.9	45.5	56.2	49.1
PRM831	2017-06-21 08:45:40	-25.8	27.9	44.4	42.5
PRM831	2017-06-21 08:37:13	-26.0	30.9	35.0	21.8
PRM831	2017-06-21 06:00:37	-26.0	12.5	11.6	9.3

Date	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**
2017-07-06 11:26:26	64.4	67.0	54.6	64.4	60.7	60.2	73.5	64.8	60.2	58.8	56.8	52.5	51.1	51.3	47.7	43.4	43.8	41.5	35.3
2017-07-05 10:50:32	63.8	59.3	51.2	50.2	47.9	48.2	46.9	39.2	46.9	53.1	68.0	49.7	73.9	73.5	64.7	66.3	64.3	62.0	48.6
2017-07-05 10:50:17	42.3	57.2	49.2	50.1	49.1	42.1	49.6	48.7	47.1	46.9	48.1	46.9	47.2	43.8	37.8	43.2	39.5	31.2	31.4
2017-06-21 13:26:03	49.7	45.8	60.8	61.8	51.3	50.8	56.9	56.1	58.1	54.0	55.0	52.9	54.4	45.2	41.6	34.5	35.1	27.1	30.6
2017-06-21 08:45:40	37.4	44.0	45.2	57.8	49.3	49.6	52.7	52.5	53.6	52.8	63.0	41.2	44.9	47.5	48.9	53.0	39.8	32.5	30.5
2017-06-21 08:37:13	25.9	33.5	30.4	32.5	30.2	24.7	21.1	23.7	19.3	29.8	26.4	16.2	23.4	26.4	23.7	28.4	26.8	26.7	27.8
2017-06-21 06:00:37	10.2	4.5	4.1	4.3	6.1	5.9	0.6	-1.9	4.4	4.6	-2.8	-4.5	-5.8	-7.9	-3.0	-3.8	-4.8	-2.9	-2.2

Date	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
2017-07-06 11:26:26	114.0	49.0	28.3	64.9	30.2	59.2	34.0	33.9	34.3	35.8	36.8	38.1	39.0	40.8
2017-07-05 10:50:32	114.0	49.3	31.7	65.1	30.5	59.0	33.7	33.7	34.5	35.9	37.1	38.0	38.8	40.9
2017-07-05 10:50:17	113.9	49.0	28.9	64.9	30.2	59.0	33.5	33.8	34.4	35.5	36.5	37.5	39.0	40.8
2017-06-21 13:26:03	113.9	48.9	28.2	65.9	30.2	57.8	33.3	33.5	34.7	35.2	36.8	37.7	38.9	40.7
2017-06-21 08:45:40	114.2	49.2	28.3	64.2	29.6	55.7	32.2	32.0	31.9	32.0	32.0	31.4	30.5	29.5
2017-06-21 08:37:13	29.2	30.2	30.5	31.8	32.9	35.2	34.9	56.2	37.7	38.4	39.5	41.2	41.5	42.6
2017-06-21 06:00:37	-3.3	-4.2	-2.1	-1.4	-0.4	0.0	1.2	1.7	3.5	3.4	4.6	5.9	7.5	9.1

Appendix A.5

Site 5

Summary

File Name on Meter	831_Data.007
File Name on PC	SLM_0003006_831_Data_007.00.ldbin
Serial Number	0003006
Model	Model 831
Firmware Version	2.313
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2017-07-06 12:54:37
Stop	2017-07-06 13:10:40
Duration	00:16:02.8
Run Time	00:16:01.5
Pause	00:00:01.3
Pre Calibration	2017-07-06 11:26:26
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRM831			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Low			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	Bin Max			
Gain	20.0	dB		
Overload	123.4	dB		
	A	**C**	**Z**	
Under Range Peak	**56.0**	53.0	58.0	dB
Under Range Limit	**24.6**	25.0	32.0	dB
Noise Floor	15.5	15.9	20.7	dB

Results

LAeq	72.1 dB		
LAE	101.8 dB		
EA	1.685 mPa²h		
EA8	50.458 mPa²h		
EA40	252.290 mPa²h		
LApeak (max)	2017-07-06 12:59:17	109.9	dB
LASmax	2017-07-06 12:59:18	93.1	dB
LASmin	2017-07-06 13:06:50	56.4	dB
SEA	-99.9 dB		
LAS > 65.0 dB (Exceedance Counts / Duration)	25	748.4	s
LAS > 85.0 dB (Exceedance Counts / Duration)	1	3.8	s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0	s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0	s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0	s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	72.0	72.0	-99.9	72.0	72.0	-99.9	-99.9	dB

LCeq	80.1 dB
LAeq	72.0 dB
LCeq - LAeq	8.1 dB
LAIeq	75.3 dB
LAeq	72.0 dB
LAIeq - LAeq	3.4 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	72.0		80.1		82.4	
LS(max)	93.1	2017/07/06 12:59:18	96.5	2017/07/06 12:59:18	96.5	2017/07/06 12:59:18
LF(max)	99.0	2017/07/06 12:59:18	102.4	2017/07/06 12:59:18	102.5	2017/07/06 12:59:18
LI(max)	100.5	2017/07/06 12:59:17	103.6	2017/07/06 12:59:17	103.6	2017/07/06 12:59:17
LS(min)	56.4	2017/07/06 13:06:50	69.9	2017/07/06 13:03:18	72.7	2017/07/06 13:09:03
LF(min)	55.3	2017/07/06 13:06:49	67.5	2017/07/06 13:05:30	71.3	2017/07/06 13:00:47
LI(min)	55.7	2017/07/06 13:06:49	70.9	2017/07/06 13:03:19	72.9	2017/07/06 13:09:03
LPeak(max)	109.9	2017/07/06 12:59:17	111.1	2017/07/06 12:59:17	111.3	2017/07/06 12:59:17

# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	75.0
OBA Overload Duration	649.7 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.00	0.03 %
Projected Dose	0.12	0.79 %
TWA (Projected)	41.4	55.1 dB
TWA (t)	16.9	30.6 dB
Lep (t)	57.2	57.2 dB

Statistics

LAS5.00	76.3 dB
LAS10.00	74.3 dB
LAS33.30	70.6 dB
LAS50.00	68.2 dB
LAS66.60	66.0 dB
LAS90.00	60.2 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**
PRM831	2017-07-06 11:26:26	-26.1	51.8	66.2	58.9
PRM831	2017-07-05 10:50:32	-26.0	46.5	43.4	55.7
PRM831	2017-07-05 10:50:17	-26.0	42.5	50.4	51.8
PRM831	2017-06-21 13:26:03	-25.9	45.5	56.2	49.1
PRM831	2017-06-21 08:45:40	-25.8	27.9	44.4	42.5
PRM831	2017-06-21 08:37:13	-26.0	30.9	35.0	21.8
PRM831	2017-06-21 06:00:37	-26.0	12.5	11.6	9.3

Date	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**
2017-07-06 11:26:26	64.4	67.0	54.6	64.4	60.7	60.2	73.5	64.8	60.2	58.8	56.8	52.5	51.1	51.3	47.7	43.4	43.8	41.5	35.3
2017-07-05 10:50:32	63.8	59.3	51.2	50.2	47.9	48.2	46.9	39.2	46.9	53.1	68.0	49.7	73.9	73.5	64.7	66.3	64.3	62.0	48.6
2017-07-05 10:50:17	42.3	57.2	49.2	50.1	49.1	42.1	49.6	48.7	47.1	46.9	48.1	46.9	47.2	43.8	37.8	43.2	39.5	31.2	31.4
2017-06-21 13:26:03	49.7	45.8	60.8	61.8	51.3	50.8	56.9	56.1	58.1	54.0	55.0	52.9	54.4	45.2	41.6	34.5	35.1	27.1	30.6
2017-06-21 08:45:40	37.4	44.0	45.2	57.8	49.3	49.6	52.7	52.5	53.6	52.8	63.0	41.2	44.9	47.5	48.9	53.0	39.8	32.5	30.5
2017-06-21 08:37:13	25.9	33.5	30.4	32.5	30.2	24.7	21.1	23.7	19.3	29.8	26.4	16.2	23.4	26.4	23.7	28.4	26.8	26.7	27.8
2017-06-21 06:00:37	10.2	4.5	4.1	4.3	6.1	5.9	0.6	-1.9	4.4	4.6	-2.8	-4.5	-5.8	-7.9	-3.0	-3.8	-4.8	-2.9	-2.2

Date	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
2017-07-06 11:26:26	114.0	49.0	28.3	64.9	30.2	59.2	34.0	33.9	34.3	35.8	36.8	38.1	39.0	40.8
2017-07-05 10:50:32	114.0	49.3	31.7	65.1	30.5	59.0	33.7	33.7	34.5	35.9	37.1	38.0	38.8	40.9
2017-07-05 10:50:17	113.9	49.0	28.9	64.9	30.2	59.0	33.5	33.8	34.4	35.5	36.5	37.5	39.0	40.8
2017-06-21 13:26:03	113.9	48.9	28.2	65.9	30.2	57.8	33.3	33.5	34.7	35.2	36.8	37.7	38.9	40.7
2017-06-21 08:45:40	114.2	49.2	28.3	64.2	29.6	55.7	32.2	32.0	31.9	32.0	32.0	31.4	30.5	29.5
2017-06-21 08:37:13	29.2	30.2	30.5	31.8	32.9	35.2	34.9	56.2	37.7	38.4	39.5	41.2	41.5	42.6
2017-06-21 06:00:37	-3.3	-4.2	-2.1	-1.4	-0.4	0.0	1.2	1.7	3.5	3.4	4.6	5.9	7.5	9.1

APPENDIX B

Roadway Traffic Noise Spreadsheets

Project Name rev. (Date)

Weekday AM Peak Hour Volumes

Intersection: 1

Vineyard Avenue & W. Stroube Street

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		W. Stroube Street	
Leg	North of	South of	East of	West of
Cross Street	W. Stroube Street		Vineyard Avenue	
Existing	16,592.0	17,264.0	2,856.0	1,576.0
Exising plus Proj	16,688.0	17,504.0	3,000.0	1,576.0
Cumulative	17,232.0	18,048.0	3,000.0	1,576.0
Cumlative plus P	17,232.0	18,048.0	3,000.0	1,576.0

Vineyard Avenue

Southbound

	right	through	left
Existing	20	1,003	42
Exising plus Proj	20	1,010	42
Cumulative	20	1,038	42
Cumlative plus P	20	1,038	42

W. Stroube Street

Eastbound

	left	through	right
Existing	60	31	26
Exising plus Proj	60	31	26
Cumulative	60	31	26
Cumlative plus P	60	31	26

N

W E

S

Westbound

	right	through	left
Existing	50	32	134
Exising plus Proj	50	32	144
Cumulative	50	32	144
Cumlative plus P	50	32	144

Northbound

	left	through	right
Existing	28	899	68
Exising plus Proj	28	904	76
Cumulative	28	944	76
Cumlative plus P	28	944	76

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment Land Us	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineya																																			
Existing	2	10	16,592	40	75	0	0	1.8%	0.7%	65.0	12,892	2,107	1,593	261	103	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.6	57.4	65.8	61.5	49.0	47.2	61.8	48.3	47.1	48.2	52.6
Existing plus Pr	2	10	16,688	40	75	0	0	1.8%	0.7%	65.1	12,967	2,119	1,602	263	104	15	3	23	9	67.4	76.3	81.2	-1.8	64.5	56.6	57.4	65.8	61.5	49.0	47.3	61.9	48.3	47.1	48.2	52.7
Cumulative	2	10	17,232	40	75	0	0	1.8%	0.7%	65.2	13,389	2,188	1,654	271	107	16	3	23	10	67.4	76.3	81.2	-1.8	64.6	56.7	57.6	65.9	61.6	49.2	47.4	62.0	48.4	47.3	48.3	52.8
Cumulative plus	2	10	17,232	40	75	0	0	1.8%	0.7%	65.2	13,389	2,188	1,654	271	107	16	3	23	10	67.4	76.3	81.2	-1.8	64.6	56.7	57.6	65.9	61.6	49.2	47.4	62.0	48.4	47.3	48.3	52.8
Vineya																																			
Existing	2	10	17,264	40	75	0	0	1.8%	0.7%	65.2	13,414	2,193	1,657	272	108	16	3	23	10	67.4	76.3	81.2	-1.8	64.6	56.7	57.6	65.9	61.6	49.2	47.4	62.0	48.4	47.3	48.3	52.8
Existing plus Pr	2	10	17,504	40	75	0	0	1.8%	0.7%	65.3	13,601	2,223	1,680	275	109	16	3	24	10	67.4	76.3	81.2	-1.8	64.7	56.8	57.6	66.0	61.7	49.2	47.5	62.1	48.5	47.4	48.4	52.9
Cumulative	2	10	18,048	40	75	0	0	1.8%	0.7%	65.4	14,023	2,292	1,733	284	113	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.8	66.1	61.8	49.4	47.6	62.2	48.6	47.5	48.5	53.0
Cumulative plus	2	10	18,048	40	75	0	0	1.8%	0.7%	65.4	14,023	2,292	1,733	284	113	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.8	66.1	61.8	49.4	47.6	62.2	48.6	47.5	48.5	53.0
W.																																			
Existing	1	0	2,856	15	75	0	0	1.8%	0.7%	49.6	2,219	363	274	45	18	3	1	4	2	50.8	65.4	74.5	-1.8	44.5	42.2	47.3	49.9	41.5	34.7	37.1	43.5	28.3	32.8	38.1	39.5
Existing plus Pr	1	0	3,000	15	75	0	0	1.8%	0.7%	49.8	2,331	381	288	47	19	3	1	4	2	50.8	65.4	74.5	-1.8	44.7	42.5	47.5	50.1	41.7	34.9	37.3	43.7	28.5	33.0	38.3	39.7
Cumulative	1	0	3,000	15	75	0	0	1.8%	0.7%	49.8	2,331	381	288	47	19	3	1	4	2	50.8	65.4	74.5	-1.8	44.7	42.5	47.5	50.1	41.7	34.9	37.3	43.7	28.5	33.0	38.3	39.7
Cumulative plus	1	0	3,000	15	75	0	0	1.8%	0.7%	49.8	2,331	381	288	47	19	3	1	4	2	50.8	65.4	74.5	-1.8	44.7	42.5	47.5	50.1	41.7	34.9	37.3	43.7	28.5	33.0	38.3	39.7
W.																																			
Existing	1	0	1,576	15	75	0	0	1.8%	0.7%	47.0	1,225	200	151	25	10	1	0	2	1	50.8	65.4	74.5	-1.8	41.9	39.7	44.7	47.3	38.9	32.1	34.5	40.9	25.7	30.2	35.5	36.9
Existing plus Pr	1	0	1,576	15	75	0	0	1.8%	0.7%	47.0	1,225	200	151	25	10	1	0	2	1	50.8	65.4	74.5	-1.8	41.9	39.7	44.7	47.3	38.9	32.1	34.5	40.9	25.7	30.2	35.5	36.9
Cumulative	1	0	1,576	15	75	0	0	1.8%	0.7%	47.0	1,225	200	151	25	10	1	0	2	1	50.8	65.4	74.5	-1.8	41.9	39.7	44.7	47.3	38.9	32.1	34.5	40.9	25.7	30.2	35.5	36.9
Cumulative plus	1	0	1,576	15	75	0	0	1.8%	0.7%	47.0	1,225	200	151	25	10	1	0	2	1	50.8	65.4	74.5	-1.8	41.9	39.7	44.7	47.3	38.9	32.1	34.5	40.9	25.7	30.2	35.5	36.9

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface.
An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt.
An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as

Assumed 24-Hou	Day	Evening	Night
Total ADT Volur	77.70%	12.70%	9.60%
Medium-Duty Tr	87.43%	5.05%	7.52%
Heavy-Duty Truc	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday PM Peak Hour Volumes

Intersection: 1
Vineyard Avenue & W. Stroube Street

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		W. Stroube Street	
Leg	North of	South of	East of	West of
Cross Street	W. Stroube Street		Vineyard Avenue	
Existing	17,928.0	17,536.0	1,992.0	1,504.0
Exising plus Proj	18,016.0	17,752.0	2,120.0	1,504.0
Cumulative	18,648.0	18,384.0	2,120.0	1,504.0
Cumulative plus	18,648.0	18,384.0	2,120.0	1,504.0

Vineyard Avenue

Southbound

	right	through	left
Existing	20	1,135	49
Exising plus Proj	20	1,139	49
Cumulative	20	1,205	49
Cumulative plus	20	1,205	49

W. Stroube Street

Eastbound

	left	through	right
Existing	99	23	30
Exising plus Proj	99	23	30
Cumulative	99	23	30
Cumulative plus	99	23	30

N
W E
S

Westbound

	right	through	left
Existing	46	6	103
Exising plus Proj	46	6	109
Cumulative	46	6	109
Cumulative plus	46	6	109

Northbound

	left	through	right
Existing	10	892	22
Exising plus Proj	10	899	32
Cumulative	10	912	32
Cumulative plus	10	912	32

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o W.																																				
Existing		2	0	17,928	40	75	0	0	1.8%	0.7%	65.3	13,930	2,277	1,721	282	112	16	4	24	10	67.4	76.3	81.2	-1.8	64.7	56.9	57.7	66.1	61.8	49.3	47.5	62.1	48.6	47.4	48.5	53.0
Existing plus Project		2	0	18,016	40	75	0	0	1.8%	0.7%	65.4	13,998	2,288	1,730	284	112	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.7	66.1	61.8	49.3	47.6	62.2	48.6	47.4	48.5	53.0
Cumulative		2	0	18,648	40	75	0	0	1.8%	0.7%	65.5	14,489	2,368	1,790	293	116	17	4	25	11	67.4	76.3	81.2	-1.8	64.9	57.0	57.9	66.2	61.9	49.5	47.7	62.3	48.7	47.6	48.6	53.1
Cumulative plus Project		2	0	18,648	40	75	0	0	1.8%	0.7%	65.5	14,489	2,368	1,790	293	116	17	4	25	11	67.4	76.3	81.2	-1.8	64.9	57.0	57.9	66.2	61.9	49.5	47.7	62.3	48.7	47.6	48.6	53.1
Vineyard Avenue s/o W.																																				
Existing		2	0	17,536	40	75	0	0	1.8%	0.7%	65.2	13,625	2,227	1,683	276	109	16	3	24	10	67.4	76.3	81.2	-1.8	64.6	56.8	57.6	66.0	61.7	49.2	47.4	62.1	48.5	47.3	48.4	52.9
Existing plus Project		2	0	17,752	40	75	0	0	1.8%	0.7%	65.3	13,793	2,255	1,704	279	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.7	56.8	57.7	66.0	61.7	49.2	47.5	62.1	48.5	47.4	48.4	52.9
Cumulative		2	0	18,384	40	75	0	0	1.8%	0.7%	65.4	14,284	2,335	1,765	289	115	17	4	25	10	67.4	76.3	81.2	-1.8	64.8	57.0	57.8	66.2	61.9	49.4	47.6	62.3	48.7	47.5	48.6	53.1
Cumulative plus Project		2	0	18,384	40	75	0	0	1.8%	0.7%	65.4	14,284	2,335	1,765	289	115	17	4	25	10	67.4	76.3	81.2	-1.8	64.8	57.0	57.8	66.2	61.9	49.4	47.6	62.3	48.7	47.5	48.6	53.1
W. Stroube Street e/o																																				
Existing		2	0	1,992	15	75	0	0	1.8%	0.7%	48.1	1,548	253	191	31	12	2	0	3	1	50.8	65.4	74.5	-1.8	42.9	40.7	45.7	48.4	39.9	33.1	35.6	41.9	26.7	31.2	36.5	38.0
Existing plus Project		2	0	2,120	15	75	0	0	1.8%	0.7%	48.3	1,647	269	204	33	13	2	0	3	1	50.8	65.4	74.5	-1.8	43.2	41.0	46.0	48.6	40.2	33.4	35.8	42.2	27.0	31.5	36.8	38.2
Cumulative		2	0	2,120	15	75	0	0	1.8%	0.7%	48.3	1,647	269	204	33	13	2	0	3	1	50.8	65.4	74.5	-1.8	43.2	41.0	46.0	48.6	40.2	33.4	35.8	42.2	27.0	31.5	36.8	38.2
Cumulative plus Project		2	0	2,120	15	75	0	0	1.8%	0.7%	48.3	1,647	269	204	33	13	2	0	3	1	50.8	65.4	74.5	-1.8	43.2	41.0	46.0	48.6	40.2	33.4	35.8	42.2	27.0	31.5	36.8	38.2
W. Stroube Street w/o																																				
Existing		2	0	1,504	15	75	0	0	1.8%	0.7%	46.8	1,169	191	144	24	9	1	0	2	1	50.8	65.4	74.5	-1.8	41.7	39.5	44.5	47.2	38.7	31.9	34.4	40.7	25.5	30.0	35.3	36.8
Existing plus Project		2	0	1,504	15	75	0	0	1.8%	0.7%	46.8	1,169	191	144	24	9	1	0	2	1	50.8	65.4	74.5	-1.8	41.7	39.5	44.5	47.2	38.7	31.9	34.4	40.7	25.5	30.0	35.3	36.8
Cumulative		2	0	1,504	15	75	0	0	1.8%	0.7%	46.8	1,169	191	144	24	9	1	0	2	1	50.8	65.4	74.5	-1.8	41.7	39.5	44.5	47.2	38.7	31.9	34.4	40.7	25.5	30.0	35.3	36.8
Cumulative plus Project		2	0	1,504	15	75	0	0	1.8%	0.7%	46.8	1,169	191	144	24	9	1	0	2	1	50.8	65.4	74.5	-1.8	41.7	39.5	44.5	47.2	38.7	31.9	34.4	40.7	25.5	30.0	35.3	36.8

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 2
Vineyard Avenue & Rio School Lane

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		Rio School Lane	
Leg	North of	South of	East of	West of
Cross Street	Rio School Lane		Vineyard Avenue	
Existing	18,848.0	18,864.0	304.0	112.0
Exising plus Proj	19,088.0	19,256.0	856.0	112.0
Cumulative	19,632.0	19,608.0	664.0	112.0
Cumulative plus	19,632.0	19,608.0	664.0	112.0

Vineyard Avenue

Southbound

	right	through	left
Existing	2	1,295	14
Exising plus Proj	2	1,295	31
Cumulative	2	1,323	31
Cumulative plus	2	1,323	31

Rio School Lane

Eastbound

	left	through	right
Existing	0	0	7
Exising plus Proj	0	0	7
Cumulative	0	0	7
Cumulative plus	0	0	7

N
W E
S

Westbound

	right	through	left
Existing	9		6
Exising plus Proj	17		26
Cumulative	17		26
Cumulative plus	17		26

Northbound

	left	through	right
Existing	5	1,036	9
Exising plus Proj	5	1,041	33
Cumulative	5	1,081	9
Cumulative plus	5	1,081	9

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o Rio																																				
Existing		3	0	18,848	40	75	0	0	1.8%	0.7%	65.6	14,645	2,394	1,809	297	118	17	4	26	11	67.4	76.3	81.2	-1.8	65.0	57.1	58.0	66.3	62.0	49.6	47.8	62.4	48.8	47.7	48.7	53.2
Existing plus Project		3	0	19,088	40	75	0	0	1.8%	0.7%	65.6	14,831	2,424	1,832	300	119	17	4	26	11	67.4	76.3	81.2	-1.8	65.0	57.2	58.0	66.4	62.1	49.6	47.9	62.5	48.9	47.7	48.8	53.3
Cumulative		3	0	19,632	40	75	0	0	1.8%	0.7%	65.8	15,254	2,493	1,885	309	122	18	4	27	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.1	66.5	62.2	49.7	48.0	62.6	49.0	47.9	48.9	53.4
Cumulative plus Project		3	0	19,632	40	75	0	0	1.8%	0.7%	65.8	15,254	2,493	1,885	309	122	18	4	27	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.1	66.5	62.2	49.7	48.0	62.6	49.0	47.9	48.9	53.4
Vineyard Avenue s/o Rio																																				
Existing		3	0	18,864	40	75	0	0	1.8%	0.7%	65.6	14,657	2,396	1,811	297	118	17	4	26	11	67.4	76.3	81.2	-1.8	65.0	57.1	58.0	66.3	62.0	49.6	47.8	62.4	48.8	47.7	48.7	53.2
Existing plus Project		3	0	19,256	40	75	0	0	1.8%	0.7%	65.7	14,962	2,446	1,849	303	120	18	4	26	11	67.4	76.3	81.2	-1.8	65.1	57.2	58.1	66.4	62.1	49.6	47.9	62.5	48.9	47.8	48.8	53.3
Cumulative		3	0	19,608	40	75	0	0	1.8%	0.7%	65.8	15,235	2,490	1,882	309	122	18	4	27	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.1	66.5	62.2	49.7	48.0	62.6	49.0	47.9	48.9	53.4
Cumulative plus Project		3	0	19,608	40	75	0	0	1.8%	0.7%	65.8	15,235	2,490	1,882	309	122	18	4	27	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.1	66.5	62.2	49.7	48.0	62.6	49.0	47.9	48.9	53.4
Rio School Lane e/o Vineyard																																				
Existing		2	0	304	15	75	0	0	1.8%	0.7%	39.9	236	39	29	5	2	0	0	0	0	50.8	65.4	74.5	-1.8	34.8	32.5	37.6	40.2	31.8	24.9	27.4	33.7	18.6	23.1	28.3	29.8
Existing plus Project		2	0	856	15	75	0	0	1.8%	0.7%	44.4	665	109	82	13	5	1	0	1	0	50.8	65.4	74.5	-1.8	39.3	37.0	42.1	44.7	36.3	29.4	31.9	38.2	23.1	27.6	32.8	34.3
Cumulative		2	0	664	15	75	0	0	1.8%	0.7%	43.3	516	84	64	10	4	1	0	1	0	50.8	65.4	74.5	-1.8	38.2	35.9	41.0	43.6	35.2	28.3	30.8	37.1	22.0	26.5	31.7	33.2
Cumulative plus Project		2	0	664	15	75	0	0	1.8%	0.7%	43.3	516	84	64	10	4	1	0	1	0	50.8	65.4	74.5	-1.8	38.2	35.9	41.0	43.6	35.2	28.3	30.8	37.1	22.0	26.5	31.7	33.2
Rio School Lane w/o																																				
Existing		2	0	112	15	75	0	0	1.8%	0.7%	35.6	87	14	11	2	1	0	0	0	0	50.8	65.4	74.5	-1.8	30.4	28.2	33.2	35.9	27.4	20.6	23.1	29.4	14.2	18.7	24.0	25.5
Existing plus Project		2	0	112	15	75	0	0	1.8%	0.7%	35.6	87	14	11	2	1	0	0	0	0	50.8	65.4	74.5	-1.8	30.4	28.2	33.2	35.9	27.4	20.6	23.1	29.4	14.2	18.7	24.0	25.5
Cumulative		2	0	112	15	75	0	0	1.8%	0.7%	35.6	87	14	11	2	1	0	0	0	0	50.8	65.4	74.5	-1.8	30.4	28.2	33.2	35.9	27.4	20.6	23.1	29.4	14.2	18.7	24.0	25.5
Cumulative plus Project		2	0	112	15	75	0	0	1.8%	0.7%	35.6	87	14	11	2	1	0	0	0	0	50.8	65.4	74.5	-1.8	30.4	28.2	33.2	35.9	27.4	20.6	23.1	29.4	14.2	18.7	24.0	25.5

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name
Weekday PM Peak Hour Volumes

rev. (Date)

Intersection: 2
Vineyard Avenue & Rio School Lane

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		Rio School Lane	
Leg	North of	South of	East of	West of
Cross Street	Rio School Lane		Vineyard Avenue	
Existing	16,552.0	16,528.0	88.0	48.0
Exising plus Proj	16,768.0	16,896.0	560.0	48.0
Cumulative	16,992.0	17,016.0	456.0	48.0
Cumulative plus I	16,992.0	17,016.0	456.0	48.0

Vineyard Avenue

Southbound

	right	through	left
Existing	2	1,127	5
Exising plus Proj	2	1,127	15
Cumulative	2	1,127	15
Cumulative plus	2	1,127	15

Rio School Lane

Eastbound

	left	through	right
Existing	0	0	3
Exising plus Proj	0	0	3
Cumulative	0	0	3
Cumulative plus	0	0	3

N
W E
S

Westbound

	right	through	left
Existing	3		1
Exising plus Proj	13		27
Cumulative	13		27
Cumulative plus	13		27

Northbound

	left	through	right
Existing	1	932	2
Exising plus Proj	1	939	15
Cumulative	1	967	2
Cumulative plus	1	967	2

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o Rio																																				
Existing		3	0	16,552	40	75	0	0	1.8%	0.7%	65.0	12,861	2,102	1,589	260	103	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.6	57.4	65.8	61.4	49.0	47.2	61.8	48.3	47.1	48.2	52.6
Existing plus Project		3	0	16,768	40	75	0	0	1.8%	0.7%	65.1	13,029	2,130	1,610	264	105	15	3	23	9	67.4	76.3	81.2	-1.8	64.5	56.6	57.5	65.8	61.5	49.0	47.3	61.9	48.3	47.2	48.2	52.7
Cumulative		3	0	16,992	40	75	0	0	1.8%	0.7%	65.1	13,203	2,158	1,631	267	106	15	3	23	10	67.4	76.3	81.2	-1.8	64.5	56.7	57.5	65.9	61.6	49.1	47.3	62.0	48.4	47.2	48.3	52.8
Cumulative plus Project		3	0	16,992	40	75	0	0	1.8%	0.7%	65.1	13,203	2,158	1,631	267	106	15	3	23	10	67.4	76.3	81.2	-1.8	64.5	56.7	57.5	65.9	61.6	49.1	47.3	62.0	48.4	47.2	48.3	52.8
Vineyard Avenue s/o Rio																																				
Existing		3	0	16,528	40	75	0	0	1.8%	0.7%	65.0	12,842	2,099	1,587	260	103	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.6	57.4	65.8	61.4	49.0	47.2	61.8	48.2	47.1	48.2	52.6
Existing plus Project		3	0	16,896	40	75	0	0	1.8%	0.7%	65.1	13,128	2,146	1,622	266	105	15	3	23	10	67.4	76.3	81.2	-1.8	64.5	56.7	57.5	65.9	61.5	49.1	47.3	61.9	48.3	47.2	48.3	52.7
Cumulative		3	0	17,016	40	75	0	0	1.8%	0.7%	65.1	13,221	2,161	1,634	268	106	15	3	23	10	67.4	76.3	81.2	-1.8	64.5	56.7	57.5	65.9	61.6	49.1	47.4	62.0	48.4	47.2	48.3	52.8
Cumulative plus Project		3	0	17,016	40	75	0	0	1.8%	0.7%	65.1	13,221	2,161	1,634	268	106	15	3	23	10	67.4	76.3	81.2	-1.8	64.5	56.7	57.5	65.9	61.6	49.1	47.4	62.0	48.4	47.2	48.3	52.8
Rio School Lane e/o Vineyard																																				
Existing		2	0	88	15	75	0	0	1.8%	0.7%	34.5	68	11	8	1	1	0	0	0	0	50.8	65.4	74.5	-1.8	29.4	27.1	32.2	34.8	26.4	19.6	22.0	28.4	13.2	17.7	23.0	24.4
Existing plus Project		2	0	560	15	75	0	0	1.8%	0.7%	42.6	435	71	54	9	3	1	0	1	0	50.8	65.4	74.5	-1.8	37.4	35.2	40.2	42.9	34.4	27.6	30.1	36.4	21.2	25.7	31.0	32.5
Cumulative		2	0	456	15	75	0	0	1.8%	0.7%	41.7	354	58	44	7	3	0	0	1	0	50.8	65.4	74.5	-1.8	36.5	34.3	39.3	42.0	33.5	26.7	29.2	35.5	20.3	24.8	30.1	31.6
Cumulative plus Project		2	0	456	15	75	0	0	1.8%	0.7%	41.7	354	58	44	7	3	0	0	1	0	50.8	65.4	74.5	-1.8	36.5	34.3	39.3	42.0	33.5	26.7	29.2	35.5	20.3	24.8	30.1	31.6
Rio School Lane w/o																																				
Existing		2	0	48	15	75	0	0	1.8%	0.7%	31.9	37	6	5	1	0	0	0	0	0	50.8	65.4	74.5	-1.8	26.7	24.5	29.6	32.2	23.8	16.9	19.4	25.7	10.6	15.1	20.3	21.8
Existing plus Project		2	0	48	15	75	0	0	1.8%	0.7%	31.9	37	6	5	1	0	0	0	0	0	50.8	65.4	74.5	-1.8	26.7	24.5	29.6	32.2	23.8	16.9	19.4	25.7	10.6	15.1	20.3	21.8
Cumulative		2	0	48	15	75	0	0	1.8%	0.7%	31.9	37	6	5	1	0	0	0	0	0	50.8	65.4	74.5	-1.8	26.7	24.5	29.6	32.2	23.8	16.9	19.4	25.7	10.6	15.1	20.3	21.8
Cumulative plus Project		2	0	48	15	75	0	0	1.8%	0.7%	31.9	37	6	5	1	0	0	0	0	0	50.8	65.4	74.5	-1.8	26.7	24.5	29.6	32.2	23.8	16.9	19.4	25.7	10.6	15.1	20.3	21.8

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)

Weekday AM Peak Hour Volumes

Intersection: 3

Vineyard Avenue & River Park Boulevard

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		River Park Boulevard	
Leg	North of	South of	East of	West of
Cross Street	River Park Boulevard		Vineyard Avenue	
Existing	18,304.0	26,552.0	7,496.0	7,984.0
Exising plus Proj	19,032.0	27,232.0	7,496.0	8,032.0
Cumulative	19,576.0	28,184.0	7,576.0	8,360.0
Cumulative plus	19,576.0	28,184.0	7,576.0	8,360.0

Vineyard Avenue

Southbound

	right	through	left
Existing	64	1,018	31
Exising plus Proj	67	1,055	31
Cumulative	67	1,083	31
Cumulative plus	67	1,083	31

River Park Boulevard

Eastbound

	left	through	right
Existing	57	74	341
Exising plus Proj	60	74	341
Cumulative	60	74	353
Cumulative plus	60	74	353

N

W E

S

Westbound

	right	through	left
Existing	100	126	362
Exising plus Proj	100	126	362
Cumulative	100	126	365
Cumulative plus	100	126	365

Northbound

	left	through	right
Existing	336	1,018	244
Exising plus Proj	336	1,066	244
Cumulative	365	1,106	251
Cumulative plus	365	1,106	251

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o River																																				
Existing		3	0	18,304	40	75	0	0	1.8%	0.7%	65.5	14,222	2,325	1,757	288	114	17	4	25	10	67.4	76.3	81.2	-1.8	64.9	57.0	57.8	66.2	61.9	49.4	47.7	62.3	48.7	47.6	48.6	53.1
Existing plus Project		3	0	19,032	40	75	0	0	1.8%	0.7%	65.6	14,788	2,417	1,827	300	119	17	4	26	11	67.4	76.3	81.2	-1.8	65.0	57.2	58.0	66.4	62.1	49.6	47.8	62.4	48.9	47.7	48.8	53.3
Cumulative		3	0	19,576	40	75	0	0	1.8%	0.7%	65.8	15,211	2,486	1,879	308	122	18	4	26	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.1	66.5	62.2	49.7	48.0	62.6	49.0	47.8	48.9	53.4
Cumulative plus Project		3	0	19,576	40	75	0	0	1.8%	0.7%	65.8	15,211	2,486	1,879	308	122	18	4	26	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.1	66.5	62.2	49.7	48.0	62.6	49.0	47.8	48.9	53.4
Vineyard Avenue s/o River																																				
Existing		3	0	26,552	40	75	0	0	1.8%	0.7%	67.1	20,631	3,372	2,549	418	166	24	5	36	15	67.4	76.3	81.2	-1.8	66.5	58.6	59.5	67.8	63.5	51.0	49.3	63.9	50.3	49.2	50.2	54.7
Existing plus Project		3	0	27,232	40	75	0	0	1.8%	0.7%	67.2	21,159	3,458	2,614	429	170	25	5	37	15	67.4	76.3	81.2	-1.8	66.6	58.7	59.6	67.9	63.6	51.2	49.4	64.0	50.4	49.3	50.3	54.8
Cumulative		3	0	28,184	40	75	0	0	1.8%	0.7%	67.3	21,899	3,579	2,706	444	176	26	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.9	59.7	68.1	63.8	51.3	49.5	64.2	50.6	49.4	50.5	55.0
Cumulative plus Project		3	0	28,184	40	75	0	0	1.8%	0.7%	67.3	21,899	3,579	2,706	444	176	26	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.9	59.7	68.1	63.8	51.3	49.5	64.2	50.6	49.4	50.5	55.0
River Park Boulevard e/o																																				
Existing		2	5	7,496	30	75	0	0	1.8%	0.7%	59.2	5,824	952	720	118	47	7	1	10	4	62.5	73.1	80.3	-1.8	57.4	51.2	54.3	59.7	54.4	43.6	44.1	55.1	41.2	41.7	45.0	47.8
Existing plus Project		2	5	7,496	30	75	0	0	1.8%	0.7%	59.2	5,824	952	720	118	47	7	1	10	4	62.5	73.1	80.3	-1.8	57.4	51.2	54.3	59.7	54.4	43.6	44.1	55.1	41.2	41.7	45.0	47.8
Cumulative		2	5	7,576	30	75	0	0	1.8%	0.7%	59.2	5,887	962	727	119	47	7	2	10	4	62.5	73.1	80.3	-1.8	57.4	51.2	54.3	59.8	54.4	43.6	44.2	55.1	41.2	41.7	45.1	47.8
Cumulative plus Project		2	5	7,576	30	75	0	0	1.8%	0.7%	59.2	5,887	962	727	119	47	7	2	10	4	62.5	73.1	80.3	-1.8	57.4	51.2	54.3	59.8	54.4	43.6	44.2	55.1	41.2	41.7	45.1	47.8
River Park Boulevard w/o																																				
Existing		2	15	7,984	30	75	0	0	1.8%	0.7%	59.5	6,204	1,014	766	126	50	7	2	11	5	62.5	73.1	80.3	-1.8	57.7	51.5	54.6	60.1	54.7	43.9	44.4	55.4	41.5	42.0	45.4	48.1
Existing plus Project		2	15	8,032	30	75	0	0	1.8%	0.7%	59.5	6,241	1,020	771	126	50	7	2	11	5	62.5	73.1	80.3	-1.8	57.7	51.5	54.6	60.1	54.7	43.9	44.5	55.4	41.5	42.0	45.4	48.1
Cumulative		2	15	8,360	30	75	0	0	1.8%	0.7%	59.7	6,496	1,062	803	132	52	8	2	11	5	62.5	73.1	80.3	-1.8	57.9	51.7	54.8	60.3	54.9	44.1	44.6	55.6	41.7	42.2	45.6	48.3
Cumulative plus Project		2	15	8,360	30	75	0	0	1.8%	0.7%	59.7	6,496	1,062	803	132	52	8	2	11	5	62.5	73.1	80.3	-1.8	57.9	51.7	54.8	60.3	54.9	44.1	44.6	55.6	41.7	42.2	45.6	48.3

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday PM Peak Hour Volumes

Intersection: 3
Vineyard Avenue & River Park Boulevard

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		River Park Boulevard	
Leg	North of	South of	East of	West of
Cross Street	River Park Boulevard		Vineyard Avenue	
Existing	19,128.0	26,072.0	7,448.0	6,104.0
Exising plus Proj	19,768.0	26,664.0	7,448.0	6,152.0
Cumulative	20,400.0	27,568.0	7,496.0	6,376.0
Cumulative plus I	20,400.0	27,568.0	7,496.0	6,376.0

Vineyard Avenue

Southbound

	right	through	left
Existing	51	1,092	108
Exising plus Proj	55	1,140	108
Cumulative	55	1,206	108
Cumulative plus	55	1,206	108

River Park Boulevard

Eastbound

	left	through	right
Existing	55	97	355
Exising plus Proj	57	97	355
Cumulative	57	97	369
Cumulative plus	57	97	369

N
W E
S

Westbound

	right	through	left
Existing	50	52	214
Exising plus Proj	50	52	214
Cumulative	50	52	219
Cumulative plus	50	52	219

Northbound

	left	through	right
Existing	153	1,035	410
Exising plus Proj	153	1,061	410
Cumulative	167	1,074	411
Cumulative plus	167	1,074	411

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o River																																				
Existing		3	0	19,128	40	75	0	0	1.8%	0.7%	65.7	14,862	####	####	301	119	17	4	26	11	67.4	76.3	81.2	-1.8	65.1	57.2	58.0	66.4	62.1	49.6	47.9	62.5	48.9	47.7	48.8	53.3
Existing plus Project		3	0	19,768	40	75	0	0	1.8%	0.7%	65.8	15,360	####	####	311	123	18	4	27	11	67.4	76.3	81.2	-1.8	65.2	57.3	58.2	66.5	62.2	49.8	48.0	62.6	49.0	47.9	48.9	53.4
Cumulative		3	0	20,400	40	75	0	0	1.8%	0.7%	65.9	15,851	####	####	321	127	19	4	28	12	67.4	76.3	81.2	-1.8	65.3	57.5	58.3	66.7	62.4	49.9	48.1	62.8	49.2	48.0	49.1	53.6
Cumulative plus Project		3	0	20,400	40	75	0	0	1.8%	0.7%	65.9	15,851	####	####	321	127	19	4	28	12	67.4	76.3	81.2	-1.8	65.3	57.5	58.3	66.7	62.4	49.9	48.1	62.8	49.2	48.0	49.1	53.6
Vineyard Avenue s/o River																																				
Existing		3	0	26,072	40	75	0	0	1.8%	0.7%	67.0	20,258	####	####	410	163	24	5	35	15	67.4	76.3	81.2	-1.8	66.4	58.5	59.4	67.7	63.4	51.0	49.2	63.8	50.2	49.1	50.1	54.6
Existing plus Project		3	0	26,664	40	75	0	0	1.8%	0.7%	67.1	20,718	####	####	420	166	24	5	36	15	67.4	76.3	81.2	-1.8	66.5	58.6	59.5	67.8	63.5	51.1	49.3	63.9	50.3	49.2	50.2	54.7
Cumulative		3	0	27,568	40	75	0	0	1.8%	0.7%	67.2	21,420	####	####	434	172	25	5	37	16	67.4	76.3	81.2	-1.8	66.6	58.8	59.6	68.0	63.7	51.2	49.4	64.1	50.5	49.3	50.4	54.9
Cumulative plus Project		3	0	27,568	40	75	0	0	1.8%	0.7%	67.2	21,420	####	####	434	172	25	5	37	16	67.4	76.3	81.2	-1.8	66.6	58.8	59.6	68.0	63.7	51.2	49.4	64.1	50.5	49.3	50.4	54.9
River Park Boulevard e/o																																				
Existing		2	5	7,448	30	75	0	0	1.8%	0.7%	59.1	5,787	946	715	117	46	7	1	10	4	62.5	73.1	80.3	-1.8	57.3	51.1	54.3	59.7	54.4	43.5	44.1	55.1	41.2	41.7	45.0	47.7
Existing plus Project		2	5	7,448	30	75	0	0	1.8%	0.7%	59.1	5,787	946	715	117	46	7	1	10	4	62.5	73.1	80.3	-1.8	57.3	51.1	54.3	59.7	54.4	43.5	44.1	55.1	41.2	41.7	45.0	47.7
Cumulative		2	5	7,496	30	75	0	0	1.8%	0.7%	59.2	5,824	952	720	118	47	7	1	10	4	62.5	73.1	80.3	-1.8	57.4	51.2	54.3	59.7	54.4	43.6	44.1	55.1	41.2	41.7	45.0	47.8
Cumulative plus Project		2	5	7,496	30	75	0	0	1.8%	0.7%	59.2	5,824	952	720	118	47	7	1	10	4	62.5	73.1	80.3	-1.8	57.4	51.2	54.3	59.7	54.4	43.6	44.1	55.1	41.2	41.7	45.0	47.8
River Park Boulevard w/o																																				
Existing		2	15	6,104	30	75	0	0	1.8%	0.7%	58.3	4,743	775	586	96	38	6	1	8	3	62.5	73.1	80.3	-1.8	56.5	50.3	53.4	58.9	53.5	42.7	43.3	54.2	40.3	40.9	44.2	46.9
Existing plus Project		2	15	6,152	30	75	0	0	1.8%	0.7%	58.3	4,780	781	591	97	38	6	1	8	3	62.5	73.1	80.3	-1.8	56.5	50.3	53.5	58.9	53.6	42.8	43.3	54.3	40.4	40.9	44.2	47.0
Cumulative		2	15	6,376	30	75	0	0	1.8%	0.7%	58.5	4,954	810	612	100	40	6	1	9	4	62.5	73.1	80.3	-1.8	56.7	50.5	53.6	59.1	53.7	42.9	43.5	54.4	40.5	41.0	44.4	47.1
Cumulative plus Project		2	15	6,376	30	75	0	0	1.8%	0.7%	58.5	4,954	810	612	100	40	6	1	9	4	62.5	73.1	80.3	-1.8	56.7	50.5	53.6	59.1	53.7	42.9	43.5	54.4	40.5	41.0	44.4	47.1

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 4
Vineyard Avenue & US-101 NB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		US-101 NB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 NB Off-Ramp		Vineyard Avenue	
Existing	26,392.0	27,432.0	7,664.0	2,368.0
Exising plus Proj	27,072.0	27,872.0	7,776.0	2,496.0
Cumulative	28,048.0	30,008.0	9,032.0	2,528.0
Cumulative plus	28,048.0	30,008.0	9,032.0	2,528.0

Vineyard Avenue

Southbound

	right	through	left
Existing	296	1,401	
Exising plus Proj	312	1,422	
Cumulative	316	1,456	
Cumulative plus	316	1,456	

US-101 NB Off-Ramp

Eastbound

	left	through	right
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

N
W E
S

Westbound

	right	through	left
Existing	266		492
Exising plus Proj	280		492
Cumulative	284		539
Cumulative plus	284		539

Northbound

	left	through	right
Existing		1,336	200
Exising plus Project		1,370	200
Cumulative		1,450	306
Cumulative plus Project		1,450	306

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL
Vineyard Avenue n/o US-101											
Existing		3	0	26,392	40	75	0	0	1.8%	0.7%	67.1
Existing plus Project		3	0	27,072	40	75	0	0	1.8%	0.7%	67.2
Cumulative		3	0	28,048	40	75	0	0	1.8%	0.7%	67.3
Cumulative plus Project		3	0	28,048	40	75	0	0	1.8%	0.7%	67.3
Vineyard Avenue s/o US-101											
Existing		3	0	27,432	40	75	0	0	1.8%	0.7%	67.2
Existing plus Project		3	0	27,872	40	75	0	0	1.8%	0.7%	67.3
Cumulative		3	0	30,008	40	75	0	0	1.8%	0.7%	67.6
Cumulative plus Project		3	0	30,008	40	75	0	0	1.8%	0.7%	67.6
US-101 NB Off-Ramp e/o											
Existing		3	0	7,664	15	75	0	0	1.8%	0.7%	54.0
Existing plus Project		3	0	7,776	15	75	0	0	1.8%	0.7%	54.0
Cumulative		3	0	9,032	15	75	0	0	1.8%	0.7%	54.7
Cumulative plus Project		3	0	9,032	15	75	0	0	1.8%	0.7%	54.7
US-101 NB Off-Ramp w/o											
Existing		1	0	2,368	15	75	0	0	1.8%	0.7%	48.8
Existing plus Project		1	0	2,496	15	75	0	0	1.8%	0.7%	49.0
Cumulative		1	0	2,528	15	75	0	0	1.8%	0.7%	49.1
Cumulative plus Project		1	0	2,528	15	75	0	0	1.8%	0.7%	49.1

ROADWAY NAME Segment	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o US-101																									
Existing	20,507	3,352	2,534	415	165	24	5	36	15	67.4	76.3	81.2	-1.8	66.5	58.6	59.4	67.8	63.5	51.0	49.3	63.9	50.3	49.1	50.2	54.7
Existing plus Project	21,035	3,438	2,599	426	169	25	5	37	15	67.4	76.3	81.2	-1.8	66.6	58.7	59.5	67.9	63.6	51.1	49.4	64.0	50.4	49.3	50.3	54.8
Cumulative	21,793	3,562	2,693	441	175	25	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.9	59.7	68.1	63.7	51.3	49.5	64.1	50.5	49.4	50.5	54.9
Cumulative plus Project	21,793	3,562	2,693	441	175	25	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.9	59.7	68.1	63.7	51.3	49.5	64.1	50.5	49.4	50.5	54.9
Vineyard Avenue s/o US-101																									
Existing	21,315	3,484	2,633	432	171	25	5	37	15	67.4	76.3	81.2	-1.8	66.6	58.8	59.6	68.0	63.6	51.2	49.4	64.0	50.4	49.3	50.4	54.8
Existing plus Project	21,657	3,540	2,676	439	174	25	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.8	59.7	68.0	63.7	51.3	49.5	64.1	50.5	49.4	50.4	54.9
Cumulative	23,316	3,811	2,881	472	187	27	6	41	17	67.4	76.3	81.2	-1.8	67.0	59.2	60.0	68.4	64.0	51.6	49.8	64.4	50.8	49.7	50.7	55.2
Cumulative plus Project	23,316	3,811	2,881	472	187	27	6	41	17	67.4	76.3	81.2	-1.8	67.0	59.2	60.0	68.4	64.0	51.6	49.8	64.4	50.8	49.7	50.7	55.2
US-101 NB Off-Ramp e/o																									
Existing	5,955	973	736	121	48	7	2	10	4	50.8	65.4	74.5	-1.8	48.8	46.6	51.6	54.3	45.8	39.0	41.5	47.8	32.6	37.1	42.4	43.9
Existing plus Project	6,042	988	746	122	48	7	2	11	4	50.8	65.4	74.5	-1.8	48.9	46.6	51.7	54.3	45.9	39.1	41.5	47.9	32.7	37.2	42.5	43.9
Cumulative	7,018	1,147	867	142	56	8	2	12	5	50.8	65.4	74.5	-1.8	49.5	47.3	52.3	55.0	46.6	39.7	42.2	48.5	33.4	37.8	43.1	44.6
Cumulative plus Project	7,018	1,147	867	142	56	8	2	12	5	50.8	65.4	74.5	-1.8	49.5	47.3	52.3	55.0	46.6	39.7	42.2	48.5	33.4	37.8	43.1	44.6
US-101 NB Off-Ramp w/o																									
Existing	1,840	301	227	37	15	2	0	3	1	50.8	65.4	74.5	-1.8	43.7	41.4	46.5	49.1	40.7	33.8	36.3	42.6	27.5	32.0	37.2	38.7
Existing plus Project	1,939	317	240	39	16	2	0	3	1	50.8	65.4	74.5	-1.8	43.9	41.7	46.7	49.3	40.9	34.1	36.5	42.9	27.7	32.2	37.5	38.9
Cumulative	1,964	321	243	40	16	2	1	3	1	50.8	65.4	74.5	-1.8	43.9	41.7	46.8	49.4	41.0	34.1	36.6	42.9	27.8	32.3	37.5	39.0
Cumulative plus Project	1,964	321	243	40	16	2	1	3	1	50.8	65.4	74.5	-1.8	43.9	41.7	46.8	49.4	41.0	34.1	36.6	42.9	27.8	32.3	37.5	39.0

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name
Weekday PM Peak Hour Volumes

rev. (Date)

Intersection: 4
Vineyard Avenue & US-101 NB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		US-101 NB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 NB Off-Ramp		Vineyard Avenue	
Existing	25,944.0	25,656.0	6,432.0	2,992.0
Exising plus Proj	26,536.0	26,024.0	6,488.0	3,160.0
Cumulative	27,424.0	28,832.0	8,448.0	3,168.0
Cumulative plus	27,424.0	28,832.0	8,448.0	3,168.0

Vineyard Avenue

Southbound

	right	through	left
Existing	374	1,311	
Exising plus Proj	395	1,338	
Cumulative	396	1,418	
Cumulative plus	396	1,418	

US-101 NB Off-Ramp

Eastbound

	left	through	right
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

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Westbound

	right	through	left
Existing	233		370
Exising plus Proj	240		370
Cumulative	242		559
Cumulative plus	242		559

Northbound

	left	through	right
Existing		1,325	201
Exising plus Project		1,344	201
Cumulative		1,372	255
Cumulative plus Project		1,372	255

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL
Vineyard Avenue n/o US-101											
Existing		2	0	25,944	40	75	0	0	1.8%	0.7%	66.9
Existing plus Project		2	0	26,536	40	75	0	0	1.8%	0.7%	67.0
Cumulative		2	0	27,424	40	75	0	0	1.8%	0.7%	67.2
Cumulative plus Project		2	0	27,424	40	75	0	0	1.8%	0.7%	67.2
Vineyard Avenue s/o US-101											
Existing		2	0	25,656	40	75	0	0	1.8%	0.7%	66.9
Existing plus Project		2	0	26,024	40	75	0	0	1.8%	0.7%	66.9
Cumulative		2	0	28,832	40	75	0	0	1.8%	0.7%	67.4
Cumulative plus Project		2	0	28,832	40	75	0	0	1.8%	0.7%	67.4
US-101 NB Off-Ramp e/o											
Existing		3	0	6,432	15	75	0	0	1.8%	0.7%	53.2
Existing plus Project		3	0	6,488	15	75	0	0	1.8%	0.7%	53.2
Cumulative		3	0	8,448	15	75	0	0	1.8%	0.7%	54.4
Cumulative plus Project		3	0	8,448	15	75	0	0	1.8%	0.7%	54.4
US-101 NB Off-Ramp w/o											
Existing		1	0	2,992	15	75	0	0	1.8%	0.7%	49.8
Existing plus Project		1	0	3,160	15	75	0	0	1.8%	0.7%	50.1
Cumulative		1	0	3,168	15	75	0	0	1.8%	0.7%	50.1
Cumulative plus Project		1	0	3,168	15	75	0	0	1.8%	0.7%	50.1

Segment	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o US-101																									
Existing	20,158	3,295	2,491	408	162	24	5	35	15	67.4	76.3	81.2	-1.8	66.3	58.5	59.3	67.7	63.4	50.9	49.1	63.8	50.2	49.0	50.1	54.6
Existing plus Project	20,618	3,370	2,547	418	166	24	5	36	15	67.4	76.3	81.2	-1.8	66.4	58.6	59.4	67.8	63.5	51.0	49.2	63.8	50.3	49.1	50.2	54.7
Cumulative	21,308	3,483	2,633	432	171	25	5	37	15	67.4	76.3	81.2	-1.8	66.6	58.7	59.5	67.9	63.6	51.1	49.4	64.0	50.4	49.3	50.3	54.8
Cumulative plus Project	21,308	3,483	2,633	432	171	25	5	37	15	67.4	76.3	81.2	-1.8	66.6	58.7	59.5	67.9	63.6	51.1	49.4	64.0	50.4	49.3	50.3	54.8
Vineyard Avenue s/o US-101																									
Existing	19,935	3,258	2,463	404	160	23	5	35	14	67.4	76.3	81.2	-1.8	66.3	58.4	59.3	67.6	63.3	50.8	49.1	63.7	50.1	49.0	50.0	54.5
Existing plus Project	20,221	3,305	2,498	410	162	24	5	35	15	67.4	76.3	81.2	-1.8	66.4	58.5	59.3	67.7	63.4	50.9	49.2	63.8	50.2	49.0	50.1	54.6
Cumulative	22,402	3,662	2,768	454	180	26	6	39	16	67.4	76.3	81.2	-1.8	66.8	58.9	59.8	68.1	63.8	51.4	49.6	64.2	50.6	49.5	50.5	55.0
Cumulative plus Project	22,402	3,662	2,768	454	180	26	6	39	16	67.4	76.3	81.2	-1.8	66.8	58.9	59.8	68.1	63.8	51.4	49.6	64.2	50.6	49.5	50.5	55.0
US-101 NB Off-Ramp e/o																									
Existing	4,998	817	617	101	40	6	1	9	4	50.8	65.4	74.5	-1.8	48.1	45.8	50.9	53.5	45.1	38.2	40.7	47.0	31.9	36.4	41.6	43.1
Existing plus Project	5,041	824	623	102	40	6	1	9	4	50.8	65.4	74.5	-1.8	48.1	45.9	50.9	53.5	45.1	38.3	40.7	47.1	31.9	36.4	41.7	43.1
Cumulative	6,564	1,073	811	133	53	8	2	11	5	50.8	65.4	74.5	-1.8	49.2	47.0	52.1	54.7	46.3	39.4	41.9	48.2	33.1	37.6	42.8	44.3
Cumulative plus Project	6,564	1,073	811	133	53	8	2	11	5	50.8	65.4	74.5	-1.8	49.2	47.0	52.1	54.7	46.3	39.4	41.9	48.2	33.1	37.6	42.8	44.3
US-101 NB Off-Ramp w/o																									
Existing	2,325	380	287	47	19	3	1	4	2	50.8	65.4	74.5	-1.8	44.7	42.4	47.5	50.1	41.7	34.9	37.3	43.7	28.5	33.0	38.3	39.7
Existing plus Project	2,455	401	303	50	20	3	1	4	2	50.8	65.4	74.5	-1.8	44.9	42.7	47.7	50.4	41.9	35.1	37.6	43.9	28.7	33.2	38.5	40.0
Cumulative	2,462	402	304	50	20	3	1	4	2	50.8	65.4	74.5	-1.8	44.9	42.7	47.7	50.4	41.9	35.1	37.6	43.9	28.7	33.2	38.5	40.0
Cumulative plus Project	2,462	402	304	50	20	3	1	4	2	50.8	65.4	74.5	-1.8	44.9	42.7	47.7	50.4	41.9	35.1	37.6	43.9	28.7	33.2	38.5	40.0

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 5
Vineyard Avenue & US-101 SB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		US-101 SB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 SB Off-Ramp		Vineyard Avenue	
Existing	27,400.0	28,824.0	4,680.0	5,592.0
Exising plus Proj	27,840.0	29,016.0	4,680.0	5,840.0
Cumulative	30,000.0	37,440.0	8,288.0	8,608.0
Cumulative plus	30,000.0	37,440.0	8,288.0	8,608.0

Vineyard Avenue

Southbound

	right	through	left
Existing	217	1,683	
Exising plus Proj	228	1,693	
Cumulative	231	1,774	
Cumulative plus	231	1,774	

US-101 SB Off-Ramp

Eastbound

	left	through	right
Existing	336		146
Exising plus Proj	356		146
Cumulative	360		485
Cumulative plus	360		485

N
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Westbound

	right	through	left
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

Northbound

	left	through	right
Existing		1,189	585
Exising plus Project		1,203	585
Cumulative		1,385	1,036
Cumulative plus Project		1,385	1,036

2
NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o US-101																																				
Existing		3	15	27,400	40	75	0	0	1.8%	0.7%	67.3	21,290	3,480	2,630	431	171	25	5	37	15	67.4	76.3	81.2	-1.7	66.7	58.9	59.7	68.1	63.7	51.3	49.5	64.1	50.5	49.4	50.4	54.9
Existing plus Project		3	15	27,840	40	75	0	0	1.8%	0.7%	67.4	21,632	3,536	2,673	438	174	25	6	38	16	67.4	76.3	81.2	-1.7	66.8	58.9	59.8	68.1	63.8	51.3	49.6	64.2	50.6	49.5	50.5	55.0
Cumulative		3	15	30,000	40	75	0	0	1.8%	0.7%	67.7	23,310	3,810	2,880	472	187	27	6	41	17	67.4	76.3	81.2	-1.7	67.1	59.3	60.1	68.4	64.1	51.7	49.9	64.5	50.9	49.8	50.8	55.3
Cumulative plus Project		3	15	30,000	40	75	0	0	1.8%	0.7%	67.7	23,310	3,810	2,880	472	187	27	6	41	17	67.4	76.3	81.2	-1.7	67.1	59.3	60.1	68.4	64.1	51.7	49.9	64.5	50.9	49.8	50.8	55.3
Vineyard Avenue s/o US-101																																				
Existing		3	15	28,824	40	75	0	0	1.8%	0.7%	67.5	22,396	3,661	2,767	454	180	26	6	39	16	67.4	76.3	81.2	-1.7	66.9	59.1	59.9	68.3	64.0	51.5	49.7	64.3	50.8	49.6	50.7	55.2
Existing plus Project		3	15	29,016	40	75	0	0	1.8%	0.7%	67.6	22,545	3,685	2,786	457	181	26	6	39	16	67.4	76.3	81.2	-1.7	67.0	59.1	59.9	68.3	64.0	51.5	49.8	64.4	50.8	49.7	50.7	55.2
Cumulative		3	15	37,440	40	75	0	0	1.8%	0.7%	68.7	29,091	4,755	3,594	589	234	34	7	51	21	67.4	76.3	81.2	-1.7	68.1	60.2	61.0	69.4	65.1	52.6	50.9	65.5	51.9	50.8	51.8	56.3
Cumulative plus Project		3	15	37,440	40	75	0	0	1.8%	0.7%	68.7	29,091	4,755	3,594	589	234	34	7	51	21	67.4	76.3	81.2	-1.7	68.1	60.2	61.0	69.4	65.1	52.6	50.9	65.5	51.9	50.8	51.8	56.3
US-101 SB Off-Ramp e/o																																				
Existing		1	0	4,680	15	75	0	0	1.8%	0.7%	51.8	3,636	594	449	74	29	4	1	6	3	50.8	65.4	74.5	-1.8	46.6	44.4	49.4	52.1	43.6	36.8	39.3	45.6	30.4	34.9	40.2	41.7
Existing plus Project		1	0	4,680	15	75	0	0	1.8%	0.7%	51.8	3,636	594	449	74	29	4	1	6	3	50.8	65.4	74.5	-1.8	46.6	44.4	49.4	52.1	43.6	36.8	39.3	45.6	30.4	34.9	40.2	41.7
Cumulative		1	0	8,288	15	75	0	0	1.8%	0.7%	54.2	6,440	1,053	796	130	52	8	2	11	5	50.8	65.4	74.5	-1.8	49.1	46.9	51.9	54.6	46.1	39.3	41.8	48.1	32.9	37.4	42.7	44.2
Cumulative plus Project		1	0	8,288	15	75	0	0	1.8%	0.7%	54.2	6,440	1,053	796	130	52	8	2	11	5	50.8	65.4	74.5	-1.8	49.1	46.9	51.9	54.6	46.1	39.3	41.8	48.1	32.9	37.4	42.7	44.2
US-101 SB Off-Ramp w/o																																				
Existing		1	0	5,592	15	75	0	0	1.8%	0.7%	52.5	4,345	710	537	88	35	5	1	8	3	50.8	65.4	74.5	-1.8	47.4	45.2	50.2	52.8	44.4	37.6	40.0	46.4	31.2	35.7	41.0	42.4
Existing plus Project		1	0	5,840	15	75	0	0	1.8%	0.7%	52.7	4,538	742	561	92	36	5	1	8	3	50.8	65.4	74.5	-1.8	47.6	45.3	50.4	53.0	44.6	37.8	40.2	46.6	31.4	35.9	41.2	42.6
Cumulative		1	0	8,608	15	75	0	0	1.8%	0.7%	54.4	6,688	1,093	826	135	54	8	2	12	5	50.8	65.4	74.5	-1.8	49.3	47.0	52.1	54.7	46.3	39.4	41.9	48.3	33.1	37.6	42.8	44.3
Cumulative plus Project		1	0	8,608	15	75	0	0	1.8%	0.7%	54.4	6,688	1,093	826	135	54	8	2	12	5	50.8	65.4	74.5	-1.8	49.3	47.0	52.1	54.7	46.3	39.4	41.9	48.3	33.1	37.6	42.8	44.3

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)

Weekday PM Peak Hour Volumes

Intersection: 5

Vineyard Avenue & US-101 SB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667

If Peak Hour = 7% of ADT, Scaling Factor = 14.286

If Peak Hour = 8% of ADT, Scaling Factor = 12.5

If Peak Hour = 9% of ADT, Scaling Factor = 11.111

If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		US-101 SB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 SB Off-Ramp		Vineyard Avenue	
Existing	25,440.0	27,592.0	7,168.0	8,216.0
Exising plus Proj	25,808.0	27,760.0	7,168.0	8,416.0
Cumulative	28,048.0	31,232.0	7,520.0	9,024.0
Cumulative plus	28,416.0	31,400.0	7,520.0	9,224.0

Vineyard Avenue

Southbound

	right	through	left
Existing	431	1,198	
Exising plus Proj	445	1,211	
Cumulative	435	1,463	
Cumulative plus	449	1,476	

US-101 SB Off-Ramp

Eastbound

	left	through	right
Existing	396		200
Exising plus Proj	407		200
Cumulative	400		293
Cumulative plus	411		293

N

W E

S

Westbound

	right	through	left
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

Northbound

	left	through	right
Existing		1,155	896
Exising plus Project		1,163	896
Cumulative		1,208	940
Cumulative plus Project		1,216	940

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o US-101																																				
Existing		3	15	25,440	40	75	0	0	1.8%	0.7%	67.0	19,767	####	####	400	159	23	5	34	14	67.4	76.3	81.2	-1.7	66.4	58.5	59.4	67.7	63.4	51.0	49.2	63.8	50.2	49.1	50.1	54.6
Existing plus Project		3	15	25,808	40	75	0	0	1.8%	0.7%	67.1	20,053	####	####	406	161	23	5	35	15	67.4	76.3	81.2	-1.7	66.5	58.6	59.4	67.8	63.5	51.0	49.3	63.9	50.3	49.1	50.2	54.7
Cumulative		3	15	28,048	40	75	0	0	1.8%	0.7%	67.4	21,793	####	####	441	175	25	6	38	16	67.4	76.3	81.2	-1.7	66.8	59.0	59.8	68.2	63.8	51.4	49.6	64.2	50.6	49.5	50.5	55.0
Cumulative plus Project		3	15	28,416	40	75	0	0	1.8%	0.7%	67.5	22,079	####	####	447	177	26	6	38	16	67.4	76.3	81.2	-1.7	66.9	59.0	59.8	68.2	63.9	51.4	49.7	64.3	50.7	49.6	50.6	55.1
Vineyard Avenue s/o US-101																																				
Existing		3	15	27,592	40	75	0	0	1.8%	0.7%	67.3	21,439	####	####	434	172	25	5	37	16	67.4	76.3	81.2	-1.7	66.7	58.9	59.7	68.1	63.8	51.3	49.5	64.2	50.6	49.4	50.5	55.0
Existing plus Project		3	15	27,760	40	75	0	0	1.8%	0.7%	67.4	21,570	####	####	437	173	25	6	38	16	67.4	76.3	81.2	-1.7	66.8	58.9	59.7	68.1	63.8	51.3	49.6	64.2	50.6	49.5	50.5	55.0
Cumulative		3	15	31,232	40	75	0	0	1.8%	0.7%	67.9	24,267	####	####	492	195	28	6	42	18	67.4	76.3	81.2	-1.7	67.3	59.4	60.3	68.6	64.3	51.8	50.1	64.7	51.1	50.0	51.0	55.5
Cumulative plus Project		3	15	31,400	40	75	0	0	1.8%	0.7%	67.9	24,398	####	####	494	196	29	6	43	18	67.4	76.3	81.2	-1.7	67.3	59.4	60.3	68.6	64.3	51.9	50.1	64.7	51.1	50.0	51.0	55.5
US-101 SB Off-Ramp e/o																																				
Existing		1	0	7,168	15	75	0	0	1.8%	0.7%	53.6	5,570	910	688	113	45	7	1	10	4	50.8	65.4	74.5	-1.8	48.5	46.2	51.3	53.9	45.5	38.7	41.1	47.5	32.3	36.8	42.1	43.5
Existing plus Project		1	0	7,168	15	75	0	0	1.8%	0.7%	53.6	5,570	910	688	113	45	7	1	10	4	50.8	65.4	74.5	-1.8	48.5	46.2	51.3	53.9	45.5	38.7	41.1	47.5	32.3	36.8	42.1	43.5
Cumulative		1	0	7,520	15	75	0	0	1.8%	0.7%	53.8	5,843	955	722	118	47	7	1	10	4	50.8	65.4	74.5	-1.8	48.7	46.4	51.5	54.1	45.7	38.9	41.3	47.7	32.5	37.0	42.3	43.7
Cumulative plus Project		1	0	7,520	15	75	0	0	1.8%	0.7%	53.8	5,843	955	722	118	47	7	1	10	4	50.8	65.4	74.5	-1.8	48.7	46.4	51.5	54.1	45.7	38.9	41.3	47.7	32.5	37.0	42.3	43.7
US-101 SB Off-Ramp w/o																																				
Existing		1	0	8,216	15	75	0	0	1.8%	0.7%	54.2	6,384	####	789	129	51	7	2	11	5	50.8	65.4	74.5	-1.8	49.1	46.8	51.9	54.5	46.1	39.2	41.7	48.1	32.9	37.4	42.6	44.1
Existing plus Project		1	0	8,416	15	75	0	0	1.8%	0.7%	54.3	6,539	####	808	132	52	8	2	11	5	50.8	65.4	74.5	-1.8	49.2	46.9	52.0	54.6	46.2	39.3	41.8	48.2	33.0	37.5	42.8	44.2
Cumulative		1	0	9,024	15	75	0	0	1.8%	0.7%	54.6	7,012	####	866	142	56	8	2	12	5	50.8	65.4	74.5	-1.8	49.5	47.2	52.3	54.9	46.5	39.7	42.1	48.5	33.3	37.8	43.1	44.5
Cumulative plus Project		1	0	9,224	15	75	0	0	1.8%	0.7%	54.7	7,167	####	886	145	58	8	2	12	5	50.8	65.4	74.5	-1.8	49.6	47.3	52.4	55.0	46.6	39.7	42.2	48.6	33.4	37.9	43.1	44.6

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 6
Vineyard Avenue & Esplanade Drive

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		Esplanade Drive	
Leg	North of	South of	East of	West of
Cross Street	Esplanade Drive		Vineyard Avenue	
Existing	31,192.0	28,672.0	7,464.0	8,576.0
Exising plus Proj	31,376.0	28,816.0	7,464.0	8,616.0
Cumulative	33,680.0	32,488.0	12,392.0	10,272.0
Cumulative plus	33,864.0	32,632.0	12,392.0	10,312.0

Vineyard Avenue

Southbound

	right	through	left
Existing	300	1,563	205
Exising plus Proj	302	1,571	205
Cumulative	322	1,569	292
Cumulative plus	324	1,577	292

Esplanade Drive

Eastbound

	left	through	right
Existing	212	24	281
Exising plus Proj	215	24	281
Cumulative	273	33	350
Cumulative plus	276	33	350

N
W E
S

Westbound

	right	through	left
Existing	354	65	214
Exising plus Proj	354	65	214
Cumulative	485	86	485
Cumulative plus	485	86	485

Northbound

	left	through	right
Existing	190	1,265	71
Exising plus Proj	190	1,275	71
Cumulative	220	1,269	168
Cumulative plus	220	1,279	168

2
NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o US-101																																				
Existing		3	15	31,192	40	75	0	0	1.8%	0.7%	67.9	24,236	3,961	2,994	491	195	28	6	42	18	67.4	76.3	81.2	-1.7	67.3	59.4	60.2	68.6	64.3	51.8	50.1	64.7	51.1	50.0	51.0	55.5
Existing plus Project		3	15	31,376	40	75	0	0	1.8%	0.7%	67.9	24,379	3,985	3,012	494	196	29	6	42	18	67.4	76.3	81.2	-1.7	67.3	59.4	60.3	68.6	64.3	51.9	50.1	64.7	51.1	50.0	51.0	55.5
Cumulative		3	15	33,680	40	75	0	0	1.8%	0.7%	68.2	26,169	4,277	3,233	530	210	31	7	46	19	67.4	76.3	81.2	-1.7	67.6	59.8	60.6	69.0	64.6	52.2	50.4	65.0	51.4	50.3	51.3	55.8
Cumulative plus Project		3	15	33,864	40	75	0	0	1.8%	0.7%	68.2	26,312	4,301	3,251	533	211	31	7	46	19	67.4	76.3	81.2	-1.7	67.6	59.8	60.6	69.0	64.7	52.2	50.4	65.0	51.5	50.3	51.4	55.9
Vineyard Avenue s/o																																				
Existing		3	15	28,672	40	75	0	0	1.8%	0.7%	67.5	22,278	3,641	2,753	451	179	26	6	39	16	67.4	76.3	81.2	-1.7	66.9	59.1	59.9	68.3	63.9	51.5	49.7	64.3	50.7	49.6	50.6	55.1
Existing plus Project		3	15	28,816	40	75	0	0	1.8%	0.7%	67.5	22,390	3,660	2,766	453	180	26	6	39	16	67.4	76.3	81.2	-1.7	66.9	59.1	59.9	68.3	64.0	51.5	49.7	64.3	50.8	49.6	50.7	55.1
Cumulative		3	15	32,488	40	75	0	0	1.8%	0.7%	68.1	25,243	4,126	3,119	511	203	30	6	44	18	67.4	76.3	81.2	-1.7	67.5	59.6	60.4	68.8	64.5	52.0	50.3	64.9	51.3	50.1	51.2	55.7
Cumulative plus Project		3	15	32,632	40	75	0	0	1.8%	0.7%	68.1	25,355	4,144	3,133	514	204	30	6	44	18	67.4	76.3	81.2	-1.7	67.5	59.6	60.4	68.8	64.5	52.0	50.3	64.9	51.3	50.2	51.2	55.7
Esplanade Drive e/o Vineyard																																				
Existing		1	0	7,464	15	75	0	0	1.8%	0.7%	53.8	5,800	948	717	117	47	7	1	10	4	50.8	65.4	74.5	-1.8	48.6	46.4	51.5	54.1	45.7	38.8	41.3	47.6	32.5	37.0	42.2	43.7
Existing plus Project		1	0	7,464	15	75	0	0	1.8%	0.7%	53.8	5,800	948	717	117	47	7	1	10	4	50.8	65.4	74.5	-1.8	48.6	46.4	51.5	54.1	45.7	38.8	41.3	47.6	32.5	37.0	42.2	43.7
Cumulative		1	0	12,392	15	75	0	0	1.8%	0.7%	56.0	9,629	1,574	1,190	195	77	11	2	17	7	50.8	65.4	74.5	-1.8	50.8	48.6	53.7	56.3	47.9	41.0	43.5	49.8	34.7	39.2	44.4	45.9
Cumulative plus Project		1	0	12,392	15	75	0	0	1.8%	0.7%	56.0	9,629	1,574	1,190	195	77	11	2	17	7	50.8	65.4	74.5	-1.8	50.8	48.6	53.7	56.3	47.9	41.0	43.5	49.8	34.7	39.2	44.4	45.9
Esplanade Drive w/o																																				
Existing		2	0	8,576	30	75	0	0	1.8%	0.7%	59.7	6,664	1,089	823	135	53	8	2	12	5	62.5	73.1	80.3	-1.8	57.9	51.7	54.9	60.3	55.0	44.1	44.7	55.7	41.8	42.3	45.6	48.3
Existing plus Project		2	0	8,616	30	75	0	0	1.8%	0.7%	59.7	6,695	1,094	827	136	54	8	2	12	5	62.5	73.1	80.3	-1.8	58.0	51.7	54.9	60.3	55.0	44.2	44.7	55.7	41.8	42.3	45.6	48.4
Cumulative		2	0	10,272	30	75	0	0	1.8%	0.7%	60.5	7,981	1,305	986	162	64	9	2	14	6	62.5	73.1	80.3	-1.8	58.7	52.5	55.6	61.1	55.7	44.9	45.5	56.4	42.5	43.1	46.4	49.1
Cumulative plus Project		2	0	10,312	30	75	0	0	1.8%	0.7%	60.5	8,012	1,310	990	162	64	9	2	14	6	62.5	73.1	80.3	-1.8	58.7	52.5	55.7	61.1	55.8	44.9	45.5	56.5	42.6	43.1	46.4	49.1

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday PM Peak Hour Volumes

Intersection: 6
Vineyard Avenue & Esplanade Drive

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Vineyard Avenue		Esplanade Drive	
Leg	North of	South of	East of	West of
Cross Street	Esplanade Drive		Vineyard Avenue	
Existing	27,752.0	24,168.0	4,984.0	3,320.0
Exising plus Proj	27,904.0	24,296.0	4,984.0	3,344.0
Cumulative	29,712.0	26,648.0	8,552.0	4,576.0
Cumulative plus	29,880.0	26,776.0	8,552.0	4,616.0

Vineyard Avenue

Southbound

	right	through	left
Existing	160	1,024	353
Exising plus Proj	163	1,034	353
Cumulative	201	1,026	493
Cumulative plus	204	1,036	493

Esplanade Drive

Eastbound

	left	through	right
Existing	87	17	82
Exising plus Proj	87	17	82
Cumulative	104	39	94
Cumulative plus	106	39	94

N
W E
S

Westbound

	right	through	left
Existing	114	12	61
Exising plus Proj	114	12	61
Cumulative	157	18	108
Cumulative plus	157	18	108

Northbound

	left	through	right
Existing	57	1,731	66
Exising plus Proj	57	1,737	66
Cumulative	116	1,733	254
Cumulative plus	116	1,739	254

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Vineyard Avenue n/o																																				
Existing		3	15	27,752	40	75	0	0	1.8%	0.7%	67.4	21,563	3,525	2,664	437	173	25	6	38	16	67.4	76.3	81.2	-1.7	66.8	58.9	59.7	68.1	63.8	51.3	49.6	64.2	50.6	49.5	50.5	55.0
Existing plus Project		3	15	27,904	40	75	0	0	1.8%	0.7%	67.4	21,681	3,544	2,679	439	174	25	6	38	16	67.4	76.3	81.2	-1.7	66.8	58.9	59.8	68.1	63.8	51.4	49.6	64.2	50.6	49.5	50.5	55.0
Cumulative		3	15	29,712	40	75	0	0	1.8%	0.7%	67.7	23,086	3,773	2,852	468	185	27	6	40	17	67.4	76.3	81.2	-1.7	67.1	59.2	60.0	68.4	64.1	51.6	49.9	64.5	50.9	49.8	50.8	55.3
Cumulative plus Project		3	15	29,880	40	75	0	0	1.8%	0.7%	67.7	23,217	3,795	2,868	470	186	27	6	40	17	67.4	76.3	81.2	-1.7	67.1	59.2	60.1	68.4	64.1	51.6	49.9	64.5	50.9	49.8	50.8	55.3
Vineyard Avenue s/o																																				
Existing		3	15	24,168	40	75	0	0	1.8%	0.7%	66.8	18,779	3,069	2,320	380	151	22	5	33	14	67.4	76.3	81.2	-1.7	66.2	58.3	59.1	67.5	63.2	50.7	49.0	63.6	50.0	48.9	49.9	54.4
Existing plus Project		3	15	24,296	40	75	0	0	1.8%	0.7%	66.8	18,878	3,086	2,332	382	152	22	5	33	14	67.4	76.3	81.2	-1.7	66.2	58.3	59.2	67.5	63.2	50.8	49.0	63.6	50.0	48.9	49.9	54.4
Cumulative		3	15	26,648	40	75	0	0	1.8%	0.7%	67.2	20,705	3,384	2,558	419	166	24	5	36	15	67.4	76.3	81.2	-1.7	66.6	58.7	59.6	67.9	63.6	51.2	49.4	64.0	50.4	49.3	50.3	54.8
Cumulative plus Project		3	15	26,776	40	75	0	0	1.8%	0.7%	67.2	20,805	3,401	2,570	421	167	24	5	36	15	67.4	76.3	81.2	-1.7	66.6	58.8	59.6	68.0	63.6	51.2	49.4	64.0	50.4	49.3	50.3	54.8
Esplanade Drive e/o Vineyard																																				
Existing		1	0	4,984	15	75	0	0	1.8%	0.7%	52.0	3,873	633	478	78	31	5	1	7	3	50.8	65.4	74.5	-1.8	46.9	44.7	49.7	52.3	43.9	37.1	39.5	45.9	30.7	35.2	40.5	41.9
Existing plus Project		1	0	4,984	15	75	0	0	1.8%	0.7%	52.0	3,873	633	478	78	31	5	1	7	3	50.8	65.4	74.5	-1.8	46.9	44.7	49.7	52.3	43.9	37.1	39.5	45.9	30.7	35.2	40.5	41.9
Cumulative		1	0	8,552	15	75	0	0	1.8%	0.7%	54.4	6,645	1,086	821	135	53	8	2	12	5	50.8	65.4	74.5	-1.8	49.2	47.0	52.1	54.7	46.3	39.4	41.9	48.2	33.1	37.5	42.8	44.3
Cumulative plus Project		1	0	8,552	15	75	0	0	1.8%	0.7%	54.4	6,645	1,086	821	135	53	8	2	12	5	50.8	65.4	74.5	-1.8	49.2	47.0	52.1	54.7	46.3	39.4	41.9	48.2	33.1	37.5	42.8	44.3
Esplanade Drive w/o																																				
Existing		2	0	3,320	30	75	0	0	1.8%	0.7%	55.6	2,580	422	319	52	21	3	1	4	2	62.5	73.1	80.3	-1.8	53.8	47.6	50.7	56.2	50.8	40.0	40.6	51.5	37.6	38.1	41.5	44.2
Existing plus Project		2	0	3,344	30	75	0	0	1.8%	0.7%	55.6	2,598	425	321	53	21	3	1	5	2	62.5	73.1	80.3	-1.8	53.8	47.6	50.8	56.2	50.9	40.1	40.6	51.6	37.7	38.2	41.5	44.3
Cumulative		2	0	4,576	30	75	0	0	1.8%	0.7%	57.0	3,556	581	439	72	29	4	1	6	3	62.5	73.1	80.3	-1.8	55.2	49.0	52.1	57.6	52.2	41.4	42.0	52.9	39.0	39.5	42.9	45.6
Cumulative plus Project		2	0	4,616	30	75	0	0	1.8%	0.7%	57.0	3,587	586	443	73	29	4	1	6	3	62.5	73.1	80.3	-1.8	55.2	49.0	52.2	57.6	52.3	41.5	42.0	53.0	39.1	39.6	42.9	45.7

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 7
Rose Avenue & W. Stroube Street

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		W. Stroube Street	
Leg	North of	South of	East of	West of
Cross Street	W. Stroube Street		Rose Avenue	
Existing	13,968.0	15,544.0	0.0	1,928.0
Exising plus Proj	14,064.0	15,592.0	0.0	2,072.0
Cumulative	16,192.0	17,768.0	0.0	1,928.0
Cumulative plus	16,288.0	17,816.0	0.0	2,072.0

Rose Avenue

Southbound

	right	through	left
Existing	22	860	
Exising plus Proj	29	860	
Cumulative	22	896	
Cumulative plus	29	896	

W. Stroube Street

Eastbound

	left	through	right
Existing	0		103
Exising plus Proj	5		106
Cumulative	0		103
Cumulative plus	5		106

N
W E
S

Westbound

	right	through	left
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

Northbound

	left	through	right
Existing	116	864	
Exising plus Proj	119	864	
Cumulative	116	1,106	
Cumulative plus	119	1,106	

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME / Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o W. Stroube Street																																				
Existing		2	15	13,968	40	75	0	0	1.8%	0.7%	64.3	10,853	1,774	1,341	220	87	13	3	19	8	67.4	76.3	81.2	-1.8	63.7	55.8	56.7	65.0	60.7	48.3	46.5	61.1	47.5	46.4	47.4	51.9
Existing plus Project		2	15	14,064	40	75	0	0	1.8%	0.7%	64.3	10,928	1,786	1,350	221	88	13	3	19	8	67.4	76.3	81.2	-1.8	63.7	55.9	56.7	65.1	60.8	48.3	46.5	61.2	47.6	46.4	47.5	52.0
Cumulative		2	15	16,192	40	75	0	0	1.8%	0.7%	64.9	12,581	2,056	1,554	255	101	15	3	22	9	67.4	76.3	81.2	-1.8	64.3	56.5	57.3	65.7	61.4	48.9	47.2	61.8	48.2	47.0	48.1	52.6
Cumulative plus Project		2	15	16,288	40	75	0	0	1.8%	0.7%	65.0	12,656	2,069	1,564	256	102	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.5	57.3	65.7	61.4	48.9	47.2	61.8	48.2	47.1	48.1	52.6
Rose Avenue s/o W. Stroube Street																																				
Existing		2	15	15,544	40	75	0	0	1.8%	0.7%	64.8	12,078	1,974	1,492	245	97	14	3	21	9	67.4	76.3	81.2	-1.8	64.2	56.3	57.1	65.5	61.2	48.7	47.0	61.6	48.0	46.9	47.9	52.4
Existing plus Project		2	15	15,592	40	75	0	0	1.8%	0.7%	64.8	12,115	1,980	1,497	245	97	14	3	21	9	67.4	76.3	81.2	-1.8	64.2	56.3	57.2	65.5	61.2	48.7	47.0	61.6	48.0	46.9	47.9	52.4
Cumulative		2	15	17,768	40	75	0	0	1.8%	0.7%	65.4	13,806	2,257	1,706	280	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.7	66.1	61.8	49.3	47.6	62.2	48.6	47.4	48.5	53.0
Cumulative plus Project		2	15	17,816	40	75	0	0	1.8%	0.7%	65.4	13,843	2,263	1,710	280	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.7	66.1	61.8	49.3	47.6	62.2	48.6	47.5	48.5	53.0
W. Stroube Street e/o Rose Avenue																																				
Existing		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Existing plus Project		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Cumulative		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Cumulative plus Project		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
W. Stroube Street w/o Rose Avenue																																				
Existing		1	0	1,928	15	75	0	0	1.8%	0.7%	47.9	1,498	245	185	30	12	2	0	3	1	50.8	65.4	74.5	-1.8	42.8	40.5	45.6	48.2	39.8	32.9	35.4	41.8	26.6	31.1	36.4	37.8
Existing plus Project		1	0	2,072	15	75	0	0	1.8%	0.7%	48.2	1,610	263	199	33	13	2	0	3	1	50.8	65.4	74.5	-1.8	43.1	40.8	45.9	48.5	40.1	33.3	35.7	42.1	26.9	31.4	36.7	38.1
Cumulative		1	0	1,928	15	75	0	0	1.8%	0.7%	47.9	1,498	245	185	30	12	2	0	3	1	50.8	65.4	74.5	-1.8	42.8	40.5	45.6	48.2	39.8	32.9	35.4	41.8	26.6	31.1	36.4	37.8
Cumulative plus Project		1	0	2,072	15	75	0	0	1.8%	0.7%	48.2	1,610	263	199	33	13	2	0	3	1	50.8	65.4	74.5	-1.8	43.1	40.8	45.9	48.5	40.1	33.3	35.7	42.1	26.9	31.4	36.7	38.1

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name
Weekday PM Peak Hour Volumes

rev. (Date)

Intersection: 7
Rose Avenue & W. Stroube Street

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		W. Stroube Street	
Leg	North of	South of	East of	West of
Cross Street	W. Stroube Street		Rose Avenue	
Existing	14,072.0	16,432.0	0.0	2,888.0
Exising plus Proj	14,160.0	16,472.0	0.0	3,016.0
Cumulative	15,368.0	17,728.0	0.0	2,888.0
Cumulative plus	15,456.0	17,768.0	0.0	3,016.0

Rose Avenue

Southbound

	right	through	left
Existing	29	912	
Exising plus Proj	33	912	
Cumulative	29	1,001	
Cumulative plus	33	1,001	

W. Stroube Street

Eastbound

	left	through	right
Existing	4		183
Exising plus Proj	11		186
Cumulative	4		183
Cumulative plus	11		186

N
W E
S

Westbound

	right	through	left
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

Northbound

	left	through	right
Existing	145	814	
Exising plus Proj	147	814	
Cumulative	145	887	
Cumulative plus	147	887	

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o W. Stroube																																				
Existing		2	15	14,072	40	75	0	0	1.8%	0.7%	64.3	10,934	1,787	1,351	221	88	13	3	19	8	67.4	76.3	81.2	-1.8	63.7	55.9	56.7	65.1	60.8	48.3	46.5	61.2	47.6	46.4	47.5	52.0
Existing plus Project		2	15	14,160	40	75	0	0	1.8%	0.7%	64.4	11,002	1,798	1,359	223	88	13	3	19	8	67.4	76.3	81.2	-1.8	63.8	55.9	56.7	65.1	60.8	48.3	46.6	61.2	47.6	46.5	47.5	52.0
Cumulative		2	15	15,368	40	75	0	0	1.8%	0.7%	64.7	11,941	1,952	1,475	242	96	14	3	21	9	67.4	76.3	81.2	-1.8	64.1	56.3	57.1	65.5	61.1	48.7	46.9	61.5	47.9	46.8	47.9	52.3
Cumulative plus Project		2	15	15,456	40	75	0	0	1.8%	0.7%	64.7	12,009	1,963	1,484	243	96	14	3	21	9	67.4	76.3	81.2	-1.8	64.1	56.3	57.1	65.5	61.2	48.7	47.0	61.6	48.0	46.8	47.9	52.4
Rose Avenue s/o W. Stroube																																				
Existing		2	15	16,432	40	75	0	0	1.8%	0.7%	65.0	12,768	2,087	1,577	259	102	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.6	57.4	65.8	61.4	49.0	47.2	61.8	48.2	47.1	48.1	52.6
Existing plus Project		2	15	16,472	40	75	0	0	1.8%	0.7%	65.0	12,799	2,092	1,581	259	103	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.6	57.4	65.8	61.4	49.0	47.2	61.8	48.2	47.1	48.2	52.6
Cumulative		2	15	17,728	40	75	0	0	1.8%	0.7%	65.3	13,775	2,251	1,702	279	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.7	56.9	57.7	66.1	61.8	49.3	47.5	62.2	48.6	47.4	48.5	53.0
Cumulative plus Project		2	15	17,768	40	75	0	0	1.8%	0.7%	65.4	13,806	2,257	1,706	280	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.7	66.1	61.8	49.3	47.6	62.2	48.6	47.4	48.5	53.0
W. Stroube Street e/o Rose																																				
Existing		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Existing plus Project		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Cumulative		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
Cumulative plus Project		0	0	0	40	75	0	0	1.8%	0.7%	#NUM!	0	0	0	0	0	0	0	0	0	67.4	76.3	81.2	-1.8	####	####	####	####	####	####	####	####	####	####	####	####
W. Stroube Street w/o Rose																																				
Existing		1	0	2,888	15	75	0	0	1.8%	0.7%	49.7	2,244	367	277	45	18	3	1	4	2	50.8	65.4	74.5	-1.8	44.5	42.3	47.3	50.0	41.5	34.7	37.2	43.5	28.3	32.8	38.1	39.6
Existing plus Project		1	0	3,016	15	75	0	0	1.8%	0.7%	49.9	2,343	383	290	47	19	3	1	4	2	50.8	65.4	74.5	-1.8	44.7	42.5	47.5	50.2	41.7	34.9	37.4	43.7	28.5	33.0	38.3	39.8
Cumulative		1	0	2,888	15	75	0	0	1.8%	0.7%	49.7	2,244	367	277	45	18	3	1	4	2	50.8	65.4	74.5	-1.8	44.5	42.3	47.3	50.0	41.5	34.7	37.2	43.5	28.3	32.8	38.1	39.6
Cumulative plus Project		1	0	3,016	15	75	0	0	1.8%	0.7%	49.9	2,343	383	290	47	19	3	1	4	2	50.8	65.4	74.5	-1.8	44.7	42.5	47.5	50.2	41.7	34.9	37.4	43.7	28.5	33.0	38.3	39.8

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name
Weekday AM Peak Hour Volumes

rev. (Date)

Intersection: 8
Rose Avenue & River Park Boulevard

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		River Park Boulevard	
Leg	North of	South of	East of	West of
Cross Street	River Park Boulevard		Rose Avenue	
Existing	15,136.0	27,864.0	17,528.0	6,112.0
Exising plus Proj	15,184.0	27,912.0	17,528.0	6,112.0
Cumulative	17,728.0	30,488.0	19,608.0	7,696.0
Cumulative plus I	17,776.0	30,536.0	19,608.0	7,696.0

Rose Avenue

Southbound

	right	through	left
Existing	28	797	148
Exising plus Proj	28	800	148
Cumulative	69	833	153
Cumulative plus	69	836	153

River Park Boulevard

Eastbound

	left	through	right
Existing	7	95	232
Exising plus Proj	7	95	232
Cumulative	50	133	236
Cumulative plus	50	133	236

N
W E
S

Westbound

	right	through	left
Existing	219	185	902
Exising plus Proj	219	185	902
Cumulative	262	242	971
Cumulative plus	262	242	971

Northbound

	left	through	right
Existing	217	693	642
Exising plus Proj	217	696	642
Cumulative	232	849	690
Cumulative plus	232	852	690

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o River Park																																				
Existing		2	15	15,136	40	75	0	0	1.8%	0.7%	64.7	11,761	####	####	238	94	14	3	20	9	67.4	76.3	81.2	-1.8	64.1	56.2	57.0	65.4	61.1	48.6	46.9	61.5	47.9	46.7	47.8	52.3
Existing plus Project		2	15	15,184	40	75	0	0	1.8%	0.7%	64.7	11,798	####	####	239	95	14	3	21	9	67.4	76.3	81.2	-1.8	64.1	56.2	57.0	65.4	61.1	48.6	46.9	61.5	47.9	46.8	47.8	52.3
Cumulative		2	15	17,728	40	75	0	0	1.8%	0.7%	65.3	13,775	####	####	279	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.7	56.9	57.7	66.1	61.8	49.3	47.5	62.2	48.6	47.4	48.5	53.0
Cumulative plus Project		2	15	17,776	40	75	0	0	1.8%	0.7%	65.4	13,812	####	####	280	111	16	4	24	10	67.4	76.3	81.2	-1.8	64.8	56.9	57.7	66.1	61.8	49.3	47.6	62.2	48.6	47.4	48.5	53.0
Rose Avenue s/o River Park																																				
Existing		2	15	27,864	40	75	0	0	1.8%	0.7%	67.3	21,650	####	####	439	174	25	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.8	59.7	68.0	63.7	51.3	49.5	64.1	50.5	49.4	50.4	54.9
Existing plus Project		2	15	27,912	40	75	0	0	1.8%	0.7%	67.3	21,688	####	####	439	174	25	6	38	16	67.4	76.3	81.2	-1.8	66.7	58.9	59.7	68.1	63.7	51.3	49.5	64.1	50.5	49.4	50.4	54.9
Cumulative		2	15	30,488	40	75	0	0	1.8%	0.7%	67.7	23,689	####	####	480	190	28	6	41	17	67.4	76.3	81.2	-1.8	67.1	59.2	60.1	68.4	64.1	51.7	49.9	64.5	50.9	49.8	50.8	55.3
Cumulative plus Project		2	15	30,536	40	75	0	0	1.8%	0.7%	67.7	23,726	####	####	481	190	28	6	41	17	67.4	76.3	81.2	-1.8	67.1	59.2	60.1	68.4	64.1	51.7	49.9	64.5	50.9	49.8	50.8	55.3
River Park Boulevard e/o																																				
Existing		2	5	17,528	30	75	0	0	1.8%	0.7%	62.8	13,619	####	####	276	109	16	3	24	10	62.5	73.1	80.3	-1.8	61.1	54.8	58.0	63.4	58.1	47.3	47.8	58.8	44.9	45.4	48.7	51.5
Existing plus Project		2	5	17,528	30	75	0	0	1.8%	0.7%	62.8	13,619	####	####	276	109	16	3	24	10	62.5	73.1	80.3	-1.8	61.1	54.8	58.0	63.4	58.1	47.3	47.8	58.8	44.9	45.4	48.7	51.5
Cumulative		2	5	19,608	30	75	0	0	1.8%	0.7%	63.3	15,235	####	####	309	122	18	4	27	11	62.5	73.1	80.3	-1.8	61.5	55.3	58.5	63.9	58.6	47.7	48.3	59.3	45.4	45.9	49.2	51.9
Cumulative plus Project		2	5	19,608	30	75	0	0	1.8%	0.7%	63.3	15,235	####	####	309	122	18	4	27	11	62.5	73.1	80.3	-1.8	61.5	55.3	58.5	63.9	58.6	47.7	48.3	59.3	45.4	45.9	49.2	51.9
River Park Boulevard w/o																																				
Existing		1	0	6,112	15	75	0	0	1.8%	0.7%	52.9	4,749	776	587	96	38	6	1	8	3	50.8	65.4	74.5	-1.8	47.8	45.5	50.6	53.2	44.8	38.0	40.4	46.8	31.6	36.1	41.4	42.8
Existing plus Project		1	0	6,112	15	75	0	0	1.8%	0.7%	52.9	4,749	776	587	96	38	6	1	8	3	50.8	65.4	74.5	-1.8	47.8	45.5	50.6	53.2	44.8	38.0	40.4	46.8	31.6	36.1	41.4	42.8
Cumulative		1	0	7,696	15	75	0	0	1.8%	0.7%	53.9	5,980	977	739	121	48	7	2	10	4	50.8	65.4	74.5	-1.8	48.8	46.5	51.6	54.2	45.8	39.0	41.4	47.8	32.6	37.1	42.4	43.8
Cumulative plus Project		1	0	7,696	15	75	0	0	1.8%	0.7%	53.9	5,980	977	739	121	48	7	2	10	4	50.8	65.4	74.5	-1.8	48.8	46.5	51.6	54.2	45.8	39.0	41.4	47.8	32.6	37.1	42.4	43.8

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name
Weekday PM Peak Hour Volumes

rev. (Date)

Intersection: 8
Rose Avenue & River Park Boulevard

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		River Park Boulevard	
Leg	North of	South of	East of	West of
Cross Street	River Park Boulevard		Rose Avenue	
Existing	16,536.0	20,944.0	6,992.0	3,880.0
Exising plus Proj	16,576.0	20,984.0	6,992.0	3,880.0
Cumulative	18,736.0	23,264.0	9,768.0	5,528.0
Cumulative plus	18,776.0	23,304.0	9,768.0	5,528.0

Rose Avenue

Southbound

	right	through	left
Existing	36	951	118
Exising plus Proj	36	954	118
Cumulative	72	1,040	197
Cumulative plus	72	1,043	197

River Park Boulevard

Eastbound

	left	through	right
Existing	44	76	171
Exising plus Proj	44	76	171
Cumulative	79	166	190
Cumulative plus	79	166	190

N
W E
S

Westbound

	right	through	left
Existing	92	38	188
Exising plus Proj	92	38	188
Cumulative	97	62	251
Cumulative plus	97	62	251

Northbound

	left	through	right
Existing	120	826	362
Exising plus Proj	120	828	362
Cumulative	122	857	448
Cumulative plus	122	859	448

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o River Park																																				
Existing		2	15	16,536	40	75	0	0	1.8%	0.7%	65.0	12,848	####	####	260	103	15	3	22	9	67.4	76.3	81.2	-1.8	64.4	56.6	57.4	65.8	61.5	49.0	47.2	61.9	48.3	47.1	48.2	52.7
Existing plus Project		2	15	16,576	40	75	0	0	1.8%	0.7%	65.0	12,880	####	####	261	103	15	3	22	9	67.4	76.3	81.2	-1.8	64.5	56.6	57.4	65.8	61.5	49.0	47.3	61.9	48.3	47.1	48.2	52.7
Cumulative		2	15	18,736	40	75	0	0	1.8%	0.7%	65.6	14,558	####	####	295	117	17	4	25	11	67.4	76.3	81.2	-1.8	65.0	57.1	58.0	66.3	62.0	49.5	47.8	62.4	48.8	47.7	48.7	53.2
Cumulative plus Project		2	15	18,776	40	75	0	0	1.8%	0.7%	65.6	14,589	####	####	295	117	17	4	25	11	67.4	76.3	81.2	-1.8	65.0	57.1	58.0	66.3	62.0	49.6	47.8	62.4	48.8	47.7	48.7	53.2
Rose Avenue s/o River Park																																				
Existing		2	15	20,944	40	75	0	0	1.8%	0.7%	66.1	16,273	####	####	330	131	19	4	28	12	67.4	76.3	81.2	-1.8	65.5	57.6	58.4	66.8	62.5	50.0	48.3	62.9	49.3	48.2	49.2	53.7
Existing plus Project		2	15	20,984	40	75	0	0	1.8%	0.7%	66.1	16,305	####	####	330	131	19	4	28	12	67.4	76.3	81.2	-1.8	65.5	57.6	58.4	66.8	62.5	50.0	48.3	62.9	49.3	48.2	49.2	53.7
Cumulative		2	15	23,264	40	75	0	0	1.8%	0.7%	66.5	18,076	####	####	366	145	21	5	31	13	67.4	76.3	81.2	-1.8	65.9	58.1	58.9	67.3	62.9	50.5	48.7	63.3	49.7	48.6	49.7	54.1
Cumulative plus Project		2	15	23,304	40	75	0	0	1.8%	0.7%	66.5	18,107	####	####	367	145	21	5	32	13	67.4	76.3	81.2	-1.8	65.9	58.1	58.9	67.3	63.0	50.5	48.7	63.3	49.8	48.6	49.7	54.1
River Park Boulevard e/o																																				
Existing		2	5	6,992	30	75	0	0	1.8%	0.7%	58.9	5,433	888	671	110	44	6	1	9	4	62.5	73.1	80.3	-1.8	57.1	50.9	54.0	59.4	54.1	43.3	43.8	54.8	40.9	41.4	44.7	47.5
Existing plus Project		2	5	6,992	30	75	0	0	1.8%	0.7%	58.9	5,433	888	671	110	44	6	1	9	4	62.5	73.1	80.3	-1.8	57.1	50.9	54.0	59.4	54.1	43.3	43.8	54.8	40.9	41.4	44.7	47.5
Cumulative		2	5	9,768	30	75	0	0	1.8%	0.7%	60.3	7,590	####	938	154	61	9	2	13	6	62.5	73.1	80.3	-1.8	58.5	52.3	55.4	60.9	55.5	44.7	45.3	56.2	42.3	42.8	46.2	48.9
Cumulative plus Project		2	5	9,768	30	75	0	0	1.8%	0.7%	60.3	7,590	####	938	154	61	9	2	13	6	62.5	73.1	80.3	-1.8	58.5	52.3	55.4	60.9	55.5	44.7	45.3	56.2	42.3	42.8	46.2	48.9
River Park Boulevard w/o																																				
Existing		1	0	3,880	15	75	0	0	1.8%	0.7%	50.9	3,015	493	372	61	24	4	1	5	2	50.8	65.4	74.5	-1.8	45.8	43.6	48.6	51.3	42.8	36.0	38.5	44.8	29.6	34.1	39.4	40.9
Existing plus Project		1	0	3,880	15	75	0	0	1.8%	0.7%	50.9	3,015	493	372	61	24	4	1	5	2	50.8	65.4	74.5	-1.8	45.8	43.6	48.6	51.3	42.8	36.0	38.5	44.8	29.6	34.1	39.4	40.9
Cumulative		1	0	5,528	15	75	0	0	1.8%	0.7%	52.5	4,295	702	531	87	34	5	1	7	3	50.8	65.4	74.5	-1.8	47.3	45.1	50.2	52.8	44.4	37.5	40.0	46.3	31.2	35.7	40.9	42.4
Cumulative plus Project		1	0	5,528	15	75	0	0	1.8%	0.7%	52.5	4,295	702	531	87	34	5	1	7	3	50.8	65.4	74.5	-1.8	47.3	45.1	50.2	52.8	44.4	37.5	40.0	46.3	31.2	35.7	40.9	42.4

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 9
Rose Avenue & US-101 NB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		US-101 NB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 NB Off-Ramp		Rose Avenue	
Existing	27,528.0	33,312.0	11,728.0	3,992.0
Exising plus Proj	27,576.0	33,360.0	11,776.0	3,992.0
Cumulative	30,120.0	35,768.0	12,920.0	4,232.0
Cumulative plus	30,168.0	35,816.0	12,968.0	4,232.0

Rose Avenue

Southbound

	right	through	left
Existing	499	1,345	
Exising plus Proj	499	1,348	
Cumulative	529	1,424	
Cumulative plus	529	1,427	

US-101 NB Off-Ramp

Eastbound

	left	through	right
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

N
W E
S

Westbound

	right	through	left
Existing	122		402
Exising plus Proj	125		402
Cumulative	190		421
Cumulative plus	193		421

Northbound

	left	through	right
Existing		1,475	942
Exising plus Project		1,475	945
Cumulative		1,622	1,004
Cumulative plus Project		1,622	1,007

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL
Rose Avenue n/o US-101 NB											
Existing		3	15	27,528	40	75	0	0	1.8%	0.7%	67.3
Existing plus Project		3	15	27,576	40	75	0	0	1.8%	0.7%	67.3
Cumulative		3	15	30,120	40	75	0	0	1.8%	0.7%	67.7
Cumulative plus Project		3	15	30,168	40	75	0	0	1.8%	0.7%	67.7
Rose Avenue s/o US-101 NB											
Existing		3	15	33,312	40	75	0	0	1.8%	0.7%	68.2
Existing plus Project		3	15	33,360	40	75	0	0	1.8%	0.7%	68.2
Cumulative		3	15	35,768	40	75	0	0	1.8%	0.7%	68.5
Cumulative plus Project		3	15	35,816	40	75	0	0	1.8%	0.7%	68.5
US-101 NB Off-Ramp e/o											
Existing		2	0	11,728	15	75	0	0	1.8%	0.7%	55.8
Existing plus Project		2	0	11,776	15	75	0	0	1.8%	0.7%	55.8
Cumulative		2	0	12,920	15	75	0	0	1.8%	0.7%	56.2
Cumulative plus Project		2	0	12,968	15	75	0	0	1.8%	0.7%	56.2
US-101 NB Off-Ramp w/o											
Existing		1	0	3,992	15	75	0	0	1.8%	0.7%	51.1
Existing plus Project		1	0	3,992	15	75	0	0	1.8%	0.7%	51.1
Cumulative		1	0	4,232	15	75	0	0	1.8%	0.7%	51.3
Cumulative plus Project		1	0	4,232	15	75	0	0	1.8%	0.7%	51.3

Segment	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o US-101 NB																									
Existing	21,389	3,496	2,643	433	172	25	5	37	16	67.4	76.3	81.2	-1.7	66.7	58.9	59.7	68.1	63.8	51.3	49.5	64.1	50.6	49.4	50.5	55.0
Existing plus Project	21,427	3,502	2,647	434	172	25	5	37	16	67.4	76.3	81.2	-1.7	66.7	58.9	59.7	68.1	63.8	51.3	49.5	64.2	50.6	49.4	50.5	55.0
Cumulative	23,403	3,825	2,892	474	188	27	6	41	17	67.4	76.3	81.2	-1.7	67.1	59.3	60.1	68.5	64.1	51.7	49.9	64.5	51.0	49.8	50.9	55.3
Cumulative plus Project	23,441	3,831	2,896	475	188	27	6	41	17	67.4	76.3	81.2	-1.7	67.1	59.3	60.1	68.5	64.2	51.7	49.9	64.5	51.0	49.8	50.9	55.3
Rose Avenue s/o US-101 NB																									
Existing	25,883	4,231	3,198	524	208	30	7	45	19	67.4	76.3	81.2	-1.7	67.6	59.7	60.5	68.9	64.6	52.1	50.4	65.0	51.4	50.3	51.3	55.8
Existing plus Project	25,921	4,237	3,203	525	208	30	7	45	19	67.4	76.3	81.2	-1.7	67.6	59.7	60.5	68.9	64.6	52.1	50.4	65.0	51.4	50.3	51.3	55.8
Cumulative	27,792	4,543	3,434	563	223	33	7	48	20	67.4	76.3	81.2	-1.7	67.9	60.0	60.8	69.2	64.9	52.4	50.7	65.3	51.7	50.6	51.6	56.1
Cumulative plus Project	27,829	4,549	3,438	564	223	33	7	48	20	67.4	76.3	81.2	-1.7	67.9	60.0	60.8	69.2	64.9	52.4	50.7	65.3	51.7	50.6	51.6	56.1
US-101 NB Off-Ramp e/o																									
Existing	9,113	1,489	1,126	185	73	11	2	16	7	50.8	65.4	74.5	-1.8	50.6	48.4	53.4	56.1	47.6	40.8	43.3	49.6	34.4	38.9	44.2	45.7
Existing plus Project	9,150	1,496	1,130	185	73	11	2	16	7	50.8	65.4	74.5	-1.8	50.6	48.4	53.5	56.1	47.7	40.8	43.3	49.6	34.5	39.0	44.2	45.7
Cumulative	10,039	1,641	1,240	203	81	12	3	17	7	50.8	65.4	74.5	-1.8	51.0	48.8	53.9	56.5	48.1	41.2	43.7	50.0	34.9	39.4	44.6	46.1
Cumulative plus Project	10,076	1,647	1,245	204	81	12	3	18	7	50.8	65.4	74.5	-1.8	51.1	48.8	53.9	56.5	48.1	41.2	43.7	50.0	34.9	39.4	44.6	46.1
US-101 NB Off-Ramp w/o																									
Existing	3,102	507	383	63	25	4	1	5	2	50.8	65.4	74.5	-1.8	45.9	43.7	48.7	51.4	42.9	36.1	38.6	44.9	29.8	34.2	39.5	41.0
Existing plus Project	3,102	507	383	63	25	4	1	5	2	50.8	65.4	74.5	-1.8	45.9	43.7	48.7	51.4	42.9	36.1	38.6	44.9	29.8	34.2	39.5	41.0
Cumulative	3,288	537	406	67	26	4	1	6	2	50.8	65.4	74.5	-1.8	46.2	43.9	49.0	51.6	43.2	36.4	38.8	45.2	30.0	34.5	39.8	41.2
Cumulative plus Project	3,288	537	406	67	26	4	1	6	2	50.8	65.4	74.5	-1.8	46.2	43.9	49.0	51.6	43.2	36.4	38.8	45.2	30.0	34.5	39.8	41.2

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday PM Peak Hour Volumes

Intersection: 9
Rose Avenue & US-101 NB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		US-101 NB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 NB Off-Ramp		Rose Avenue	
Existing	21,120.0	28,464.0	10,776.0	1,736.0
Exising plus Proj	21,160.0	28,504.0	10,808.0	1,736.0
Cumulative	23,448.0	30,768.0	11,416.0	1,872.0
Cumulative plus	23,488.0	30,808.0	11,448.0	1,872.0

Rose Avenue

Southbound

	right	through	left
Existing	217	1,109	
Exising plus Proj	217	1,112	
Cumulative	234	1,264	
Cumulative plus	234	1,267	

US-101 NB Off-Ramp

Eastbound

	left	through	right
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

N
W E
S

Westbound

	right	through	left
Existing	106		415
Exising plus Proj	108		415
Cumulative	139		448
Cumulative plus	141		448

Northbound

	left	through	right
Existing		1,208	826
Exising plus Project		1,208	828
Cumulative		1,294	840
Cumulative plus Project		1,294	842

2
NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center tc Receptor	Alpha Factor (1	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o US-101 NB																																				
Existing		3	15	21,120	40	75	0	0	1.8%	0.7%	66.2	16,410	####	####	332	132	19	4	29	12	67.4	76.3	81.2	-1.7	65.6	57.7	58.6	66.9	62.6	50.1	48.4	63.0	49.4	48.3	49.3	53.8
Existing plus Project		3	15	21,160	40	75	0	0	1.8%	0.7%	66.2	16,441	####	####	333	132	19	4	29	12	67.4	76.3	81.2	-1.7	65.6	57.7	58.6	66.9	62.6	50.2	48.4	63.0	49.4	48.3	49.3	53.8
Cumulative		3	15	23,448	40	75	0	0	1.8%	0.7%	66.6	18,219	####	####	369	146	21	5	32	13	67.4	76.3	81.2	-1.7	66.0	58.2	59.0	67.4	63.1	50.6	48.8	63.5	49.9	48.7	49.8	54.3
Cumulative plus Project		3	15	23,488	40	75	0	0	1.8%	0.7%	66.6	18,250	####	####	370	146	21	5	32	13	67.4	76.3	81.2	-1.7	66.0	58.2	59.0	67.4	63.1	50.6	48.8	63.5	49.9	48.7	49.8	54.3
Rose Avenue s/o US-101 NB																																				
Existing		3	15	28,464	40	75	0	0	1.8%	0.7%	67.5	22,117	####	####	448	178	26	6	39	16	67.4	76.3	81.2	-1.7	66.9	59.0	59.8	68.2	63.9	51.4	49.7	64.3	50.7	49.6	50.6	55.1
Existing plus Project		3	15	28,504	40	75	0	0	1.8%	0.7%	67.5	22,148	####	####	449	178	26	6	39	16	67.4	76.3	81.2	-1.7	66.9	59.0	59.9	68.2	63.9	51.4	49.7	64.3	50.7	49.6	50.6	55.1
Cumulative		3	15	30,768	40	75	0	0	1.8%	0.7%	67.8	23,907	####	####	484	192	28	6	42	17	67.4	76.3	81.2	-1.7	67.2	59.4	60.2	68.6	64.2	51.8	50.0	64.6	51.0	49.9	51.0	55.4
Cumulative plus Project		3	15	30,808	40	75	0	0	1.8%	0.7%	67.8	23,938	####	####	485	192	28	6	42	17	67.4	76.3	81.2	-1.7	67.2	59.4	60.2	68.6	64.2	51.8	50.0	64.6	51.0	49.9	51.0	55.4
US-101 NB Off-Ramp e/o																																				
Existing		2	0	10,776	15	75	0	0	1.8%	0.7%	55.4	8,373	####	####	170	67	10	2	15	6	50.8	65.4	74.5	-1.8	50.3	48.0	53.1	55.7	47.3	40.4	42.9	49.2	34.1	38.6	43.8	45.3
Existing plus Project		2	0	10,808	15	75	0	0	1.8%	0.7%	55.4	8,398	####	####	170	67	10	2	15	6	50.8	65.4	74.5	-1.8	50.3	48.0	53.1	55.7	47.3	40.4	42.9	49.3	34.1	38.6	43.9	45.3
Cumulative		2	0	11,416	15	75	0	0	1.8%	0.7%	55.7	8,870	####	####	180	71	10	2	15	6	50.8	65.4	74.5	-1.8	50.5	48.3	53.3	56.0	47.5	40.7	43.2	49.5	34.3	38.8	44.1	45.6
Cumulative plus Project		2	0	11,448	15	75	0	0	1.8%	0.7%	55.7	8,895	####	####	180	71	10	2	15	6	50.8	65.4	74.5	-1.8	50.5	48.3	53.3	56.0	47.5	40.7	43.2	49.5	34.3	38.8	44.1	45.6
US-101 NB Off-Ramp w/o																																				
Existing		1	0	1,736	15	75	0	0	1.8%	0.7%	47.5	1,349	220	167	27	11	2	0	2	1	50.8	65.4	74.5	-1.8	42.3	40.1	45.1	47.8	39.3	32.5	35.0	41.3	26.1	30.6	35.9	37.4
Existing plus Project		1	0	1,736	15	75	0	0	1.8%	0.7%	47.5	1,349	220	167	27	11	2	0	2	1	50.8	65.4	74.5	-1.8	42.3	40.1	45.1	47.8	39.3	32.5	35.0	41.3	26.1	30.6	35.9	37.4
Cumulative		1	0	1,872	15	75	0	0	1.8%	0.7%	47.8	1,455	238	180	29	12	2	0	3	1	50.8	65.4	74.5	-1.8	42.6	40.4	45.5	48.1	39.7	32.8	35.3	41.6	26.5	31.0	36.2	37.7
Cumulative plus Project		1	0	1,872	15	75	0	0	1.8%	0.7%	47.8	1,455	238	180	29	12	2	0	3	1	50.8	65.4	74.5	-1.8	42.6	40.4	45.5	48.1	39.7	32.8	35.3	41.6	26.5	31.0	36.2	37.7

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday AM Peak Hour Volumes

Intersection: 10
Rose Avenue & US-101 SB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

Rose Avenue

Southbound

	right	through	left
Existing	146	1,598	
Exising plus Proj	149	1,598	
Cumulative	187	1,636	
Cumulative plus	190	1,636	

US-101 SB Off-Ramp

Eastbound

	left	through	right
Existing	303		900
Exising plus Proj	303		903
Cumulative	320		912
Cumulative plus	320		915

N
W E
S

Westbound

	right	through	left
Existing			
Exising plus Project			
Cumulative			
Cumulative plus Project			

Northbound

	left	through	right
Existing		2,101	409
Exising plus Project		2,104	409
Cumulative		2,296	415
Cumulative plus Project		2,299	415

ADT

Road	Rose Avenue		US-101 SB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 SB Off-Ramp		Rose Avenue	
Existing	33,184.0	40,064.0	3,272.0	10,792.0
Exising plus Proj	33,232.0	40,112.0	3,272.0	10,840.0
Cumulative	35,512.0	42,072.0	3,320.0	11,352.0
Cumulative plus	35,560.0	42,120.0	3,320.0	11,400.0

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME			Median	ADT	Design	Dist. from		Barrier	Vehicle Mix			Traffic Volumes									Ref. Energy Levels			Dist	Ld				Le				Ln			
Segment	Land Use	Lanes	Width	Volume	Speed (mph)	Center to Receptor	Alpha Factor (1)	Attn. dB(A)	Medium Trucks	Heavy Trucks	dB(A) CNEL	Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT	Total	A	MT	HT	Total	A	MT	HT	Total
Rose Avenue n/o US-101 SB																																				
Existing		3	0	33,184	40	75	0	0	1.8%	0.7%	68.0	25,784	####	####	522	207	30	7	45	19	67.4	76.3	81.2	-1.8	67.5	59.6	60.4	68.8	64.5	52.0	50.3	64.9	51.3	50.1	51.2	55.7
Existing plus Project		3	0	33,232	40	75	0	0	1.8%	0.7%	68.1	25,821	####	####	523	207	30	7	45	19	67.4	76.3	81.2	-1.8	67.5	59.6	60.4	68.8	64.5	52.0	50.3	64.9	51.3	50.1	51.2	55.7
Cumulative		3	0	35,512	40	75	0	0	1.8%	0.7%	68.3	27,593	####	####	559	221	32	7	48	20	67.4	76.3	81.2	-1.8	67.7	59.9	60.7	69.1	64.8	52.3	50.5	65.2	51.6	50.4	51.5	56.0
Cumulative plus Project		3	0	35,560	40	75	0	0	1.8%	0.7%	68.3	27,630	####	####	560	222	32	7	48	20	67.4	76.3	81.2	-1.8	67.8	59.9	60.7	69.1	64.8	52.3	50.6	65.2	51.6	50.4	51.5	56.0
Rose Avenue s/o US-101 SB																																				
Existing		3	0	40,064	40	75	0	0	1.8%	0.7%	68.9	31,130	####	####	631	250	36	8	54	23	67.4	76.3	81.2	-1.8	68.3	60.4	61.2	69.6	65.3	52.8	51.1	65.7	52.1	51.0	52.0	56.5
Existing plus Project		3	0	40,112	40	75	0	0	1.8%	0.7%	68.9	31,167	####	####	631	250	36	8	54	23	67.4	76.3	81.2	-1.8	68.3	60.4	61.2	69.6	65.3	52.8	51.1	65.7	52.1	51.0	52.0	56.5
Cumulative		3	0	42,072	40	75	0	0	1.8%	0.7%	69.1	32,690	####	####	662	262	38	8	57	24	67.4	76.3	81.2	-1.8	68.5	60.6	61.5	69.8	65.5	53.0	51.3	65.9	52.3	51.2	52.2	56.7
Cumulative plus Project		3	0	42,120	40	75	0	0	1.8%	0.7%	69.1	32,727	####	####	663	263	38	8	57	24	67.4	76.3	81.2	-1.8	68.5	60.6	61.5	69.8	65.5	53.0	51.3	65.9	52.3	51.2	52.2	56.7
US-101 SB Off-Ramp e/o																																				
Existing		1	0	3,272	15	75	0	0	1.8%	0.7%	50.2	2,542	416	314	51	20	3	1	4	2	50.8	65.4	74.5	-1.8	45.1	42.8	47.9	50.5	42.1	35.2	37.7	44.1	28.9	33.4	38.6	40.1
Existing plus Project		1	0	3,272	15	75	0	0	1.8%	0.7%	50.2	2,542	416	314	51	20	3	1	4	2	50.8	65.4	74.5	-1.8	45.1	42.8	47.9	50.5	42.1	35.2	37.7	44.1	28.9	33.4	38.6	40.1
Cumulative		1	0	3,320	15	75	0	0	1.8%	0.7%	50.3	2,580	422	319	52	21	3	1	4	2	50.8	65.4	74.5	-1.8	45.1	42.9	47.9	50.6	42.1	35.3	37.8	44.1	29.0	33.4	38.7	40.2
Cumulative plus Project		1	0	3,320	15	75	0	0	1.8%	0.7%	50.3	2,580	422	319	52	21	3	1	4	2	50.8	65.4	74.5	-1.8	45.1	42.9	47.9	50.6	42.1	35.3	37.8	44.1	29.0	33.4	38.7	40.2
US-101 SB Off-Ramp w/o																																				
Existing		3	0	10,792	15	75	0	0	1.8%	0.7%	55.4	8,385	####	####	170	67	10	2	15	6	50.8	65.4	74.5	-1.8	50.3	48.1	53.1	55.8	47.3	40.5	43.0	49.3	34.1	38.6	43.9	45.4
Existing plus Project		3	0	10,840	15	75	0	0	1.8%	0.7%	55.5	8,423	####	####	171	68	10	2	15	6	50.8	65.4	74.5	-1.8	50.3	48.1	53.1	55.8	47.3	40.5	43.0	49.3	34.1	38.6	43.9	45.4
Cumulative		3	0	11,352	15	75	0	0	1.8%	0.7%	55.7	8,821	####	####	179	71	10	2	15	6	50.8	65.4	74.5	-1.8	50.5	48.3	53.3	56.0	47.5	40.7	43.2	49.5	34.3	38.8	44.1	45.6
Cumulative plus Project		3	0	11,400	15	75	0	0	1.8%	0.7%	55.7	8,858	####	####	179	71	10	2	15	6	50.8	65.4	74.5	-1.8	50.5	48.3	53.4	56.0	47.6	40.7	43.2	49.5	34.4	38.9	44.1	45.6

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Project Name rev. (Date)
Weekday PM Peak Hour Volumes

Intersection: 10
Rose Avenue & US-101 SB Off-Ramp

If Peak Hour = 6% of ADT, Scaling Factor = 16.667
If Peak Hour = 7% of ADT, Scaling Factor = 14.286
If Peak Hour = 8% of ADT, Scaling Factor = 12.5
If Peak Hour = 9% of ADT, Scaling Factor = 11.111
If Peak Hour = 10% of ADT, Scaling Factor = 10

ADT

Road	Rose Avenue		US-101 SB Off-Ramp	
Leg	North of	South of	East of	West of
Cross Street	US-101 SB Off-Ramp		Rose Avenue	
Existing	28,296.0	35,344.0	4,408.0	9,104.0
Exising plus Proj	28,336.0	35,384.0	4,408.0	9,152.0
Cumulative	30,336.0	37,272.0	4,456.0	10,240.0
Cumulativeplus P	30,376.0	37,312.0	4,456.0	10,288.0

Rose Avenue

Southbound

	right	through	left
Existing	194	1,320	
Exising plus Proj	197	1,320	
Cumulative	248	1,421	
Cumulativeplus P	251	1,421	

US-101 SB Off-Ramp

Eastbound

	left	through	right
Existing	210		734
Exising plus Proj	210		737
Cumulative	237		795
Cumulativeplus P	237		798

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Westbound

	right	through	left
Existing			
Exising plus Project			
Cumulative			
Cumulativeplus Project			

Northbound

	left	through	right
Existing		1,813	551
Exising plus Project		1,815	551
Cumulative		1,886	557
Cumulativeplus Project		1,888	557

2

NOISE LEVEL CONTOURS - Existing Plus Project Weekday Off-Site ADT Volumes

ROADWAY NAME Segment	Land Use	Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha Factor (1)	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	dB(A) CNEL	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels A	MT	HT	Dist Adj	Ld A	MT	HT	Total	Le A	MT	HT	Total	Ln A	MT	HT	Total
Rose Avenue n/o US-101 SB																																				
Existing		3	0	28,296	40	75	0	0	1.8%	0.7%	67.4	21,986	3,594	2,716	445	176	26	6	38	16	67.4	76.3	81.2	-1.8	66.8	58.9	59.7	68.1	63.8	51.3	49.6	64.2	50.6	49.4	50.5	55.0
Existing plus Project		3	0	28,336	40	75	0	0	1.8%	0.7%	67.4	22,017	3,599	2,720	446	177	26	6	38	16	67.4	76.3	81.2	-1.8	66.8	58.9	59.7	68.1	63.8	51.3	49.6	64.2	50.6	49.5	50.5	55.0
Cumulative		3	0	30,336	40	75	0	0	1.8%	0.7%	67.7	23,571	3,853	2,912	477	189	28	6	41	17	67.4	76.3	81.2	-1.8	67.1	59.2	60.0	68.4	64.1	51.6	49.9	64.5	50.9	49.7	50.8	55.3
Cumulative plus Project		3	0	30,376	40	75	0	0	1.8%	0.7%	67.7	23,602	3,858	2,916	478	189	28	6	41	17	67.4	76.3	81.2	-1.8	67.1	59.2	60.0	68.4	64.1	51.6	49.9	64.5	50.9	49.8	50.8	55.3
Rose Avenue s/o US-101 SB																																				
Existing		3	0	35,344	40	75	0	0	1.8%	0.7%	68.3	27,462	4,489	3,393	556	220	32	7	48	20	67.4	76.3	81.2	-1.8	67.7	59.9	60.7	69.1	64.7	52.3	50.5	65.1	51.5	50.4	51.5	55.9
Existing plus Project		3	0	35,384	40	75	0	0	1.8%	0.7%	68.3	27,493	4,494	3,397	557	221	32	7	48	20	67.4	76.3	81.2	-1.8	67.7	59.9	60.7	69.1	64.7	52.3	50.5	65.1	51.6	50.4	51.5	55.9
Cumulative		3	0	37,272	40	75	0	0	1.8%	0.7%	68.6	28,960	4,734	3,578	587	232	34	7	50	21	67.4	76.3	81.2	-1.8	68.0	60.1	60.9	69.3	65.0	52.5	50.8	65.4	51.8	50.6	51.7	56.2
Cumulative plus Project		3	0	37,312	40	75	0	0	1.8%	0.7%	68.6	28,991	4,739	3,582	587	233	34	7	51	21	67.4	76.3	81.2	-1.8	68.0	60.1	60.9	69.3	65.0	52.5	50.8	65.4	51.8	50.6	51.7	56.2
US-101 SB Off-Ramp e/o																																				
Existing		1	0	4,408	15	75	0	0	1.8%	0.7%	51.5	3,425	560	423	69	27	4	1	6	2	50.8	65.4	74.5	-1.8	46.4	44.1	49.2	51.8	43.4	36.5	39.0	45.3	30.2	34.7	39.9	41.4
Existing plus Project		1	0	4,408	15	75	0	0	1.8%	0.7%	51.5	3,425	560	423	69	27	4	1	6	2	50.8	65.4	74.5	-1.8	46.4	44.1	49.2	51.8	43.4	36.5	39.0	45.3	30.2	34.7	39.9	41.4
Cumulative		1	0	4,456	15	75	0	0	1.8%	0.7%	51.6	3,462	566	428	70	28	4	1	6	3	50.8	65.4	74.5	-1.8	46.4	44.2	49.2	51.9	43.4	36.6	39.1	45.4	30.2	34.7	40.0	41.5
Cumulative plus Project		1	0	4,456	15	75	0	0	1.8%	0.7%	51.6	3,462	566	428	70	28	4	1	6	3	50.8	65.4	74.5	-1.8	46.4	44.2	49.2	51.9	43.4	36.6	39.1	45.4	30.2	34.7	40.0	41.5
US-101 SB Off-Ramp w/o																																				
Existing		3	0	9,104	15	75	0	0	1.8%	0.7%	54.7	7,074	1,156	874	143	57	8	2	12	5	50.8	65.4	74.5	-1.8	49.6	47.3	52.4	55.0	46.6	39.7	42.2	48.6	33.4	37.9	43.1	44.6
Existing plus Project		3	0	9,152	15	75	0	0	1.8%	0.7%	54.7	7,111	1,162	879	144	57	8	2	12	5	50.8	65.4	74.5	-1.8	49.6	47.4	52.4	55.0	46.6	39.8	42.2	48.6	33.4	37.9	43.2	44.6
Cumulative		3	0	10,240	15	75	0	0	1.8%	0.7%	55.2	7,956	1,300	983	161	64	9	2	14	6	50.8	65.4	74.5	-1.8	50.1	47.8	52.9	55.5	47.1	40.3	42.7	49.1	33.9	38.4	43.7	45.1
Cumulative plus Project		3	0	10,288	15	75	0	0	1.8%	0.7%	55.2	7,994	1,307	988	162	64	9	2	14	6	50.8	65.4	74.5	-1.8	50.1	47.9	52.9	55.6	47.1	40.3	42.7	49.1	33.9	38.4	43.7	45.1

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such as vegetative ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

APPENDIX C

Construction Noise Data Spreadsheets

Project Title: Rio Urbana Mixed Use
Receptor: REC-1

Parameters

Construction Hours:

11	Daytime hours (7:00 AM to 7:00 PM)
0	Evening hours (7:00 PM to 10:00 PM)
0	Nighttime hours (10:00 PM to 7:00 AM)

Calculation

Construction Phase / **Equipment Type**	**Number of Units**	**Acoustical Usage Factor**	**Actual Noise Level At 50 feet, Lmax**	**Distance Feet**	**Leq**	**Estimate Noise Shielding dBA**
Demolition					79.7	
Concrete Saw	1	0.2	90	95	77.4	0
Backhoe	3	0.4	78	95	73.2	0
Dozer	1	0.4	82	95	72.4	0
Site Preparation					78.4	
Grader	1	0.4	85	95	75.4	0
Scraper	1	0.4	84	95	74.4	0
Backhoe	1	0.4	78	95	68.4	0
Grading/Excavation					78.2	
Grader	1	0.4	85	95	75.4	0
Dozer	1	0.4	82	95	72.4	0
Backhoe	2	0.4	78	95	71.5	0
Building Construction					81.0	
Crane	1	0.16	81	95	67.5	0
Forklift, 40 HP	2	1	82	95	79.4	0
Generator	1	0.5	81	95	72.4	0
Backhoe	1	0.4	78	95	68.4	0
Welder/Torch	3	0.4	74	95	69.2	0
Paving					76.1	
Concrete Mixer	1	0.4	79	95	69.4	0
Paver	2	0.5	77	95	71.4	0
Paver	2	0.5	77	95	71.4	0
Roller	2	0.2	80	95	70.4	0
Backhoe	1	0.4	78	95	68.4	0
Architectural Coating					68.4	
Compressor	1	0.4	78	95	68.4	0

Project Title: Rio Urbana Mixed Use

Receptor: REC-2

Parameters

Construction Hours:

11	Daytime hours (7:00 AM to 7:00 PM)
0	Evening hours (7:00 PM to 10:00 PM)
0	Nighttime hours (10:00 PM to 7:00 AM)

Calculation

Construction Phase / Equipment Type	Number of Units	Acoustical Usage Factor	Actual Noise Level At 50 feet, Lmax	Distance Feet	Leq	Estimate Noise Shielding dBA
Demolition					80.2	
Concrete Saw	1	0.2	90	90	77.9	0
Backhoe	3	0.4	78	90	73.7	0
Dozer	1	0.4	82	90	72.9	0
Site Preparation					78.9	
Grader	1	0.4	85	90	75.9	0
Scraper	1	0.4	84	90	74.9	0
Backhoe	1	0.4	78	90	68.9	0
Grading/Excavation					78.7	
Grader	1	0.4	85	90	75.9	0
Dozer	1	0.4	82	90	72.9	0
Backhoe	2	0.4	78	90	71.9	0
Building Construction					81.5	
Crane	1	0.16	81	90	67.9	0
Forklift, 40 HP	2	1	82	90	79.9	0
Generator	1	0.5	81	90	72.9	0
Backhoe	1	0.4	78	90	68.9	0
Welder/Torch	3	0.4	74	90	69.7	0
Paving					76.6	
Concrete Mixer	1	0.4	79	90	69.9	0
Paver	2	0.5	77	90	71.9	0
Paver	2	0.5	77	90	71.9	0
Roller	2	0.2	80	90	70.9	0
Backhoe	1	0.4	78	90	68.9	0
Architectural Coating					68.9	
Compressor	1	0.4	78	95	68.9	0

Project Title: Rio Urbana Mixed Use

Receptor: REC-3

Parameters

Construction Hours:

11	Daytime hours (7:00 AM to 7:00 PM)
0	Evening hours (7:00 PM to 10:00 PM)
0	Nighttime hours (10:00 PM to 7:00 AM)

Calculation

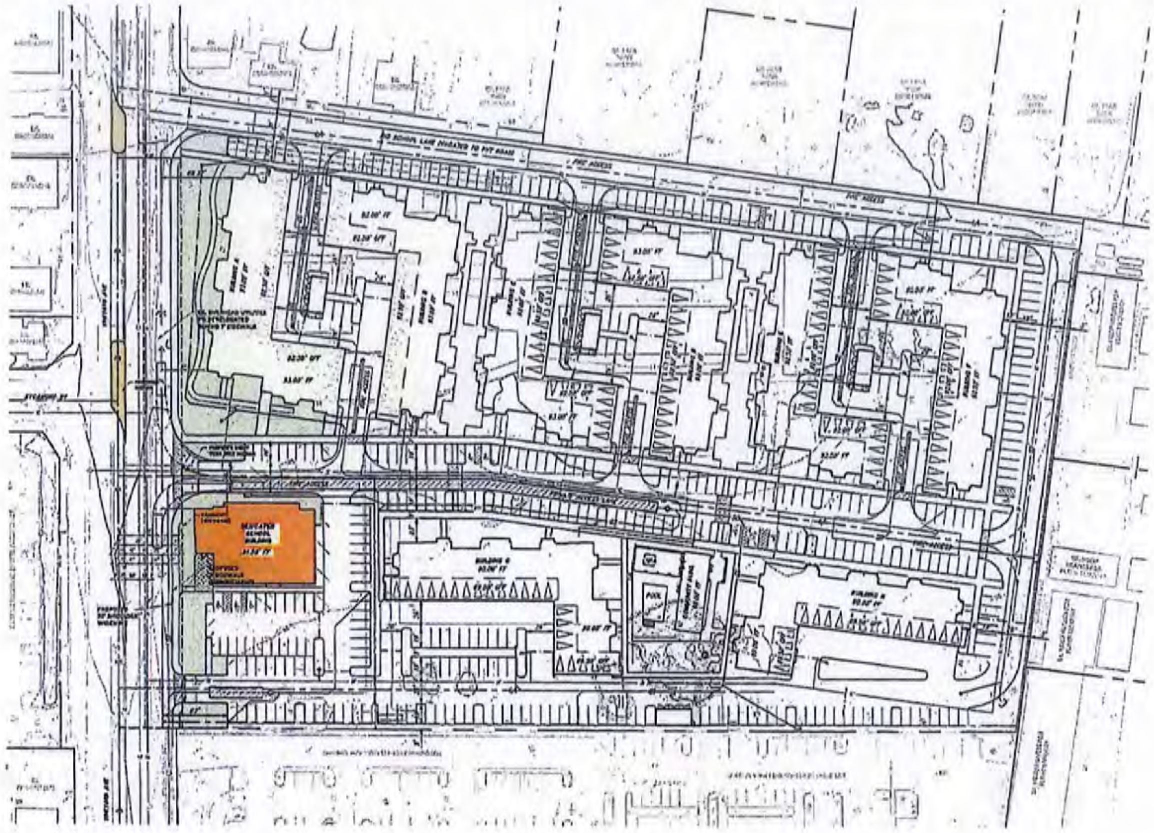
Construction Phase / Equipment Type	Number of Units	Acoustical Usage Factor	Actual Noise Level At 50 feet, Lmax	Distance Feet	Leq	Estimate Noise Shielding dBA
Demolition					73.5	
Concrete Saw	1	0.2	90	195	71.2	0
Backhoe	3	0.4	78	195	67.0	0
Dozer	1	0.4	82	195	66.2	0
Site Preparation					72.2	
Grader	1	0.4	85	195	69.2	0
Scraper	1	0.4	84	195	68.2	0
Backhoe	1	0.4	78	195	62.2	0
Grading/Excavation					72.0	
Grader	1	0.4	85	195	69.2	0
Dozer	1	0.4	82	195	66.2	0
Backhoe	2	0.4	78	195	65.2	0
Building Construction					74.8	
Crane	1	0.16	81	195	61.2	0
Forklift, 40 HP	2	1	82	195	73.2	0
Generator	1	0.5	81	195	66.2	0
Backhoe	1	0.4	78	195	62.2	0
Welder/Torch	3	0.4	74	195	63.0	0
Paving					69.9	
Concrete Mixer	1	0.4	79	195	63.2	0
Paver	2	0.5	77	195	65.2	0
Paver	2	0.5	77	195	65.2	0
Roller	2	0.2	80	195	64.2	0
Backhoe	1	0.4	78	195	62.2	0
Architectural Coating					62.2	
Compressor	1	0.4	78	195	62.2	0

Appendix H

Revised Traffic and Circulation Study

RIO URBANA RESIDENTIAL AND OFFICE PROJECT
OXNARD, CALIFORNIA

REVISED TRAFFIC AND CIRCULATION STUDY



April 27, 2018 **ATE Project 17053**

Prepared for:

The Pacific Companies
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Since 1978

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

April 27, 2018

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REVISED TRAFFIC AND CIRCULATION STUDY FOR THE RIO URBANA RESIDENTIAL AND OFFICE PROJECT - CITY OF OXNARD

Associated Transportation Engineers (ATE) has prepared the following revised traffic and circulation study for the Rio Urbana Residential and Office Project. The study examines existing and future traffic conditions within the study-area and assesses the traffic and circulation impacts associated with the project. It our understanding that the results of the study will be used by the City of Oxnard to process the project's development application.

We appreciate the opportunity to assist the Pacific Companies with this project.

Associated Transportation Engineers

By: Scott A. Schell, AICP, PTP
Vice President

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The following traffic study contains an analysis of the potential traffic and circulation impacts associated with the Rio Urbana Residential and Office Project (the "Project"), located in the City of Oxnard. The guidelines set forth in the City of Oxnard's Traffic Impact Study standards were utilized in formatting the various sections of the traffic study. The study provides information relative to existing, existing + project, cumulative (existing + approved/pending projects) and cumulative + project traffic conditions. Site access and circulation are also addressed. This revised traffic study addresses comments proved by City staff on the initial traffic study prepared July 25, 2017.

PROJECT DESCRIPTION

As shown on Figure 1, the Rio Urbana Residential and Office Project is located at 2714 Vineyard Avenue, north of U.S. Highway 101 in the City of Oxnard. The Project is proposing to redevelop the existing Rio Mesa Elementary School site which currently houses the school district's offices and a bus storage yard. The Project will construct a new 15,000 square-foot office building and 182 residential condominium units. Access to the Project site will be provided via 2 driveway connections to Vineyard Avenue and 4 connections to Rio School Lane. The Project driveways on Vineyard Avenue will be restricted to right-turns inbound and outbound only. As part of the Project, the Vineyard Avenue/Rio Lane School intersection will be restricted to left-turns inbound and no left-turns outbound. The Project site plan is illustrated on Figure 2.

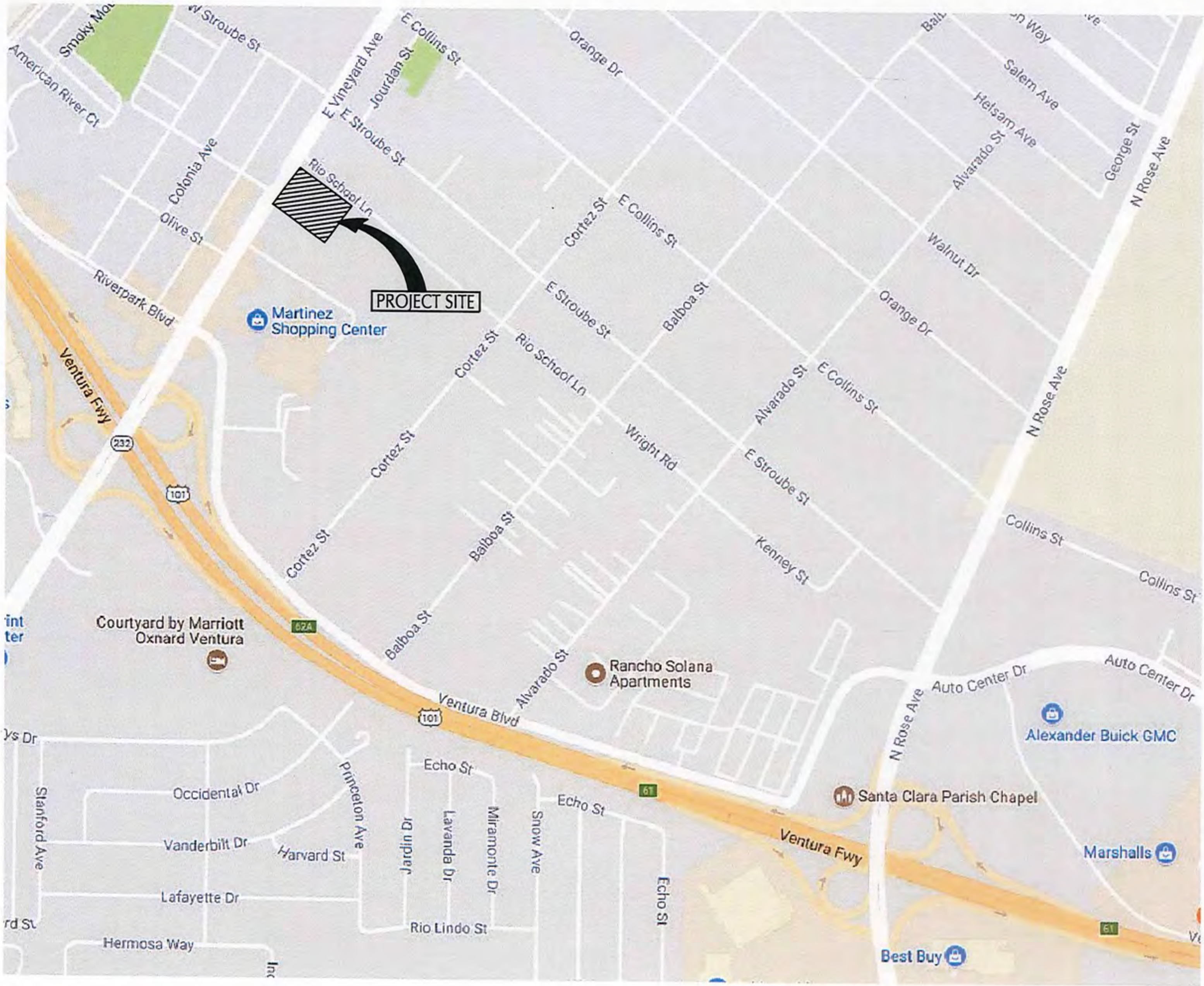
EXISTING CONDITIONS

Existing Street Network

The Project site is served by a circulation system comprised of arterial and collector streets, which are illustrated on Figure 1. The major roadways serving the site are discussed in the following text.

U.S. Highway 101, located south of the Project site, is a multi-lane freeway which serves as a major arterial for the City and is the principal inter-city route along this portion of the Pacific Coast. The segment of U.S. Highway 101 in the study-area is 6 to 8-lane facility. Regional access between the freeway and the Project site is provided via the Vineyard Avenue and Rose Avenue interchanges.

Vineyard Avenue, located on the west side of the Project site, is a 4- to 6-lane north-south roadway that extends east from Patterson Avenue to Los Angeles Avenue in unincorporated Ventura County. Vineyard Avenue serves both residential and commercial land-uses in the study-area. Vineyard Avenue is signalized at Esplanade Drive, the U.S. Highway 101 ramps, Riverpark Boulevard, and Stroube Street. Vineyard Avenue will provide direct access to the Project via two right-turn in/right-turn out driveway connections.



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EXISTING STREET NETWORK/PROJECT LOCATION

FIGURE 1

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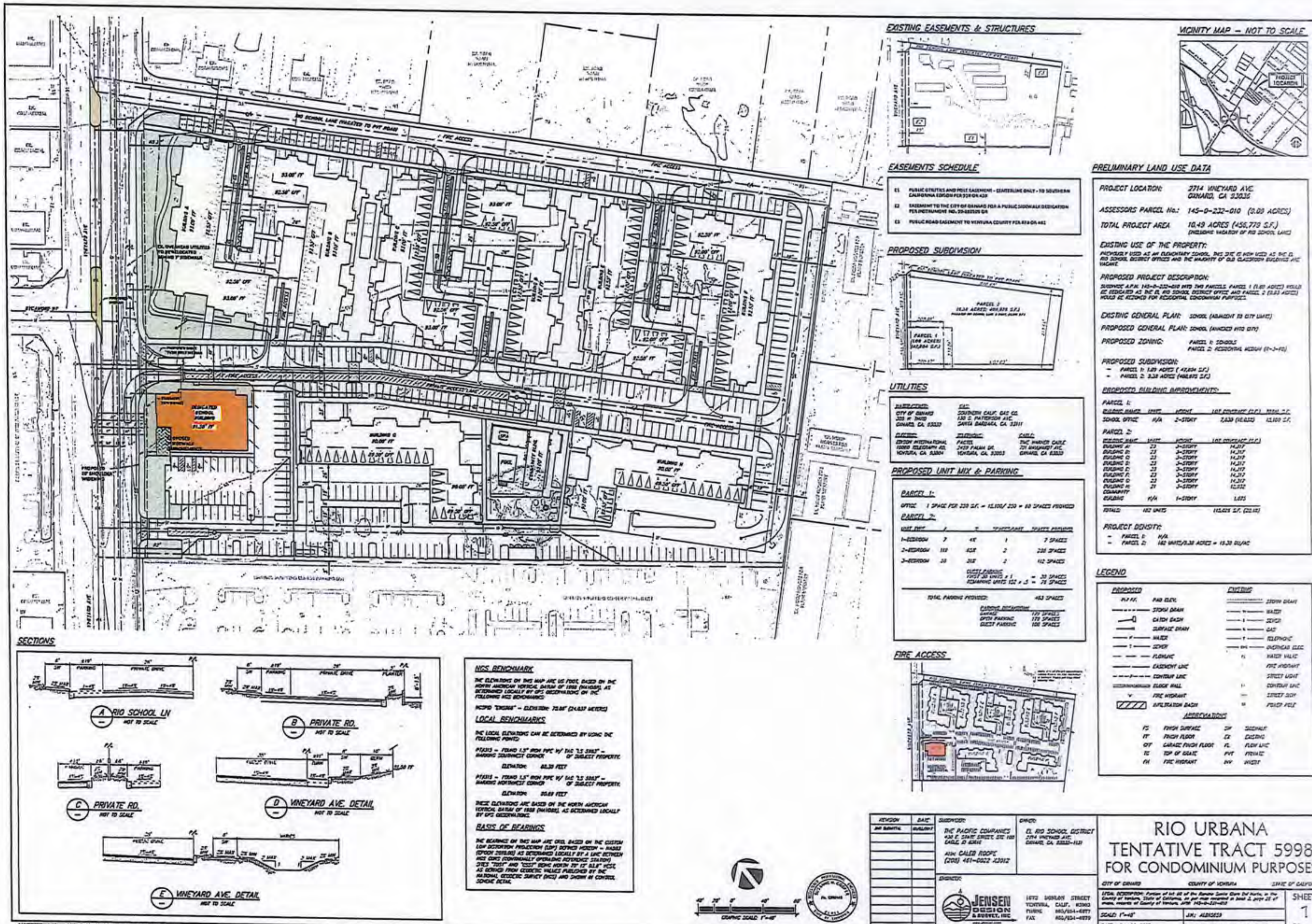

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PROJECT SITE PLAN

FIGURE 2

EKM - ATE#17053

Rose Avenue, located east of the Project site is a 2- to 6-lane north-south arterial roadway extending from Pleasant Valley Road to State Route 118 (Los Angeles Avenue). Within the study-area, Rose Avenue serves both residential and commercial land-uses. Rose Avenue is signalized at the U.S. Highway 101 ramps and Auto Center Drive.

Esplanade Drive, located south of the Project site, is a 2--lane local roadway that extends east from Oxnard Boulevard to Vineyard Avenue. Esplanade Drive serves primarily commercial uses in the study-area. The Vineyard Avenue/Esplanade Drive intersection is signalized.

Riverpark Boulevard, is a 2-lane north-south roadway that extends from Forest Park Boulevard in the River Park development to Vineyard Avenue. Riverpark Boulevard serves the residential and commercial land-uses in the River Park development. The Vineyard Avenue/Riverpark Boulevard intersection is signalized.

Rio School Lane, located adjacent on the north side of the Project site is a 2-lane east-west private roadway that extends east from Vineyard Avenue terminating at the eastern boundary of the Project site. Rio School Lane serves primarily commercial land-uses in the study-area. Rio School Lane will provide direct access to the Project site via 3 driveway connections. The Rio School Lane/Vineyard Avenue intersection is STOP-Sign controlled.

Stroube Street, is a 2-lane east-west local roadway that extends from Detroit Drive to Rose Avenue. Stroube Street serves primarily residential and commercial land-uses in the study-area. The Rose Avenue/Stroube Street intersection is STOP-Sign controlled.

Sycamore Street, is a 2-lane east-west local roadway that extends from Detroit Drive to Vineyard Avenue. Sycamore Street serves primarily residential and commercial land-uses in the study-area. The Vineyard Avenue/Sycamore Street intersection is STOP-Sign controlled. The eastbound approach is restricted to right-turns outbound only. As part of the Project the driveway will be restricted to right-turns inbound and outbound only.

Existing Volumes and Levels of Service

Intersection Operations

Figure 3 illustrates the existing traffic controls and geometries for the study-area intersections. The Existing A.M. and P.M. peak hour traffic volumes at the study-area intersections are illustrated on Figure 4. These volumes were collected in March of 2016, March of 2017 and June of 2017 for this study and are included in the Technical Appendix.

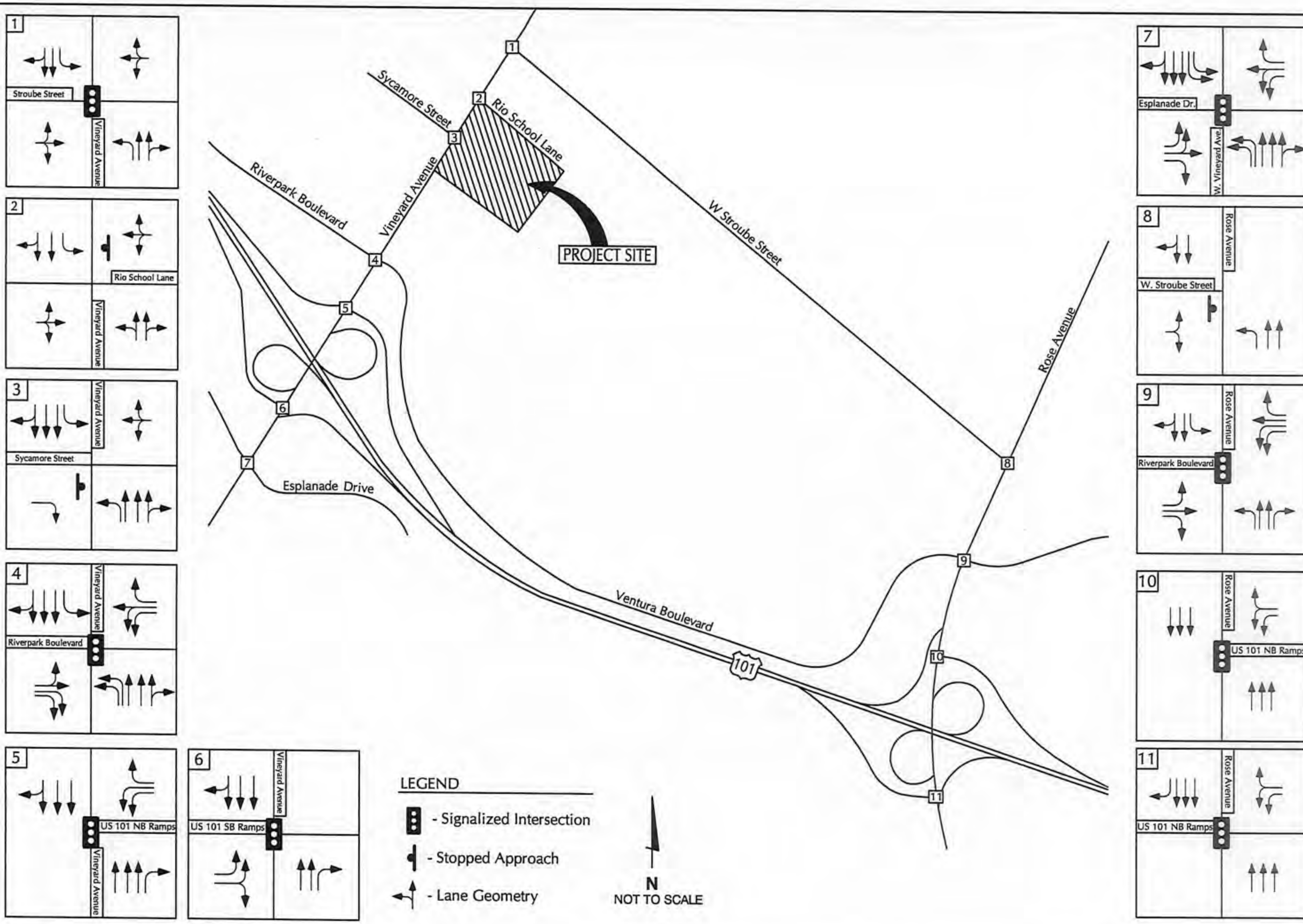

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FIGURE 3

INTERSECTION LANE GEOMETRIES AND TRAFFIC CONTROLS

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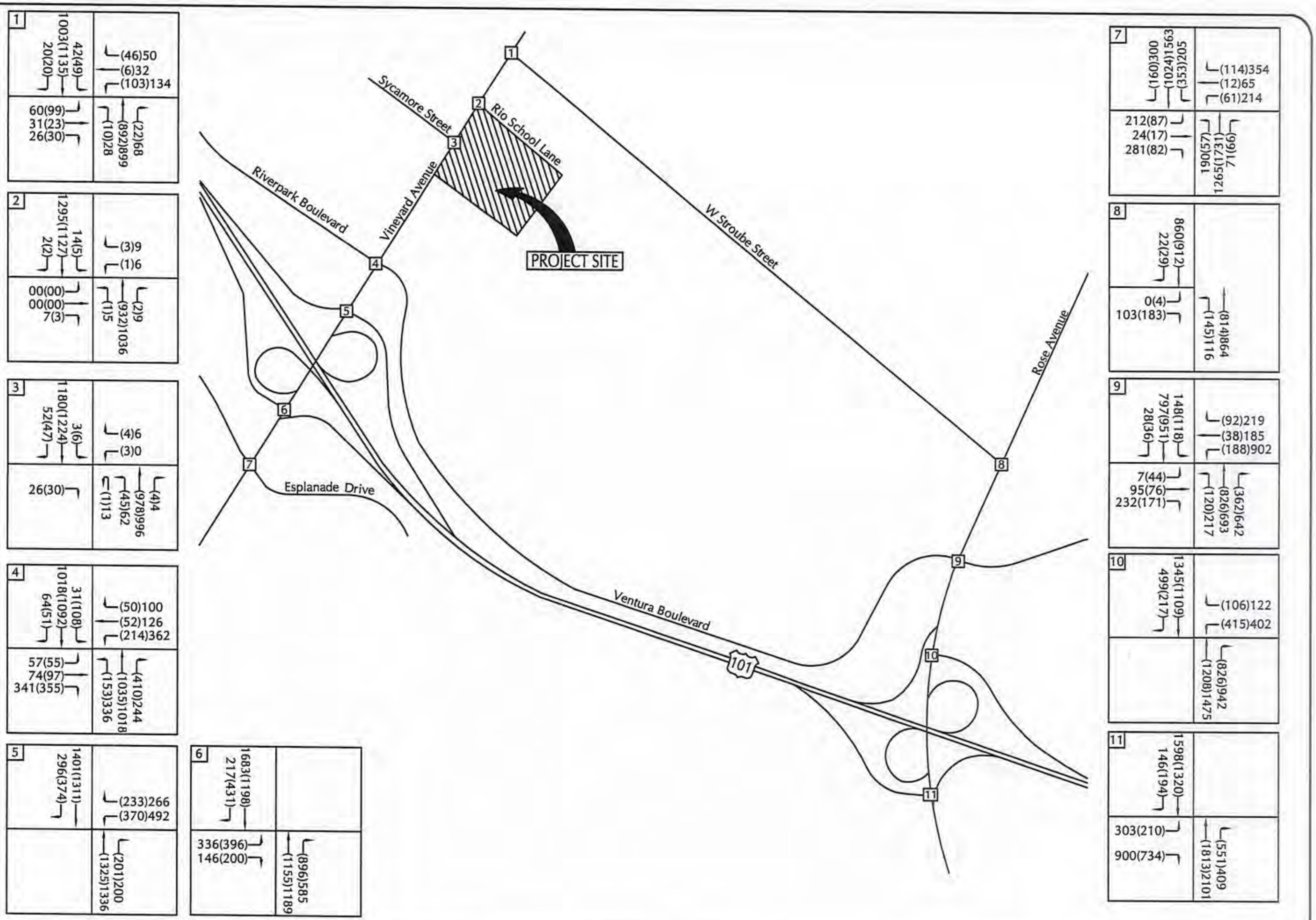

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EXISTING TRAFFIC VOLUMES

FIGURE 4

EKM - ATE#17053

Traffic flow on urban arterials is most constrained at intersections. Therefore, a detailed analysis of traffic flows must examine the operating conditions of critical intersections during peak travel periods. In rating intersection operations, "Levels of Service" (LOS) A through F are used, with LOS A indicating free flow operations and LOS F indicating congested operations (more complete definitions of levels of service are included in the Technical Appendix). In the City of Oxnard LOS "C" is the acceptable operating standard for intersections.

Existing levels of service for the study-area intersections were calculated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections and the Highway Capacity Manual unsignalized methodology as required by the City of Oxnard. Worksheets illustrating the level of service calculations are contained in the Technical Appendix for reference. Table 1 lists the Existing levels of service for the six study-area intersections during the A.M. and P.M. peak hour periods.

Table 1
Existing Peak Hour Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		ICU/Delay	LOS	ICU/Delay	LOS
Vineyard Avenue/Stroube Street	Signal	0.56	LOS A	0.55	LOS A
Vineyard Avenue/Rio School Lane	STOP-Sign	1.0 sec.	LOS A	1.0 sec.	LOS A
Vineyard Avenue/Sycamore Street	STOP-Sign	1.0 sec.	LOS A	1.0 sec.	LOS A
Vineyard Avenue/Riverpark Boulevard	Signal	0.55	LOS A	0.56	LOS A
U.S. Highway 101 NB Ramps/Vineyard Avenue	Signal	0.50	LOS A	0.52	LOS A
U.S. Highway 101 SB Ramps/Vineyard Avenue	Signal	0.53	LOS A	0.55	LOS A
Vineyard Avenue/Esplanade Drive	Signal	0.56	LOS A	0.63	LOS B
Rose Avenue/Stroube Street	STOP-Sign	15.3 sec.	LOS C	12.3 sec.	LOS B
Rose Avenue/Auto Center Drive	Signal	0.55	LOS A	0.77	LOS C
U.S. Highway 101 NB Ramps/Rose Avenue	Signal	0.42	LOS A	0.47	LOS A
U.S. Highway 101 SB Ramps/Rose Avenue	Signal	0.61	LOS B	0.69	LOS B

The data presented in Table 1 indicate that the study-area intersections currently operate at LOS C or better during the A.M. peak hour and P.M. peak hour periods, which meets the City's LOS C standard.

IMPACT THRESHOLD CRITERIA

The City of Oxnard's criteria for evaluating project impacts at intersections is based on the change in ICU/LOS attributable to the project. The City of Oxnard has established LOS C as the threshold of significance for determining project impacts at intersections. If the addition of project traffic increases the ICU by 0.02 or more at an intersection operating at LOS C or worse, it should be mitigated to the ICU level identified without the project traffic. These criteria were used to determine the significance of the impacts generated by the project at the study-area intersections.

PROJECT GENERATED TRAFFIC VOLUMES

Project Trip Generation

Trip generation estimates were calculated for the Rio Urbana Residential and Office Project based on the rates presented in the Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, for Residential Condominiums (Land-Use Code #230) and Single Tenant Office Buildings (Land Use Code #715)[1]. Table 2 summarizes the average daily, A.M. and P.M. peak hour trip generation estimates developed for the Project.

Table 2
Project Trip Generation

Land Use	Size	ADT		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
Condominium	182 units	5.81	1,057	0.44	80 (14/66)	0.52	95 (64/31)
Office	15,000 sq.ft.	11.65	175	1.80	27 (24/3)	1.74	26 (4/22)
Total Project Trip Generation:			1,232		107 (38/69)		121 (68/53)

The data presented in Table 2 show that the Project would generate 1,232 average daily trips (ADT), 107 A.M. peak hour trips, and 121 P.M. peak hour trips. The trip generation presented in Table 2 was used for the traffic analysis.

Existing Use Trip Generation

The Project site is currently occupied by the old Rio Mesa Elementary School campus and is currently being used by the school district for office space and a bus storage yard. Trip generation estimates for the current uses housed on the Project site were developed based on 24-hour traffic counts conducted at the Project site driveways (count data contained in the

[1] Trip Generation, Institute of Transportation Engineers, 9th Edition, 2013.

Technical Appendix for reference). The existing uses housed on the Project site generate 261 ADT, 28 A.M. peak hour trips, and 32 P.M. peak hour trips.

Project Trip Distribution and Assignment

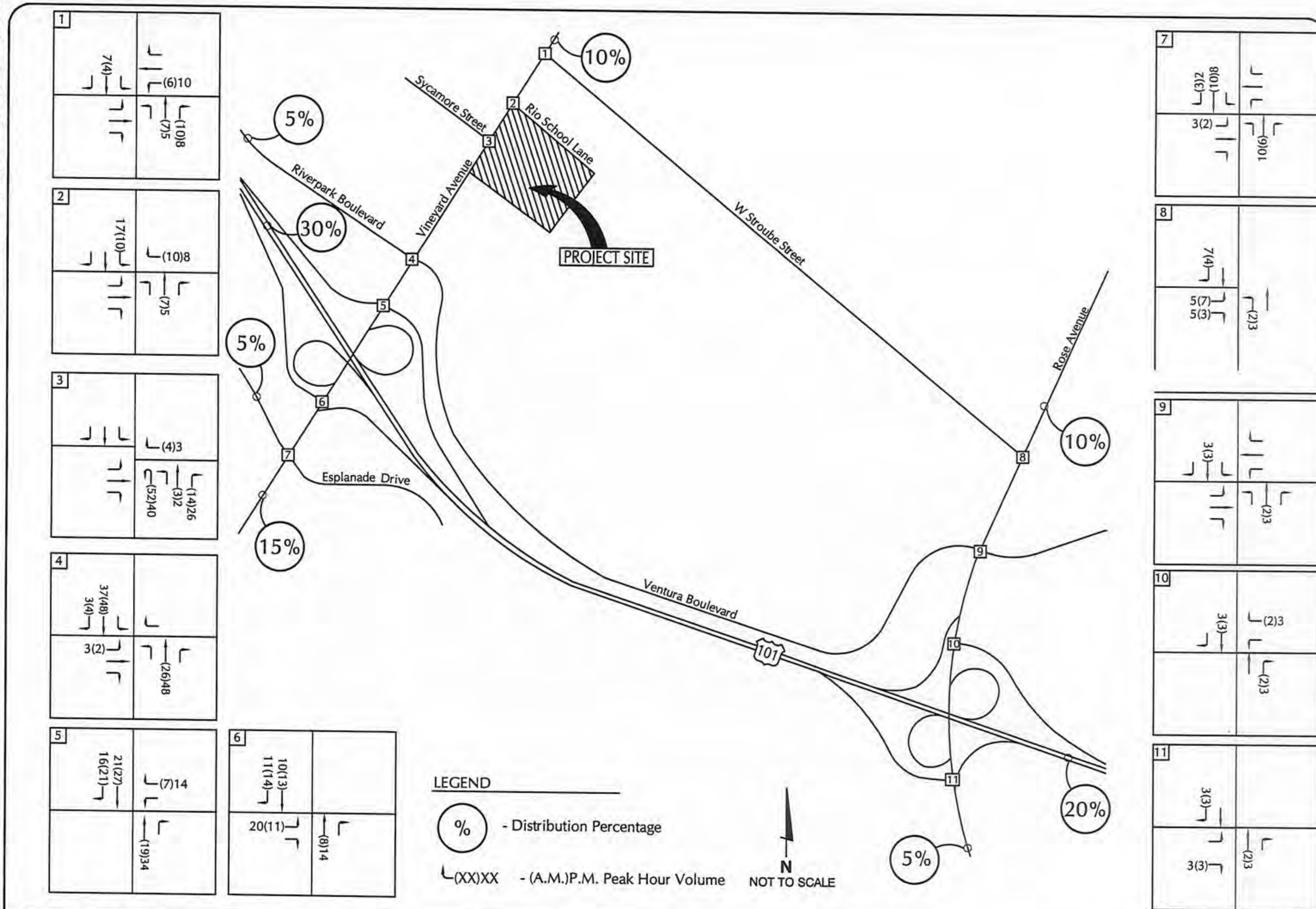
The project-generated A.M. and P.M. peak hour traffic volumes were distributed and assigned to the study-area intersections based on travel data derived from the existing traffic volumes as well as a general knowledge of the population, employment and commercial centers in the Oxnard/Ventura area. Figure 5 illustrates the trip distribution and assignment assumed for the Project's trips. Figure 6 illustrates the Existing + Project traffic volumes.

PROJECT-SPECIFIC IMPACTS

Levels of service were calculated for the study-area intersections assuming the Existing + Project volumes. Tables 3 and 4 show the results of the calculations and identify the Project's impacts based on the City of Oxnard thresholds.

Table 3
Existing + Project A.M. Peak Hour Levels of Service

Intersection	Existing		Existing + Project		Change	Impact?
	ICU/Delay	LOS	ICU/Delay	LOS		
Vineyard Avenue/Stroube Street	0.56	LOS A	0.57	LOS A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	LOS A	1.0 sec.	LOS A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	LOS A	1.5 sec.	LOS A	0.5 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.55	LOS A	0.55	LOS A	0.00	No
U.S. Highway 101 NB Ramps/Vineyard Avenue	0.50	LOS A	0.51	LOS A	0.01	No
U.S. Highway 101 SB Ramps/Vineyard Avenue	0.53	LOS A	0.54	LOS A	0.01	No
Vineyard Avenue/Esplanade Drive	0.56	LOS A	0.56	LOS A	0.00	No
Rose Avenue/Stroube Street	15.3 sec.	LOS C	17.1 sec.	LOS C	1.8 sec.	No
Rose Avenue/Auto Center Drive	0.55	LOS A	0.55	LOS A	0.00	No
U.S. Highway 101 NB Ramps/Rose Avenue	0.42	LOS A	0.42	LOS A	0.00	No
U.S. Highway 101 SB Ramps/Rose Avenue	0.58	LOS A	0.58	LOS A	0.00	No



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PROJECT TRIP DISTRIBUTION AND ASSIGNMENT
(SYCAMORE UNSIGNALIZED)

FIGURE 5

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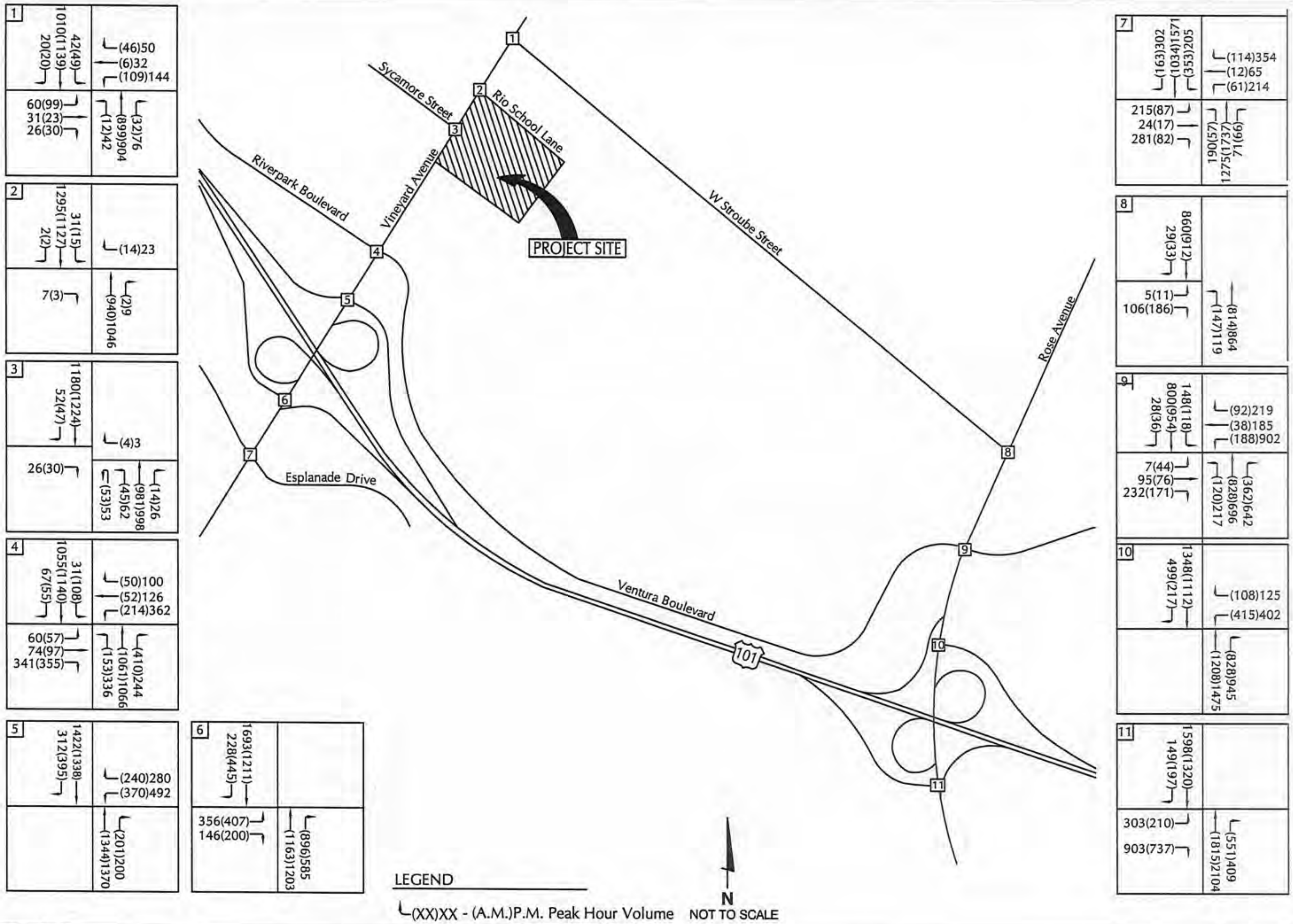

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EXISTING + PROJECT TRAFFIC VOLUMES
(SYCAMORE UNSIGNALIZED)

FIGURE 6

EKM - ATE#17053

Table 4
Existing + Project P.M. Peak Hour Levels of Service

Intersection	Existing		Existing + Project		Change	Impact?
	ICU/Delay	LOS	ICU/Delay	LOS		
Vineyard Avenue/Stroube Street	0.55	LOS A	0.56	LOS A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	LOS A	1.0 sec.	LOS A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	LOS A	1.6 sec.	LOS A	0.6 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.56	LOS A	0.57	LOS A	0.01	No
U.S. Highway 101 NB Ramps/Vineyard Avenue	0.52	LOS A	0.54	LOS A	0.02	No
U.S. Highway 101 SB Ramps/Vineyard Avenue	0.55	LOS A	0.56	LOS A	0.01	No
Vineyard Avenue/Esplanade Drive	0.63	LOS B	0.63	LOS B	0.00	No
Rose Avenue/Stroube Street	12.3 sec.	LOS B	13.0 sec.	LOS B	0.7 sec.	No
Rose Avenue/Auto Center Drive	0.77	LOS C	0.77	LOS C	0.00	No
U.S. Highway 101 NB Ramps/Rose Avenue	0.47	LOS A	0.47	LOS A	0.00	No
U.S. Highway 101 SB Ramps/Rose Avenue	0.69	LOS B	0.69	LOS B	0.00	No

The data presented in Tables 3 and 4 indicate that the Project would not generate significant impacts to the study-area intersections based on the City of Oxnard's traffic impact thresholds during the A.M. or the P.M. peak hour periods.

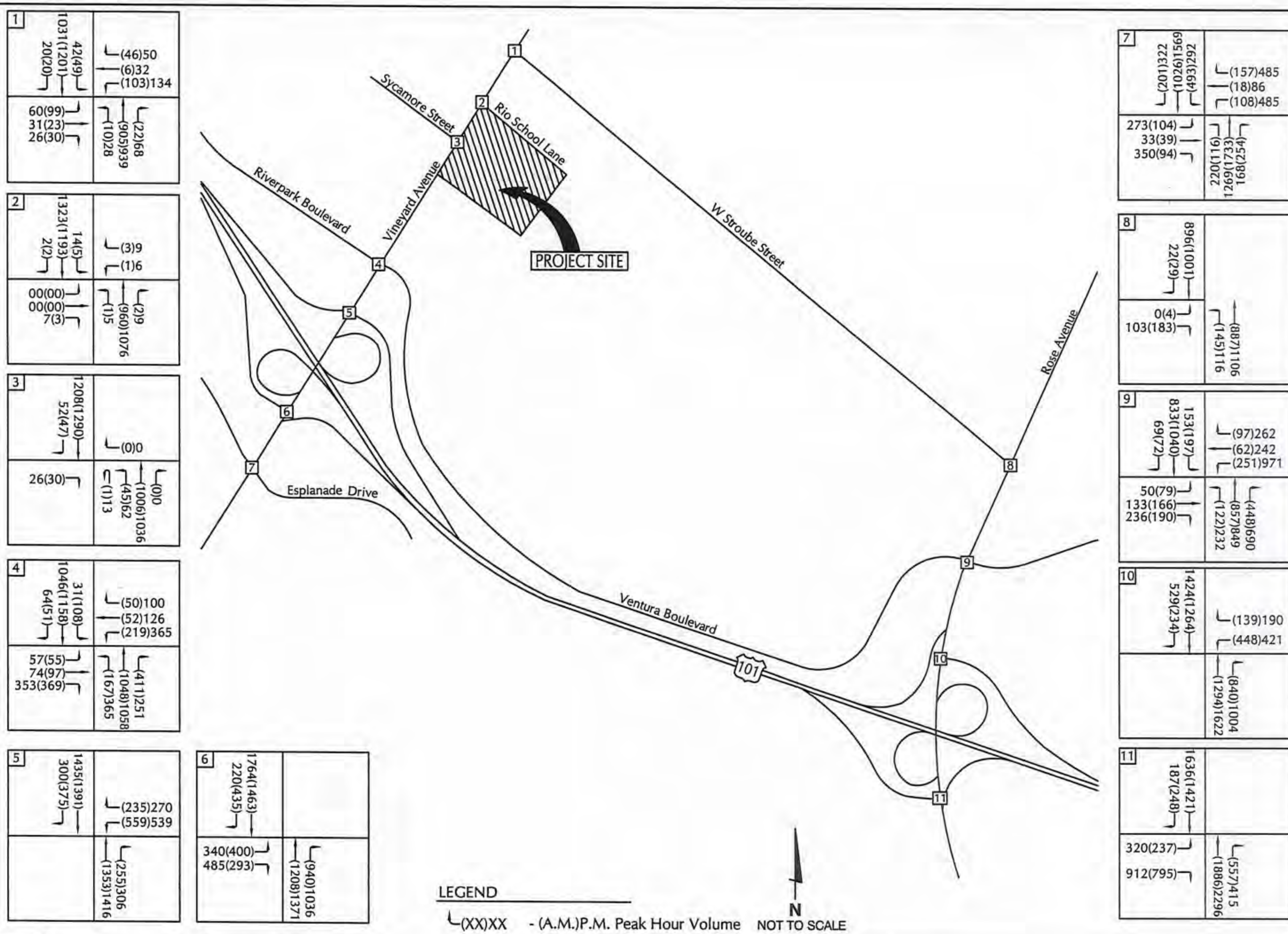
CUMULATIVE (EXISTING + APPROVED/PENDING PROJECTS) CONDITIONS

The City of Oxnard requires that intersections be analyzed with the addition of traffic generated by projects which have been approved or are pending within the project study-area. Trip generation estimates were developed for the cumulative developments using the rates presented in the ITE, Trip Generation, 9th Edition. Table 5 summarizes the average daily, A.M. and P.M. peak hour trip generation estimates for the approved/pending projects.

Table 5
Approved/Pending Projects Trip Generation

No.	Project	Land Use	Size	ADT	A.M. Peak Hour	P.M. Peak Hour
1.	Oakmont Senior Living	Assisted Living	85 units	172	5	14
2.	The Village	Multi-Family Res.	88 units	580	40	51
3.	The Village	Multi-Family Res.	78 units	514	36	45
4.	The Village	Multi-Family Res.	144 units	949	66	84
5.	Ventura/Vineyard Homes	Single Family Res.	152 units	1,447	114	152
6.	River Park Senior	Senior Residential	136 units	275	8	23
7.	Wagon Wheel The Village	Multi-Family Res. Retail Commercial	219 units 16,303 sq.ft.	1,443 722	101 22	127 44
8.	Veranda	Single-Family Res.	95 units	904	71	95
9.	Westerly River Park	Single-Family Res.	69 units	657	52	69
10.	V. C. Credit Union	Bank	3,391 sq.ft.	230	0	41
11.	Shoe City	Retail Commercial	17,513 sq.ft.	776	23	47
12.	The Point	Retail Commercial	45,000 sq.ft.	1,922	43	167
13.	Esplanade Gateway	Coffee Shop Retail Commercial	1,836 sq.ft. 5,000 sq.ft.	762	97	37
14.	The Collection - River Park	Retail Commercial	40,000 sq.ft.	1,708	38	148
15.	Campus at Topa Towers	Restaurant Retail Commercial	8,350 sq.ft. 15,240 sq.ft.	1,062 675	90 22	82 41
16.	Third Tower	Office	300,000 sq.ft.	3,308	468	447
17	Gold Coast Transit	Trip Generation from Penfield & Smith TIA		2,263	153	78
18.	Audi of Oxnard	Auto Dealership	35,064 sq.ft.	939	76	97
19.	Food 4 Less Center	Retail Commercial Gas Station	75,776 sq.ft. 14 pumps	3,236 2,360	73 170	281 194
			Total Trips:	21,965	1,427	2,066

As shown in Table 5 the approved/pending projects would generate a total of 21,965 average daily trips, 1,427 A.M. peak hour trips and 2,066 P.M. peak hour trips. Traffic generated by the approved/pending projects was distributed and assigned to the study-area intersections based on the location of each project, recent traffic studies, as well as a general knowledge of the population, employment and commercial centers in Oxnard and surrounding Ventura County area. Figure 7 illustrates the Cumulative peak hour traffic volumes at the study-area intersections.



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CUMULATIVE TRAFFIC VOLUMES
(SYCAMORE UNSIGNALIZED)

FIGURE 7

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The Third Tower project will be required to improve the Vineyard Avenue/Esplanade Drive intersection. As illustrated on Figure 8, an additional through lane and a through/right-turn lane will be provided on the northbound approach; an additional left-turn lane will be provided on the eastbound approach; and an additional right-turn lane will be provided on the westbound approach. At the Rose Avenue/Auto Center Drive intersection, the City will re-stripe the northbound approach to provide a second right-turn lane. The intersections improvements are assumed to be in place for the cumulative analysis. The Cumulative levels of service for the study-area intersections are shown in Table 6.

Table 6
Cumulative Peak Hour Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		ICU/Delay	LOS	ICU/Delay	LOS
Vineyard Avenue/Stroube Street	Signal	0.58	LOS A	0.55	LOS A
Vineyard Avenue/Rio School Lane	STOP-Sign	1.0 sec.	LOS A	1.0 sec.	LOS A
Vineyard Avenue/Sycamore Street	STOP-Sign	1.0 sec.	LOS A	1.0 sec.	LOS A
Vineyard Avenue/Riverpark Boulevard	Signal	0.55	LOS A	0.58	LOS A
U.S. Highway 101 NB Ramps/Vineyard Avenue	Signal	0.54	LOS A	0.53	LOS A
U.S. Highway 101 SB Ramps/Vineyard Avenue	Signal	0.61	LOS B	0.67	LOS B
Vineyard Avenue/Esplanade Drive	Signal	0.52	LOS A	0.66	LOS B
Rose Avenue/Stroube Street	STOP-Sign	16.7 sec.	LOS B	12.6 sec.	LOS B
Rose Avenue/Auto Center Drive	Signal	0.61	LOS B	**0.83**	**LOS D**
U.S. Highway 101 NB Ramps/Rose Avenue	Signal	0.45	LOS A	0.53	LOS A
U.S. Highway 101 SB Ramps/Rose Avenue	Signal	0.61	LOS B	0.74	LOS C

The data presented in Table 6 indicate that the Rose Avenue/Auto Center Drive intersection would operate at LOS D during the P.M. peak hour period with the addition of Cumulative traffic volumes.

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VINEYARD AVENUE/ESPLANADE DRIVE IMPROVEMENTS

FIGURE 8

EKM - ATE#17053

Cumulative + Project Impacts

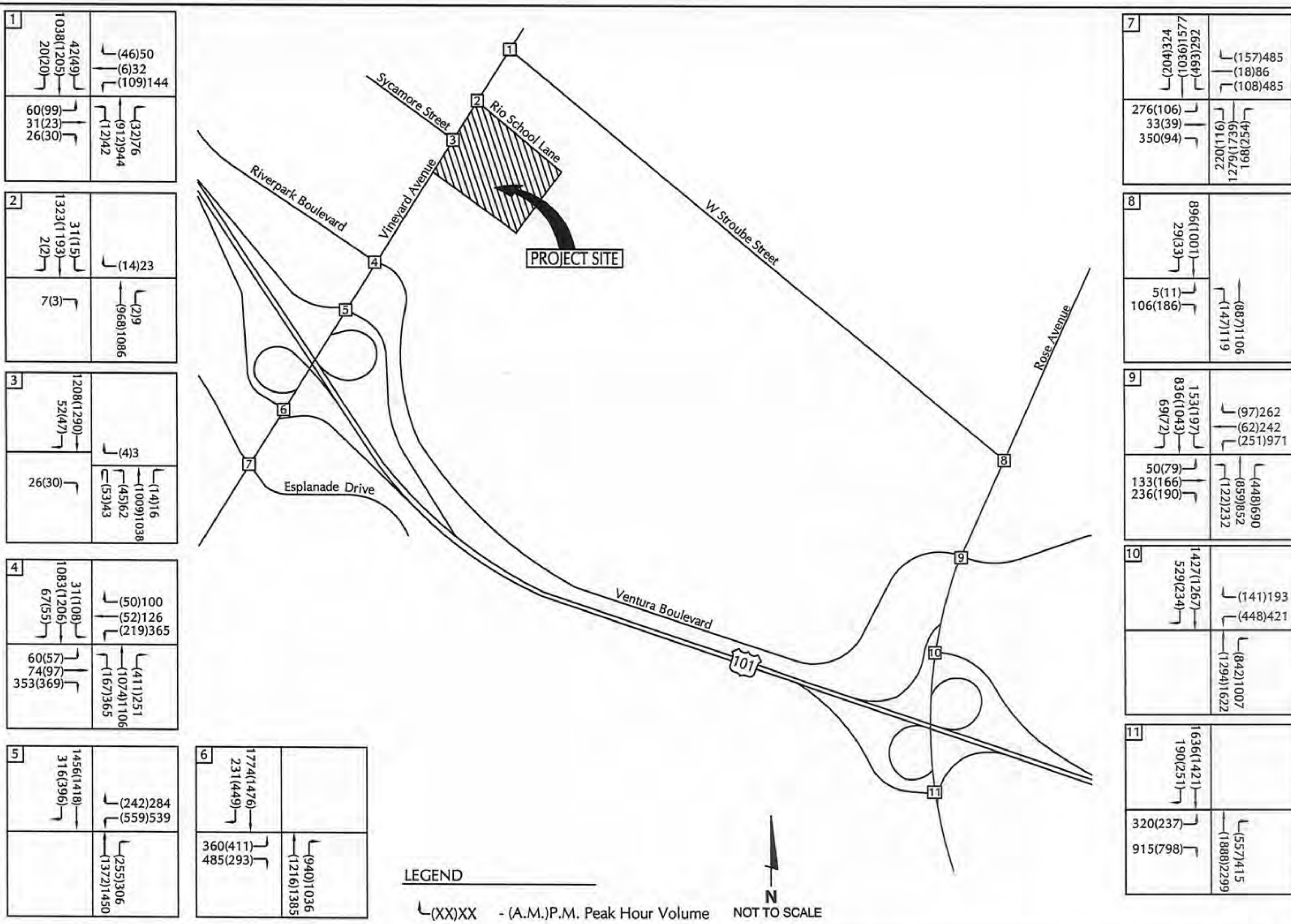
Levels of service were calculated for the study-area intersections assuming the Cumulative + Project volumes illustrated on Figure 9. Tables 7 and 8 show the results of the calculations and identify the impacts of the Project based on City of Oxnard thresholds.

Table 7
Cumulative + Project A.M. Peak Hour Levels of Service

Intersection	Cumulative		Cumulative + Proj.		Change	Impact?
	ICU/Delay	LOS	ICU/Delay	LOS		
Vineyard Avenue/Stroube Street	0.58	LOS A	0.59	LOS A	0.01	No
Vineyard Avenue/Rio School Lane	1.0 sec.	LOS A	1.0 sec.	LOS A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec,	LOS A	1.6 sec.	LOS A	0.6 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.55	LOS A	0.56	LOS A	0.01	No
U.S. Highway 101 NB Ramps/Vineyard Avenue	0.54	LOS A	0.55	LOS A	0.01	No
U.S. Highway 101 SB Ramps/Vineyard Avenue	0.61	LOS B	0.62	LOS B	0.01	No
Vineyard Avenue/Esplanade Drive	0.52	LOS A	0.52	LOS A	0.00	No
Rose Avenue/Stroube Street	16.7 sec.	LOS C	19.1 sec.	LOS C	2.4 sec.	No
Rose Avenue/Auto Center Drive	0.61	LOS B	0.61	LOS B	0.00	No
U.S. Highway 101 NB Ramps/Rose Avenue	0.45	LOS A	0.45	LOS A	0.00	No
U.S. Highway 101 SB Ramps/Rose Avenue	0.61	LOS B	0.61	LOS B	0.00	No

Table 8
Cumulative + Project P.M. Peak Hour Levels of Service

Intersection	Cumulative		Cumulative + Proj.		Change	Impact?
	ICU/Delay	LOS	ICU/Delay	LOS		
Vineyard Avenue/Stroube Street	0.55	LOS A	0.57	LOS A	0.02	No
Vineyard Avenue/Rio School Lane	1.0 sec.	LOS A	1.0 sec.	LOS A	0.0 sec.	No
Vineyard Avenue/Sycamore Street	1.0 sec.	LOS A	1.3 sec.	LOS A	0.3 sec.	No
Vineyard Avenue/Riverpark Boulevard	0.58	LOS A	0.59	LOS A	0.01	No
U.S. Highway 101 NB Ramps/Vineyard Avenue	0.53	LOS A	0.55	LOS A	0.02	No
U.S. Highway 101 SB Ramps/Vineyard Avenue	0.67	LOS B	0.68	LOS B	0.01	No
Vineyard Avenue/Esplanade Drive	0.66	LOS B	0.67	LOS B	0.01	No
Rose Avenue/Stroube Street	12.6 sec.	LOS B	13.5 sec.	LOS B	0.9 sec.	No
Rose Avenue/Auto Center Drive	**0.83**	**LOS D**	**0.83**	**LOS D**	0.00	No
U.S. Highway 101 NB Ramps/Rose Avenue	0.53	LOS A	0.53	LOS A	0.00	No
U.S. Highway 101 SB Ramps/Rose Avenue	0.74	LOS C	0.74	LOS C	0.00	No



ASSOCIATED TRANSPORTATION ENGINEERS

CUMULATIVE + PROJECT TRAFFIC VOLUMES
(SYCAMORE UNSIGNALIZED)

FIGURE 9

EKM - ATE#17053

The data presented in Tables 7 and 8 indicate that the Project would not generate significant cumulative impacts to the study-area intersections based on the City of Oxnard's traffic impact thresholds during the A.M. or the P.M. peak hour periods.

PROJECT SITE ACCESS

Proposed Site Access

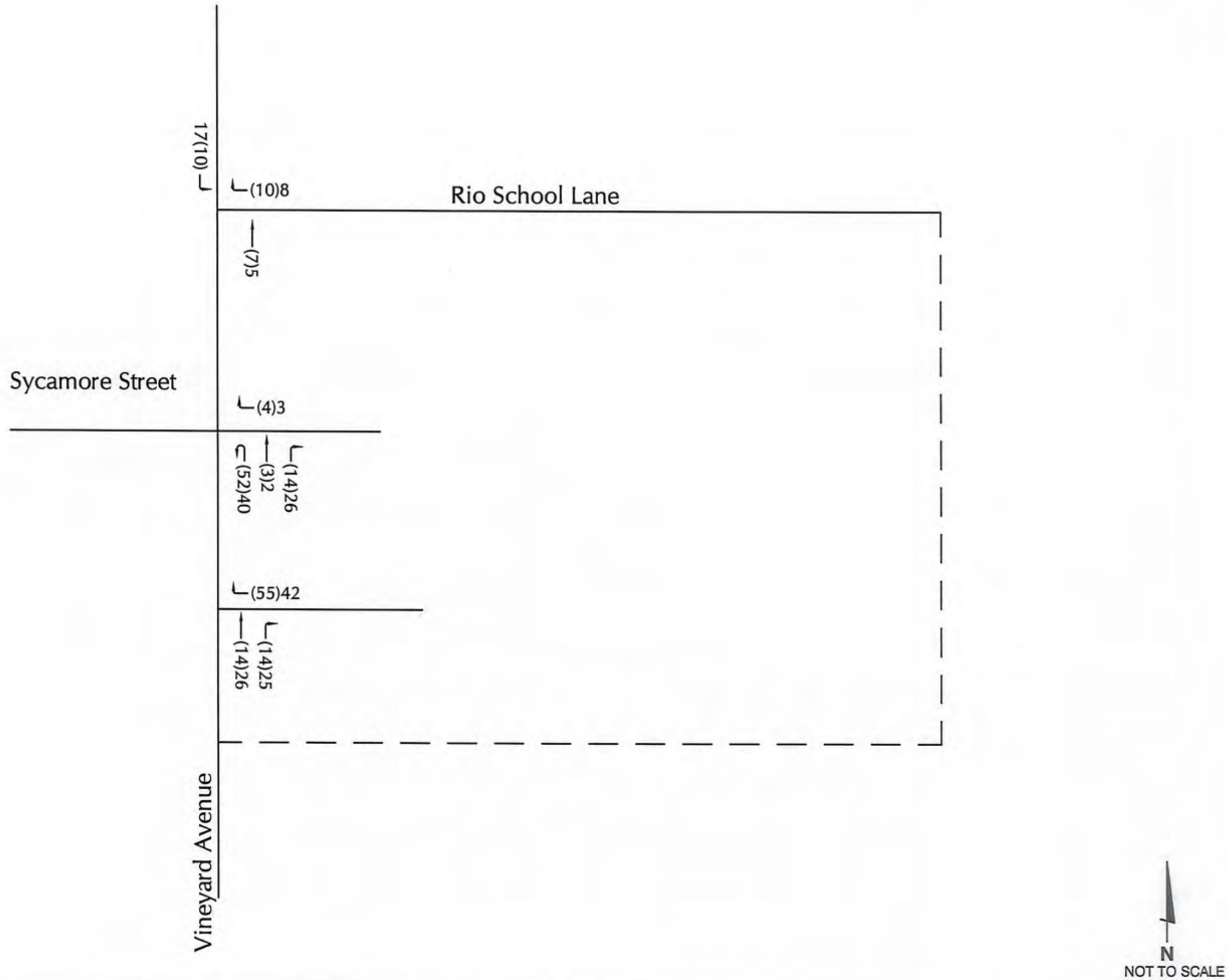
As illustrated on Figure 2, access to the Project site would be provided by two driveways on Vineyard Avenue and four driveways on Rio School Lane. The two Project driveways on Vineyard Avenue will be restricted to right-turns in and out only due to the raised left-turn median on Vineyard Avenue. The Project driveways will be designed and constructed to City of Oxnard design standards. The Project will be required to complete any and all necessary roadway improvements on Vineyard Avenue and Rio School Lane along its frontage.

ATE utilized the Synchro software and companion SimTraffic simulation model to evaluate the operation of the unsignalized Vineyard Avenue/Sycamore Street intersection. The unsignalized intersection would operate at LOS "A" during the A.M. and P.M. peak hour periods. Figure 10 illustrates the Project driveway volumes.

Vehicle queuing was also evaluated at the intersection using the SimTraffic simulation model. Table 9 shows the 95th percentile queue lengths for the northbound left-turn movement at the intersection with "Existing + Project" and "Cumulative + Project" traffic volumes. The 95th percentile queue length is the queue that is exceeded 5% of the time during the peak hour periods. Table 9 shows that the 95th percentile queues lengths will not exceed the 140 feet of storage provided in the northbound left-turn lane. Note that the change in queues lengths (approximately 1 car length 25') is a reflection in the change in the allocation of green times at the traffic upstream traffic signal which allows gaps in the southbound traffic flow. The SimTraffic queue lengths for all study-area intersections are contained in the Technical Appendix.

Table 9
Left-Turn Storage Requirements at the Vineyard Avenue/Sycamore Street Intersection (Unsignalized)

Movement	Existing Storage	95% Queue Length			
		Existing + Project		Cumulative + Project	
		A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
Northbound Left-Turn	140 feet	77 feet	78 feet	50 feet	56 feet



Associated
Transportation
Engineers

FIGURE 10

PROJECT DRIVEWAY VOLUMES (UNSIGNALIZED)

EKM - ATE#17053

Alternative Site Access

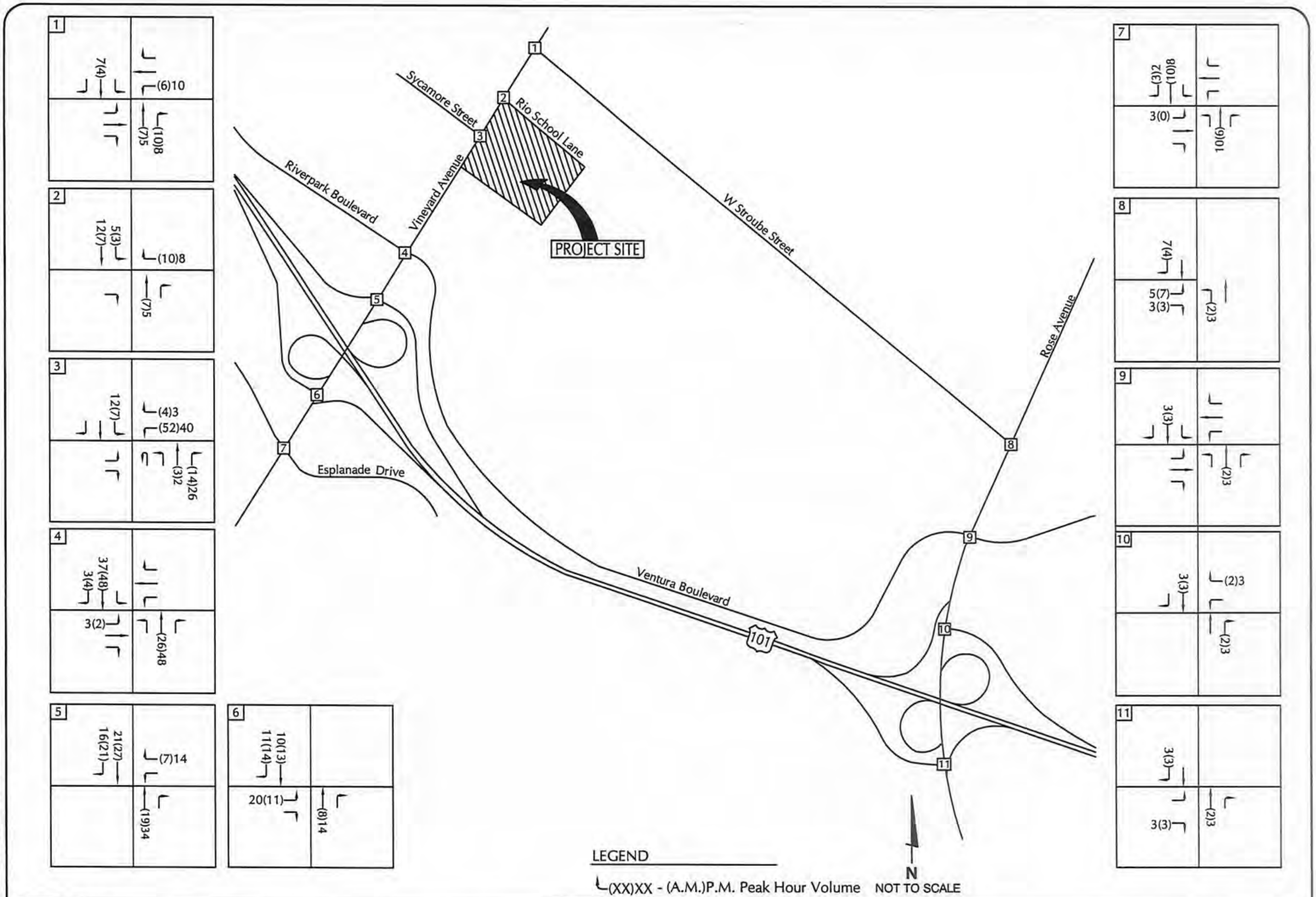
An alternative access plan was reviewed that also provides two driveways on Vineyard Avenue and four driveways on Rio School Lane. The northern Project driveway on Vineyard Avenue would be signalized and aligned opposite Sycamore Street allowing full access. The southern Project driveway on Vineyard Avenue would be restricted to right-turns in and out only due to the raised left-turn median on Vineyard Avenue. The alternative Project access would require the site layout to be redesigned. The Project driveways will be designed and constructed to City of Oxnard design standards.

ATE utilized the Synchro software and companion SimTraffic simulation model to evaluate the operation of the signalized Vineyard Avenue/Sycamore Street intersection. Project trips were reassigned to the adjacent street system as illustrated on Figure 11. Existing + Project traffic volumes are illustrated on Figure 12. Cumulative + Project traffic volumes are illustrated on Figure 13. The signalized Vineyard Avenue/Sycamore Street intersection would operate at LOS "A" during the A.M. and P.M. peak hour periods. Figure 14 illustrates the Project driveway volumes.

Vehicle queuing was also evaluated at the intersection using the SimTraffic simulation model. Table 10 shows the 95th percentile queue lengths for the northbound left-turn movement at the intersection with Existing + Project and Cumulative + Project traffic volumes. The 95th percentile queue length is the queue that is exceeded 5% of the time during the peak hour periods. Table 10 shows that the 95th percentile queues lengths will not exceed the existing store for the northbound length turn movement at the signalized intersection. Note that the change in queues lengths (approximately 1 car length 25') is a reflection in the change in the allocation of green times and signal phasing, which assumes co-ordinated signal optimization for each scenario. The SimTraffic queue lengths for all study-area intersections are contained in the Technical Appendix.

Table 10
Left-Turn Storage Requirements at the Vineyard Avenue/Sycamore Street Intersection (Signalized)

Movement	Existing Storage	95% Queue Length			
		Existing + Project		Cumulative + Project	
		A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
Northbound Left-Turn	140 feet	53 feet	128 feet	72 feet	108 feet

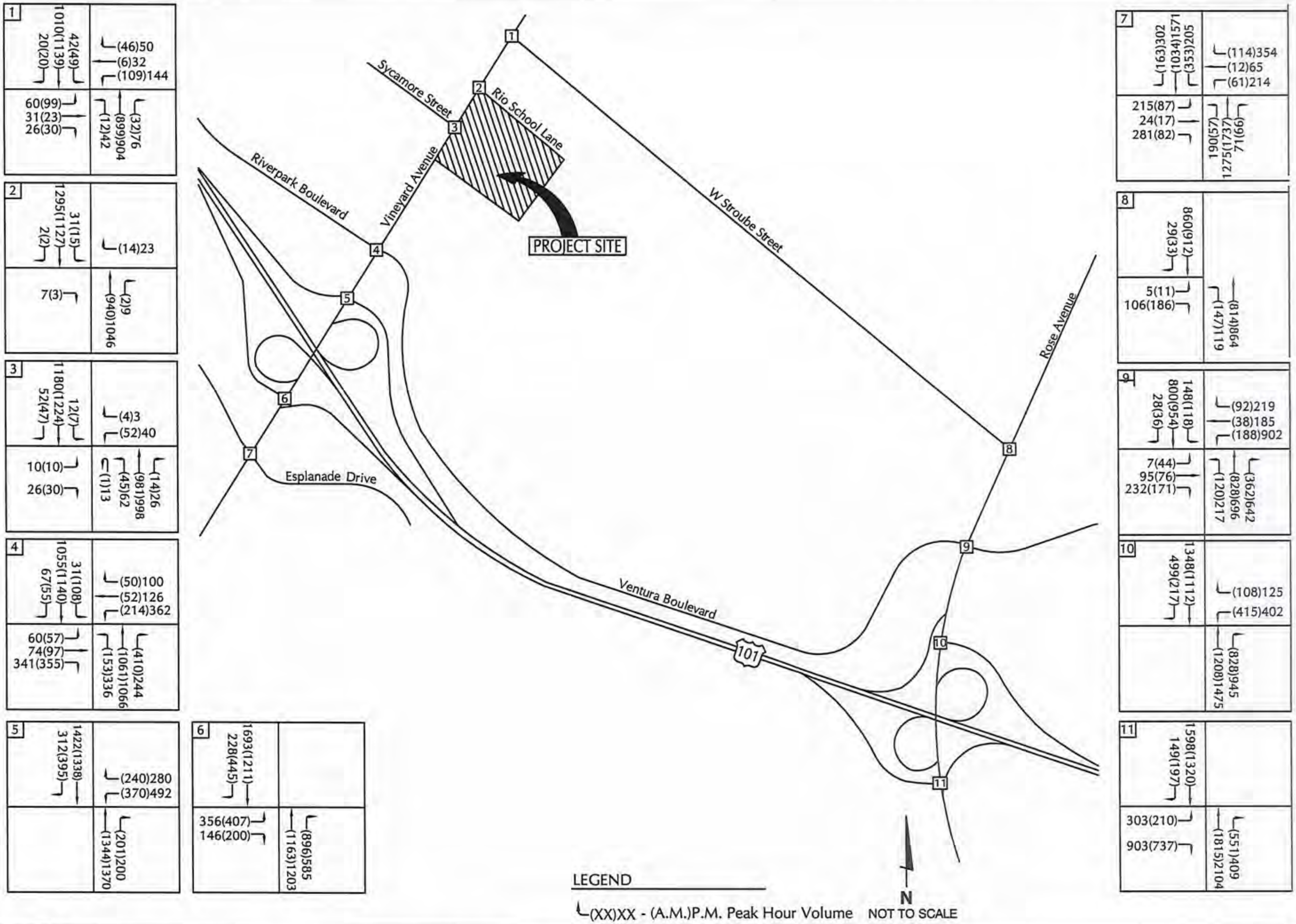


ASSOCIATED
TRANSPORTATION
ENGINEERS

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT
(SYCAMORE SIGNALIZED)

FIGURE 11

EKM - ATE#17053

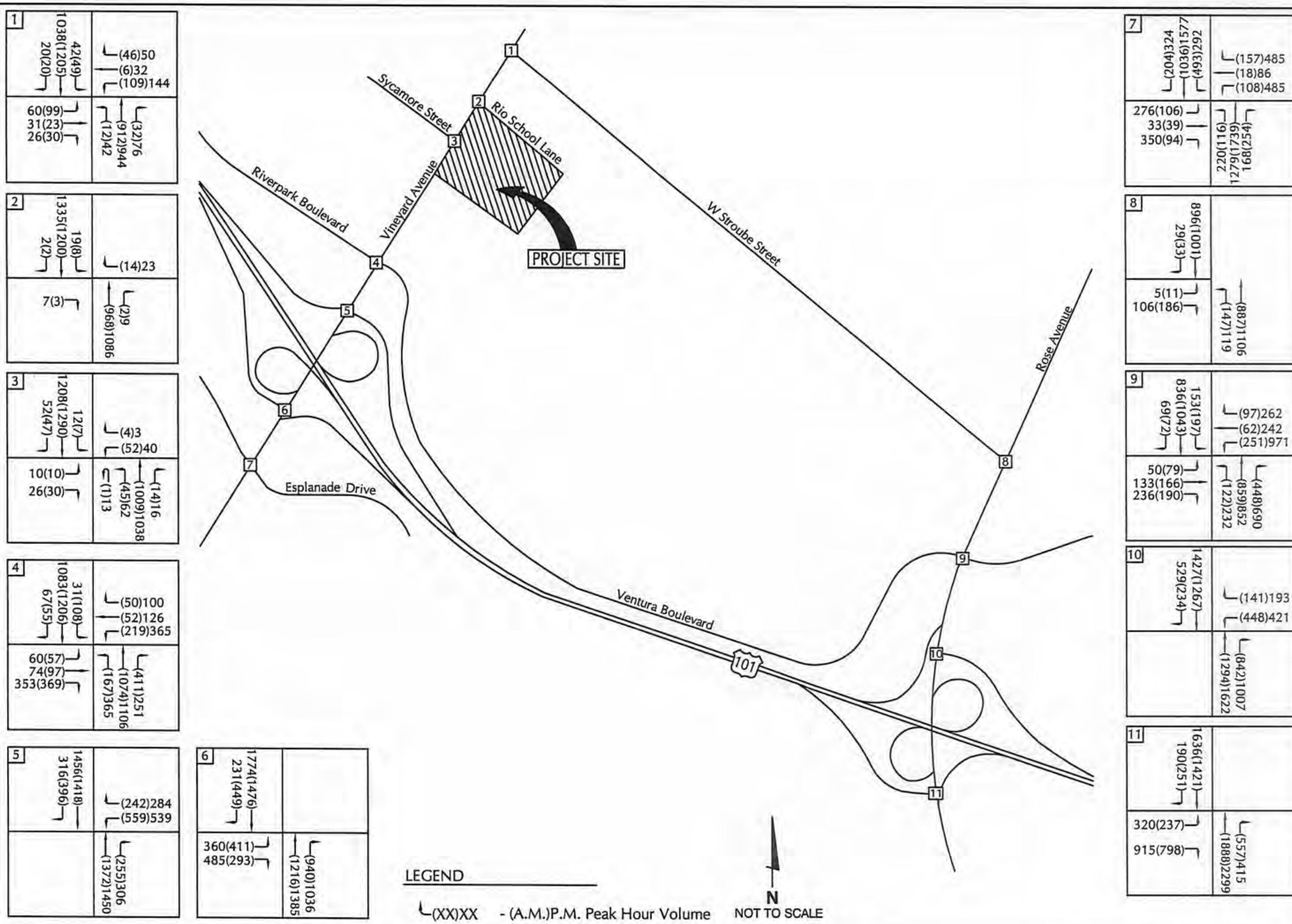


ASSOCIATED TRANSPORTATION ENGINEERS

EXISTING + PROJECT TRAFFIC VOLUMES
(SYCAMORE SIGNALIZED)

FIGURE 12

EKM - ATE#17053

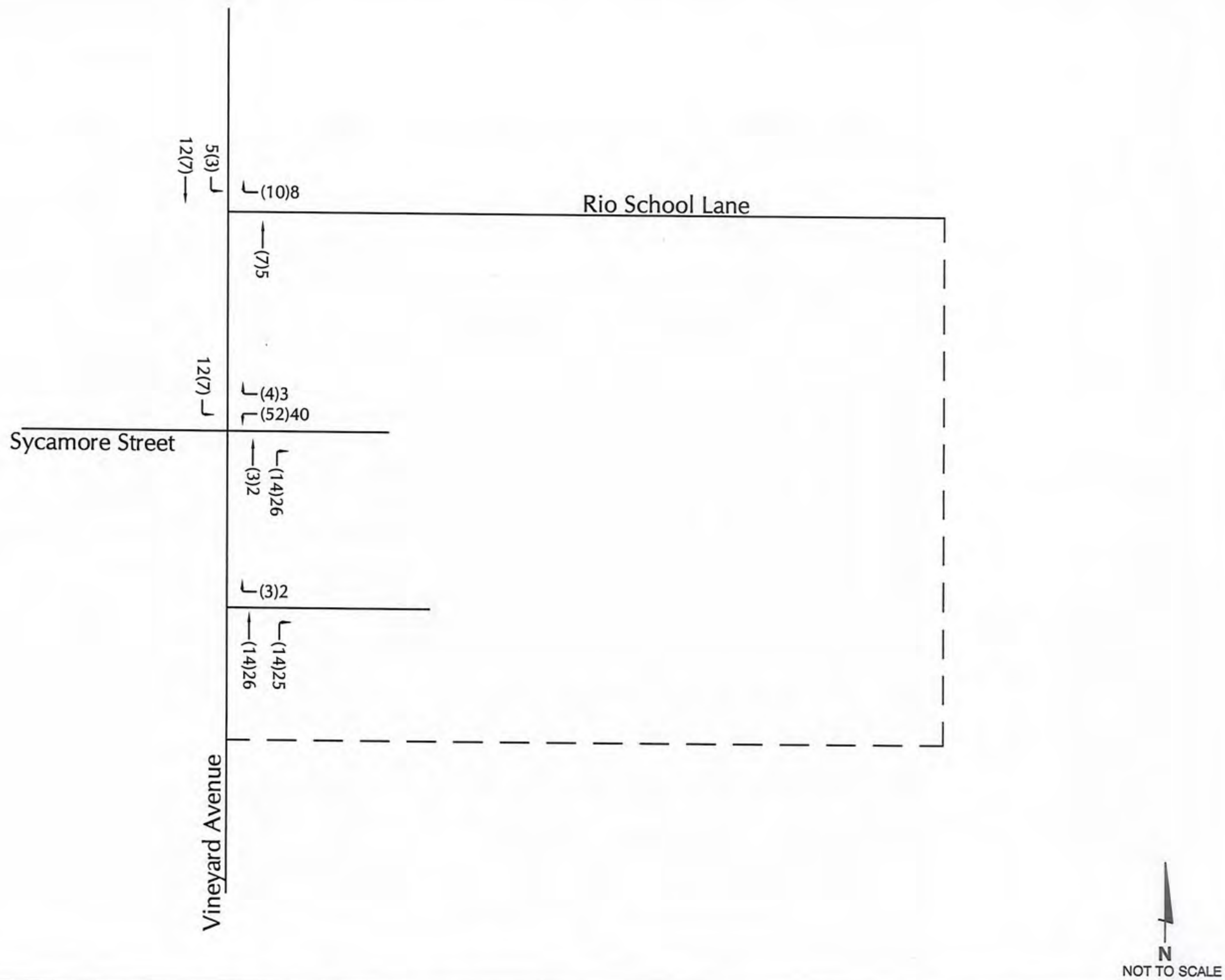


ASSOCIATED TRANSPORTATION ENGINEERS

CUMULATIVE + PROJECT TRAFFIC VOLUMES
(SYCAMORE SIGNALIZED)

FIGURE 13

EKM - ATE#17053



ASSOCIATED TRANSPORTATION ENGINEERS

PROJECT DRIVEWAY VOLUMES (SIGNALIZED)

FIGURE 14

EKM - ATE#17053

Signal Warrant Analysis

A signal warrant analysis was conducted assuming full access with the project driveway aligned opposite the Vineyard Avenue/Sycamore Street intersection. The traffic signal warrant analysis was completed based on the Manual on Uniform Traffic Control Devices (MUTCD), California Supplement. The MUTCD provides 9 signal warrants as guidance in determining the need for traffic signal installation. ATE evaluated the need for traffic signals at the Vineyard Avene/Sycamore Street intersection based on the Four Hour and the Crash Experience warrant criteria. The posted speed limit on Vineyard Avenue is 35 MPH, therefore the urban warrants apply. Table 11 summarizes the results of the signal warrant analysis.

Table 11
Signal Warrant Results

Warrant	Type	Warrant Satisfied ?	
		Existing + Project	Cumulative + Project
#3	Four Hour	No	No
#7	Crash Experience	No	No

The Existing + Project and Cumulative + Project driveway volumes are illustrated on Figure 14. The approach volumes on the minor street at the intersection do not satisfy the Four Hour Vehicular Volume warrant under any scenario. In order to satisfy the Four Hour Vehicular Volume warrant, a minimum of 80 exiting vehicles per hour are necessary on the minor street approach. The peak exiting traffic volumes generated by the Project are below 80 vehicles per hour (56 A.M. peak hour vehicles and 43 P.M. peak hour vehicles).

The number of reported crashes at the intersection within the most recent 12 month period is less than 5 and do not satisfy Crash Experience Warrant. In order to satisfy the Crash Experience warrant, a minimum of 5 reported crashes are necessary. Collision Summary Report provided by City staff is contain in the Technical Appendix.

PROJECT MITIGATION MEASURES

Based on the City of Oxnard traffic impact thresholds, it was determined that the Project would not have a significant impact to any of the study-area intersections. Thus no mitigation measures were developed for the study-area intersections under the City's jurisdiction. The project would, however, be required to pay the City's traffic mitigation fees to off-set its contribution to cumulative traffic increases in the City.

VENTURA COUNTY GENERAL PLAN CONSISTENCY

The City of Oxnard and Ventura County have executed a "Reciprocal Traffic Mitigation Agreement" wherein the City and the County agree that a pro-rata share of the cost of mitigations will be collected by each agency for identified traffic impacts in the other jurisdiction. The Project would be consistent with the Ventura County General Plan by complying with the terms of the "Reciprocal Traffic Mitigation Agreement" between the City of Oxnard and the County of Ventura approved on February 2, 1993.

VENTURA COUNTY CONGESTION MANAGEMENT PROGRAM

According to the County's Congestion Management Program (CMP), the minimum acceptable standard for traffic operations is LOS E.[2] However, so that local jurisdictions are not unfairly penalized for existing congestion, CMP locations currently operating in the LOS F range are considered acceptable.

Intersection Operation

The study-area intersections along Vineyard Avenue and Rose Avenue are included in the County's CMP. The intersections are all expected to operate at LOS D or better with the addition of Cumulative + Project peak hour volumes, and thus would not exceed the CMP LOS E standard.

■ ■ ■

Traffic LOS Monitoring for the Ventura County Congestion Management Program, Ventura County Transportation Commission, 2009.

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Scott A. Schell, AICP, PTP, Principal Planner
Darryl F. Nelson, Senior Transportation Planner
Erica K. Monson, Traffic Technician I

Persons Contacted

Earnel Bihis, City of Oxnard

References

Highway Capacity Manual, Transportation Research Board, National Research Council, 2000.

Trip Generation, Institute of Transportation Engineers, 9th Edition, 2013.

Traffic LOS Monitoring for the Ventura County Congestion Management Program, Ventura County Transportation Commission, 2009.

Financial Plaza Tower III Final EIR Addendum, May 2002.

Starbucks Traffic and Circulation Study, ATE, August 2016.

Audi of Oxnard Traffic and Circulation Study, ATE, November 2016.

Campus at Topa Towers Traffic and Circulation Study, ATE, April 2017.

Appendix I

Wet Utility Preliminary Investigation and Domestic Water Supply and Demand Memorandum

WET UTILITY PRELIMINARY INVESTIGATION

RIO URBANA (TENTATIVE TRACT MAP 5998)

APN: 145-0-232-010

2714 Vineyard Avenue
Oxnard, CA 93036

prepared for:
The Pacific Companies
Attn: Caleb Roope
430 E. State Street, Suite 100
Eagle, ID 93616

prepared by:
Jensen Design & Survey, Inc.
1672 Donlon St.
Ventura, CA 93003

Prepared on:

August 21, 2017

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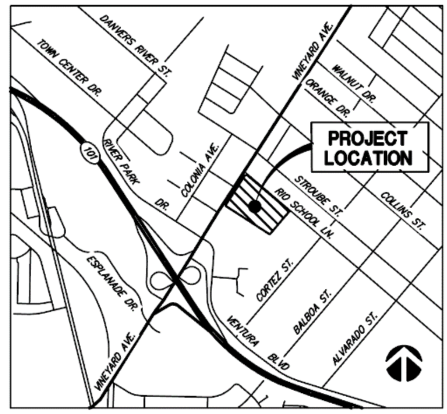
1.0 PROJECT BACKGROUND

1.1 PROJECT DESCRIPTION & LOCATION

The Pacific Companies (Client/Applicant) in partnership with El Rio School District (Property Owner) proposes to entitle, annex, and develop the El Rio School District property located at 2714 Vineyard Avenue in the unincorporated area of El Rio adjacent to the City of Oxnard's city limit boundary. This project is within the City of Oxnard's Sphere of Influence, CURB Boundaries, Water and Sewer Master Plans, and is being processed through the City of Oxnard as Planning and Zoning Permit No. PZ17-500-05 for a large lot subdivision and annexation (Tentative Tract Map 5998, TTM 5998). The first proposed lot includes a 15,100 square foot commercial office space located along Vineyard Avenue. This lot is designated for the El Rio School District new office headquarters. The second proposed lot is designated for residential condominium purposes including a mixture of one-, two-, and three- bedrooms units totaling 182 units.



1.2 HISTORICAL USES

Since 1949, El Rio School District has owned the property. From 1949 to 2005, Rio Elementary School operated at this location until moving locations to the present day Rio Real School. From 2006-2014, the site served as a number of uses including: the operating location for California Conservation Core until 2009; the El Rio School District Office and Dispatch headquarters until 2014, and; from 2014 to present, the Site is used as the Dispatch Headquarters for the El Rio School District Vehicle Fleet.

1.3 REPORT OBJECTIVE

On May 5th, 2017, the City of Oxnard issued the Applicant 'Pre-DAC Comments' identifying the need for a technical study assessing *Wet Utilities.* A subsequent conversation with Contract Planner for the City (Chris Williamson), clarified specific details the City identified as beneficial to Study to adequately inform potential environmental impacts of wet utilities for the City's Initial Study/Environmental Assessment (Initial Study). This Initial Study is to be performed by the Lead Agency (City of Oxnard) and will assess the project's compliance with California Environmental Quality Act (CEQA). For the Lead Agency, this Wet Utility Preliminary Investigation will assess existing and proposed water usage and sewer loading associated with the Rio Urbana project. There is also a 1st – Level assessment of the City's existing Recycled Water pipeline infrastructure in proximity to the project site and general feasibility for connecting.

2.0 EXISTING & PROPOSED SEWER GENERATION

The historical land use as an elementary school on the Project Site supported 46 adult persons and 770 elementary-aged students. The landscaping of the school site amounts to 4.31 acres of irrigated land. The following table provides a detailed breakdown for the "Existing Sewer Loading" for the Elementary School Site. The total existing sewer loading to the City of Oxnard's 10" VCP (vitrified clay pipeline) located in Vineyard Avenue 67' offset from the property line amounts to 10.58 GPM (ADD, average daily demand). See Sewer Atlas P-12 & P-13 (Appendix A)

EXISTING SEWER LOADING

Ex. People	Persons	GPD/Person*	GPD	GPM	
Staff	11	20	220	0.15	
Teachers	35	20	700	0.49	
Students	770	15	11,550	8.02	
				8.66	**gpm (ADD)**

* City of Oxnard Standard Plate 43 for assumptions per person

Ex. Landscape		
Grass	4.31	Ac.
Use (Assumed)	3.1	AF/yr/Ac
Use (Assumed)	**1.92**	**gpm (ADD)**

TOTAL	**10.58 GPM (ADD)**

The proposed project contains two land uses: office and residential. The office component will be around 15,100 square feet of building and support 61 employees. Using the City of Oxnard's Standard Plate #43 (Appendix B), the following table provides a detailed breakdown for the "Proposed Sewer Loading" associated with the proposed uses of the project, TTM 5998. As the TTM 5998 shows (Appendix C), the proposed Point of Connection to the City's sewer pipe would be located just south of Sycamore Street with a potential invert elevation of 79.90'.

PROPOSED SEWER LOADING

El Rio Community

Bedrooms	No. Units	gpd/unit*	gpd (ADD)	gpm (ADD)	
1	7	150	1,050	0.73	
2	119	200	23,800	16.53	
3	56	250	14,000	9.72	
				26.98	**gpm (ADD)**

* City of Oxnard Standard Plate 43 for assumptions per person

Office Building

Employees	gpd/person*	gpd	**gpm (ADD)**
61	20	1,220	**0.85**

Total gpm (ADD) Proposed Demand	**27.83 gpm (ADD)**

3.0 EXISTING & PROPOSED WATER USE

Standard Plates #43 (Appendix B) from the City of Oxnard was applied to the sewer generation analysis of the project as detailed in the above section. For existing and proposed water usage numbers, no City Standard Plates exists. As a result, this study applies an industry standard assumption to obtain the following table of existing and proposed water usages. The proposed domestic waterline connection to the City's 12" concrete domestic water pipeline (Unit ID# 13-PT01) is shown on TTM 5998 and provided in this Study as Appendix C. It is anticipated the existing ¾" domestic water meter serving the school site could be abandoned if desired – upon preliminary research, it appears this ¾" domestic water connection is with the City of Oxnard 10" VCP in Vineyard.

EXISTING WATER USE

12.11	**GPM (ADD)** (Based on 1.18 * Sewer Generation + Landscape)

PROPOSED WATER USE

32.74 GPM (ADD) (Based on 1.18 * Sewer Generation, and; assumes recycled water will be used to irrigate)

4.0 SEWER CAPACITY

The Rio Urbana Project Site is included in the boundary area of the City of Oxnard's Wastewater Master Plan Update (September 2008). This Master Plan includes the City Limit Boundaries and City Urban Restrictive Boundaries (CURB). Land use projections used for creating the Wastewater Master Plan were based on the adopted 2020 General Plan. In Figure 3-5 of the General Plan, the Project Site was identified as a Redevelopment Area.

The Project Site disposes of wastewater into the City's existing 10" trunk sewer line in Vineyard Avenue/Highway 232. There is inconclusive data in the City's Wastewater Master Plan (2008) and the City's Integrated Waste Master Plan (2015) to establish a sewer capacity of the 10" trunk sewer in Vineyard/Highway 232 at this time.

5.0 RECYCLED WATER CONNECTION – 1ST LEVEL ANALYSIS

The existing Recycled Water Distribution Pipeline is shown in Appendix D and sourced from the City of Oxnard Public Works Integrated Master Plan, PM 4.2. The nearest location for a potential point of connection is at Riverpark Boulevard and Colonia Avenue. The second closest connection is at the corner of Forest Park Boulevard and Vineyard Avenue/ Highway 232. See Appendix E for an exhibit showing a first-level analysis of two (2) Alternatives showing Point of Connections and a general Alignment for a Recycled Water pipeline connection to the Project Site.

Based on the Integrated Master Plan for Recycled Water, the maximum available flow to the Riverpark Area at the point of connection is 1,750 gom at 60 psi (Table 3 of Integrated Master Plan, PM 4.2. In 2040, Table 4 of the Integrated Master Plan (PM 4.2). The Integrated Master Plan states the Riverpark Development will have a maximum required flow of 651 gpm at 117 psi. This maximum flow is based on ultimate projects planned for build out as recommended in PM 2.5 (through 2040). At the time of the analysis, the El Rio School site was not included.

For several reasons, a connection to the City's Recycled Water Pipeline is not reasonably feasible. Two major factors contributing to this analysis include a) the Project Site is not included in the Integrated Master Plan for the Recycled Water Facilities, and b) the distance required to connect the Project Site to a Recycled Water line is over 1,450 L.F. of open trench pipeline design and construction. The land uses affected by a potential alignment are single-family residences for approximately 1,300 L.F. The remaining open trench construction of the pipeline would require a crossing over Caltrans right of way along Vineyard Avenue/Highway232.

6.0 APPENDICES

Appendix A: Sewer Atlas P-12 & P-13

Appendix B: City Standard Plate #43

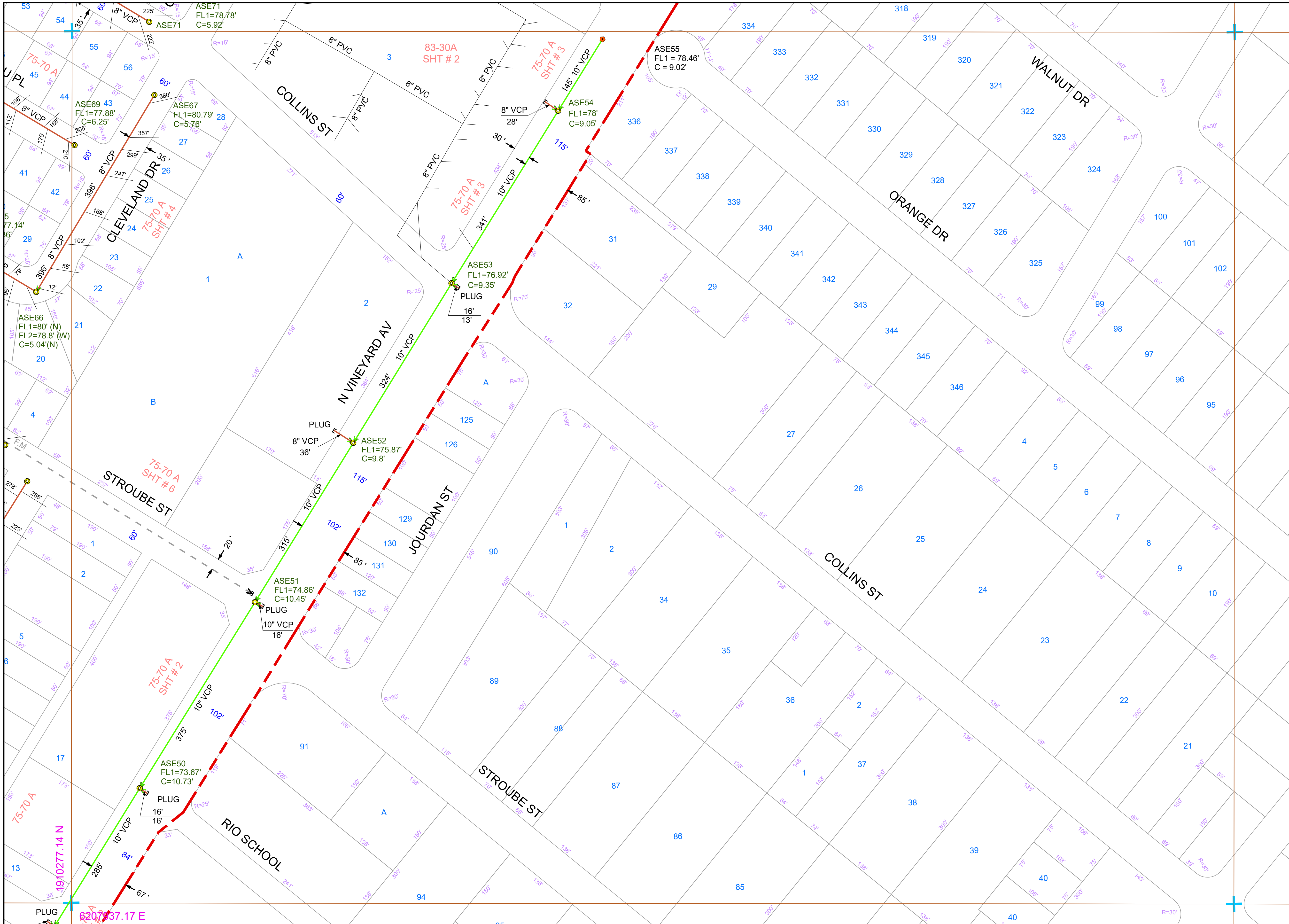
Appendix C: TTM 5998

Appendix D: Integrated Master Plan PM 4.2

Appendix E: Recycled Water Connection Feasibility (1st- Level Analysis)

SEE MAP P-11

SEE MAP O-12

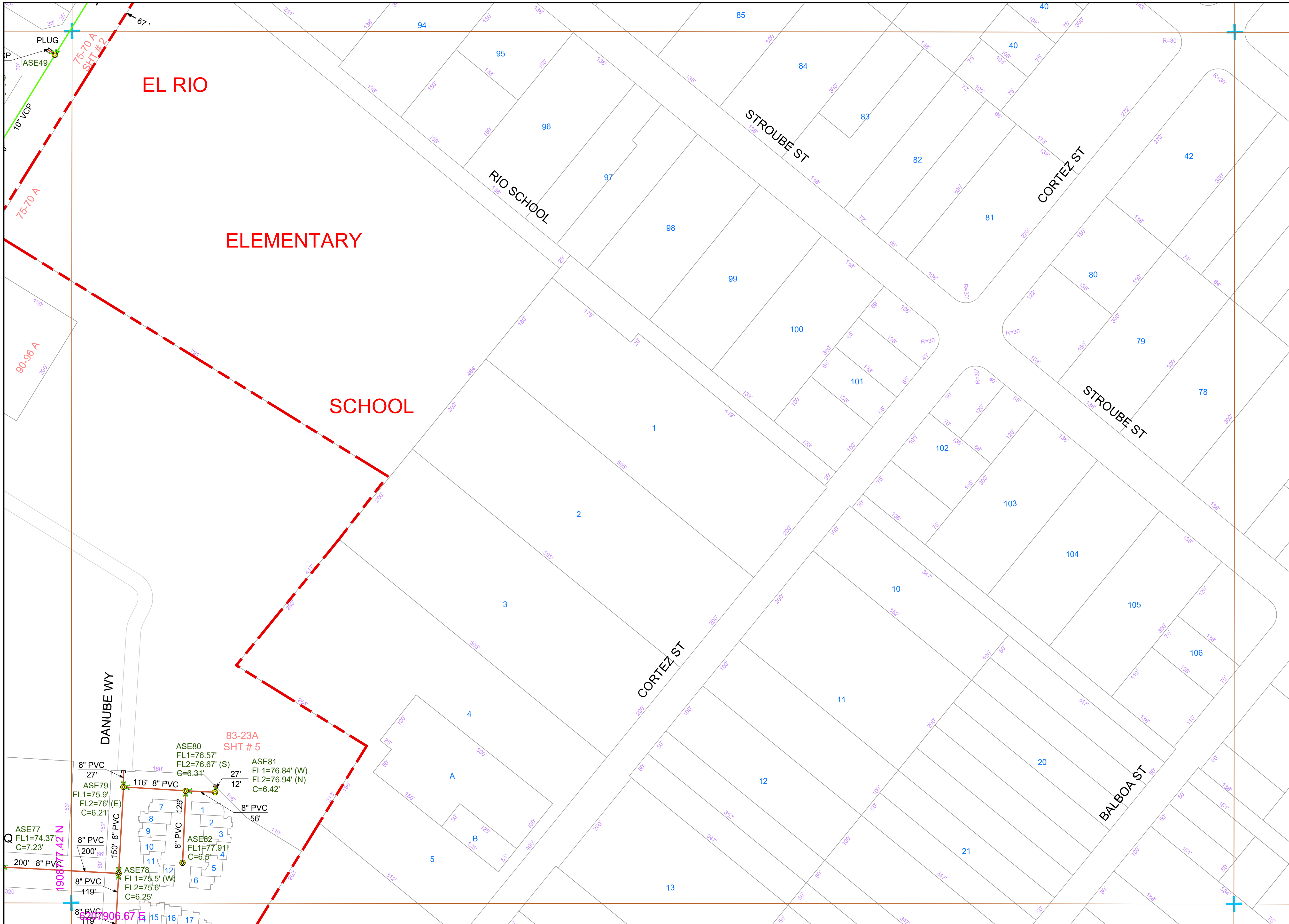


SEE MAP P-13

P-12	City of Oxnard	0 160 320 FEET	SEWER ATLAS	DATUM NOTE: ALL ELEVATIONS ARE ON CITY OF OXNARD DATUM UNLESS OTHERWISE SHOWN. AN ASTERISK (*) INDICATES N.G.V. DATUM.	October 2009		P-12

SEE MAP P-12

SEE MAP O-13



P-13	City of Oxnard	0 160 320 FEET	SEWER ATLAS	DATUM NOTE: ALL ELEVATIONS ARE ON CITY OF OXNARD DATUM UNLESS OTHERWISE SHOWN. AN ASTERISK (*) INDICATES N.G.V. DATUM.	October 2009			P-13

SEE MAP P-14

AVERAGE SEWAGE FLOW RATES

TYPE OF DEVELOPMENT	GALLONS/PERSON/DAY	
Airport	15	per employee
	4	per passenger
Factories.... No showers	20	per employee
With showers	30	per employee
Cafeteria - Add industrial waste and BOD load		
Offices	20	per employee
Stores (Not including food & laundry waste)	100	per 1000 Sq.Ft. space
	400	per toilet
(Per shift)	15	per employee
Laundries (Coin operated).	300	per machine
Per customer....	50	per wash
Service Station	1000	for first bay
....	500	for each additional
....	10	per car served
Swimming Pools	10	per employee
....	4	per swimmer
With hot water.....	8	per swimmer
Theaters.....	5	per seat
Drive in	5	per space
Assembly & Dance Halls....	2	per seat or customer
Church - Small	4	per seat
Large & with kitchen	6	per seat
Bowling Alleys - Pool Parlors	75	per lane or table
Country Clubs	75	per member
Add	25	per non-member
Camps - Resort (Limited Plumbing)....	50	per person
(Luxury)...	120	per person
Youth & Recreation	50	per camper
Tent Campground (toilets only)	25	per camper
Central stations w/showers..	35	per camper
Vacation cottages..	200	per cottage
Picnic Parks (toilets only)...	10	per person
(w/bath house & flush toilets)	15	per person
Camper & Travel Trailers		
Without hook up..	50	per space
w/water and sewer hook up...	120	per space
Camps - Summer and Seasonal	50	per person
Construction	50	per person
Day Camps no meal served	20	per person

REV. APPR. BY DATE

CITY OF Oxnard

GENERAL REQUIREMENTS - SEWER

DRAWN: SOHER CKD. Jay Patel APPR. BY Benjamin Y. Wong

Public Works Department

STANDARD PLAN

PLATE 43

SHEET 1 OF 2

AVERAGE SEWAGE FLOW RATES

TYPE OF DEVELOPMENT		GALLONS/PERSON/DAY	
Mobil Home Parks (Average)	.....	180	per space
(Delux)..	.....	225	per space
Overnight & Travel Trailer	.....	150	per space
Restaurants - Cafeterias..	.....	15	per employee
Add Kitchen Waste..	.....	7	per meal served
Add Garbage Grinder	.....	1	per meal served
Toilet & Kitchen Waste	.....	10	per customer
Day time Operation	.....	70	per seat space
24-hr. Operation...	.....	100	per seat space
Curb Service	.....	50	per car
With Tavern, add...	.....	2	per customer
Schools and Colleges			
Staff and Office...	.....	20	per person
Elementry students.	.....	15	per student
Intermediate and High	.....	20	per student
Day Schools w/cafeteria only....		15	per student
w/showers	.....	20	per student
Boarding school....	.....	80	per student
College Dormitories	.....	85	per student
Hospitals	.....	100	per bed
.....	.....	150	per patient & Staff
Institutions (Resident)	.....	100	per person
Nursing homes	.....	100	per person
Rest homes	.....	100	per person
Convalescent	.....	85	per bed
Hotel/Motels - No private bath	.....	100	per room (2 persons)
with Private bath	.....	150	per room (2 persons)
Apartment Buildings:			
Bachelor or Single Dwelling units (Studio)	.....	100	per dwelling unit
1 bedroom dwelling unit	.....	150	per dwelling unit
2 bedroom dwelling unit	.....	200	per dwelling unit
3 bedroom dwelling unit	.....	250	per dwelling unit

REV. | APPR. BY | DATE

CITY OF Oxnard

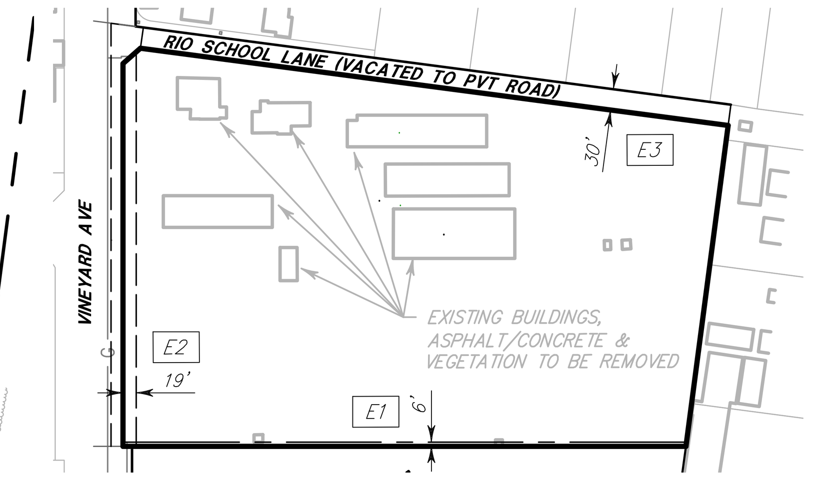
GENERAL REQUIREMENTS - SEWER

DRAWN: SOHER | CKD. Jay Patel | APPR. BY Benjamin Y. Wong

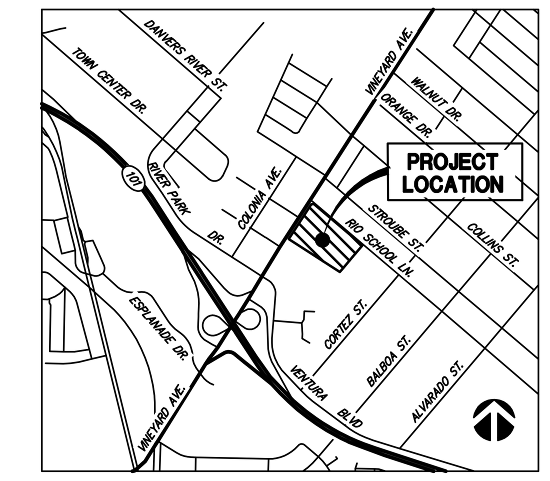
Public Works Department

STANDARD PLAN
PLATE 43
SHEET 2 OF 2

EXISTING EASEMENTS & STRUCTURES



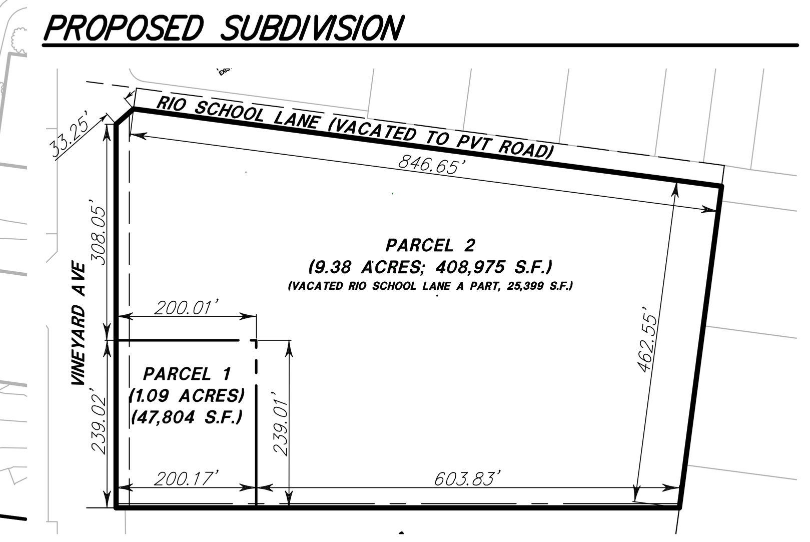
VICINITY MAP – NOT TO SCALE



EASEMENTS SCHEDULE

E1	PUBLIC UTILITIES AND POLE EASEMENT – CENTERLINE ONLY – TO SOUTHERN CALIFORNIA EDISON PER 958 OR 420
E2	EASEMENT TO THE CITY OF OXNARD FOR A PUBLIC SIDEWALK DEDICATION PER INSTRUMENT NO. 90-180309 OR
E3	PUBLIC ROAD EASEMENT TO VENTURA COUNTY PER 878 OR 402

PROPOSED SUBDIVISION



UTILITIES

WATER/SEWER:
CITY OF OXNARD
305 W. THIRD
OXNARD, CA. 93030

GAS:
SOUTHERN CALIF. GAS CO.
130 S. PATTERSON AVE.
SANTA BARBARA, CA. 93111

ELECTRIC:
EDISON INTERNATIONAL
10060 TELEGRAPH RD.
VENTURA, CA. 93004

TELEPHONE:
PACTEL
2459 PALMA DR.
VENTURA, CA. 93003

CABLE:
TIME WARNER CABLE
721 MAULHARDT AVE.
OXNARD, CA 93030

PROPOSED UNIT MIX & PARKING

PARCEL 1:

OFFICE 1 SPACE PER 250 S.F. = 15,100/ 250 = 60 SPACES PROVIDED

PARCEL 2:

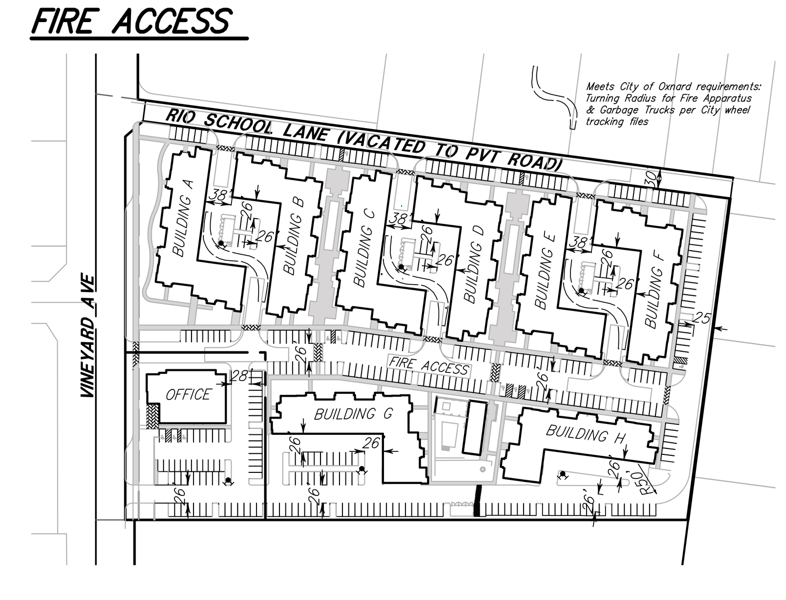
UNIT TYPE	#	%	SPACES/UNIT	SPACES PROVIDED
1-BEDROOM	7	4%	1	7 SPACES
2-BEDROOM	119	65%	2	238 SPACES
3-BEDROOM	56	31%	2	112 SPACES

GUEST PARKING
FIRST 30 UNITS x 1 = 30 SPACES
REMAINING UNITS 152 x .5 = 76 SPACES

TOTAL PARKING PROVIDED: 463 SPACES

PARKING BREAKDOWN	
GARAGE	179 SPACES
OPEN PARKING	178 SPACES
GUEST PARKING	106 SPACES

FIRE ACCESS



PRELIMINARY LAND USE DATA

PROJECT LOCATION: 2714 VINEYARD AVE.
OXNARD, CA 93036

ASSESSORS PARCEL No.: 145-0-232-010 (9.09 ACRES)

TOTAL PROJECT AREA 10.49 ACRES (456,779 S.F.)
(INCLUDING VACATION OF RIO SCHOOL LANE)

EXISTING USE OF THE PROPERTY:

PREVIOUSLY USED AS AN ELEMENTARY SCHOOL, THIS SITE IS NOW USED AS THE EL RIO SCHOOL DISTRICT OFFICES AND THE MAJORITY OF OLD CLASSROOM BUILDINGS ARE VACANT.

PROPOSED PROJECT DESCRIPTION:

SUBDIVIDE A.P.N. 145-0-232-010 INTO TWO PARCELS. PARCEL 1 (1.09 ACRES) WOULD BE DEDICATED AS THE EL RIO SCHOOL DISTRICT OFFICE AND PARCEL 2 (9.93 ACRES) WOULD BE REZONED FOR RESIDENTIAL CONDOMINIUM PURPOSES.

EXISTING GENERAL PLAN: SCHOOL (ADJACENT TO CITY LIMITS)

PROPOSED GENERAL PLAN: SCHOOL (ANNEXED INTO CITY)

PROPOSED ZONING: PARCEL 1: SCHOOLS
PARCEL 2: RESIDENTIAL MEDIUM (R-3-PD)

PROPOSED SUBDIVISION:
- PARCEL 1: 1.09 ACRES (47,804 S.F.)
- PARCEL 2: 9.38 ACRES (408,975 S.F.)

PROPOSED BUILDING IMPROVEMENTS:

PARCEL 1:

BUILDING NAMED	UNITS	HEIGHT	LOT COVERAGE (S.F.)	TOTAL S.F.
SCHOOL OFFICE	N/A	2-STORY	7,830 (16.03%)	15,100 S.F.

PARCEL 2:

BUILDING NAME	UNITS	HEIGHT	LOT COVERAGE (S.F.)
BUILDING A:	23	3-STORY	14,317
BUILDING B:	23	3-STORY	14,317
BUILDING C:	23	3-STORY	14,317
BUILDING D:	23	3-STORY	14,317
BUILDING E:	23	3-STORY	14,317
BUILDING F:	23	3-STORY	14,317
BUILDING G:	23	3-STORY	14,317
BUILDING H:	21	3-STORY	12,932
COMMUNITY BUILDING	N/A	1-STORY	1,875
TOTALS:	182 UNITS		115,026 S.F. (28.1%)

PROJECT DENSITY:
- PARCEL 1: N/A
- PARCEL 2: 182 UNITS/9.38 ACRES = 19.38 DU/AC

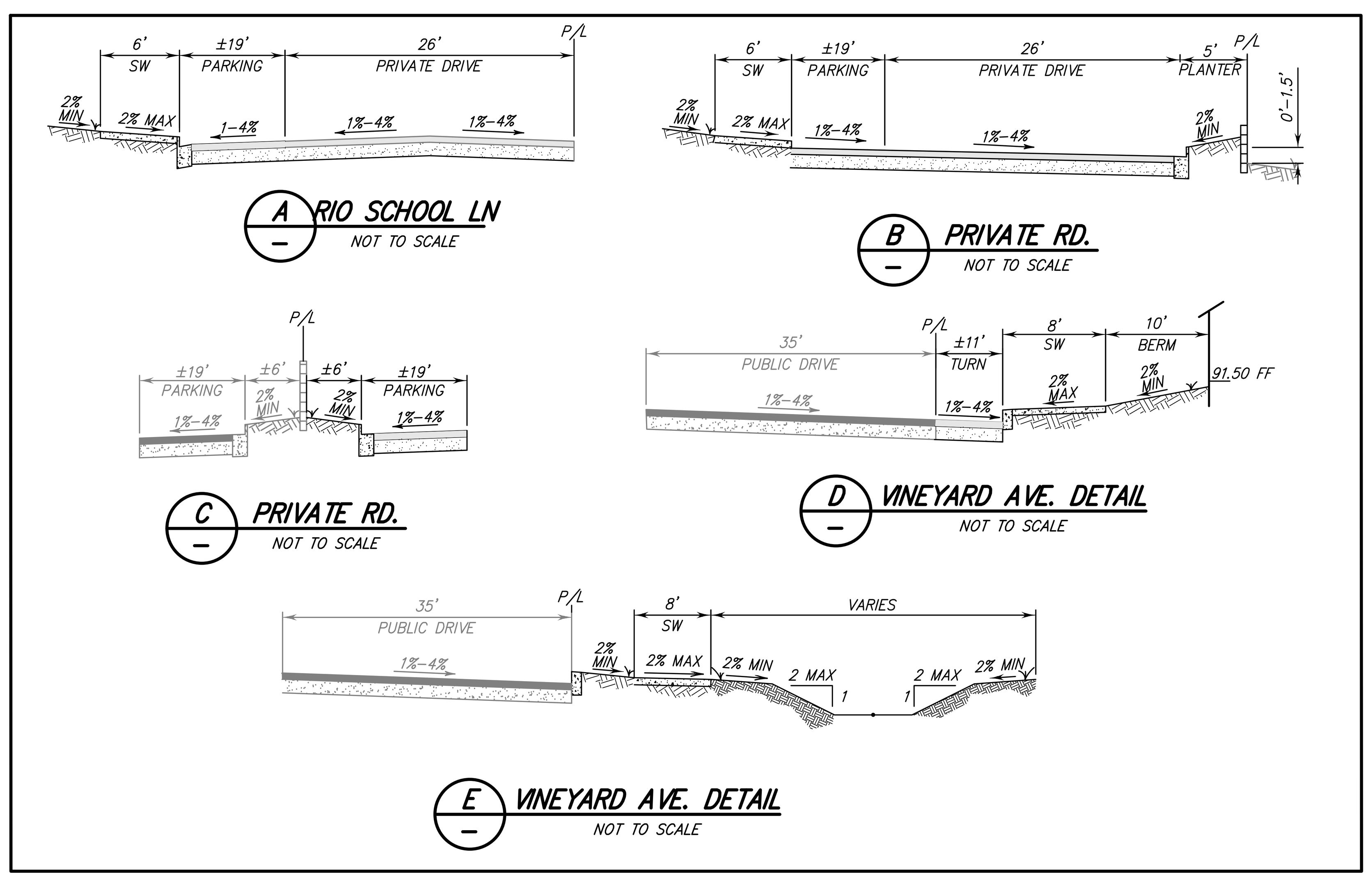
LEGEND

PROPOSED		EXISTING
91.7 F.F.	PAD ELEV.	STORM DRAIN
	STORM DRAIN	WATER
	CATCH BASIN	SEWER
	SURFACE DRAIN	GAS
	WATER	TELEPHONE
	SEWER	OVERHEAD ELEC.
	FLOWLINE	WATER VALVE
	EASEMENT LINE	FIRE HYDRANT
	CONTOUR LINE	STREET LIGHT
	BLOCK WALL	CONTOUR LINE
	FIRE HYDRANT	STREET SIGN
	INFILTRATION BASIN	POWER POLE

ABBREVIATIONS

FS	FINISH SURFACE	SW	SIDEWALK
FF	FINISH FLOOR	EX	EXISTING
GFF	GARAGE FINISH FLOOR	FL	FLOW LINE
TG	TOP OF GRATE	PVT	PRIVATE
FH	FIRE HYDRANT	INV	INVERT

SECTIONS



NGS BENCHMARK

THE ELEVATIONS ON THIS MAP ARE US FOOT, BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), AS DETERMINED LOCALLY BY GPS OBSERVATIONS ON THE FOLLOWING NGS BENCHMARKS:

NGSPID "EW5966" – ELEVATION: 78.86' (24.037 METERS)

LOCAL BENCHMARKS

THE LOCAL ELEVATIONS CAN BE DETERMINED BY USING THE FOLLOWING POINTS:

PT#315 – FOUND 1.5" IRON PIPE W/ TAG "LS 5983" – MARKING SOUTHWEST CORNER OF SUBJECT PROPERTY.

ELEVATION: 88.30 FEET

PT#315 – FOUND 1.5" IRON PIPE W/ TAG "LS 5983" – MARKING NORTHWEST CORNER OF SUBJECT PROPERTY.

ELEVATION: 90.89 FEET

THESE ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), AS DETERMINED LOCALLY BY GPS OBSERVATIONS.

BASIS OF BEARINGS

THE BEARINGS ON THIS MAP ARE GRID, BASED ON THE CUSTOM LOW DISTORTION PROJECTION (LDP) DEFINED HEREON – NAD83 (EPOCH 2010.00) AS DETERMINED LOCALLY BY A LINE BETWEEN NGS CORS (CONTINUALLY OPERATING REFERENCE STATION) SITES "TOST" AND "CSST" BEING NORTH 70° 12' 03.8" WEST, AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY (NGS) AND SHOWN IN CONTROL SCHEME DETAIL

GRAPHIC SCALE: 1"=40'

REGISTERED PROFESSIONAL ENGINEER SUZANNE M. COOPER No. C060448 CIVIL STATE OF CALIFORNIA

REVISION	DATE
2ND SUBMITTAL	06/02/2017

SUBDIVIDER:
THE PACIFIC COMPANIES
430 E. STATE STREET, STE 100
EAGLE, ID 83616
Attn: CALEB ROOPE
(208) 461-0022 X3012

OWNER:
EL RIO SCHOOL DISTRICT
2714 VINEYARD AVE.
OXNARD, CA. 93035-1131

ENGINEER:
JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

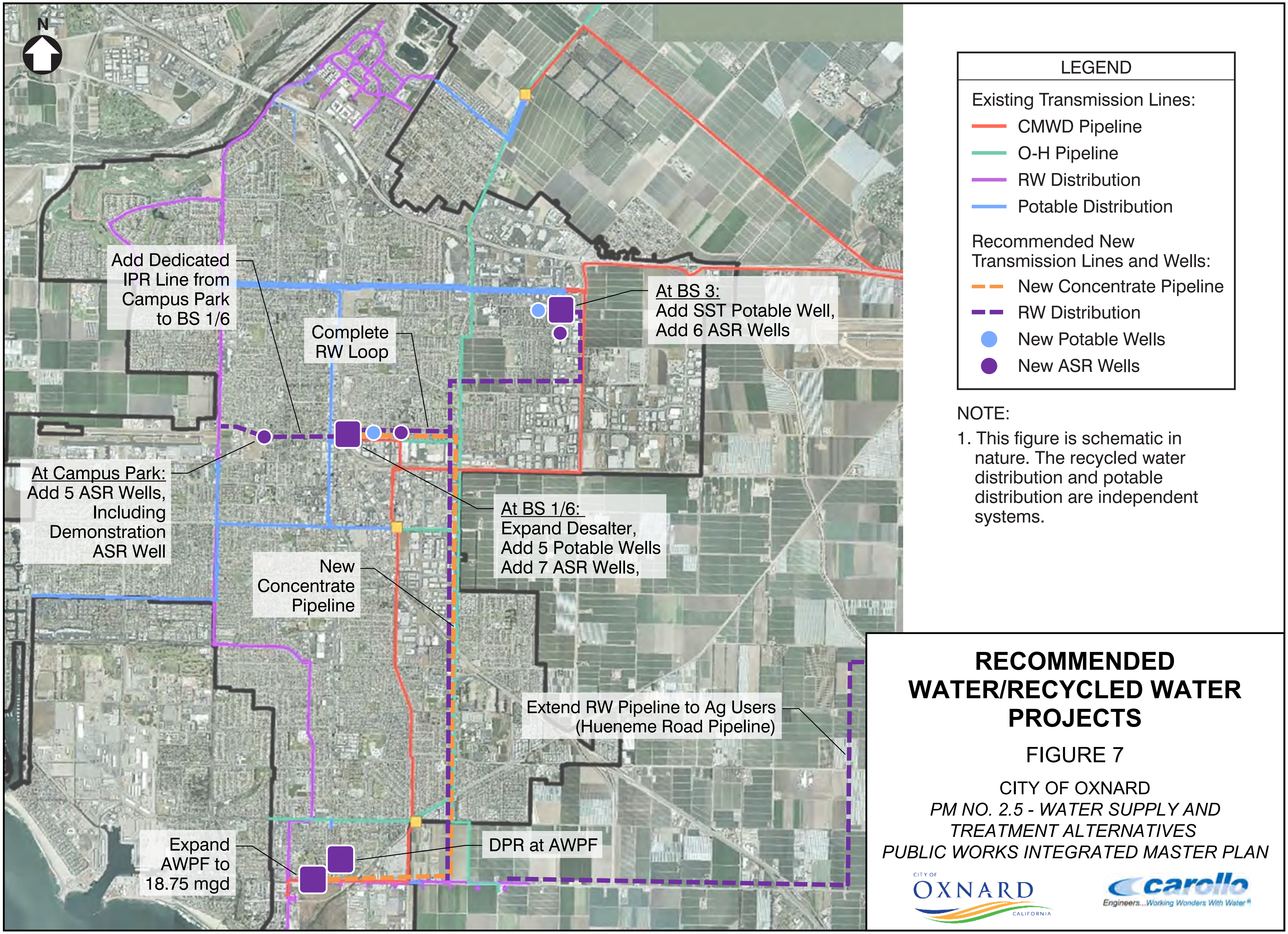
RIO URBANA
TENTATIVE TRACT 5998
FOR CONDOMINIUM PURPOSES

CITY OF OXNARD COUNTY OF VENTURA STATE OF CALIFORNIA

LEGAL DESCRIPTION: Portion of lot 90 of the Rancho Santa Clara Del Norte, in the County of Ventura, State of California, as per map recorded in book 3, page 26 of maps, records of County of Ventura. APN: 145-0-231-010

SCALE: 1"=40' J.N.: ALD15659

DATE: Jun 12, 2017 DWG. NAME: 5659-01-TM.dwg



RECOMMENDED WATER/RECYCLED WATER PROJECTS

FIGURE 7

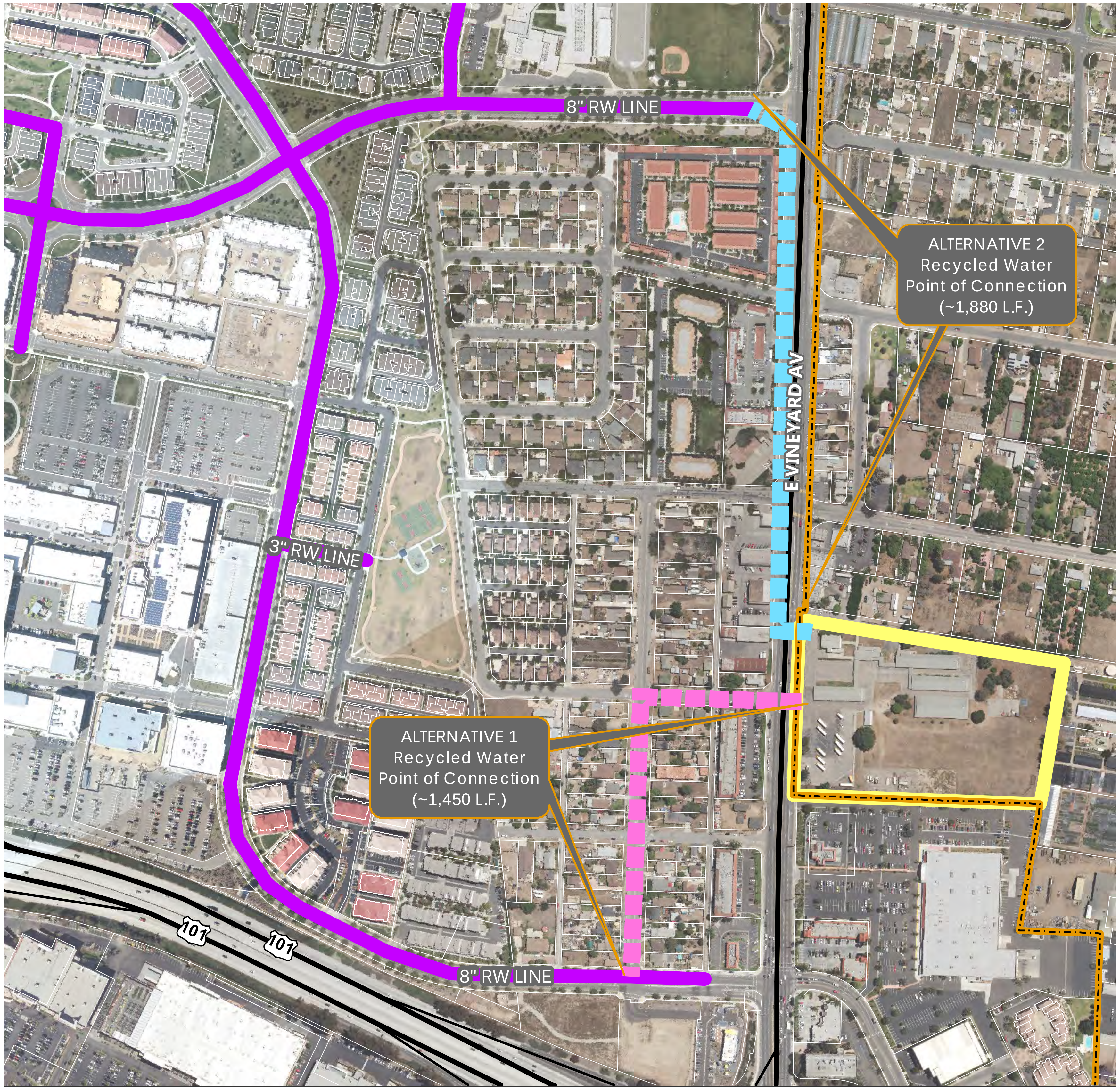
CITY OF OXNARD

PM NO. 2.5 - WATER SUPPLY AND TREATMENT ALTERNATIVES

PUBLIC WORKS INTEGRATED MASTER PLAN

ox1215f5-9587(PM2-5FIG7).ai

OVERVIEW 1 inch = 1,000 feet



ALTERNATIVES | POINT OF CONNECTION & ALIGNMENT 1 inch = 400 feet

Path: J:\ALD15659_Data\GIS\RecycledWater_Feasibility.mxd

- Project Site
- City Recycled Waterline
- Alt 2 - R.W. Connection
- City Boundary
- Alt 1 - R.W. Connection

Parcel boundaries on this exhibit are a graphical representation only. They should not be used in place of record boundary information and/or field survey data and do not accurately define property boundaries.

JENSEN DESIGN & SURVEY, INC.

RIO URBANA | RECYCLED WATER FEASIBILITY - 1ST LEVEL

JENSEN
DESIGN & SURVEY, INC.
Delivering excellence through experience

1672 Donlon Street
Ventura, CA 93003
Local 805 654-6977
Fax 805 654-6979
www.jdscivil.com

ALD01.5659
April 4, 2019

TECHNICAL MEMORANDUM

To: Thien Ng, Assistant Public Works Director, City of Oxnard

Copy: Kathleen Mallory, Planning Manager, City of Oxnard
Joel Kirchenstein, Rio School District, Co-Applicant
Caleb Roope, Pacific Communities, Co-Applicant
Tony Talamante, P.E., Consultant to Pacific Communities

RE: Proposed Rio Urbana Residential and Commercial Office Development Domestic Water Supply and Demand

The Rio Urbana Residential and Commercial Office Building Project has been submitted to the City of Oxnard Planning Department for review. The project will entail the demolition of the former El Rio School facilities for the proposed development and construction of 167 for sale residential unit community and a 15,100 square foot commercial office building for the Rio School District administrative needs. The property currently is within unincorporated County of Ventura and annexation into the City of Oxnard is proposed. As part of the annexation, groundwater pumping rights, established by Fox Canyon Groundwater Management Agency, will be transferred to the City of Oxnard in compliance with City of Oxnard CEQA Guidelines, May 2017, Water Neutrality Policy. This Technical Memorandum presents the analysis of projected water demand for the project, and the proposed transfer of pumping rights to the City of Oxnard from active Rio School District groundwater wells.

Rio School District Fox Canyon Groundwater History

Historically, the domestic water supply for Rio School District facilities has been provided by a combination of three active ground water wells and domestic water connections with the City of Oxnard and United Water Conservation District. Prior to the proposed reductions in allocations from the Fox Canyon Ground Water Basin, the Rio School District was allowed to pump 100.240 AFY (acre feet per year) without incurring surcharges for over-pumping. Fox Canyon GMA is in process of conducting hearings to adopt an Ordinance which will require well owners to reduce groundwater pumping and reduce transferable allocation and pumping rights. Based on well pumping information provided by Rio School District and a courtesy review by Fox Canyon GMA, pumping a maximum of 52.074 AFY, including the well on the proposed project site parcel, will be allowed once the Ordinance is adopted. Currently, the well on Rio Urbana project site would have an allocation of 10.483 AFY per the proposed future Ordinance with the remaining amount of 41.591 AFY allocated to the other two wells to be held by the Rio School District.

Rio Urbana Project Demand

The water demand for the Rio Urbana Project is made up of three components:

1) Domestic water use by residents
2) Commercial water use for the commercial office building
3) Landscape irrigation for the entire project.

Rio Urbana Projected Domestic Water Use by Residence

The City of Oxnard has not developed a specific water demand calculation methodology for domestic use in high density attached units and apartments utilizing the current standards for water conservation fixtures and measures. For this project, as a comparative analysis it has been agreed to use water demand for a recently constructed nearby high density apartment project of similar size and product design. This comparable project contains 224 residential units and water meter readings for approximately two years from the City of Oxnard Water Department. The comparable project and the Rio Urbana project design requirements utilize the current industry standards for water saving fixtures and other measures as required by state and local regulations.

Utilizing the household size (number of persons per unit) defined in the California Plumbing Code the per capita domestic water use per day for the comparable project was determined to be 45.82 gallons per day per person. Using this per capita factor, based on the projected number of residents for the Rio Urbana project (543 people), the domestic water demand is estimated to be 27.87 AFY. Understanding not all projects are identical, occupancies can vary and change, and other variables, a 20% contingency was added to equal a total residential demand of 33.45 AFY. This water demand is equivalent to 55 gallons per person per day, which is the target value of the State of California Assembly Bill 1668 and State of California Senate Bill 606 state as use per person per day.

Project Commercial Water Use for the commercial office Building

The commercial office building is approximately 15,100 square feet. Using the City of Oxnard standard plate 43, the applicable sewer generation rate is 300 gallons per day per 1,000 square feet. Since the proposed building is approximately 15,100 square feet the resulting sewer generation is 4,530 gallons per day and using a 1.2 multiplier for water demand, at the resulting water demand estimate is 5,436 gallons of water per day. This calculates to a conservative 6.089 AFY water demand. It is unknown at the time how the office building will be occupied and number of occupants. Based on comparison of sewage generation to actual water demand, it can be established the calculation is conservative.

Landscape Irrigation

Landscape irrigation system will be designed for both spray and drip irrigation. The Landscape Architect has provided yearly water consumption calculations using the State of California landscape calculator. The calculator output is provided in the appendices. Results of the calculator show total irrigation for the entire site to be 0.860 AFY water demand. The landscape design palette will be conditioned to meet the City of Oxnard current “drought tolerant” standards.

Rio Urbana Projected Water Demand Summary

Residential Domestic Water	33.450 AFY
Commercial Office Building Water	6.089 AFY
Landscape Irrigation	0.860 AFY
Total:	**40.399 AFY**

Fox Canyon Groundwater Allocation Transfer

As stated above, the Rio Urbana project site and Rio School District would be currently allowed to pump 52.074 AFY from the existing wells of which 41.591 AFY is allocated to two existing wells located on neighboring Rio School District property and 10.483 AFY allocated to the well on the Rio Urbana project site parcel. The Rio Urbana project development and the Rio School District are in a position to transfer 40.399 AFY of groundwater pumping allocation to the City of Oxnard in compliance with City of Oxnard CEQA Guidelines, May 2017, Water Neutrality Policy, The Rio School District will maintain ownership of 11.675 AFY to meet the school facility needs in addition to the 6.089 transferred to the Rio School District commercial office building. The Rio School District expects the remaining allocation will be adequate to provide their water needs along with their current services connections to United Water Conservation District and City of Oxnard water lines. Although Fox Canyon GMA is currently in the process of revising their allocation transfer program as part of the SGMA work, they are aware this M&I to M&I transfer request will soon be submitted. The co-applicants will submit application and documents, including this letter, to Fox Canyon GMA to initiate the formal transfer process upon City of Oxnard approval of the proposed project water demand and allocation transfer.

Please contact us if you have any questions.

Sincerely,

James C. McCoskey, P.E.
Senior Civil Engineer I
Jensen Design & Survey, In

REGISTERED PROFESSIONAL ENGINEER
JAMES C. MCCOSKEY
No. C076941
EXP. 12/31/20
CIVIL
STATE OF CALIFORNIA

Mosaic

	# Units	S.F.	PPL per Unit**	People Extended	Total People	Meter 1 (gal./day)	Meter 2 (gal./day)	Ave. Total Use (gal./day)	90% Occupancy # People	Ave. Per Person (gal./day)
1 - Bedroom*	144	730-745	2	288	528	9896	11879	21775	475.2	45.82
2 - Bedroom	80	988-1096	3	240						
	224									

City Data Between Jan. 2017 & Aug. 2018

Assumed 90% Occupied

Rio Urbana

	# Units	S.F.	PPL per Unit**	People Extended	Total People	Demand from Mosaic (gal./day/person)	Rio Urbana Demand (AFY)	20% Contingency	**Total Rio Ubana Demand (AFY)**
1 - Bedroom	5	841	2	10	543	45.82	27.87	5.57	**33.45**
2 - Bedroom	115	901-1192	3	345					
3 - Bedroom	47	N/A	4	188					
	167								

Assumed 100% Occupied

* Mosaic has 5 units that are studio units

** Per California Plumbing Code

Jensen Design & Survey, Inc.
4/2/2019

RIO URBANA (#17053) REF: 03 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *10/17/019*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *VINEYARD AVENUE*

E/W STREET: *RIVERPARK BOULEVARD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	177	938	323	107	928	49	38	97	359	232	54	55

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
LANE GEOMETRICS	LL TT TR	L TT TR	LT RR	L LT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES (A+B)
SCENARIO 3 = CUMULATIVE (C)
SCENARIO 4 = CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	177				0.055			
NBT	3	4800	938				0.263 *			
NBR	0	0	323				-			
SBL	1	1600	107				0.067 *			
SBT	3	4800	928				0.204			
SBR	0	0	49				-			
EBL	0	0	38				-			
EBT	1	1600	97				0.084			
EBR	2	3200	359				0.112 *			
WBL	0	0	232				-			
WBT	3	4800	54				0.071 *			
WBR	0	0	55				-			
TOTAL INTERSECTION CAPACITY UTILIZATION:							0.51			
SCENARIO LEVEL OF SERVICE:							A			

NOTES:

Printed: 10/25/19

RIO URBANA (#17053) REF: 03 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *10/17/019*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***VINEYARD AVENUE***

E/W STREET: ***RIVERPARK BOULEVARD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	390	1027	234	59	1065	99	63	75	369	357	144	73

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
LANE GEOMETRICS	LL TT TR	L TT TR	LT RR	L LT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES (A+B)
SCENARIO 3 = CUMULATIVE (C)
SCENARIO 4 = CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	390				0.122 *			
NBT	3	4800	1027				0.263			
NBR	0	0	234				-			
SBL	1	1600	59				0.037			
SBT	3	4800	1065				0.243 *			
SBR	0	0	99				-			
EBL	0	0	63				-			
EBT	1	1600	75				0.086			
EBR	2	3200	369				0.115 *			
WBL	0	0	357				-			
WBT	3	4800	144				0.120 *			
WBR	0	0	73				-			
TOTAL INTERSECTION CAPACITY UTILIZATION:							0.60			
SCENARIO LEVEL OF SERVICE:							A			

NOTES:

Printed: 10/25/19

Prepared by National Data & Surveying Services

River Park Blvd/Ventura Blvd & E Vineyard Ave

Peak Hour Turning Movement Count

ID: 19-05624-001
City: Oxnard

Day: Thursday
Date: 10/17/2019

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

River Park Blvd/Ventura Blvd — SOUTHBOUND

	Right	Through	Left	U-Turn	Out
AM	359	97	36	2	282
NOON	0	0	0	0	0
PM	369	75	60	3	636
Lanes	2	0.5	0.5	0	

E Vineyard Ave — EASTBOUND

	Lanes	AM	NOON	PM
Out		1519	0	1791
U-Turn	0	0	0	0
Left	2	177	0	390
Through	3	938	0	1027
Right	0	323	0	234

E Vineyard Ave — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	99	0	49
Through	3	1065	0	928
Left	1	59	0	107
U-Turn	0	0	0	0
Out		1160	0	1029

River Park Blvd/Ventura Blvd — NORTHBOUND

	Out	U-Turn	Left	Through	Right
Lanes		0	1.5	0.5	1
PM	368	0	357	144	73
NOON	0	0	0	0	0
AM	527	0	232	54	55

CONTROL

Signalized

	AM	NOON	PM
TEV	3357	0	3955
PHF	0.92		0.91

Total Vehicles (AM)

Approach	Left	Through	Right
Southbound	36	97	359
Eastbound	177	938	323
Westbound	107	928	49
Northbound	232	54	55

Total Vehicles (Noon)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach	Left	Through	Right
Southbound	60	75	369
Eastbound	390	1027	234
Westbound	59	1065	99
Northbound	357	144	73

RTOR (AM)

Approach	Left	Through	Right
Southbound	0	0	180
Eastbound	0	0	56
Westbound	0	0	1
Northbound	0	0	35

RTOR (NOON)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

RTOR (PM)

Approach	Left	Through	Right
Southbound	0	0	192
Eastbound	0	0	27
Westbound	0	0	3
Northbound	0	0	47

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0	0	0
South leg	0	0	0
East leg	0	0	0
West leg	0	0	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Vineyard Ave and River Park Blvd , Oxnard

Date: 3/15/2017

Day: Wednesday

Project #: 17-5162-003

City: Oxnard

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Vineyard Ave)

	Left	Through	Right		Exiting	
Lanes	0	3	1			
AM	51	1092	108		1140	AM
NOON	0	0	0		0	NOON
PM	64	1018	31		1175	PM

River Park Blvd

West leg, exiting

AM	NOON	PM
256	0	526

Eastbound

Lanes	AM	NOON	PM	Movement
0.5	55	0	57	Left
0.5	97	0	74	Through
2	355	0	341	Right

Westbound

AM	NOON	PM	Lanes	Movement
50	0	100	1	Right
52	0	126	0.5	Through
214	0	362	1.5	Left

East leg, exiting

AM	NOON	PM
615	0	349

CONTROL

Signalized

Northbound Approach

	Exiting		Left	Through	Right	
AM	1661		153	1035	410	AM
NOON	0		0	0	0	NOON
PM	1721		336	1018	244	PM
			2	3	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	1251	1140
NOON	0	0
PM	1113	1175

West Leg

	AM	NOON	PM
Out	256	0	526
In	507	0	472

East Leg

	AM	NOON	PM
In	316	0	588
Out	615	0	349

South Leg

	Out	In
AM	1661	1598
NOON	0	0
PM	1721	1598

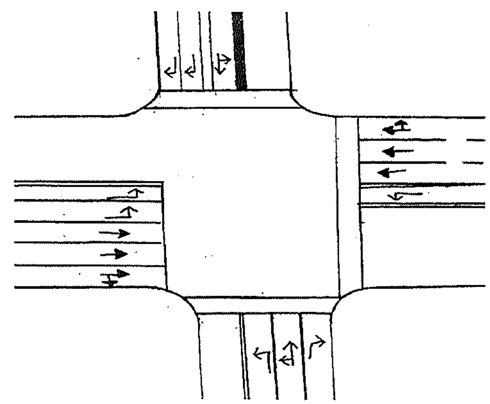
Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2391	0	2288
West Leg	763	0	998
East Leg	931	0	937
South Leg	3259	0	3319

Graphic Summary of Vehicle Movements

Job #: 19-5624-001	**Date:** 10/17/2019
N/S Street: River Park Blvd/Ventura Blvd	**E/W Street:** E Vineyard Ave
Counter:	**City:** Oxnard

↑
North



Control Type:

Signalized (√) 1-way Stop Sign ( ) 2-way Stop Sign ( ) 3-way Stop Sign ( ) 4-way Stop Sign ( )

Lane Geometry:

NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
1.5	0.5	1	0.5	0.5	2	2	3	0	1	3	0

Additional Notes:

Signal Phasing :- NL/NT
SL/ST
EL/WL
ET/WT

RESPONSES TO COMMENTS ON THE INITIAL STUDY

This section includes comments received during the circulation of the Draft Initial Study-Mitigated Negative Declaration prepared for the Rio Urbana project.

The Draft IS-MND was circulated for a 30-day public review period that began on July 19, 2019 and ended on August 197, 2019. The City of Oxnard received nine comment letters, plus a letter from the State Clearinghouse, California Office of Planning and Research (OPR), regarding the Draft IS-MND public review. This letter from OPR confirmed that no additional comment letters were received from state agencies through the State Clearinghouse distribution and review process. The commenters and the page number on which each commenter's letter appear are listed below:

Letter No. and Commenter		Page No.
1	Scott Morgan, Director, State Clearinghouse	2
2	Kathleen Riedel, Groundwater Specialist, Fox Canyon Groundwater Management Agency	4
3	Andrea Ozdy, Deputy Executive Officer, Ventura Local Agency Formation Commission	9
4	Dan Drugan, Resources Program Coordinator, Calleguas Municipal Water District	18
5	Nathaniel Summerville, Engineer III, County of Ventura, Public Works	21
6	Anitha Balan, Engineering Manager II, County of Ventura, Public Works Agency, Transportation Department	24
7	Frances Duong, Acting IGR/CEQA Branch Chief, Department of Transportation	27
8	Henry Macias, Neighbor	30
9	Vicente Macias, Neighbor	36
10	Manuel Vaca, Neighbor	39

The comment letters and responses follow. The comment letters have been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment Letter 1).

Any changes made to the text of the Draft IS-MND correcting information, data, or intent, other than minor typographical corrections or minor working changes, are noted in the Final EIR as changes from the Draft SEIR. Where a comment results in a change to the Draft SEIR text, a notation is made in the response indicating that the text is revised. Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (<u>underlined font</u>) where text is added.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

Letter 1

August 20, 2019

Chris Williamson
Oxnard, City of
214 S. C Street
2019079068
Oxnard, CA 93030

Subject: Rio Urbana Project (Tentative Subdivision Map No. 5998)
SCH#: 2019079068

Dear Chris Williamson

The State Clearinghouse submitted the above named MND to selected state agencies for review. The review period closed on 8/19/2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, https://ceqanet.opr.ca.gov/2019079068/2. 1.1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

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Letter 1

COMMENTER: Scott Morgan, Director, State Clearinghouse

DATE: August 20, 2019

Response 1.1

The commenter notes that the state public review period was completed, and that no state agencies submitted separate comment letters through this procedure.

Caltrans, a state agency, submitted a separate letter that is addressed below.

FOX CANYON
GROUNDWATER MANAGEMENT AGENCY
A STATE OF CALIFORNIA WATER AGENCY

Letter 2

August 16, 2019

City of Oxnard, Planning Division
Attn: Mr. Chris Williamson
214 South C Street
Oxnard, CA 93030

SUBJECT: Comments Regarding Notice of Intent to Adopt Mitigated Negative Declaration No. 2017-04

Dear Mr. Williamson:

Thank you for the opportunity to comment on *City of Oxnard Rio Urbana Project (Tentative Subdivision Map No. 5998) Draft Initial Study- Mitigated Negative Declaration PZ#17-610-01, 17-620-01, 17-560-01, 17-300-03, 17-500-13, 17-500-05,* Section XVI and Appendix I – *Wet Utility Preliminary Investigation and Domestic Water Supply and Demand Memorandum.* Some of the information presented in the documents are incorrect and/ or misleading. This comment letter was prepared to provide clarification. 2.1

The Rio Urbana Project Site (Project Site) is located within the jurisdictional boundaries of the Fox Canyon Groundwater Management Agency (FCGMA/ Agency). The Agency serves as both the Groundwater Management Agency (GMA) and Groundwater Sustainability Agency (GSA). The Agency in both capacities manages groundwater and thus extraction allocations. It does not establish or modify water rights. 2.2

The Rio School District account is associated with five groundwater wells of which three wells are active and two have been destroyed. All wells associated with the account are located in the Forebay Management Area of the Oxnard Subbasin (Subbasin). There is one active well associated with each of three properties located on Vineyard Avenue (the Project Site), Rose Avenue, and Cortez Street. Reported groundwater extractions associated with each of the properties is listed in the table below. 2.3

The Rio School District is associated with an initial historical allocation of 124.124 AF/yr, however 26.700 AF/yr was transferred from the account in 1996 to the United Water Conservation District (UWCD) Oxnard-Hueneme (OH) account, and in 1999, 2.000 AF/yr to the City of Oxnard. The Rio School District account is not associated with a Baseline Allocation. Under Emergency Ordinance E currently in effect, the Rio School District is operating with a

Temporary Extraction Allocation (TEA) of 53.344 AF/yr (full amount) which is currently reduced by 20% to 42.676 AF/yr. A new allocation ordinance is currently being developed. The FCGMA Board directed that extraction allocations at each well under the new ordinance be based on the average annual extractions from 2005 through 2014. Furthermore, it is known that historical extractions from the Subbasin have exceeded the sustainable yield. It is anticipated that groundwater extraction allocations will be decreased over the next twenty years. The FCGMA Board directed that it would determine the allocation reductions required following completion of the Groundwater Sustainability Plan (GSP), planned to be adopted by the Board at a December 13, 2019, special meeting. 2.3 (cont'd)

Rio School District Reported Groundwater Extractions (in acre-feet), 2004 to 2018

Calendar Year	Extractions by Property Location			Annual Extractions
	Vineyard Ave.	Rose Ave.	Cortez St.	
2005	11.129	30.208	16.986	58.323
2006	14.029	22.625	15.598	52.252
2007	25.170	35.446	23.724	84.340
2008	8.846	24.720	17.520	51.086
2009	8.846	24.720	17.520	51.086
2010	8.886	25.099	8.464	42.449
2011	8.094	34.075	7.941	50.110
2012	6.257	8.330	12.542	27.129
2013	8.306	37.725	7.325	53.356
2014	5.262	30.394	14.954	50.610
2015	0.639	24.174	16.535	41.348
2016	0.393	18.771	19.092	38.256
2017	0.645	10.346	7.432	18.423
2018	2.011	22.540	13.126	37.677
Average extraction 2005 to 2014	10.483	27.334	14.257	52.074

Per the Jensen Design & Survey, Inc., Technical Memorandum dated April 4, 2019, which is included in Appendix I, the Rio School District proposes to transfer 40.399 acre-feet per year (AF/yr) allocation to the City of Oxnard for the Rio Urbana project site which includes 6.089 AF/yr to the Rio School District commercial office building, and maintain 11.675 AF/yr to provide water for the Rose Avenue and Cortez Street properties. The document does not explain how the groundwater demand of the two remaining properties (school campuses) will be satisfied with an allocation of 11.675 AF/yr when the groundwater demand (extractions) during the period 2005 to 2014 averaged 41.592 AF/yr, and extractions in 2018 were 35.666 AF. Rio School District has the ability to extract groundwater in excess of groundwater extraction allocation, however extractions in excess of allocation will incur surcharge rates. 2.4

It is important to recognize that the numbers presented are based on an allocation system that has not yet been adopted and that past groundwater extractions from the Subbasin exceeded the sustainable yield. Per the Sustainable Groundwater Management Act, groundwater extractions must be brought within the sustainable yield of the Subbasin by 2040 through 2.5

implementation of water-supply projects and reduction of groundwater extractions. Future groundwater extraction allocations are anticipated to be reduced over the next 20 year.

Please contact me at (805) 654-2954 if you have any questions.

Sincerely,

Kathleen Riedel

Kathleen Riedel, PG, CEG
Groundwater Specialist

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Letter 2

COMMENTER: Kathleen Riedel, PG, CEG, Groundwater Specialist, Fox Canyon Groundwater Management Agency

DATE: August 16, 2019

Response 2.1

The commenter provides initial information to clarify the role of the Fox Canyon Groundwater Management Agency.

The description of FCGWMA is on page 30 of the IS-MND (Section IX Hydrology and Water Quality, issue 2), and is consistent with the information provided by the commenter.

Response 2.2

The commenter clarifies that the FCGWMA does not establish or modify groundwater rights.

Page v of the IS-MND has been revised to describe the FCGWMA action more accurately. Mention of water rights in the body of the IS-MND occurs on page 31 in the discussion of the Oxnard Municipal Code Section 22-100. That code section applies to the provision of City water service through a new connection, such as to lands annexed to the City, and requires that water rights associated with the land be transferred to the City.

Response 2.3

The commenter provides background information, data, and recent determinations by FCGWMA regarding the Temporary Extraction Allocation by the FCGWMA to the El Rio School District, which may be applied to this property. The updated Wet Utilities Study and April 2019 memo addressing domestic water supply and demand prepared by Jensen Design and Survey, Inc., (Appendix I) are consistent with this information.

Response 2.4

The commenter notes that if a substantial portion of the current Rio School District groundwater extraction allocation of 52.074 acre feet per year (AFY) is transferred to the City of Oxnard and assigned to this development project, the water demand at the remaining school district properties may not be met by the district wells on those properties without incurring substantial surcharges for excess groundwater withdrawals in the future.

Current groundwater extractions by the Rio School district at the two offsite properties (Rio del Valle Middle School on Rose Avenue and Rio Real Elementary School on Cortez Street) are limited to landscape irrigation purposes. Both properties have potable water service from the United Water Conservation District (UWCD) that provides for the needs of students and staff at each location.

If the wells at the two offsite locations continue to be used for landscape irrigation purposes, then the district will be required to pay groundwater extraction surcharge rates to FCGWMA for any amounts above its remaining allocation, .as indicated in the comment.

As an alternative, the school district would have to reduce groundwater pumping in order to stay within the small remaining extraction allocation to these wells, and/or use potable water supplied by the UWCD for landscape irrigation. Additional water service fees (surcharges) and water conservation measures would be applicable since UWCD is also subject to the same groundwater allocation restrictions by FCGWMA as the City and other agencies.

To avoid surcharges, the district could also fund other programs in the City or UWCD to conserve water at industrial sites within the City, offset agricultural water use by providing improved treated wastewater, or extend reclaimed water distribution lines within the City to increase use of this source. These programs in the City are briefly summarized in Section XVI-Utilities and Energy (paragraphs 1.a.., on page 60). In addition, the Rio School has several other schools in the region, all served by municipal water providers. Water conservation programs undertaken at these other schools could also be used to balance any increase in the use of municipal water. The precise combination of these measures to be pursued by the school district is not known at the present time, but the ordinances and other requirements of the FCGWMA, the City of Oxnard, and other water suppliers would remain in effect and continue to apply to the other school district properties.

Response 2.5

The discussions, analysis, and conclusions in the IS-MND are based on the most recent information available with the expectation that the FCGWMA will proceed with its new allocation ordinance as currently proposed. It is not possible to predict how additional regulation or restrictions may apply to the school district in the future, or how those future events might affect this project.

VENTURA LOCAL AGENCY FORMATION COMMISSION
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August 19, 2019 Letter 3 SENT VIA E-MAIL

Chris Williamson
City of Oxnard Planning Division
214 S. C Street
Oxnard, CA 93030

Subject: Notice of Intent to Adopt a Mitigated Negative Declaration (MND) for the Rio Urbana Project (2714 E. Vineyard Avenue and Rio School Lane, Assessor's Parcel Number 145-0-232-01)

Dear Dr. Williamson:

Thank you for providing the Ventura Local Agency Formation Commission (LAFCo) with the opportunity to review the draft Initial Study/MND for the Rio Urbana Project. As a responsible agency under the California Environmental Quality Act (CEQA), LAFCo is charged with ensuring that environmental documents prepared by lead agencies address the issues that relate to LAFCo's scope of authority. Please note that the Commission has not reviewed the draft Initial Study/MND, and these comments are solely those of LAFCo staff. 3.1

LAFCo's purposes are to (1) discourage urban sprawl, (2) preserve open space and prime agricultural land, (3) ensure efficient provision of government services, and (4) encourage the orderly formation and development of local agencies, such as cities (Government Code § 56301). The Ventura LAFCo has adopted local policies that it must consider when making decisions on reorganization proposals. Specifically, the policies found in Division 3 of the Ventura LAFCo Commissioner's Handbook (available on the Ventura LAFCo website) apply to the proposed project.

Project Description

The City of Oxnard is the lead agency for the subject project. If approved, the project would involve the demolition of existing buildings, subdivision of the approximately 10.5-acre parcel into two parcels, and development of 167 condominium units in eight three-story buildings on the resulting 9+ acre parcel and a 15,100-square-foot office building on the resulting 1+ acre parcel for use as the Rio School District (District) administrative offices. The project would involve widening of E. Vineyard Avenue, and the installation of parking areas, landscaping, and various amenities including a fitness center, tot lot, and dog park.

The proposed development site is located immediately south of the intersection of E. Vineyard Avenue and Rio School Lane, contiguous to the City of Oxnard to the west and south, and within the City of Oxnard's sphere of influence[1] and city urban restriction boundary (CURB)[2]. The project site was used as El Rio Elementary School until 2008. As part of the proposal, the County would vacate Rio School Lane, and this portion of the development site would be used for vehicular access and parking. The subject property is surrounded by restaurants and single-family residential development to the north, a plant nursery to the east, restaurants and other commercial development to the south, and E. Vineyard Avenue and commercial development to the west. The property has a County General Plan land-use designation of *Existing Community – Urban Reserve* and a zoning designation of *Rural Exclusive, 20,000 square foot minimum parcel size.* The proposal includes an amendment to change the City's land use designation from *School* to *Commercial General*, and to pre-zone the site as *C-2-PD (General Commercial Planned Development).* 3.1 (cont'd)

Reorganization Request

In order for the project site to be developed as proposed, the project area must be annexed to the City. The City would provide municipal services to the proposal area upon annexation of the territory to the City. Annexation of the proposal area to the City requires LAFCo approval of several changes of organization, collectively called a reorganization. The project description should include the following LAFCo actions that would be necessary components of the reorganization: 3.2

- Annexation to the City of Oxnard
- Annexation to the Calleguas Municipal Water District
- Detachment from the Ventura County Resource Conservation District
- Detachment from the Ventura County Fire Protection District
- Detachment from Ventura County Service Area No. 32

The draft Initial Study/MND states that LAFCo approval is required for annexation to the City and detachment from the County of Ventura. The Initial Study/MND should remove the reference to detachment from the County, as the territory will remain in the County.

LAFCo Law and Additional Ventura LAFCo Policies

In the Initial Study/MND, the City discussed a variety of issue areas, and identified several potentially significant impacts requiring mitigation in order for those impacts to be reduced to less than significant levels.

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[1] A sphere of influence is defined in Government Code § 56076 as the probable physical boundary and service area of a local agency, as determined by the Commission.

[2] Subject to the City's Save Open Space and Agricultural Resources (SOAR) ordinance, the CURB establishes a boundary within which voter approval is generally required prior to the extension of City services or a change in general plan designation.

Fire Protection/Law Enforcement/Emergency Services

The Oxnard Fire Department and Oxnard Police Department are proposed to provide fire protection and law enforcement services, respectively, to the project site and its anticipated approximately 663 residents. While the Initial Study/MND states that the project would not result in substantial impacts to provision of fire protection and law enforcement services, it does not provide any existing or anticipated response statistics to support those assertions. The Initial Study/MND should provide additional information to justify the conclusion that impacts to services provided by the Oxnard Fire Department and Oxnard Police Department would be less than significant. 3.3

Hydrology and Water Quality

The checklist for the Hydrology and Water Quality section of the Initial Study/MND indicates that impacts related to depletion of groundwater supplies or interference with groundwater recharge would be less than significant, if mitigated. However, the discussion contained in the same section concludes that adverse impacts related to groundwater withdrawals and wells in the vicinity would not exist. The Initial Study/MND should clarify the level of impact, and adjust the documentation accordingly. 3.4

Transportation/Circulation

The site plan depicts nine structures, separated by landscaping and surrounded by three main driveways (and parking areas) accessed from E. Vineyard Avenue. The site plan and traffic circulation discussion do not show any left turn options from the development south onto E. Vineyard Avenue toward the 101 Freeway (located less than ¼ mile south of the project site). Given the proximity of the project site to the freeway, a left turn option from the site onto E. Vineyard Avenue would likely reduce the number of vehicles that would otherwise need to turn right and, as a result, contribute to traffic volume on arterial and collector streets surrounding the development. Therefore, the circulation section of the Initial Study/MND should evaluate the feasibility and impacts of a left turn option exiting the development. 3.5

Water Service

Development of the project is anticipated to result in a total water demand of 40.399 acre-feet per year (AFY) from the City of Oxnard. The discussion in the Initial Study/MND suggests that the proposed development would be consistent with the City's "net-zero" policy (which requires a proposed development to provide and transfer groundwater allocation to the City or contribute to City programs to offset potable water use), because the District's anticipated total groundwater extraction allocation of 52.074 AFY through its three groundwater wells exceeds the anticipated water demand for the project. However, the Fox Canyon Groundwater Management Agency has not yet adopted an ordinance that would establish 52.074 AFY as the District's extraction allocation. 3.6 Furthermore, it is not clear if the difference between the anticipated extraction allocation of 52.074 AFY and expected project demand of 40.399 AFY (i.e., 11.675 AFY) is sufficient to meet the water demand of the District's other facilities. The 3.7

Initial Study/MND should demonstrate that the project is consistent with the City's net-zero policy based on known water supply availability and expected water demand. Furthermore, the Initial Study/MND should clarify whether sufficient water supply is available to support the project and continue to support the other properties that rely on the District's three groundwater wells. 3.7 (cont'd)

The April 4, 2019, letter included as part of Appendix I to the Initial Study/MND includes an estimated water demand based on 543 anticipated residents of the development using 55 gallons per day, multiplied by a 20% contingency, which equates to a maximum of 652 residents. In various sections of the Initial Study/MND, the increase in population is estimated to be 663. It therefore appears that the actual water demand may exceed that discussed in the Initial Study/MND. While information provided in the document suggests that the City would have the ability to provide additional water to the site, the Initial Study/MND should specifically state whether or not this is the case. 3.8

Sewer Service

The project site is located within the boundaries of Ventura County Service Area No. 34 (CSA 34), which provides wastewater collection and conveyance services within the El Rio community. Wastewater is then transferred to the City of Oxnard's wastewater collection infrastructure for conveyance to the City's treatment facility. The proposed development is anticipated to generate 33,247 gallons per day of wastewater, to be disposed through the public sewer system. The Initial Study/MND states: "There is inconclusive data on the City's Wastewater Master Plan (2008) and the City's Integrated Waste Master Plan (2015) to determine the sewer capacity of the 10-inch trunk sewer line in Vineyard Avenue at this time." The evaluation further states that sewer connection fees and service fees would finance the operation and maintenance of the sewer system within the El Rio area. Based on the information provided, it is unknown whether the existing sewer system would be able to accommodate the increase in system load, and whether the required fees would be sufficient to upgrade the system (if necessary) to handle anticipated demand. The Initial Study/MND should include an assessment of the existing sewer system, and provide a determination regarding whether anticipated sewer-related fees would be sufficient to handle the anticipated increase in the volume of wastewater. 3.9

Schools

The Rio Elementary School District and Oxnard Union High School District would serve the subject territory. The MND/Initial Study acknowledges that residents of the proposed development would include students who would attend local public schools, but states that Government Code § 65996 considers development fees authorized by Senate Bill 50 to be "full and complete mitigation of the impacts" related to schools. The environmental analysis should include an evaluation of the ability of local school facilities to accommodate the expected increase in the number of students that would occur as a result of the proposed development, even if school fees qualify as financial mitigation for the deficiency in school facilities. 3.10

Additional Comments

Pursuant to Revenue and Taxation Code § 99, a property tax sharing agreement must be in place to establish the exchange of property tax revenues among local agencies to occur as a result of a reorganization. At this time, a valid tax sharing agreement does not exist between the County of Ventura and the City of Oxnard (the pre-existing master tax sharing agreement was terminated effective December 31, 2018); therefore, any future boundary change request involving the City of Oxnard must include a property tax sharing agreement. 3.11

We identified two typographical errors within the Initial Study/MND: (1) In Section X (Land Use Planning) on page 33, the discussion states that the project site is located within the City of Ventura's sphere of influence; however, the city name should be corrected to reflect that the site is within the City of Oxnard's sphere of influence; and (2) In Section XVI (Utilities and Energy) on page 61, the maximum groundwater pumping figure is provided as 50.074 AFY, but is referenced elsewhere in the document and within Appendix I as 52.074 AFY. 3.12

The Ventura LAFCo encourages prospective applicants to meet with LAFCo staff early in the planning process (see the letter from the Commission to prospective applicants available on the Ventura LAFCo website). We find that such consultation and ongoing communication is helpful to clarify the nuances of LAFCo requirements and to avoid delays later in the process. Additionally, please be aware that any requested information that is not included in the environmental document will be required as part of the application to LAFCo. 3.13

Thank you again for the opportunity to comment on the draft Initial Study/MND. Please contact me if you have any questions or wish to discuss our comments.

Sincerely,

Andrea Ozdy

Andrea Ozdy
Deputy Executive Officer

c: Dave Ward, Ventura County Planning Division

Letter 3

COMMENTER: Andrea Ozdy, Deputy Executive Officer, Ventura Local Agency Formation Commission (LAFCO)

DATE: August 19, 2019

Response 3.1

The commenter describes the role of LAFCO, and reiterates the project description and reorganization request. No response is necessary.

Response 3.2

The commenter provides clarifications regarding the governmental reorganizations to be approved by LAFCO, and corrects the statement in the draft IS-MND that implied the project site would be detached from the County.

Revisions have been made in the introductory portion of the IS-MND to clarify these aspects of the project description.

Response 3.3

The commenter requests additional information to support the conclusion that the project effects on Police and Fire Department services would be less than significant.

The project site is within the planning boundary used in the City of Oxnard 2030 General Plan. Although the site itself remains shown as a school, the residential population increase represented by the project is well within the population projections in the City used for planning City services.

In the 2018 Municipal Services Review for the City of Oxnard, LAFCO indicated that the City employed 0.67 firefighters for every 1,000 residents (up from a ratio of 0.48 in 2000). The Police Department employed one officer for each 831 residents (LAFCO 2018:pages 11-12).

With respect to fire service, the project site is less than one mile from the City of Oxnard Fire Station No. 7, located at 3300 Turnout Park Circle. The City Fire Department sets a goal of a 240 second (4 minute) travel time. Station No. 7 achieves this goal about 42% of the time. Station No. 7 is located approximately 0.7 miles to the northeast, just off of E. Vineyard Avenue. This proximity would allow a travel time well within the goal of 4 minutes. This City Fire Station No. 7 is located adjacent to the Ventura County Fire Station No. 51, located at 3302 Turnout Park Circle, which currently serves the unincorporated El Rio community (including the project site).

The City provides police services directly, including community patrol, criminal investigation, emergency communications, animal safety, and support services. The project site is located within Police Beat 14, Riverpark District. According to the LAFCO Municipal Services Review, the City of Oxnard 2017-2018 budget allowed for increased spending both for new vehicles and staffing to help maintain the police staffing ratio (Ventura LAFCO 2018:12).

Both the City Police and Fire Departments reviewed the project through the City's Development Advisory Committee. Over the course of the project submittal, review, and revisions process, both Departments provided comments and requested specific features within the project to improve security, visibility, and access for emergency services.

In addition to the access and security designs within the project, which were developed with input from the City, the project applicant would pay applicable developer fees that would offset costs for Police and Fire Department reviews, tests, and inspections of the project as it is developed. Finally, growth development fees, applicable to all residential and commercial projects, contribute towards funding capital projects within the City, while other taxes provide revenue of ongoing City services. In this respect, the project would be typical of new development and would not represent any unique or substantial adverse effects with respect to fire and police service, and the conclusions in the IS-MND remain valid.

Response 3.4

In the Hydrology and Water Quality section, the commenter notes the apparent confusion caused by the identified level of potential impact, and the lack of a specific mitigation measure. This discussion in the IS-MND reflects the direction and position of the City. There would be a potential impact if the onsite well continued to operate. The "mitigation" involves decommissioning and removal of the well, as required in the City Municipal Code Section 22.123. Since this action is a matter of compliance with uniformly applied existing code requirement, a separate "mitigation measure" was not presented. No change in the text of the IS-MND is necessary.

Response 3.5

The commenter states that the "Transportation/Circulation" section of the document should include an additional evaluation of the feasibility and impacts of a left turn option onto East Vineyard Avenue, because a left turn option onto East Vineyard Avenue would likely reduce traffic on East Vineyard and nearby streets.

The traffic study was prepared under the direction and review of the City Public Works Department. The potential for left turn movements into and out of the project on E. Vineyard Avenue was considered, and was rejected by the City in order to maintain smoother traffic flow. A raised median is planned along E. Vineyard Avenue to restrict left turns into and out of all adjacent properties. No changes are necessary in the IS-MND.

Response 3.6

The commenter repeats information from the IS-MND, and notes that the FCGWMA is in the process of adopting a new ordinance that may modify groundwater allocations. The IS-MND is based on the most recent information available at the time of its preparation. Response 2.5 above, addressing the FCGWMA letter, also relates to this issue.

Response 3.7

The commenter raises additional concerns regarding the ability of the project to meet the City of Oxnard "net zero" policy, and what effect the transfer of groundwater allocation from offsite wells owned by the Rio School District would have on those properties.

These issues are addressed in the response to the FCGWMA letter above, and are discussed in responses 2.4.

Response 3.8

The commenter also notes a small difference in the number of estimated residents in the updated water supply study (in Appendix I) and the number estimated in the IS-MND and used in other topics.

The Air Quality Section (III.1., page 9) cites an average household size of 3.97 persons from Department of Finance data published in January 2019), which yielded the estimate of 663 new residences for the project that is used generally throughout the report.

As explained in the April 4, 2019 Technical Memorandum to update the estimated water demand (Appendix I), the City does not have a specific water demand calculation method applicable to the project. Therefore, the Technical Memorandum describes the method developed, based in part on household size defined in the California Plumbing Code with other adjustments.

All projections of the numbers of residences expected in the project, and effects related to the number of people, are estimates. Variation in such estimates is expected. Based on the most recent information available, the City has determined that it would have the capability to supply water for the project.

The City's long-term ability to continue providing water is dependent on continuing efforts at water conservation, re-use of treated wastewater, and other measures that are briefly summarized in in Section XVI Utilities and Energy (paragraphs 1.a.., on page 60). More detail on this topic is also available in the City's Urban Water Management Plan (Oxnard, January 2018).

No changes are necessary in the IS-MND.

Response 3.9

The commenter states that the information provided in the Initial Study-MND related to sewer services are not sufficient to determine whether the existing sewer system would be able to accommodate the increase in system load, and whether the required fees would be sufficient to upgrade the system (if necessary) to handle anticipated demand.

The discussion cited by the commenter occurs in Section XVI.2 (page 62) of the IS-MND, and is based on the August 27, 2017 Wet Utility Preliminary Investigation prepared by Jensen Design and Survey, Inc. (The 2018 revised version of this memo has been included in Appendix I).

As noted in the revised 2018 study, and repeated in the IS-MND, at the time the preliminary study was prepared the City's Wastewater Master Plan presumed that the Rio Urbana project site would be redeveloped. This indicated that the sewer transmission design would be adequate to serve future development, but was not conclusive. The 2019 update to the Wet Utility study did not alter the discussion related to sewer service.

A separate memo, however, from the City of Oxnard to the applicant' representative, dated May 30, 2018, states that the Public Works Department completed analysis based on the revised 2018 Wet Utility Memo and determined that sewer transmission capacity was adequate to serve the proposed project.

No changes are necessary in the IS-MND.

Response 3.10

The commenter requests that the environmental analysis include an evaluation of the ability of local school facilities to accommodate the expected increase in students that would occur as a result of the proposed project.

Information related to both school districts has been added to Section XIII.5. The conclusions with respect to school impacts and mitigation are not affected.

Response 3.11

The commenter states that, due to the fact that the County of Ventura and the City of Oxnard do not currently possess an agreement for tax sharing agreement, as pursuant to Revenue and Taxation Code § 99 , any future boundary change request involving the City of Oxnard must include a property tax sharing agreement. This additional information describes requirements applicable to all annexations. No changes are necessary in the IS-MND.

Response 3.12

The commenter notes two typographical errors in the draft IS-MND. Both have been corrected in the final document.

Response 3.13

The commenter states that LAFCO encourages prospective applicants meet with LAFCO staff early in the planning process in order to prioritize consultation and ongoing communication throughout the planning process. No response is necessary.

THOMAS L. SLOSSON, PRESIDENT
DIVISION 1

ANDY WATERS, SECRETARY
DIVISION 3

STEVE BLOIS, DIRECTOR
DIVISION 5

CALLEGUAS MUNICIPAL WATER DISTRICT

ANDRES SANTAMARIA, VICE PRESIDENT
DIVISION 4

SCOTT H. QUADY, TREASURER
DIVISION 2

ERIC BERGH
INTERIM GENERAL MANAGER

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July 23, 2019

Letter 4

Via email and USPS

Chris Williamson
Consultant Planner
City of Oxnard
Planning Division
214 South C Street
Oxnard, CA 93030

RE: DRAFT MITIGATED NEGATIVE DECLARATION No. 2017-04 (RIO URBANA PROJECT)

Dear Mr. Williamson:

Thank you for sending Calleguas Municipal Water District a copy of the Notice of Intent to Adopt a Mitigated Negative Declaration for the Rio Urbana Project. The purpose of this letter is to advise the City of Oxnard that the territory under consideration, 2714 E. Vineyard Avenue (APN: 145-0-232-010), is not within the service area of Calleguas. 4.1

The Draft MND notes that annexation of the subject parcel to Calleguas, a Responsible Agency for the proposed development, is necessary to allow annexation to and water service by the City of Oxnard.

Calleguas requests that the following technical language be included in the Final MND:

> *Land on which the proposed projects will be built is not presently within the boundaries of Calleguas Municipal Water District or Metropolitan Water District of Southern California. The Administrative Codes of both agencies state that water delivered by their systems may be used only within their respective service area boundaries. Calleguas purchases all of its potable water from Metropolitan. Metropolitan supplies water from the Colorado River and the State Water Project for municipal, industrial and agricultural uses within its service area. Annexation to Calleguas and Metropolitan of the land under consideration is necessary to allow annexation to and water service by the City of Oxnard.*

Annexation procedures for Metropolitan are defined in Section 3500 of the Metropolitan Water District Act, which are also observed by Calleguas. In addition, annexations to Calleguas are subject to Part 8 of Calleguas' Administrative Code. Annexation is also subject to approval by the Ventura Local Agency Formation Commission and any terms and conditions the Commission may apply. Pursuant to Section 56017 of Part 1, Chapter 2, of the Cortese/Knox/Hertzberg Local Government Reorganization Act of 2000, annexation means the annexation, inclusion, attachment, or addition of territory to a city or district. This action will require amendment of the Spheres of Influence of Calleguas and Metropolitan. 4.1 (cont'd)

Calleguas and Metropolitan have in place Water Standby Charges. In the course of annexation, such charges will be fixed for the subject property. Water Standby Charges are assessed to pay for the benefits that properties receive from the projects and facilities provided by Calleguas and Metropolitan, whether or not they receive water from Calleguas and Metropolitan.

This administrative change in water service areas will have a less than significant impact.

As always, you are welcome to call me directly with questions at 805-579-7185.

Sincerely,

Dan Drugan
Resources Program Administrator

cc: Eric Bergh, CMWD

Letter 4

COMMENTER: Dan Drugan, Resources Program Administrator, Calleguas Municipal Water District

DATE: July 23, 2019

Response 4.1

The commenter states that the site is not within the jurisdiction serviced by Calleguas Municipal Water District, and requests specific language be added to the IS-MND.

Clarifying language to repeat that the project site is not currently within the CMWD, but would annex to CMWS as part of its annexation to the City of Oxnard, has been added to Section XIV - along with the specific technical language requested by the CWMD comment.

Letter 5

PUBLIC
VENTURA COUNTY
WORKS

WATERSHED PROTECTION

WATERSHED PLANNING AND PERMITS DIVISION
800 South Victoria Avenue, Ventura, California 93009
Sergio Vargas, Deputy Director – (805) 650-4077

MEMORANDUM

DATE: August 16, 2019

TO: Anthony Ciuffetelli, EDR Coordinator
County of Ventura

FROM: Nathaniel Summerville, Engineer III-Advanced Planning Section

SUBJECT: RMA19-010 Rio Urbana
APN(s) 145023201
Zone 2
Watershed Protection Project Number: WC2019-0060

Pursuant to your request dated July 24, 2019, this office has reviewed the submitted materials and provides the following comments.

PROJECT LOCATION:

2714 E. Vineyard Ave and Rio School Lane, Oxnard, CA

PROJECT DESCRIPTION:

The proposed project includes demolition of the existing school buildings onsite (formerly El Rio Elementary School) and subdivision of the approximately 10.5-acre parcel into two parcels. The project would develop 167 condominium units in eight, three-story buildings that include a fitness center and 17 low income deed-restricted units on the 9.12-acre parcel, as well as a two-story, 15,100 square foot office building on the 1.12-acre parcel. This office development is intended for use as relocated Rio School District administrative offices. The project would also include widening of Vineyard Avenue, associated parking, 5.1
open space, landscaping, and amenities for on-site residents. The residential units would be made up of one- to three-bedroom attached units. The residential and office structures would have a maximum height of 38 feet. The residential portion of the project would include 431 parking spaces consisting of 169 resident garages, 163 parking spaces, and 99 guest parking spaces.

The office portion of the project would include 61 standard parking spaces. Resident amenities include a 1,068 square foot recreation pavilion, four refuse structures, seven play areas and a tot lot, and a dog run.

WATERSHED PROTECTION DISTRICT COMMENTS:

1. The project is located immediately about 4,000 feet north of El Rio Drain, which is a Ventura County Watershed Protection District (District) Jurisdictional redline channel. The project proponent is hereby informed that it is the District's standard that a project cannot impair, divert, impede, or alter the characteristics of the flow of water running in any District jurisdictional red line channel under the requirements of Ordinance WP-2. Please be aware that El Rio Drain has been identified as having limited flood carrying capacity and no increase in peak runoff will be allowed. The Project must provide adequate mitigation measures to comply with the District's standard for peak attenuation, which is that the runoff after development shall not exceed the peak flow under existing conditions for any frequency of event or, alternatively, apply the city standard; whichever is most restrictive shall apply. Analysis should consider the 100-year, 50-year, 25-year, and 10-year design storm frequencies. 5.2

2. The drainage letter in Appendix F indicates no detention will be provided since the local storm drain has available capacity to carry the 10-year flow. This does not meet the District's requirement for peak flow mitigation The calculations show there would be an increase in peak flow in the 10-year, 25-year, and 100-year flow. 5.3

   The proposed development must incorporate mitigation measures to address cumulative impacts due to the proposed increase in imperviousness. Project shall not increase peak storm runoff in any frequency of storm events consistent with District policy and WP-2 Ordinance or, alternatively, apply the city standard; whichever is most restrictive shall apply.

END OF TEXT

Letter 5

COMMENTER: Nathaniel Summerville, Engineer III-Advanced Planning Section, County of Ventura, Public Works, Watershed Planning and Permits Division

DATE: August 16, 2019

Response 5.1

The commenter reiterated the project description and listed the regional facilities within the jurisdiction for the Ventura County Public Works department which are adjacent to the project, for clarification. No response is necessary for this comment

Response 5.2

The commenter describes the project as being about 4,000 feet north of the El Rio Drain, which is under the jurisdiction of the Ventura County Watershed Protection District, and notes that under County Ordinance WP-2 the project would not be allowed to alter the characteristics of flow within the channel. This issue is discussed in Section IX of the IS-MND, including reference to the El Rio Drain and the authority of the Ventura County Watershed Protection District (issue IX.3, on page 31). The commenter provides additional detail explaining that the County standard would require that the peak flow in the El Rio Drain under 10-year, 25-year, and 100-year storm flow conditions may not be increased by project development.

Response 5.3

The commenter makes reference to the hydrology memo (Appendix F), and notes that it shows increases in the peak flow values for the 10-year, 25-year and 100-year storm flows. This comment again references the need to comply with County policy and the requirements of County Ordinance WP-2.

As noted in the hydrology memo in Appendix F, the project is expected to result in an increase in the peak flow from a 100-year storm from 32.8 cubic feet per second (cfs) under the current condition to 43.3 cfs after development is completed. This increase, however, is estimated at the point along E. Vineyard Avenue adjacent to the project site, where the drainage from the property discharges into a 54-inch diameter storm drain controlled by the City of Oxnard. The memo in Appendix F notes that it is a preliminary study and was intended only to address current City of Oxnard requirements and to form the basis for final design and analysis. Additional hydraulic analysis is necessary to determine what, if any, affect this increase would have on the peak flow in the El Rio Drain several thousand feet downstream from the project site. If the project would adversely affect the peak flow in the El Rio Drain, then its design would have to be modified to incorporate additional detention of runoff.

The City will require compliance with the County policy prior to approval of the final map for the project. The text of the IS-MND has been revised to state the County requirement more clearly. No change in the conclusions with respect to the project impact is necessary.

Letter 6

County of Ventura
PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
Traffic, Advance Planning & Permits Division
MEMORANDUM

DATE: 8/19/2019

TO: RMA Planning Division
Attention: Anthony Ciuffetelli

FROM: Anitha Balan, Engineering Manager II

SUBJECT: **REVIEW OF DOCUMENT 19-010** IS-MND
Project: **Rio Urban Project**
Lead Agency: **City of Oxnard, Community Development Department**
Demo the closed down El Rio Elementary School. Construct 167 condo units and 15,100 sq. ft. of office space.
APN# 1450232010

Pursuant to your request, the Public Works Agency - Transportation Department has reviewed the IS-MND for the Rio Urban Project.

The proposed project includes demolition of the existing school buildings onsite (formerly El Rio Elementary School) and subdivision of the approximately 10.5 acre parcel into two parcels. The project would develop 167 condominium units in eight, three-story buildings that include a fitness center and 17 low income deed-restricted units on the 9.12-acre parcel, as well as a two-story, 15,100 square foot office building on the 1.12-acre parcel. This office development is intended for use as relocated Rio School District administrative offices. The project would also include widening of Vineyard Avenue, associated parking, open space, landscaping, and amenities for on-site residents. The residential units would be made up of one- to three-bedroom attached units. The residential and office structures 6.1
would have a maximum height of 38 feet. The residential portion of the project would include 431 parking spaces consisting of 169 resident garages, 163 parking spaces, and 99 guest parking spaces. The office portion of the project would include 61 standard parking spaces. Resident amenities include a 1,068 square foot recreation pavilion, four refuse structures, seven play areas and a tot lot, and a dog run.

Rio School Lane would be vacated by the County of Ventura with current access and parking for adjoining properties, maintained. The project site would be accessed by three driveways from Vineyard Avenue. Internal circulation would accommodate fire and emergency access, and solid waste collection vehicles.

We offer the following comment(s):

1. Rio School Lane is a public roadway maintained by the County of Ventura, Public Works Agency, Transportation Department (PWATD). When the City of Oxnard Annexes Parcel 145-0-232-010, PWATD will require the City of Oxnard to annex Rio School Lane, from Vineyard Avenue to the end of county maintained roadway; County Road Number 54191. 6.1 (cont'd)

2. The applicant should provide a safe path for pedestrians to cross East Vineyard Avenue. In providing a safe path to cross East Vineyard Avenue, the applicant should evaluate the safe route to school for the children that will live in the condominiums. 6.2

3. The sidewalk along the west side of the parcel, along East Vineyard Avenue, should be brought up to current codes. The portion of the sidewalk that has been uplifted shall be corrected and there shall be a curb along the entire sidewalk protecting the pedestrians from motorist. 6.3

Our review is limited to the impacts this project may have on the County's Regional Road Network.

Letter 6

COMMENTER: Anitha Balan, Engineering Manager II, County of Ventura, Public Works Agency, Transportation Department (PWATD), Traffic, Advance Planning and Permits Division

DATE: August 19, 2019

Response 6.1

After repeating descriptive information about the project, the commenter states that PWATD will require the City to annex Rio School Lane from Vineyard Avenue to the end of County-maintained roadway (County Road Number 54191), when the City of Oxnard annexes the project site (APN 145-0-232-010).

Earlier correspondence about this project had used the term "abandon" to describe actions related to the County right-of-way for Rio School Lane. The correct terminology "vacate prior to annexation to the City of Oxnard" has been used in the IS-MND and all recent reports for the project.

Response 6.2

The commenter recommends that the applicant provide a safe path for pedestrians to cross East Vineyard Avenue in order to establish a safe route to school for the children living in the condominiums.

As shown in the project plans (Figure 4 in the IS-ND/MND) as well as Sheet 1 of the Tentative Tract Map, the proposed Rio School Lane would include sidewalks for pedestrian access along the northeastern side of the project to the existing and new sidewalk on East Vineyard Street. A signalized intersection, with pedestrian crossings, is located on East Vineyard Avenue at Stroube Street, one block northeast of the project site. Rio Vista Middle School and Rio Del Mar Elementary School are located two and three blocks farther northeast on the west side of East Vineyard Avenue.

Response 6.3

The commenter states that the sidewalk along the west side of the parcel, along East Vineyard Avenue, should be brought up to current codes.

Project improvements include widening East Vineyard Avenue and installing a full 7-foot width sidewalk along the frontage of the project site. No changes are necessary in the IS-MND.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-0475
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Letter 7

Making Conservation a California Way of Life.

August 15, 2019

Mr. Chris Williamson, AICP, Contract Planner
City of Oxnard
Community Development Department
Planning Division
214 S. C Street
Oxnard, CA 93030

RE: Rio Urbana Project (Tentative Subdivision Map No. 5998) – Mitigated Negative Declaration (MND)
SCH # 2019079068
GTS # 07-VEN-2019-00315
Vic. VEN-232/PM: 0.821
VEN-101/PM: 21.817

Dear Mr. Chris Williamson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced MND. The proposed project includes the demolition of the existing school buildings onsite (formerly El Rio Elementary School) and subdivision of the approximately 10.5 acre parcel into two parcels. The project would develop 167 condominium units in eight, three-story buildings that include a fitness center and 17 low income deed-restricted units on the 9.12-acre parcel, as well as a two-story, 15,100 square foot office building on the 1.12-acre parcel. This office development is intended for use as relocated Rio School District administrative offices. The project would also include widening of Vineyard Avenue, and providing associated parking, open space, landscaping, and amenities for on-site residents. The residential units would be made up of one- to three-bedroom attached units. Rio School Lane would be vacated by the County of Ventura, while current access and parking for adjoining properties will be maintained. The City of Oxnard is considered the Lead Agency under the California Environmental Quality Act (CEQA). 7.1

The nearest State facilities to the proposed project are State Route (SR) 232 (also known as Vineyard Avenue) and United States (US) 101. Since the project involves widening SR-232 and this facility falls under Caltrans' jurisdiction, please submit any detailed plans for widening that facility to Caltrans for its review and approval.

Caltrans also recommends implementing measures to minimize the localized transportation impacts on Vineyard Avenue during construction, including providing signage and notices informing the public that construction will be occurring. In addition, Caltrans suggests that construction and large size truck trips on State facilities be limited to off-peak commute periods. Any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. 7.2

The following information is included for your consideration.

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Therefore, Caltrans encourages the Lead Agency to integrate transportation and land use in a way that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions, as well as facilitates a high level of non-motorized travel and transit use. We encourage the Lead Agency to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications to meet these goals. Potential strategies for this project include:

- Constructing wide sidewalks with Americans with Disabilities Act (ADA) compliant ramps that are not obstructed by utility poles
- Planting shade trees and bioswales to reduce storm-water runoff, which is a sensitive issue for Ventura county and needs to be considered during project design
- Installing high-visibility crosswalks with Continental or Ladder designs
- Offering bus stops with shelters in the bulb-out style
- Providing bicycle facilities, including Class II buffered or Class IV bike lanes, as well as bicycle parking facilities at both the residential and office buildings 7.3
- Designing multiple access points or paths to the adjacent shopping center with the Vallarta Supermarket to facilitate walking to purchase groceries and limit Vehicle Miles Traveled (VMT)
- Implementing leading pedestrian intervals at intersections with crosswalks to offer a 7 second head-start to pedestrians
- Installing flashing yellow left and right-turn signals to prevent pedestrian or cyclist collisions
- Creating sidewalk extensions or bulb-outs to narrow the right-turn radius at the intersection of Riverpark Boulevard & Vineyard Avenue

For additional TDM options, please refer to *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8) by the Federal Highway Administration (FHWA). The reference is available online at: https://ops.fhwa.dot.gov/publications/fhwahop12035/index.htm.

As a reminder, Senate Bill 743 (2013) mandates that VMT be used as the primary metric in identifying transportation impacts of all future development projects under CEQA, starting July 1, 2020. For information on determining transportation impacts in terms of VMT on the State Highway System, see the Technical Advisory on Evaluating Transportation Impacts in CEQA by the California Governor's Office of Planning and Research, dated December 2018: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. 7.4

If you have any questions about these comments, please contact Emily Gibson, the project coordinator, at Emily.Gibson@dot.ca.gov, and refer to GTS # 07-VEN-2019-00315.

Sincerely,

FRANCES DUONG
ACTING IGR/CEQA Branch Chief
cc: Scott Morgan, State Clearinghouse

Letter 7

COMMENTER: Frances Duong, Acting IGR/CEQA Branch Chief, Department of Transportation

DATE: August 15, 2019

Response 7.1

The commenter reiterated the project description and neighboring state facilities (i.e. streets and highways) within the jurisdiction for the Department of Transportation (Caltrans), for clarification. The commenter requests that detailed plans related to the widening of SR-232 be provided to Caltrans because the state facility is within the agency's jurisdiction for approval.

The City will require the project developer to provide the necessary right-of-way and to widen East Vineyard Avenue in a manner consistent with City and Caltrans standards. Caltrans is identified in the IS-MND on page v) as an approving agency and will have the opportunity to review plans. At a minimum Caltrans must approve an encroachment permit in order to allow work within the Caltrans right-of-way. No changes are necessary in the IS-MND.

Response 7.2

The commenter recommends implementing measures to minimize localized transportation impacts on Vineyard Avenue during construction, including providing signage and notices informing the public that construction will be occurring. The commenter also recommends that construction and large size truck trips on State facilities be limited to off-peak commute periods. The commenter also requires that any transportation of heavy construction equipment and/or materials which requires use of oversized-transportation vehicles on State highways will need a Caltrans transportation permit. These comments identify aspects of existing requirements. As part of an encroachment permit application to Caltrans, the contractor responsible for construction of the project will have to provide a plan for managing existing traffic, through signage, temporary detours, flagmen, and other measures. Identifying construction truck routes and obtaining any permits for oversized loads are also routine requirements. No changes are necessary in the IS-MND.

Response 7.3

The commenter lists a variety of measures that are used to help encourage non-vehicle traffic, and encourages the City to integrate transportation and land use in a manner that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions. Several of the measures listed are already incorporated into the Rio Urbana project design. These include full 7-foot wide sidewalks, landscaping strips, bicycle facilities, and access to the adjacent market. Additional measures may be identified in subsequent review and approval steps for the project. No changes are necessary in the IS-MND.

Response 7.4

The commenter states, as a reminder, that Senate Bill 743 (2017) mandates that VMT be used as the primary metric in identifying transportation impacts of all future development projects under CEQA, starting July 1, 2020. The commenter provides resources in the letter in order to meet this State mandate. Since the CEQA process will be completed before the new VMT procedures become mandatory, no changes are necessary in the IS-MND.

August 14, 2019

City of Oxnard Planning Division

Attn: Chris Williamson,

Consultant Planner

214 South C Street

Oxnard, CA. 93030

Letter 8

Dear Mr. Williamson:

Thank you for meeting with my wife, Patricia and me in your office on Thursday, August 8 regarding our questions and concerns regarding the "Rio Urbana" development as well as City of Oxnard Planning Division's July 16, 2019 "Notice of Intent to Adopt Negative Declaration No. 2017-04.

The following are the questions, concerns, and suggestions that we shared at our 8/8/19 meeting which I am again asking you and the Planning Division, as well as members of the Oxnard City Council, CAL TRANS, and LAFCO to consider when the Rio Urbana plans come before each entity's review.

The following are my comments and concerns for consideration.

I stated that I was concerned that the widening of Vineyard Ave. might result in right-of way or easement actions by the City of Oxnard or CAL TRANS on my property at 2703 Vineyard Ave. In response to my inquiry, you clarified that the proposal for widening of Vineyard Avenue by 23 feet would not have any effect or impact on my property located just across the Street (at the corner of Vineyard Ave. and Sycamore Streets, from the Rio Urbana project. You pointed out that the 23 additional feet for widening would be on the Rio Urbana side of Vineyard Ave. 8.1

I inquired what route City Traffic engineers expected Rio Urbana residents/office staff to use to get to the 101 freeway, and "The Collection", etc. Based on your response, the two expected routes would be: a U-turn at the intersection of on Vineyard and Stroube Sts.; or via Stroube St. to Rose Ave. I expressed my concern that the residents of the neighborhood closest to the Rio Urbana project (Colonia Ave., Myrtle, Sycamore, Olive Streets) were not formally notified of the project plans, or given an opportunity to comment, make suggestions, or express concerns. The primary exit for residents and office staff from Rio Urbana is via Rio School Lane onto Vineyard Ave going east. Adding another traffic signal on Vineyard Ave. would only exacerbate existing traffic. Specifically, I expressed concerns that Rio Urbana traffic would use Colonia Ave. as an alternative, faster route to "The Collection" rather than use the City Planner's designated route (make a U-turn at on Vineyard and Stroube Sts. Intersection, or take 8.2

Stroube to Rose Ave. then north onto the 101 freeway. Using the Vineyard option already often-times results in bumper-to-bumper traffic on Vineyard Ave, (particularly between 4:30-530 p.m. weekdays) Traffic will instead be redirected through the the Colonia Ave residential neighborhood. Making a left-turn on Stroube St. and driving on Colonia Ave., traffic can reach The Collection more quickly via River Park Blvd. Oxnard City planners should consider the safety of the residents of Colonia Ave. Colonia Ave. a neighborhood of single-family homes; a school bus route; no street lamps; and no pedestrian walkways. In the interest of the safety of citizens residing in this neighborhood, the City of Oxnard should consider installing speed-bumps along the length of Colonia Ave, as currently exist on the entire length of length of Stroube St. to Rose Avenue (where the auto dealerships, Coscto, Fry's, etc. are located). Speed bumps along Colonia Ave. should be installed if Rio Urbana is approved, to reduce safety risks, before a fatality involving a resident of Colonia Ave. occurs. 8.2 (cont'd)

Currently the traffic signal at the intersections of Vineyard, Stroube, and Colonia Ave. included a left-turn designated signal towards Colonia Ave. If this is the route that residents of Rio Urbana are expected to use, then a combination-U-turn and left–turn option should be added to this traffic signal. 8.3

Currently, a left or right turn is allowed on Sycamore onto Vineyard West. If Vineyard is widened as planned, in the interest of traffic safety, only a right-turn should be allowed from Sycamore onto Vineyard Ave. 8.4

The City's Draft Environmental document concluded that there would be "less than significant impact with mitigation incorporated" in the areas "transportation and circulation". The impact on traffic and traffic circulation that I have outlined should be addressed. 8.5

I also expressed our concern about whether 431) parking spaces for resident and guests of the 163 one-to-three tree bedroom condo units) within the Rio Urban development were sufficient so that streets and residents nearby are not negatively impacted by overflow parking from Rio Urban. This already occurs with overflow parking from the strip-mall the located on Vineyard Ave. and Sycamore St, as well as in other similar high-density housing in Oxnard. 8.6

I expressed our concern about the noise and air quality during construction of Rio Urbana for the residents living just across the street. 8.7

Finally I also question the Draft Environmental Document's conclusion that the Rio Urbana project would "introduce multi-family residents and commercial office space that are designed for visual compatibility and consistency with surrounding land uses." In reality, the majority of nearby land use is single-story homes. Rio Urbana introduces a 2-story, 15,000 sq. foot office building, and 165condo residences within eight three-story condo units. There are currently no multi-story buildings or high-density residential units in the neighborhoods in closest proximity to the planned Rio Urbana project. 8.8

Thank you for the opportunity to comment.

Henry Macias

805-484-8263

henry.macias@roadrunner.com

Letter 8

COMMENTER: Henry Macias, Neighbor

DATE: August 14, 2019

Response 8.1

The commenter states a concern regarding the widening Vineyard Avenue and its potential effects on the properties along the north side of this roadway. As noted in the comment, and in the IS-MND, the proposed widening would occur adjacent to the Rio Urbana project site – on the south side of East Vineyard Avenue, and would not directly affect properties across the street.

Response 8.2

Second, the commenter inquires the circulation routes expected to be used by residents, customers, and employees associated with the Rio Urbana to/from U.S. Highway 101. The commenter states a concern of increased traffic surrounding Rio Urbana, including, but not limited to, "The Collection," Vineyard Avenue, Stroube Street, Rose Avenue, Colonia Avenue, Myrtle Street, Sycamore Street, and Olive Street, and recommends installing speed bumps along Colonia Avenue as a safety measure to reduce these potential risks.

The revised Traffic Study completed by Associated Transportation Engineers (ATE) accounts for convenience of travel, based on the distance and time required per trip. This detailed analysis of traffic flows includes an examination of operating conditions of critical intersections during peak travel periods. Approximately half of the peak hour traffic to and from the project would affect Vineyard Avenue west of the project site. No left turns would be allowed onto Vineyard Avenue, so project-generated traffic would either make a "U" turn at the intersection of Vineyard Avenue and Sycamore Street, a "U" turn at Stroube Street, or use surface streets as suggested by the commenter. The critical intersection movements in this general direction were determined to continue operating at Level of Service "A" or "B" under all conditions.

The traffic report evaluated the possibility of adding a new traffic signal at the intersection of Vineyard Avenue and Sycamore Street, but determined that applicable signal warrants were not met to justify that improvement. The project would include construction of a raised median at this intersection to reinforce the right turn only movement from Sycamore Street to Vineyard Avenue.

The traffic report was reviewed by the City of Oxnard Public Works Department, and reflects the City's current recommendations regarding traffic improvements that will be required as a condition of project approval. These include widening Vineyard Avenue, constructing a full sidewalk and landscaping strip adjacent to the project, and installing raised medians at specific locations on Vineyard Avenue to restrict left turns. As a general policy, speed bumps or other traffic calming measures designed to slow or retard traffic are not installed unless warranted by specific conditions. At the present time, speed bumps or other improvements beyond those described are not expected to be required for the project. Therefore, no changes in the IS-MND are warranted.

Response 8.3

The commenter suggests addition of a second left turn lane at the traffic signal on Vineyard Avenue at Stroube Street. This intersection currently has a dual left-turn "U" turn. The traffic report analyzed the operation of this signalized intersection under all conditions. These included both morning and afternoon peak hour traffic in the existing conditions, existing+approved/pending projects, cumulative conditions, and cumulative+project. Under all scenarios, this intersection would operate at Level of Service "A." Thus, no substantial alteration at this intersection is expected to be required for the project, and no changes are necessary in the IS=MND.

Response 8.4

The commenter suggests that from Sycamore Street onto Vineyard Avenue, only a right turn should be allowed. The City agrees with this conclusion, and the project will include construction of a raised median to prevent such left turns.

Response 8.5

The commenter notes that the IS-MND concludes that transportation and circulation impacts would be less than significant with the mitigation measures identified, but believes that that the traffic concerns outlined should be addressed. The concerns are addressed in these responses, which are included in the Final IS-MND, and will be part of the information provided to the Planning Commission and City Council in considering the project.

Response 8.6

The commenter states that the 431 parking spaces for residents and guests of the 163 one- to three-bedroom condo units may not be adequate and may lead to overflow parking on neighboring streets.

The parking included in the project adequately meets the City of Oxnard's standards for a property consisting of residential and commercial uses, as set forth in the Article X of the City Municipal Code. The project design, including parking, was reviewed by City departments as part of the process to identify conditions of approval, and will be reviewed by the Planning Commission.

Response 8.7

The commenter states a concern regarding noise and air quality impacts on neighbors across the street during the construction process for the proposed project.

The topics of Noise and Air Quality are discussed in Sections XII and III, respectively. Both sections explain the thresholds used to evaluate impacts and the analyses performed to reach conclusions regarding the significance of impacts. Since the commenter does not raise any specific issues relative to these discussions, no changes are necessary in the IS-MND.

Response 8.8

The commenter questions the conclusion that the project is designed for visual compatibility and consistency with surrounding land uses." Specifically, the commenter claims that introducing two-story 15,000 square foot office building and eight three-story condominium structures is incompatible with the current neighborhood density and land uses.

The issue relates specifically to items 3 and 4 in Section I Aesthetics and Urban Design. The City of Oxnard has acknowledged the architectural style, height and density features of the site are not identical to the existing neighborhood. The project underwent extensive review and revision, and incorporates several features discussed in the IS-MND to improve its compatibility with nearby land uses. The City decision makers (Planning Commission and City Council) will evaluate these concerns as part of their consideration of the project. No changes related to this issue are necessary in the IS=MND.

Letter 9

MANUEL VACA

PO BOX 6471 OXNARD, CALIFORNIA 93031 PHONE (805) 402-8999 mividavaca@aol.com

Chris Williamson
214 S. "C" Street
Oxnard, CA 93030

RE: El Rio School site proposed development

Dear Sir;

I am a property owner of a couple of parcels adjoining the property proposed for development.

I have a couple of concerns regarding the development as it is presently proposed.

First:
Another high-density project which does not have secure perimeters leaves the development open to higher crime activity by not limiting residents and invited guests to within the areas. I have seen this in past developments, and eventually (within ten years), lead to higher non owner-occupied units which causes degradation of the project. We have enough high-density problems locally already, such as exist in some areas in El Rio Southeast of this project.
I would recommend for this multi-story high density project that it be secured by limited access in the form of secure gating. This will reduce non-residents or guests from entering uninvited. 9.1

Second: I find it very disturbing that El Rio Lane would be incorporated as part of the project in the form that it becomes part of the annexation. As it is laid out in the preliminary proposal, a Lane which historically has been used for foot traffic and bike traffic from Vineyard Avenue areas, leading to Wright Road and Rio Real School would disappear. 9.2
Additionally, the buffer currently created by Rio School Lane and use of adjoining property on the opposite side of the Lane gets removed. In this rural area where we have large lots, separation and protection from high use and noise is paramount.
How could the developer think it is OK to take a public lane, and incorporate it in their project in a manner that would imply specific use by hundreds of vehicles daily for the Condo Associations' use?
Just leaving us access from their approach roadway to their extensive parking areas is not enough!
Simply, the high traffic use will make it unsafe for pedestrians and cyclists which have historically used that access point. 9.3
I totally understand that we need more housing, and ideally incorporate affordability in Ventura County, but as the project is laid out, it severely impacts the rurality of our lots by bringing the project right up to our rear fence lines. 9.4
I urge you to maintain the Rio School Lane separate from this project, so its current use is retained, and the buffer which it creates is left. 9.5

Thank You for your attention.

Sincerely,

Manuel Vaca

Letter 9

COMMENTER: Manuel Vaca, Neighbor

DATE: August 13, 2019

Response 9.1

The commenter states that they are concerned about safety and degradation of the project due to the high-density structure and lack of protective fencing along the perimeter.

As part of the landscaping plan, referenced in the project description, protective fencing, in the form of a six-foot, vertical iron rail fencing and a landscaped strip, will be located on the northern property line, in order to separate the project (including Rio Lane) from the adjacent residential areas, while maintaining existing access to those areas. In addition, six-foot, graffiti-resistant walls as well as a section short fencing and a gate will be located on the southern and eastern boundary lines in order to allow access to and from the adjacent market area.

Response 9.2

The commenter states that they have concerns regarding the annexation of El Rio Lane and its impact on traffic, density, aesthetics, and noise. The concern is that removing El Rio Lane and use of the adjoining property, as suggested in the proposal, would remove a buffer used for separating larger lots and reducing noise impacts between Vineyard Avenue, Wright Road, and Rio Real School. The commenter prefers that Rio School Lane remain public property, separate from the proposed project.

Annexation of Rio School Lane, as part of this project, is intended by the City of Oxnard as a mechanism to ensure the design and improvements, as approved, are completed without expense or liability to the City. As described in the IS-MND (page iv and Figure 4), Rio School Lane will be constructed as a private lane and will maintain access for the existing residential areas, as well as the project, with Vineyard Avenue and its sidewalk. Therefore, the inclusion of Rio School Lane within the project is a City requirement, which would retain the buffer feature provided by the existing County road as well as maintain vehicle and pedestrian access for the existing residences.

Response 9.3

The commenter raises concerns about maintaining the buffer function of Rio School Lane, including separation distance, noise, and traffic issues. As shown in the project plans (Figure 4 in the IS-ND/MND) as well as Sheet 1 of the Tentative Tract Map, the proposed Rio School Lane right-of-way would include landscaped strips, parking, a twenty-six-foot-wide private drive, seven-foot-wide sidewalk, and perimeter fencing. This design will provide a forty-eight-foot-wide buffer between the proposed residences and the nearest existing residences. Though the additional vehicle traffic from the traffic along Rio School Lane would cause an increase in noise levels near the existing residences (as displayed in Table 3 and discussed on page 39 of the IS-ND/MND), the noise modeling performed articulates less than significant noise impacts. Specifically, the noise modeling performed a reference distance of seventy-five feet between the centerline of the road and the receiver that was used. The resulting Community Noise Equivalent Level was estimated to be 44.4 decibels (dBA). The nearest existing residence is about 30 feet from the future centerline of the travel lanes on Rio

School Lane. Allowing for this smaller distance from the roadway would increase the estimate of the CNEL to approximately 50.4 dBA, which is still far below the 65 dBA threshold for a noise impact.

The revised Traffic Study completed by Associated Transportation Engineers (ATE) accounts for convenience of travel, based on the distance and time required per trip. This detailed analysis of traffic flows includes an examination of operating conditions of critical intersections during peak travel periods. Therefore, no changes are warranted.

Response 9.4

The commenter raises concerns about the differences in land use type and the separation distance between the project and the existing rural lots in the unincorporated area. The IS-MND acknowledges that the project would involve a land use change and develop multi-family apartments which are a higher density and different land use from the mixed rural land use in the unincorporated area. The project design would retain Rio School Lane as a private drive, in order to maintain access to the existing land uses and to provide a safe pedestrian route to and from Vineyard Avenue.

The project design also includes parking and landscaping that would increase the distance from the proposed residences to the nearest existing residences. The nearest existing buildings northeast of Rio School Lane in the unincorporated area are commercial in use, and there are some low density residential buildings in the general neighborhood at greater distances. The project design would provide a minimum distance in excess of 70 feet between the new apartments and existing buildings northeast of Rio School Lane. The IS-MND concludes that these design features will serve to reduce aesthetic and urban design effects to less than significant levels. No changes are necessary in the IS-MND.

Response 9.5

The commenter recommends that Rio School Lane be maintained in its current condition, separate from the project, in order to serve as a buffer between the proposed project and existing uses in the unincorporated area.

The disposition of Rio School Lane has been proposed in a manner that would bring it into the City jurisdiction as part of the project, without creating a street right-of-way for which the City would be responsible. The design, however, would maintain the width of the existing street and would provide additional landscaping and other features to separate the project from the existing uses. No changes are necessary in the IS-MND.

Letter 10

Comments on Rio Urbana

Inbox

Vicente Macias <vm3469@gmail.com>

9:48 AM (1 hour ago)

to me

Dear Mr Willamson,

I am writing to you in regards to the 30-day public review for the Rio Urbana project. (Negative Declaration No. 2017-04)

My principal concern is a total absence of realistic traffic routes to the 101 freeway from this 10.1
development, Rio Urbana. Without an additional traffic light, traffic will be diverted into the
surrounding neighborhoods. Neighborhoods that are totally devoid of crosswalks, sidewalks and
street lights.

Parallel to this development is Colonia Ave. (Where I live) It seems no notice was given to any
residents of this neighborhood. Colonia Ave. also has received no consideration in the
accompanying environmental impact report. Even though it would be one of the main routes
used by Rio Urbana residents and Rio School District employees to the 101 freeway and to
Riverpark amenities. I cannot stress enough that this neighborhood route will be essential to 10.2
the flow of traffic from the Rio Urbana development under this current plan. Which makes it
strange that it was not considered in the environmental impact report. I am also curious if the
increased traffic from the soon-to-be opened Wagon Wheel development was factored into the
report.

Colonia Ave., also hosts a school bus route making multiple stops each weekday during rush
hour. A likely consequence of Rio Urbana's impact to rush hour traffic will be an increased risk
for children waiting for the school bus. This increased risk is amplified by the non-existent basic 10.3
infrastructure on Colonia Ave. The end-result is the increased vulnerability of children and the
increased liability for schools.

I hope you consider these issues when you make your decision / recommendation

Respectfully,

Vicente Macias
2759 ½ Colonia Ave.
Oxnard CA, 93036

Letter 10

COMMENTER: Vicente Macias, Neighbor

DATE: August 16, 2019

Response 10.1

The commenter states that the proposed circulation routes between the Rio Urbana project and U.S. Highway 101 would be unsafe without the introduction of a new traffic signal.

The revised Traffic Study completed by Associated Transportation Engineers (ATE) accounts for convenience of travel, based on the distance and time required per trip. This detailed analysis of traffic flows includes an examination of operating conditions of critical intersections during peak travel periods. By referencing the need for a new traffic signal, the commenter implies that there should be left turns out of the project onto Vineyard Avenue, in order to reduce the potential for traffic routing through the surface streets northwest of the project site. The City considered the potential for left turns onto Vineyard Avenue, and this was rejected due to the traffic flow and safety issues. Therefore, no changes are warranted.

Response 10.2

The commenter states that noticing was not properly provided to residents on Colonia Avenue.

Noticing for the Initial Study-ND/MND was completed in accordance with the California Environmental Quality Act (CEQA). There will also be additional opportunities for public participation throughout the permitting process conducted by the City of Oxnard and the County of Ventura. These will include noticed public hearings at the City Planning Commission, City Council, and County Board of Supervisors and LAFCO.

Response 10.3

The commenter states that there is an existing school bus route on Colonia Avenue which may be negatively impacted by traffic associated with the Rio Urbana project. The commenter claims that the safety of children would be at risk due to increased traffic on a street that currently lacks basic infrastructure.

The revised Traffic Study completed by Associated Transportation Engineers (ATE) accounts for convenience of travel, based on the distance and time required per trip. This detailed analysis of traffic flows includes an examination of operating conditions of critical intersections during peak travel periods. Approximately half of the project-generated traffic would involve travel directed to or from Vineyard Avenue towards the southwest. There are several routes that would be available for this movement, including a "U" turn at Sycamore Street (considered the most likely in the traffic study), a "U" turn at Stroube Street, and a left turn to circulate around the block via Colonia Avenue or other streets as suggested by the commenter. The most affected intersections were considered in the traffic study, and were found to operate at Level of Service A or B under all times and scenarios studied. Thus, traffic impacts are not predicted to be significant at the lower volume intersections within the residential neighborhoods mentioned. Therefore, no changes in the IS-MND are necessary.