SCH NO. 2004071011

Addendum to the Pacific Coast Business Park Specific Plan EIR

Oceanside Fire Station 8

DECEMBER 2023

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E Noise Assessment Data
F Project Information Form (Transportation)

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
BMP	Best Management Practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of Oceanside
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
County	San Diego County, County of San Diego
dB	decibel
dBA	A-weighted decibel
GHG	greenhouse gas
L_{eq}	equivalent continuous sound level (time-averaged sound level)
MT	metric ton
MT CO_2e	metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
O_3	Ozone
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
VMT	vehicle miles traveled
VOC	volatile organic compound

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1 Introduction

1.1 Project Overview

The City of Oceanside (City) Development Services Department has prepared an entitlement application consisting of a Development Plan and Conditional Use Permit (CUP) for development of the Fire Station 8 Project (project) located on an approximately 2.15- acre vacant, previously disturbed property in the Pacific Coast Business Park (PCBP) Specific Plan (SP) area. In addition to the fire station, the 2.15-acre site would include an aboveground water reservoir which has obtained all necessary California Environmental Quality Act (CEQA) clearances and approvals. The project entails the construction and operation of the City's Fire Station 8 which includes a two-level structure (approximately 37 feet 6 inches in total height) and associated site improvements including driveways, parking spaces, emergency diesel generator and fuel storage areas, and site landscaping.

The project is the subject of analysis in this document pursuant to the California Environmental Quality Act (CEQA). In accordance with CEQA Guidelines Section 15367, the City is the lead agency with principal responsibility to consider the project for approval.

This introduction will discuss the following:

- The requirements of CEQA
- The Environmental Impact Report for the Pacific Coast Business Park Project (State Clearinghouse No. 2004071011) (City of Oceanside 2005) (herein referred to as the PCBP SP EIR) certified by the City on August 22, 2005).
- The primary purpose of an addendum to a previously certified environmental impact report (EIR)
- The standards for adequacy of an addendum pursuant to the CEQA Guidelines
- The format and content of this addendum
- The City's processing requirements to consider the project for approval
- An explanation of the Environmental Checklist (Appendix G of CEQA Guidelines)
- A summary of documents to be incorporated by reference and points of contact for the project

1.2 California Environmental Quality Act Compliance

CEQA, a statewide environmental law described in Public Resources Code Sections 21000–21177, applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to adversely affect the environment. The overarching goal of CEQA is to protect the physical environment. To achieve that goal, CEQA requires that public agencies identify the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts when avoidance or reduction is feasible. It also gives other public agencies and the general public an opportunity to comment on the information. If significant adverse impacts cannot be avoided, reduced, or mitigated to below a level of significance, the public agency is required to prepare an EIR and balance the project's environmental concerns with other goals and benefits in a statement of Project Background and Setting

1.3 Purpose and Need

The project would help the City meet the project objectives identified in the PCBP SP EIR (City of Oceanside 2005). These objectives consist of the following:

- Implement the designated land uses of the City's General Plan, Rancho del Oro Industrial Master Development Plan, and PCBP Industrial Master Development Plan
- Accommodate a broad range of product types to accommodate various sizes of buildings and types of users while ensuring a high quality, cohesive, and aesthetic development which considers the surrounding built environment.
- Provide and maintain a high quality of improvements, in general, for the mutual benefit and protection of the Pacific Coast Business Park properties, and any and all future owners of any part or parcel within the Pacific Coast Business Park.

1.4 Project Review and Background

The City prepared an EIR for the PCBP Industrial Master Development Plan (approved project) in 2005. The PCBP consisted of twelve parcels (total of approximately 1,500,000 square feet (SF) of proposed building area) which are bordered by Old Grove Road on the north and Avenida Del Oro on the east Following the certification of the EIR in 2005, the PCBP was divided into thirty (30) parcels/lots. The area was graded to create building pads and public infrastructure including public roads and utilities were installed. In 2009, the City certified a Supplemental EIR (SEIR) which modified the projected PCBP land use allocation as envisioned in the 2005 EIR to (1) reduce industrial park use from 1,100,000 square feet (SF) to 901,500 SF; (2) increase commercial office use from 400,000 SF to 518,000 SF; and (3) accommodate an approved Medical Office use of 80,500 SF.

In 2014, the City approved an Addendum to the PCPB SP EIR and SEIR which evaluated the impacts of a proposed FedEx Ground Distribution Facility on approximately 38.62 acres of the PCBP. The facility, which began operations in 2016, consists of an approximately 306,000 SF distribution center, 3,200 SF gateway building, 5,300 SF vehicle maintenance building, parking lot, and bio-retention basin. Lastly, in 2017, the City approved the second Addendum to the EIR and SEIR which evaluated Phase II of the PCBP and more specifically, construction and operation of "Building 1", "Building 2", and "Building 4" on previously rough graded lots. Located at 1322 Rocky Point Drive, 1339 Rocky Point Drive, and 1291 Rocky Point Drive, requested entitlements for the building envisioned potential wholesale distribution and storage use for all three building sites. The buildings have been constructed and are operational.

The Land Use Plan for the PCBP SP included 30 lots to accommodate a broad range of product types and facilitate build out with a variety of business park and industrial uses. The overall PCBP encompasses approximately 124.31 acres within the Rancho Del Oro Industrial Master Development Plan area and the PCBP SP which updates the Industrial Master Development Plan for the Rancho Del Oro area. Permitted uses within the PCBP include those allowed by City regulations for the Limited Industrial (IL) zone.

The project property analyzed under this document are located within the PCBP that was originally approved in 2005 by the Planning Commission, and improved with graded streets, utility infrastructure and common area landscaping by the Master Developer to facilitate future development of individual industrial lots. The project site encompasses PCBP Lot 26 which is approximately 2.15 acres and border Old Grove Road in the north, Lot 25 on the east. While Lot 26 and the underlying zoning accommodate a wide range of (1) moderate to low intensity industrial uses capable of being located adjacent to residential areas with minimal buffering and attenuation

measures and (2) commercial services and light manufacturing (City of Oceanside Zoning Ordinance), Public Safety Facilities (which includes facilities for public safety and emergency services, including police and fire protection) are allowed with the approval of a Conditional Use Permit (CUP). While the fire station use was not previously contemplated in the PCBP SP, the use is allowed with a CUP pursuant to the Zoning Ordinance. In addition and pursuant to the Zoning Ordinance, a Development Plan is also required for the construction of the new facility. The project includes the construction and operation of City Fire Station No. 8 within the PCBP and the total square footage for the fire station footprint is approximately 13,240 SF, which is within the total square footage projected under the prior CEQA analysis and PCBP SP[1]. It should also be noted that the introduction of the proposed use/fire station would not result in any new significant impacts that were not previously identified in prior EIR/SEIR/Addendum efforts.

1.5 Format and Content of this Addendum

The following components make up this addendum:

- Introduction (Chapter 1) and project description (Chapter 2)
- The completed Environmental Checklist and its associated analyses (Chapter 3), which conclude that the project would not result in any new significant environmental impacts or substantially increase the severity of environmental impacts beyond the levels disclosed in the PCBP SP EIR
- Other documentation that evaluates the project and/or project site, which are appended to this addendum:
  - **Appendix A,** Air Quality and Greenhouse Gas Emission Calculations
  - **Appendix B,** Biological Resources Letter Report
  - **Appendix C,** Cultural Resources Inventory Report for Addendum No. 3 to the Regional Recycled Water Project Program EIR (Dudek 2018)
  - **Appendix D,** Geotechnical Report
  - **Appendix E,** Noise Assessment Data
  - **Appendix F,** Project Information Form (Transportation)

1.6 Preparation and Processing of this Addendum

The City directed and supervised the preparation of this addendum. Although prepared with assistance from the consulting firm Dudek, the content contained in and the conclusions drawn by this addendum reflect the sole independent judgment of the City.

This addendum will be forwarded, along with the previously certified EIR and EIR Addendum, to the City's decision-making body for review as part of its deliberations concerning the project. A public hearing will be held at a later date to evaluate the project and the adequacy of this addendum. Public comments will be heard at this hearing. At the conclusion of the public hearing, the decision-making body may provide a decision to approve, approve with modifications, or deny approval of the project. If approved, the decision-making body will adopt findings relative to the project's environmental impacts.

[1] The PCBP SP identified Lot 26 as 2.15 acres and provided for a maximum lot coverage of 75 percent.

1.7 Initial Study Checklist

The City prepared the project's Environmental Checklist per CEQA Guidelines Sections 15063(d)(3) and 15168(c)(4). Appendix G of the CEQA Guidelines includes a suggested checklist to indicate whether the conditions set forth in Section 15162, which would require a subsequent or supplemental EIR, are met and whether there would be new significant impacts resulting from the project not examined in the PCBP SP EIR. The checklist can be found in Chapter 3 of this document. Following the checklist, Sections 3.1 through 3.21 include an explanation and discussion of each significance determination made in the checklist.

For this addendum, the following four possible responses to each of the individual environmental issue areas are included in the checklist:

1. **New Potentially Significant Impact**
2. **New Impact Requiring Mitigation**
3. **No New Impact/No Impact**
4. **Reduced Impact**

The Environmental Checklist and accompanying explanation of checklist responses provide the information and analysis necessary to assess relative environmental impacts of the project in the context of environmental impacts addressed in the previously certified EIR. In so doing, the City will determine the extent of additional environmental review, if any, required for the project.

1.8 Existing Documents to be Incorporated by Reference

CEQA Guidelines Sections 15150, 15168(c)(3), and 15168(d)(2) permit and encourage an environmental document to incorporate by reference other documents that provide relevant data. The City General Plan, the Oceanside Code of Ordinances, the PCBP SP, PCBP SP EIR and its Mitigation Monitoring and Reporting Program, technical appendices, Findings and Statement of Facts, and associated City Council Resolutions, and the PCBP SP are all herein incorporated by reference pursuant to CEQA Guidelines Section 15150. These documents are available for review at the following location:

City of Oceanside, Planning Division
300 N. Coast Highway
Oceanside, California 92054

1.9 Points of Contact

The lead agency for this environmental document is the City of Oceanside. Any questions about the preparation of this addendum, its assumptions, or its conclusions should be directed to the following:

Shannon Vitale, Senior Planner
City of Oceanside Development Services Department
300 N. Coast Highway
Oceanside, California 92054
svitale@oceansideca.org
760.435.3927

2 Project Description

2.1 Project Location

The proposed project site is located in the City of Oceanside (City), in the northern portion of San Diego County (Figure 1, Project Location). Nearby cities include Vista to the east and Carlsbad to the south. Federal lands associated with Marine Corps Base Camp Pendleton are located to the north of the City and the Pacific Ocean lies to the immediate west of City limits. The proposed project site is approximately 2.15- acres and is located on a vacant, previously disturbed property in the City's Ivey Rancho/Rancho Del Oro neighborhood. More specifically, the proposed project site borders Old Grove Road to the north, Trestles Street on the west, Rocky Point Drive on the south, and an existing two-story office building and surface parking lot (1278 Rocky Point Drive) to the east. The vacant but previously graded project site is addressed as 1282 Old Grove Road.

Regional access to the project site is provided by I-5 to the west, SR-76 to the north, and SR-78 to the south (see Figure 1, Project Location).

2.2 Environmental Setting

Project Site

The approximately 2.15-acre rectangular project site is vacant but includes irrigated vegetation in the northwestern corner. Based on archival topographic maps and historic aerial images, the project site did not support any development from 1938 to 2018. The project site has never been historically occupied or developed residentially; however, the western section of the project site was occupied by agricultural/nursery activities from 1978 to 1991.

The City General Plan Land Use Map designates the project site as Limited Industrial (LI) (City of Oceanside 2022a). The City's Zoning Map shows the site as being zoned PD-1 (IL) (Planned District 1 – Rancho Del Oro (limited Industrial) within the Rancho Del Oro Master Plan. Development for the project site is regulated by the Pacific Coast Business Park Master Development Plan

Surrounding Land Uses

While vacant, the project site is located in a developed urban area of the City and is situated adjacent to one to two-story office and medical office building development (and associated parking lots) to the east and west (west across Trestles Road), three large concrete title up warehouse buildings to the south (and southwest) across Rocky Point Drive, and gated, condominium and single-family residential development (Pacific Ridge Rancho Del Oro) to the north across Old Grove Road. Additional warehouse and office developments are located throughout the PCBP SP including a large Fed Ex distribution facility (encompassing PCBP Lots 1 through 12) and a large facility encompassing PCBP Lot 30 (approximately 6.77 acres).

2.3 Project Characteristics

The proposed project would involve the construction of the City's Fire Station 8 which includes a two-level structure (approximately 37 feet 6 inches in total height) and associated site improvements including driveways, parking

spaces, emergency diesel generator and fuel storage areas, and site landscaping. The fire station structure would include an apparatus bay and accompanying chief garage, workshop and storage/electrical rooms. In addition, the fire station facility would include a dedicated lobby, multiple restrooms, conference/meeting spaces, dining, day and exercise rooms, storage rooms, a study /library, locker room, and living quarters for staff. The Chief's dorm, bath, and office would be located on the ground floor and in addition to general staff/personnel, captain's quarters would be located on the second floor. See Figure 2, Site Plan.

The building footprint would be approximately 13,240 square feet and the parking/paved area would equate to approximately 37,300 square feet. Colorized and dimensioned floor plans of the proposed fire station building are provided as Figure 3, Floor Plan – Lower Level and Figure 4, Floor Plan – Upper Level.

The Fire Station building materials will consist of a wood frame structure with stucco finishes, standing seam metal, and TPO roofing materials. Example exterior finishes are depicted on Figure 5, Elevations.

As indicated on the Site Plan, solar panels may be installed atop the carports over the proposed parking areas in the northeastern corner of the site and a portion of the fire station building. In total, approximately 135 solar panels covering 2,025 square feet of carport/building roof may be installed on the Project Site. The Project also includes installation of an emergency, weathered protected and enclosed diesel generator (500 kilovolt-amps) and one (1) 1,000-gallon diesel fuel tank in a concrete containment pond (both elements would be sited outdoors and adjacent to the carport area. A battery storage facility is also proposed and would be housed within a two hour rated container with its own HVAC and fire detection system. Lastly, EV chargers would be installed in the apparatus bay (4) and at the public parking spaces (2) located off Trestles Street.

Lastly, lighting at the Fire Station 8 entrance would be limited to the immediate vicinity sufficient to create a visual welcoming gateway. The public parking lot and public entry would be lit for safety but would use shielded overhead lighting. The Apparatus Bay apron would require down-lighting at the front and rear overhang or would be down lit from the walls. Low level path lighting or bollards on motion sensors would illuminate walkways to employee parking and accessory site.

On-Site and Off-Site Adjacent Improvements

The project would also include improvements to Trestles Street along the project's street frontages, including a landscape setback, new sidewalks, and access points within the roadway right-of-way. Landscaped areas would be generally located along the perimeter of the site with several planting areas features trees and shrubs to be located in interior planting areas. Pursuant to City Code, approximately 12% of the Project Site square footage must support a tree canopy and a minimum of 22% of the Project Site square footage must consist of permeable materials. While existing trees and vegetation within parkways aligned along Old Grove Road, Trestles Street, and Rocky Point Drive would remain in place (several trees along Trestle Street would be removed to construct site access/a new driveway), all vegetation within the interior of the site would be removed to accommodate the proposed fire station development. A perimeter fence would be installed around the entire project site and existing sidewalks adjacent to Trestles Street and Rocky Point Drive would be demolished and rebuilt. The Project's Conceptual Landscape Plan is presented on Figure 6, Conceptual Landscape Plan.

Site Access, Circulation, and Parking

Access to the project site would be provided by three driveways. The first driveway would be 34-feet-wide and located south of the Old Grove Road and Trestles Street intersection. This driveway would not be gated and would

provide public access to the station (this driveway would also be used by refuse collection services to access site trash receptables). Three compact parking space and a handicapped parking space would be accessible via this driveway. The second driveway would be located to the south of the first driveway and would be the primary access point for fire department personnel and vehicles. This driveway would be gated. The third driveway would be approximately 29 feet wide, accessible off Rocky Point Drive near the southeast corner of the 2.15-acre site, and use would be restricted through the installation of a 28-foot wide swing gate.

Vehicle parking for fire department personnel would be located in a secured parking lot in the northeastern portion of the project site. See Figure 2. Parking spaces would be covered.

Stormwater System and Other Utility Improvements

Fire Station 8 would incorporate best management practices (BMPs) to reduce stormwater runoff from the site. The proposed drainage design will direct site runoff to the on-site treatment BMP (i.e., modular wetland system) via surface flow and subsurface stormwater pipes. The modular wetland system feature outlet will connect to the municipal storm drain network in Rocky Point Drive through a new pipe connection. The project's proposed wetland system is designed to achieve and exceed treatment requirements.

2.4 Project Construction and Phasing

Construction of the project would include concrete removal/demolition; site preparation; grading; underground utility construction (trenching); building construction; paving, architectural coating, and fencing and landscaping. Construction is anticipated to begin in approximately Spring 2025 and end in Summer 2026, for an approximated construction duration of approximately 15 months.[2] Construction equipment would be staged either on site or in the adjacent parking lot. Construction phasing is anticipated as follows:

- Site preparation (5 days)
- Grading (10 days)
- Building Construction (310 days)
- Paving (10 days)
- Architectural coating (10 days)

Site clearing and rough grading would occur during the site preparation phase. Grading would require approximately 2,066 cubic yards of fill. A summary of the anticipated construction equipment, quantity of equipment, hours of operation of the equipment, and worker, vendor, and haul trips per phase is included in Table 1.

[2] Timing estimates of the proposed project buildout were based on the preliminary project phasing schedule. Because CalEEMod uses real dates (e.g., January 15, 2024) to calculate construction emissions, assumptions were made as to key dates for each phase. While all dates reflected in this document are estimates and actual dates may differ depending on funding, weather, future campus needs, and other factors, this analysis represents a conservative assessment of air quality impacts.

Table 1. Anticipated Construction Scenario

Construction Phase	Average Daily Worker Trips (One Way)	Average Daily Vendor Trip (One Way)	Average Daily Truck Trips (One Way)	Equipment Type	Quantity	Hours/ Day
Site preparation	8	2	0	Graders	1	8
				Tractors/loaders/backhoes	1	8
				Rubber tired dozers	1	7
Grading	10	4	26	Rubber-tired dozers	1	8
				Tractors/loaders/backhoes	2	7
				Graders	1	8
Building Construction	40	16	0	Cranes	1	6
				Forklifts	1	6
				Tractors/loaders/backhoes	1	6
				Welders	3	8
				Generator sets	1	8
Paving	16	4	0	Pavers	1	6
				Cement and mortar mixers	1	6
				Rollers	2	7
				Tractors/loaders/backhoes	1	8
				Paving equipment	1	8
Architectural coating	8	0	0	Air compressors	1	6

Source: See Appendix A
Note: Water trucks were not modeled as equipment in the construction models; instead, they were modeled as vendor trips in the site preparation, grading, and trenching phases.

2.5 Project Approvals

The following discretionary approvals would be required prior to implementing the project:

- Development Plan (D22-00023)
- Conditional Use Permit (CUP22-00030)

3 Initial Study Checklist

1. **Project title:**

   Fire Station 8 Project

2. **Lead agency name and address:**

   City of Oceanside
   Community Development Department - Public Works
   300 N. Coast Highway
   Oceanside, California 92054

3. **Contact person and phone number:**

   Shannon Vitale, Senior Planner
   City of Oceanside, Development Services Department
   300 N. Coast Highway
   Oceanside, California 92054
   svitale@oceansideca.org
   760.435.3927

4. **Project location:**

   The proposed project site is located in the City of Oceanside (City), in the northern portion of San Diego County (Figure 1). Nearby cities include Vista to the east and Carlsbad to the south. Federal lands associated with Marine Corps Base Camp Pendleton are located to the north of the City and the Pacific Ocean lies to the immediate west of City limits. The proposed project site is approximately 2.15- acres and comprises vacant, previously disturbed property in the City's Ivey Rancho/Rancho Del Oro neighborhood. More specifically, the proposed project site borders Old Grove Road to the north, Trestles Street on the west, Rocky Point Drive on the south, and an existing two-story office building and surface parking lot (1278 Rocky Point Drive) to the east. The vacant but previously graded project site is addressed as 1282 Old Grove Road. Regional access to the project site is provided by I-5 to the west, SR-76 to the north, and SR-78 to the south (see Figure 1).

5. **Project sponsor's name and address:**

   Kymberly Corbin, Associate Engineer
   City of Oceanside
   Development Services Department
   300 N. Coast Highway
   Oceanside, California 92054

6. **General plan designation:**

   Rancho Del Oro Industrial (S-1-84)

7. Zoning:

PD-1/Light Industrial (IL) (Planned District 1 – Rancho Del Oro (Limited Industrial)

8. Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):

The proposed project would involve the construction of the City's Fire Station 8 which includes a two-level structure (approximately 37 feet 6 inches in total height) and associated site improvements including driveways, parking spaces, emergency diesel generator and fuel storage areas, and site landscaping. The fire station structure would be approximately 13,240 square feet and the site would include an apparatus bay and accompanying chief garage, workshop and storage/electrical rooms. In addition, the fire station facility would include a dedicated lobby, multiple restrooms, conference/meeting spaces, dining, day and exercise rooms, storage rooms, a study /library, locker room, and living quarters for staff. The Chief's dorm, bath, and office would be located on the ground floor and in addition to general staff/personnel, captain's quarters would be located on the second floor. Three driveways would provide access to the site, two from Trestle Avenue and one from Rocky Point Road.. Landscaped areas would be generally located along the perimeter of the site with several planting areas features trees and shrubs to be located in interior planting areas.

Refer to Chapter 2, Project Description, for a detailed description of the project and associated improvements.

9. Surrounding land uses and setting (Briefly describe the project's surroundings):

While vacant, the undeveloped project site is located in a developed urban area of the City and is situated adjacent to one to two-story office and medical office building development (and associated parking lots) to the east and west (west across Trestles Road), three large concrete title up warehouse buildings to the south (and southwest) across Rocky Point Drive, and gated, condominium and single-family residential development (Pacific Ridge Rancho Del Oro) to the north across Old Grove Road. Additional warehouse and office developments are located throughout the PCBP SP including a large Fed Ex distribution facility (encompassing PCBP Lots 1 through 12) and a large facility encompassing PCBP Lot 30 (approximately 6.77 acres). See Figure 7, Surrounding Land Uses.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

Responsible agencies that may have ministerial authority over the project include the San Diego Air Pollution Control District and San Diego Regional Water Quality Control Board.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Please refer to Section 3.5, Cultural Resources, and 3.18, Tribal Cultural Resources, of this document.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

12/05/23
Date

Evaluation of Environmental Impacts

Section 15168(c) of the CEQA Guidelines provides that when the lead agency adopts a program EIR, subsequent activities in the program are examined in light of the program EIR to determine whether an additional environmental document must be prepared. If the lead agency finds that pursuant to CEQA Guidelines Section 15162, no new effects could occur or mitigation measures would be required, the activity may be approved as being within the scope of the project covered by the program EIR (CEQA Guidelines Section 15162[c][2]). Pursuant to Section 21166 of CEQA and Section 15162 of the CEQA Guidelines, if the lead agency determines that one or more of the following conditions are met, a subsequent EIR or negative declaration shall be prepared for the project:

1. Substantial project changes are proposed that will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes would occur with respect to the circumstances under which the project is undertaken that require major revisions to the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance that was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified or the negative declaration was adopted shows any of the following:
    a. The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
    b. Significant effects previously examined will be substantially more severe than identified in the previous EIR;
    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponent declines to adopt the mitigation measures or alternatives; or
    d. Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponent declines to adopt the mitigation measures or alternatives.

Where none of the conditions specified in Section 15162 are present, the lead agency can choose not to prepare a subsequent or supplemental EIR (CEQA Guidelines Section 15162[a]), but may prepare a negative declaration, an addendum, or no further CEQA documentation. Section 15164 of the CEQA Guidelines states that an addendum to an EIR shall be prepared "if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred."

In accordance with the CEQA Guidelines, the City has determined that an addendum to the PCBP SP EIR is the appropriate environmental document for the project. This addendum reviews the changes proposed by the project and any pertinent changes to the circumstances under which the project is undertaken that have occurred since the PCBP SP EIR was certified. It also reviews any new information of substantial importance that was not known and could not have been known with exercise of reasonable diligence at the time that the PCBP SP EIR was certified. It further examines whether, as a result of any changes or any new information, a subsequent or supplemental EIR may be required. This examination includes an analysis of the provisions of Section 21166 of CEQA and Section 15162 of the CEQA Guidelines and their applicability to the project.

3.1 Aesthetics

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that because the area surrounding the PCBP property was developed and contained no scenic resources such as trees or rock outcroppings, aesthetic impacts (i.e., impact to scenic vistas, scenic highways, visual character, and day and nighttime views associated with new sources of light and glare) would not be significant.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring Mitigation	No New Impact/No Impact	Reduce Impact
I. AESTHETICS – Except as provided in Public Resources Code Section 21099, would the project**:**				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a) Would the project have a substantial adverse effect on a scenic vista?

Scenic vistas generally refer to views that are accessible from public vantage points, such as public roadways and parks. Although the City's General Plan does not identify specific scenic vistas, the General Plan identifies "visual open space" throughout the City that are currently dedicated or restricted to ensure their preservation (City of Oceanside 2002). The closest City-identified visual open space, Mission San Luis Rey, is located approximately 2.1 miles northwest of the site. Due to distance and intervening terrain, landscaping, and development, views of/to Mission San Luis Rey are not available from the Project site or from the immediate surrounding area in the City's Rancho Del Oro neighborhood. In addition and in regards to non-designated or informal scenic vistas, views to local or regional scenic resources such as mountains or prominent topography

are not available from the site or immediate surrounding area (see Figure 8, Existing Conditions for an example of available views and site conditions) and thus, development of the site as proposed would not have a substantial adverse effect on a scenic vista. Motorists and other road users, residents, and other viewers in the area would be provided views to onsite construction activities and once constructed, the Fire Station No. 8 facility; however, development of the site would not obstruct or substantially interrupt an existing view to a significant scenic resource. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

*b) **Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

According to the California State Scenic Highway Mapping System (Caltrans 2022), there are no officially designated state scenic highways in the Project area. The nearest eligible state scenic highway, State Route (SR) 76, which runs between Interstate 5 (I-5) and SR 79 and is located approximately 1.6 miles north of the Project site (Caltrans 2022). The nearest officially designated state scenic highway, SR 52 near Mission Trails Regional Park, is located approximately 28 miles to the southeast of the Project site. Due to distance and intervening terrain, development, and landscaping, the Project site is not visible from SR 76 or SR 52. Therefore, no impacts to scenic resources within a state scenic highway would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

*c) **In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?***

Per Public Resources Code Section 21071, an "urbanized area" is either an incorporated city with a population of at least 100,000 persons or, if the population is less than 100,000 persons, the incorporated city is adjacent to not more than two contiguous incorporated cities whose combined population equals at least 100,000 persons." As the City of Oceanside had an estimated population of 173,048 persons as of January 2022 (California Department of Finance 2022), the Project site is located within an urbanized area. Therefore, the applicable threshold to assess potential impacts to existing visual character and quality is as follows:

Would the project conflict with applicable zoning and other regulations governing scenic quality?

As discussed in response to Threshold 3.1(a) above, the proposed project site is not visible from any prominent public viewpoints. Temporary visible elements associated with project construction include construction equipment and staging activities. Visual impacts resulting from construction activities would be temporary, ceasing upon completion of construction. Upon completion of construction, the proposed project would be visible from surrounding areas. The proposed project is located within an urbanized area that includes two-story office and warehouse development, and visible components of the proposed project would be similar to that of surrounding development.

Scenic quality within the City is governed by the City's Municipal Code, General Plan and, and Local Coastal Program (LCP). The Environmental Resource Management Element of the General Plan encourages the preservation of significant visual open spaces and as previously discussed, the proposed project would not be visible from or obstruct views to City-identified visual open space. The City's LCP includes policies that protect public coastal views; however, the proposed project site is located approximately 5.4 miles east of the Pacific Ocean, and intervening development and topography obstruct views from the site to the coast. Lastly, the proposed project would comply with property development regulations relevant to the site's underlying Planned District 1 – Rancho Del Oro (Limited Industrial (PD- 1 (IL)) zoning and would comply with applicable development requirements established in the City's Municipal Code including Chapter 39 – Light Pollution Regulations. See analysis d below for details regarding the Project's compliance with applicable lighting regulations.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

As the site is currently vacant, implementation of the proposed project would result in an increase of on-site lighting sources. New sources of light would include lighting within the parking lot, along walkways, and overhead lighting within the apparatus bay. During operation, the proposed Fire Station 8 would operate 24 hours a day, seven days a week. While the project would result in an increase in lighting sources compared to existing conditions, proposed exterior lighting would be shielded and directed downward to avoid unnecessary illumination of the night sky. Shielding would also reduce potential for glare and light trespass onto offsite properties which include multifamily residential uses to the north across from Old Grove Road., Also, the proposed lighting would adhere to Chapter 39, Light Pollution Regulations, of the City's Municipal Code that requires outdoor lighting to be shielded and directed away from adjacent properties. Lastly, the building materials and site elements including rooftop solar panels would not generally be highly reflective in nature and would not produce substantial glare that would adversely affect daytime views in the area.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.2 Agricultural Resources

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR disclosed that while portions of the PCBP property were used for seasonal agriculture, none of the land is classified as prime farmland, unique farmland, farmland of statewide improvement, or land under a Williamson Act contract. Thus, the PCBP SP EIR concluded that agricultural resources would not be significantly impacted.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/No Impact	Reduced Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

a) ***Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?***

According to the California Department of Conservation's (DOC) California Important Farmland Finder, the proposed project site and undeveloped lands to the south-southeast are designated Farmland of Local Importance (DOC 2020). While the project site previously supported agricultural/nursery activities, those uses have not occurred since 1991 and the site is zoned as Planned District 1 – Rancho Del Oro (Limited Industrial (PD- 1 (IL)) which does not permit agricultural uses.

As project implementation would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses, no impact would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The proposed project site is zoned PD-1(IL). Thus, the proposed project site is not zoned for agricultural use or in a Williamson Act contract and no impacts would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The proposed project site is currently vacant and has been previously graded. The proposed project site does not contain forested area, forest land, or timberlands and thus, no impacts to forest land of timberland would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The proposed project site is currently vacant and has been previously graded. The project site is designated as Light Industrial and is located within a developed area. There are no areas zoned for forest land within the vicinity of the project site and therefore, no impacts to forest land would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The proposed project consists of the construction of the City's Fire Station Number 8 on a vacant, previously graded site. While the proposed project site is zoned PD-1 (IL), it has been mapped by the Department of Conservation as Farmland of Local Importance (DOC 2020). According to the Department of Conservation, Farmland of Local Importance is "land that meets all the characteristics of Prime and Statewide farmlands with the exception of irrigation" (DOC 2020). In addition to not being irrigated, the site is vacant and the majority is mapped as Disturbed Habitat (see Figure 9, Biological Resources). Additionally, the site has not supported agricultural or nursery uses since 1991. While the project would convert Farmland of Local Importance to Urban and Built Up Land occupied by a fire station and water reservoir, the previously graded and disturbed site is located in an urban, developed area that supports residential, commercial and medical office, and warehouse uses. Therefore, due to the location of the site within a developed urban area, past

disturbance of the site, and lack of irrigation, the loss of Farmland of Local Importance to non-agricultural use would not represent a substantial loss of important farmland. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.3 Air Quality

Prior Environmental Findings

PCBP SP EIR

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/No Impact	Reduced Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The San Diego Air Pollution Control District (SDAPCD) and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the basin—specifically, the California State Implementation Plan (SIP) and Regional Air Quality Strategy (RAQS). The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2012. The most recent O_3 attainment plan was adopted in 2021. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the basin based on the National Ambient Air Quality Standards (NAAQS. The RAQS was initially adopted in 1991 and is updated on a triennial basis (most recently in 2021). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SIP and RAQS rely on information from California Air Resources Board (CARB) and SANDAG, including mobile and area source emissions as well as information regarding projected growth in the County as a whole and the cities in the County, to project

future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their general plans.

If a project involves development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality.

The project is proposing construction of the City's Fire Station 8 and associated site improvements including driveways, parking spaces, emergency diesel generator and fuel storage areas, and site landscaping on an existing zoning designation of PD-1 (IL) Planned District 1 – Rancho Del Oro (Limited Industrial) and a General Plan designation of Light Industrial (City of Oceanside 2022). Therefore, the project would be in conformance with the zoning and land use designated in the City's General Plan. Thus, the project is consistent with the zoning designation and is anticipated in the local plan and SANDAG's growth projections.

In summary, based on the considerations presented for the two criteria, impacts relating to the project's potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Past, present, and future development projects may contribute to the San Diego Air Basin (SDAB) adverse air quality impacts on a cumulative basis. By its nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SDAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are used in the determination of whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the applied significance thresholds, it would have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

Construction and operation of the project would result in emissions of criteria air pollutants, which may result in a cumulatively considerable net increase in emissions of criteria air pollutants for which the SDAB is designated as nonattainment under the NAAQS or California Ambient Air Quality Standards (CAAQS. The SDAB has been designated as a federal nonattainment area for ozone (O_3) and a state nonattainment area for O_3, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$). The following discussion quantitatively evaluates potential short-term construction and long-term operational impacts that would result from implementation of the project.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and volatile organic compounds (VOC) off-gassing) and off-site sources (i.e., on-road vendor trucks, haul trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

The California Emissions Estimator Model (CalEEMod) Version 2022.1.1.19 was used to estimate emissions from construction of the project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, oxides of nitrogen (NO_x), carbon monoxide (CO), PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The project would be required to comply with SDAPCD Rule 55 (Fugitive Dust Control) to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The CalEEMod default assumptions were used for estimating fugitive dust emissions from grading on site. The project would involve application of architectural coating (e.g., paint and other finishes) for painting the interior and exterior of the building as well as parking lot striping. In addition, per SDAPCD Rule 67.0.1 (Architectural Coatings), only low-VOC coatings will be used for the building interiors and exteriors.

Emissions from the construction phase of the project were estimated using CalEEMod default values. Construction was modeled beginning in Spring 2025 and conclude in Summer 2026, lasting approximately 15 months. The analysis contained herein is based on the following schedule assumptions (duration of phases is approximate):

- **Site Preparation:** 5 days (March 2025)
- **Grading:** 10 days (March 2025)
- **Building construction:** 310 days (March 2025 – June 2026)
- **Paving:** 10 days (June 2026)
- **Application of architectural coatings:** 10 days (June 2026)

Construction modeling assumptions for equipment and vehicles are provided in Table 3.3-1. Equipment mix and horsepower were based on CalEEMod default values, including equipment load factor. 2,066 cubic yards of soils were assumed to be imported during grading. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site 5 days per week.

Table 3.3-1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Site Preparation	8	2	0	Graders	1	8
				Rubber Tired Dozers	1	7
				Tractors/Loaders/ Backhoes	1	8
Grading	10	4	26	Graders	1	8
				Rubber Tired Dozers	1	8
				Tractors/Loaders/ Backhoes	2	7
Building construction	40	16	0	Cranes	1	6
				Forklifts	2	6
				Generator Sets	1	8
				Tractors/Loaders/ Backhoes	1	6
				Welders	3	8
Paving	16	4	0	Cement and Mortar Mixers	1	6
				Pavers	1	6
				Paving Equipment	1	8
				Rollers	2	7
				Tractors/Loaders/ Backhoes	1	8
Architectural coating	8	0	0	Air compressors	1	6

Source: Appendix A.

Table 3.3-2 presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix A.

Table 3.3-2. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions – Unmitigated

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Summer Emissions						
2025	1.24	9.60	12.13	0.02	0.77	0.41
2026	9.92	9.19	11.92	0.02	0.74	0.38

Table 3.3-2. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions – Unmitigated

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Winter Emissions						
2025	1.59	16.77	15.90	0.04	4.03	2.12
2026	1.17	9.22	11.72	0.02	0.74	0.38
SDAPCD Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SDAPCD = San Diego Air Pollution Control District.
See Appendix A for complete results.

As shown in Table 3.3-2, daily construction emissions would not exceed the SDAPCD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction in all construction years. Construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions. Thus, impacts would be less than significant.

Operation Emissions

Operation of the project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, area sources, consumer products, architectural coatings for repainting, landscape maintenance equipment, energy sources, including combustion of fuels used for space and water heating and cooking appliances, and stationary source equipment (e.g., emergency generator). Operational Emissions, pollutant emissions associated with long-term operations were quantified using CalEEMod. Project-generated mobile source emissions were estimated in CalEEMod based on project-specific trip rates. CalEEMod default values were used to estimate emissions from the project area and energy sources.

Table 3.3-3 presents the maximum daily area, energy, and mobile source emissions associated with operation (year 2026) of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod and are compared to the SDAPCD thresholds of significance. Details of the emission calculations are provided in Appendix A.

Table 3.3-3. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Summer Emissions						
Mobile	0.45	0.32	3.37	0.01	0.75	0.19
Area	0.60	0.01	0.86	<0.01	<0.01	<0.01
Energy	0.01	0.21	0.18	<0.01	0.02	0.02
Emergency Generator	0.22	0.62	0.80	<0.01	0.03	0.03
Summer Total	**1.28**	**1.16**	**5.21**	**0.01**	**0.80**	**0.24**
Winter Emissions						
Mobile	0.44	0.35	3.16	0.01	0.75	0.19

Table 3.3-3. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area	-	0.46	-	-	-	-
Energy	0.01	0.21	0.18	<0.01	0.02	0.02
Emergency Generator	0.22	0.62	0.80	<0.01	0.03	0.03
Winter Total	**1.13**	**1.18**	**4.15**	**0.01**	**0.80**	**0.24**
SDAPCD Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SDAPCD = San Diego Air Pollution Control District; <0.01 = reported emissions are less than 0.01.
See Appendix A for complete results.
Totals may not sum due to rounding.

As shown in Table 3.3-3, the combined daily area, energy, and mobile source emissions would not exceed the SDAPCD operational thresholds for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$. Thus, impacts associated with project-generated operational criteria air pollutant emissions would be less than significant.

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SDAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. As described above, the project would have a less-than-significant impact for short-term construction and long-term operations.

The SDAB is a nonattainment area for O_3 under the NAAQS and CAAQS. The poor air quality in the SDAB is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emission sources. Projects that emit these pollutants or their precursors (i.e., VOCs and NO_x for O_3) potentially contribute to poor air quality. In analyzing cumulative impacts from a project, the analysis must specifically evaluate the project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for the CAAQS and NAAQS. If the project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, a project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

Additionally, for the basin, the RAQS serves as the long-term regional air quality planning document for the purpose of assessing cumulative operational emissions in the basin to ensure the SDAB continues to make progress toward NAAQS- and CAAQS-attainment status. As such, cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to air quality if, in combination, they would conflict with or obstruct implementation of the RAQS. Similarly, individual projects that are inconsistent with the regional planning documents upon which the RAQS is based would have the potential

to result in cumulative operational impacts if they represent development and population increases beyond regional projections.

The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As discussed previously, the project would not exceed significance thresholds during construction or operation. As such, the project would result in less-than-significant impacts to air quality relative to emissions.

Regarding long-term cumulative operational emissions in relation to consistency with local air quality plans, the SIP and RAQS serve as the primary air quality planning documents for the state and SDAB, respectively. The SIP and RAQS rely on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and the County as part of the development of their general plans. Therefore, projects that involve development consistent with the growth anticipated by local plans would be consistent with the SIP and RAQS and would not be considered to result in cumulatively considerable impacts from operational emissions. As stated previously, the project would be consistent with the zoning designation and would not result in significant regional growth that is not accounted for within the RAQS. As a result, the project would not result in a cumulatively considerable contribution to regional O_3 concentrations or other criteria pollutant emissions. Therefore, impacts associated with adverse health impacts associated with criteria pollutants would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed sensitive receptors are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. Sensitive receptors include residences, schools, playgrounds, child-care centers, athletic facilities, long-term health-care facilities, rehabilitation centers, convalescent centers, and retirement homes. The closest known sensitive receptor (single-family residences) is located approximately 110 feet to the north of the project site.

Health Impacts of Toxic Air Contaminants

In addition to impacts from criteria pollutants, certain projects may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or hazardous air pollutants. State law has established the framework for California's TAC identification and control project, which is generally more stringent than the federal project, and is aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs.

Health impacts associated with TACs are generally associated with long-term exposure. There are no meaningful sources of TACs for the operating phase of the project and, therefore, no reason to expect

health impacts related to TACs. The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks and would be from testing of the emergency generator during operations. In an abundance of caution, a voluntary construction and operational health risk assessment (HRA) were performed for the project.

The Office of Environmental Health Hazard Assessment's (OEHHA's) most recent guidance is the *2015 Risk Assessment Guidelines Manual* (OEHHA 2015), which was adopted in 2015 to replace the 2003 HRA Guidance Manual. The Children's Environmental Health Protection Act of 1999 (Senate Bill [SB] 25), which requires explicit consideration of infants and children in assessing risks from air toxics, requires revisions of the methods for both non-cancer and cancer risk assessment and of the exposure assumptions in the 2003 HRA Guidance Manual. Cancer risk parameters, such as age-sensitivity factors, daily breathing rates, exposure period, fraction of time at home, and cancer potency factors, were based on the values and data recommended by OEHHA as implemented in the Hotspots Analysis and Reporting Program (HARP2).

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends a carcinogenic (cancer) risk threshold of 10 in one million. Some TACs increase noncancer health risk due to long-term (chronic) exposures. The Chronic Hazard Index (HIC) is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. The HIC estimates for all receptor types used the 'OEHHA Derived' calculation method, which uses high-end exposure parameters for the inhalation and next top two exposure pathways and mean exposure parameters for the remaining pathways for non-cancer risk estimates. The HIC is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system.[3] A hazard index less than one (1.0) means that adverse health effects are not expected. Within this analysis, noncarcinogenic exposures of less than 1.0 are considered less than significant. The SDAPCD recommends a HIC significance threshold of 1.0 (project increment) and an acute hazard index of 1.0. The exhaust from diesel engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. Diesel particulate matter (DPM) has established cancer risk factors and relative exposure values for long-term chronic health hazard impacts. No short-term, acute relative exposure values are established and regulated and are therefore not addressed in this assessment.

The dispersion modeling was performed using the American Meteorological Society (AMS)/U.S. Environmental Protection Agency (EPA) Regulatory Model (AERMOD), which is the model SDAPCD requires for atmospheric dispersion of emissions. AERMOD (version 19191) is a steady-state Gaussian plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of surface and elevated sources, building downwash, and simple and complex terrain (EPA 2019).

The project's potential cancer and noncancer health impacts was evaluated using exposure periods appropriate to evaluate short-term emission increases (third trimester of pregnancy to 8.5 months). The exposure duration for a student would start at age 14 through age 18 at a high school (Henry J. Kaiser High Scholl). Emissions dispersion of DPM was modeled using AERMOD, then cancer risk and noncancer health impacts subsequently using the CARB HARP2. HARP2 (ADMRT, version 19121) implements the March 2015 OEHHA age-weighting methodology for assessing toxics risks. The chemical exposure results

[3] The Chronic Hazard Index estimates for all receptor types used the OEHHA Derived calculation method (OEHHA 2015).

were then compared to SDAPCD thresholds to assess project significance. Principal parameters of this modeling are presented in Table 3.3-4.

Table 3.3-4. Construction Health Risk Assessment American Meteorological Society/U.S. Environmental Protection Agency Regulatory Model Construction Principal Parameters

Parameter	Details
Meteorological Data	The latest meteorological data for the Palomar station (Station ID 3177) from SDAPCD were downloaded, then input to AERMOD. For cancer or chronic noncancer risk assessments, the average cancer risk of all years modeled was used.
Urban versus Rural Option	Urban dispersion option was selected due to the developed nature of the project area. San Diego County's population 3,298,634 was used in the analysis.
On-Site Buildings	Construction: No buildings were included for the construction scenario. Operation: One on-site building was included in the modeling using best available dimensional data. Building downwash effects were assessed using BPIPPRIME.
Terrain Characteristics	Digital elevation model files were imported into AERMOD so that complex terrain features were evaluated as appropriate. The National Elevation Dataset (NED) dataset with resolution of 1/3 arc-second was used.
Source Release Characterizations	Construction: The construction equipment DPM emissions were modeled as a line of adjacent volume sources across the project site to represent project construction with a release height of 5 meters, plume height of 2.33 meters, and plume width of 11.63 meters. On-site truck travel was modeled as a line volume source across the project site, and based on EPA methodology, the modeled sources would result in a release height of 3.4 meters, a plume height of 3.16 meters, and a plume width of 3.12 meters. Operation: The exhaust stacks from the emergency generator was modeled as individual point source for the operational scenario. The emergency generator stack was assumed to be approximately 12 feet (3.66 meters) above ground level
Receptors	The health risk assessments evaluate the risk to existing offsite sensitive receptors located in proximity to the project. A uniform 2-kilometer by 2-kilometer Cartesian grid with 50-meter spacing was centered over the project site and converted into discrete receptors to represent proximate sensitive receptors.

Notes: AERMOD = American Meteorological Society/Environmental Protection Agency Regulatory Model; SDAPCD = San Diego Air Pollution Control District; DPM = diesel particular matter; CalEEMod = California Emissions Estimator Model; DPM = diesel particulate matter.
See Appendix A.

Construction

Construction of project components would require use of heavy-duty construction equipment, which is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions, and would involve use of diesel trucks, which are also subject to an Airborne Toxics Control Measure. Construction of project components would occur over a total of 15 months and would be periodic and short term. Following completion of construction activities, project-related TAC emissions would cease. The results of the HRA during construction are provided in Table 3.3-5.

Table 3.3-5. Construction Activity Health Risk Assessment Results

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Cancer Risk	Per Million	9.29	10.0	Less than Significant
HIC	Not Applicable	0.01	1.0	Less than Significant

Source: Appendix A.
Notes: CEQA = California Environmental Quality Act; HIC = Chronic Hazard Index.

The results shown in Table 3.3-5 demonstrate that the construction mobile sources exhibit maximum individual cancer risks below the 10 in a million threshold and HIC less than 1. AERMOD and HARP2 outputs are contained in Appendix A. Therefore, the exposure to TAC emissions would be less than significant.

Operations

The operational HRA estimated the maximum individual cancer risks and the HIC for residential receptors due to the testing of the emergency generator. Results of the operational HRA are presented in Table 3.3-6.

Table 3.3-6. Operational Activity Health Risk Assessment Results

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Cancer Risk	Per Million	2.22	10.0	Less than Significant
HIC	Not Applicable	0.0005	1.0	Less than Significant

Source: Appendix A.
Notes: CEQA = California Environmental Quality Act; HIC = Chronic Hazard Index.

The results shown in Table 3.3-6 demonstrate that the testing of the emergency generator exhibit maximum individual cancer risks below the 10 in a million threshold and HIC less than 1. AERMOD and HARP2 outputs are contained in Appendix A. The project's operational TAC impacts would be less than significant.

Valley Fever

Coccidioidomycosis, more commonly known as "valley fever," is an infection caused by inhalation of the spores of the *Coccidioides immitis* fungus, which grows in the soils of the southwestern United States. When fungal spores are present, any activity that disturbs the soil, such as digging, grading, or other earth-moving operations, can cause the spores to become airborne and thereby increase the risk of exposure. The ecologic factors that appear to be most conducive to survival and replication of the spores are high summer temperatures, mild winters, sparse rainfall, and alkaline sandy soils.

The County is not considered a highly endemic region for valley fever as the San Diego County Health and Human Services Agency is listed as having 5.5 cases per 100,000 people. The project site is located within the 92054-zip code; the number of incidences of Coccidioidomycosis is even lower with a reported rate of 4.1 per 100,000 (Nelson, pers. comm. 2019). For comparison, statewide incidences in 2018 were 18.8 per 100,000 people (CDPH 2019).

Even if present at a site, earth-moving activities may not result in increased incidence of valley fever. Propagation of *Coccidioides immitis* is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells. *Coccidioides immitis* spores can be released when filaments are disturbed by earth-moving activities, although receptors must be exposed to and inhale the spores to be at increased risk of developing valley fever. Moreover, exposure to *Coccidioides immitis* does not guarantee that an individual will become ill—approximately 60% of people exposed to the fungal spores are asymptomatic and show no signs of an infection (USGS 2000).

The project would be consistent with SDAPCD Rule 55, which limits the amount of fugitive dust generated during construction and would also control the release of the *Coccidioides immitis* fungus from construction activities by watering two times per day. Residential properties are located to the north and east of the project site, with the closest located approximately 110 feet to the north of the project site. Based on the low incidence rate of Coccidioidomycosis in the project area and in greater San Diego County, and the project's implementation of dust control strategies, it is not anticipated that earth-moving activities during project construction would result in exposure of nearby sensitive receptors to valley fever. Therefore, the project would have a less-than-significant impact with respect to valley fever exposure to sensitive receptors.

Health Impacts of Carbon Monoxide

The project would generate approximately 114 average daily trips which would not likely generate significant daily or peak hour traffic. Therefore, the project operation is not expected to exceed the screening threshold and would not result in a CO hotspot and would not have the potential to result in CO emissions that when totalled with the ambient concentrations would exceed a 1-hour concentration of 20 parts per million or an 8-hour average of 9 parts per million. The impact would be less than significant.

Health Effects of Other Criteria Air Pollutants

Project construction and operation would not exceed SDAPCD thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$.

Table 3.3-7 presents a list of the criteria pollutants and other related pollutants of concern, emission sources, associated health effects, and current SDAB attainment status.

Table 3.3-7. Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
			NAAQS	CAAQS
O_3	Formed when VOCs and NO_x react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage.	Breathing difficulties, lung tissue damage, vegetation damage, damage to rubber and some plastics.	Nonattainment	Nonattainment
PM_{10}	Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants (NO_x, SO_x,	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling.	Unclassifiable/ Attainment	Nonattainment

Table 3.3-7. Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
			NAAQS	CAAQS
	organics). Incomplete combustion.			
$PM_{2.5}$	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (NO_x, SO_x, organics, and NH_3).	Increases respiratory disease, lung damage, cancer, and premature death, reduced visibility, surface soiling. Particles can aggravate heart diseases such as congestive heart failure and coronary artery disease.	Unclassifiable/ Attainment	Nonattainment
CO	Any source that burns fuel such as automobiles, trucks, heavy construction and farming equipment, residential heating.	Chest pain in heart patients, headaches, reduced mental alertness.	Attainment	Attainment
NO_2	See carbon monoxide.	Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain.	Unclassifiable/ Attainment	Attainment
Lead	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint.	Learning disabilities, brain and kidney damage.	Unclassifiable/ Attainment	Attainment
SO_2	Coal or oil burning power plants and industries, refineries, diesel engines.	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Unclassifiable/ Attainment	Attainment
Sulfates	Produced by reaction in the air of SO_2, (see SO_2 sources), a component of acid rain.	Breathing difficulties aggravates asthma, reduced visibility.	(no federal standard)	Attainment
Hydrogen Sulfide	Geothermal power plants, petroleum production and refining, sewer gas.	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations).	(no federal standard)	Unclassified
Visibly Reducing Particles	See $PM_{2.5}$	Reduced visibility (e.g., obscures mountains and other scenery), reduced airport safety.	(no federal standard)	Unclassified
Vinyl Chloride	Exhaust gases from factories that manufacture or process vinyl chloride (construction, packaging, and transportation industries)	Central nervous system effects (e.g., dizziness, drowsiness, headaches), kidney irritation, liver damage, liver cancer.	N/A	N/A

Sources: County of San Diego 2007 (pollutant descriptions); EPA 2018b (federal); CARB 2019a (state).

Notes: O_3 = ozone; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide.

VOCs and NO_x are precursors to O_3, for which the SDAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SDAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 CAAQS/NAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O_3 precursors is speculative. Construction and operation of the project would not exceed SDAPCD thresholds for VOC and NO_x; thus, implementation of the project would not contribute significant health effects associated with O_3. SDAPCD Rule 67.0.1 restricts the VOC content of coatings for both construction and operational applications.

Health effects associated with NO_x include lung irritation and enhanced allergic responses (CARB 2019). Construction of the project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. Health effects that result from NO_2 and NO_x include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. Project construction would be relatively short-term, and off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Operation of the project would not require use of any stationary sources (e.g., diesel generators and boilers) that would create substantial, localized NO_x impacts.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was discussed previously and is determined to be a less-than-significant impact. Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant.

Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2019). Construction and operation of the project would also not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or obstruct the SDAB from coming into attainment for these pollutants. The project would also not result in substantial DPM emissions during construction and operation, and therefore would not result in significant health effects related to DPM exposure. Additionally, the project would implement dust control strategies and be required to comply with SDAPCD Rule 55, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, the project is not anticipated to result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, because construction of the project would not result in exceedances of the SDAPCD significance thresholds, the potential health effects associated with criteria air pollutants would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The State of California Health and Safety Code, Division 26, Part 4, Chapter 3, Section 41700 SDAPCD Rule 51 prohibits emissions from any source whatsoever in such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Projects required to obtain permits from SDAPCD are evaluated by SDAPCD staff for potential odor nuisance, and conditions may be applied (or control equipment required) where necessary to prevent occurrence of public nuisance.

SDAPCD Rule 51 (Public Nuisance) also prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. A project that involves a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors. Odor issues are very subjective by the nature of odors themselves and due to the fact that their measurements are difficult to quantify. As a result, this guideline is qualitative and will focus on the existing and potential surrounding uses and location of sensitive receptors.

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with other emissions (such as those leading to odors) during construction would be less than significant.

Land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding facilities. The project entails development of a new fire station and would not result in the creation of a land use that is commonly associated with odors.

In summary, project operations would not result in odor emissions, and the project impact would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.4 Biological Resources

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR disclosed that the PCBP area supported disturbed habitat and overall value of disturbed habitat for wildlife was low. Several avian species including killdeer, black phoebe, house finch, and mourning doves were observed foraging in the area during biological surveys and a single red-tailed hawk and an American kestrel were observed flying over the area. One sensitive bird species, horned lark, was noted. The PCBP SP EIR also disclosed that while the area may have been used as an overwintering site for burrowing owls "in the past", the area was not expected to be utilized as breeding habitat. Indirect effects to sensitive species located offsite would be avoided by the inclusion of a noise wall between offsite areas and Old Grove Road to prevent significant noise increases on the off-site area from buildout traffic conditions. In summary, because the PCBP area was mapped as Disturbed Habitat and impacts to Disturbed Habitat are not considered significant, significant impacts to biological resources were not expected. No mitigation measures were included in the PCBP SP EIR.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/No Impact	Reduced Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) 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 Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) 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?	☐	☐	☒	☐

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/No Impact	Reduced Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

a) ***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 Game or U.S. Fish and Wildlife Service?***

No special-status plants were observed during the 2022 reconnaissance survey. While focused surveys were not conducted, no special-status plant species are expected to occur within or adjacent to the project site due to the highly disturbed condition of the site and surrounding area; therefore the proposed project would not result in impacts to special-status plant species.

While focused wildlife surveys were not conducted, no special-status wildlife species were observed during the 2022 reconnaissance survey. The highly disturbed condition of the project area, with limited vegetative cover and surrounded by development (see Figure 8), is not suitable habitat for most special-status wildlife. The project area does not contain any designated critical habitat for special-status wildlife species. One historical CNDDB occurrence for Stephens' kangaroo rat (*Dipodomys stephensi*) overlaps the project area. The occurrence is from 1973, has a 1-mile reported location accuracy, and the population has since been extirpated by development according to the specific occurrence report (CDFW 2022).

All special-status plant and wildlife species assessed as part of the literature review process for the Biological Resources Letter Report (Appendix B) were determined to have a low potential to occur or are not expected to occur on the project site.

The project area and adjacent ornamental vegetation have the potential to support nesting birds which are tolerant of disturbance during the avian breeding season. The California Fish and Game Code protects bird nests and the MBTA prohibits the intentional take of any migratory bird or any part, nest, or eggs of any such bird. If clearing, grubbing, or other activities that result in the removal of vegetation occur during the nesting bird season, any impacts to active nests or the young of nesting bird species would be potentially significant. Potential temporary indirect impacts to nesting birds could also occur as a result of excessive noise and increased human activity in close proximity to an active nest; however, necessary compliance with existing (and standard) survey requirements would ensure avoidance of impacts to nesting raptors and/or birds protected by the federal Migratory Bird Treaty Act and California Fish and Game Code, Sections 3503 and 3513. Specifically, if construction-related ground-disturbing activities (e.g., clearing/grubbing, grading, and other intensive activities) must occur during the breeding season (January 15 through August 31), then a one-time biological survey for nesting bird species to be conducted within the limits of grading and a 500-foot buffer (where accessible, and habitat is present) within 72 hours prior to

construction. Should any active nests are detected, the area shall be flagged and mapped on the construction plans or a biological resources figure, and the information provided to the construction supervisor and any personnel working near the nest buffer. Monitoring of activities near mapped active nests within specified setbacks of identified buffer area would also be required.

Conclusion: No New Impact The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The majority of the proposed project site is comprised of disturbed habitat, with ornamental and urban/developed land covers occupying the remainder of the site. See Figure 9. There are no native or sensitive vegetation communities within or adjacent to the project site, and no special-status plant species are expected to occur within or adjacent to the site. The existing condition of the project site and surrounding landscaped and developed land is already highly disturbed and supporting few native plant species. The sparse and scattered cover of plants typically associated with riparian habitat, including mulefat (*Baccharis salicifolia*) and invasive tamarisk (*Tamarix ramossisima*), is limited to a few individual plants is not enough to constitute a vegetation community, and would not be regulated by CDFW as riparian habitat since there are no associated stream channels present. The presence of these species on the project site can be attributed to landscape irrigation (sprinklers). Therefore, no impact would occur to riparian habitat or other sensitive vegetation communities.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The project area does not support any potentially jurisdictional aquatic resources or wetlands. Irrigation sprinklers which are present along the top of landscaped berms which border the site are likely responsible for causing the presence of some visible soil cracks and a small erosional feature leading to a drain in southeastern corner of the site. The proposed project is not located within the Coastal Zone, and does not support vernal pools, marsh habitat, or other protected wetlands. Therefore, impacts associated with federally protected wetlands would not occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) 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?

The project area is located outside of the Wildlife Corridor Planning Zone designated by the Oceanside Subarea Plan (City of Oceanside 2010). The project area is relatively small, highly disturbed, lacks native

vegetation communities and dense vegetative cover, and is surrounded by development. Thus, the project area has very limited value in terms of facilitating wildlife movement or dispersal and the impact of the proposed project would be less than significant. Therefore, less than significant impacts to wildlife movement corridors or native wildlife nursery sites would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

*e) **Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

The project does not conflict with any local policies or ordinances protecting biological resources. The existing condition of the project site and surrounding landscaped and developed land is already highly disturbed and supporting few native plant species. The project site does not support native vegetation communities or wetlands and contains mostly ornamental vegetation. Therefore, given that the project does not conflict with any local policies or ordinances protecting biological resources, no impacts to conflicts with local policies or ordinances protecting biological resources would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

*f) **Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?***

The proposed project fully complies with the provisions of the Oceanside Subarea Plan (City of Oceanside 2010). The project area is not located within a pre-approved mitigation area and is located within Offsite Mitigation Zone II (City of Oceanside 2010). No impacts to sensitive vegetation communities would occur as a result of the proposed project, thus no offsite mitigation would be required. Furthermore, the project area is not located within a hardline or softline preserve area (City of Oceanside 2010). No wetlands as defined and regulated by the City are mapped in or adjacent to the project area, thus no wetland buffers are required. The project area is located outside of the Wildlife Corridor Planning Zone (City of Oceanside 2010) and is surrounded by existing development, thus has limited value with regards to facilitating wildlife movement. Finally, the project area is located outside of the Coastal Zone (City of Oceanside 2010). The proposed project would not conflict with the Oceanside Subarea Plan. Therefore, impacts associated with an adopted habitat conservation plan would not occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.5 Cultural Resources

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR noted that a Cultural Resources Survey of the overall Rancho del Oro area was completed by Westec Services in 1979 and no resources were found on or near the PCBP area. Sites were tested in 1986 (i.e.,

sites within the Rancho del Oro area) and no significant impacts to cultural resources were identified in the PCBP SP EIR.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/No Impact	Reduced Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

As defined by the CEQA Guidelines (14 CCR 15000 et seq.), a "historical resource" is considered to be a resource that is listed in or eligible for listing in the National Register of Historic Places or California Register of Historical Resources (CRHR), has been identified as significant in a historical resource survey, or is listed on a local register of historical resources. Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a historical resource and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

Dudek staff conducted a records search at the South Coastal Information Center (SCIC) for the project area of potential effects (APE) for the Addendum No. 3 to the Regional Recycled Water Project Program EIR and a 1-mile radius buffer around the APE in January 2017. A summary of the records search is included in the 2018 Cultural Resources Inventory Report that was attached to Addendum No. 3. The records search identified 178 previously recorded cultural resources within 1 mile of the APE. None of the previously recorded cultural resources are located within the proposed current project area.

During preparation of this document, Dudek searched archival topographic maps and historic aerial images of the project site and determined that the project APE did not show any development from 1938 to 2018. The project site has never been historically occupied or developed residentially; however, the western section of the project site has been occupied by agricultural/nursery activities from 1978 to 1991.

As a component of the 2018 Cultural Resources Inventory Report, a survey of the project APE was conducted on December 27, 2017 and May 29, 2018. No historic structures are located within the

proposed project area. Therefore, development of a new fire station on the proposed current project area would not result in impacts to historical resources pursuant to Section 15064.5.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) ***Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?***

The proposed current project area has been previously graded. As described in response 3.5a, above, a Cultural Resources Inventory Report covering the proposed current project area was prepared in 2018 and no previously recorded cultural resources were located within the proposed current project area. Furthermore, a survey of the project area performed as part of the Cultural Resources Inventory Report did not identify any cultural resources within the proposed current project area. Because development of Fire Station No. 8 would not expanded the boundaries of areas reviewed and surveyed during the 2018 Cultural Resources Inventory Report, development of the proposed current project area would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) ***Would the project disturb any human remains, including those interred outside of formal cemeteries?***

The project site is not currently used as a cemetery and is not otherwise known to contain human remains. While the proposed current project area has been previously disturbed, there is a potential to discover unknown buried Native American human remains or sacred features during construction. In the event that that human remains are encountered during project construction, the project would be required to comply with existing laws, including California Health and Safety Code Section 7050.5 and CEQA Guidelines Section 15064.5(e). Compliance with existing regulations would ensure project impacts are less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.6 Energy

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR did not address energy because energy was not part of the CEQA checklist in 2004. Amendments to the CEQA Guidelines resulted in the addition of energy as a topical area to be addressed within the updated CEQA Guidelines Appendix G.

Impact Analysis

While an analysis of energy impacts is not required, the City has opted to require such an analysis to be conservative. This analysis is provided for informational purposes and demonstrates that the proposed project does not result in a significant impact.

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/ No Impact	Reduced Impact
VI. Energy – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Implementation of the project would result in energy use for construction and operation, including use of electricity, natural gas, and petroleum-based fuels. The electricity and natural gas used for construction of the proposed project would be temporary, would be substantially less than that required for project operation, and would have a negligible contribution to the project's overall energy consumption. Additionally, although natural gas and electricity usage would increase due to the implementation of the project, the project's energy efficiency would meet the current Building Energy Efficiency Standards (Title 24). Further, while the project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in vehicle miles traveled (VMT) over time.

The project's impact on energy resources is discussed separately below for construction and operation. Energy consumption (electricity, natural gas, and petroleum consumption) was estimated using CalEEMod data from the air quality and GHG assessment. For further detail on the assumptions and results of the energy analysis, please refer to the Appendix A, *Air Quality and Greenhouse Gas Emissions Output Files.*

Construction

Electricity

Electricity consumed during project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities would require electricity, including the conveyance of water that would be used for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. San Diego Gas and Electric (SDG&E) is the electricity provider to the project site and provided

approximately 17,445 Gigawatt-hours of electricity in 2020[4]. Overall, construction activities associated with the project would require limited electricity consumption that would not be expected to have an adverse impact on available SCE electricity supplies and infrastructure. Therefore, the use of electricity during project construction would not be wasteful, inefficient, or unnecessary.

Natural Gas

Natural gas is not anticipated to be required during project construction. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as a result of project construction would have a negligible contribution to the project's overall energy consumption.

Petroleum

Petroleum-based fuel usage represents most energy consumed during construction. Petroleum fuels would be used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, as well as delivery and haul truck trips (e.g. hauling of material to project site).

Fuel consumption from construction equipment and vehicles was estimated by converting the total carbon dioxide (CO_2) emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. All off-road equipment and hauling and vendor trucks are assumed to be diesel, while worker vehicles are assumed to be gasoline. Construction is estimated to occur in 2023 based on the construction schedule assumed in Section 3.3, Air Quality. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2021). The estimated diesel fuel usage from construction of the project is shown in Table 3.6-1.

Table 3.6-1. Estimated Construction Fuel Use

Construction Year	Fuel Use (gallons)		
	Off-Road Equipment (Diesel)	On-Road Trucks (Diesel)	On-Road Workers (Gasoline)
2023	24,110	4,081	3,214

Notes: Conversion factors from The Climate Registry (2021).
See Appendix A for complete results.

As shown in Table 3.6-1, the project is estimated to consume 31,406 gallons of petroleum during the construction phase. The project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes, which would minimize fuel consumption. While construction activities would consume petroleum-based fuels, consumption of such resources would be temporary and would cease upon the completion of construction. Further, the petroleum consumed related to project construction would be typical of construction projects of similar types and sizes and would not necessitate new petroleum resources beyond what are typically consumed in California. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be less than significant.

4 Obtained from: http://www.ecdms.energy.ca.gov/elecbyutil.aspx

Further, construction of the project is necessary to provide expanded facilities (compared to those offered at existing Fire Station Number 8) to better accommodate the existing and projected demand for services in the City's Ivey Rancho/Rancho Del Oro neighborhood. Since the project responds to demand, using resources to construct housing is not wasteful. As discussed above, those resources would be used as efficiently as possible.

Operation

Electricity

The project would require electricity for multiple purposes at buildout, including cooling, lighting, appliances, and lighting for the associated parking lot. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. Electricity consumption associated with project operation is based on the CalEEMod outputs presented in Appendix A, *Air Quality and Greenhouse Gas Emissions Output Files*.

CalEEMod default values for energy consumption for the proposed fire station were applied for the project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings (both natural gas and electricity) is divided by the program into end-use categories subject to Title 24 requirements (end-uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

Title 24 of the California Code of Regulations serves to enhance and regulate California building standards. Construction of the project would be required to comply with the 2022 Title 24 Standards at a minimum. The 2022 Title 24 Standards include robust requirements for energy efficiency that apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. According to these estimations, the project would consume approximately 257,007 kilowatt-hours per year during operation. Although electricity consumption would increase at the project site due to implementation of the project, the project would comply with the City's mandatory regulations through implementing energy-efficiency measures. In addition, the project is anticipated to include the installation of solar panels on the building roof and carport. For these reasons, electricity consumption of the project would not be considered inefficient, wasteful, or unnecessary, and impacts would be less than significant.

Natural Gas

The operation would require natural gas for various purposes, including water heating and natural gas appliances. Natural gas consumption associated with operation is based on the CalEEMod outputs presented in Appendix A, *Air Quality and Greenhouse Gas Emissions Output Files*.

As previously discussed, CalEEMod default values for energy consumption for the proposed fire station were applied for the project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings (both natural gas and electricity) is divided by the program into end-use categories subject to Title 24 requirements (end uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The project will be required to comply with the most recent amendments to Title 24, Part 6, referred to as the 2022 standards, which will be effective on January 1, 2023. However, CalEEMod Version 2020.4.0 assumes compliance with the 2019 standards. According to these estimations, the proposed project would consume approximately 638,582 kilo-British Thermal Units (kBtu) per year or 6,387 therms per year. Notably, the project would include the installation of infrastructure to allow for "all-electric" appliances which would reduce the reliance on natural gas in the future. For these reasons, the natural gas consumption of the project would not be considered inefficient or wasteful, and impacts would be less than significant.

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the VMT as a result of project operation. As shown in Appendix A, *Air Quality and Greenhouse Gas Emissions Output Files,* the annual VMT attributable to the project were estimated based on project-specific trip generation information and CalEEMod default values for the proposed land use. Similar to the construction worker and truck trips, fuel consumption from students and facility is estimated by converting the total CO_2 emissions from operation of the project to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Based on the annual fleet mix provided in CalEEMod, approximately 95% of the fleet are assumed to run on gasoline, while the remaining 5% are assumed to run on diesel. In the first year of assumed operations (2024), the project would consume approximately 11,303 gallons of petroleum from vehicle travel.

Over the lifetime of the project, the fuel efficiency of the vehicles being used by the employees of the project is expected to increase. As such, the amount of gasoline consumed as a result of vehicular trips to and from the project site during operation would decrease over time. The project would promote alternative fuel vehicles (e.g., electricity) with the installation of electric vehicle (EV) chargers in the apparatus bay and in the public parking spaces provided. Furthermore, there are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2021). Additionally, in response to SB 375, CARB has adopted the goal of reducing per-capita GHG emissions from 2005 levels by 15% by the year 2020 and 19% by the year 2035 for light-duty passenger vehicles in the SANDAG planning area. As such, operation of the project is expected to use decreasing amounts of petroleum over time, due to advances in fuel economy.

In summary, although project implementation would result in an increase in petroleum use during construction and operation, over time vehicles would use less petroleum due to advances in fuel economy. Given these considerations, the petroleum consumption associated with the project would not be considered inefficient or wasteful, and impacts would be **less than significant**.

Summary

The project would create additional electricity and natural gas demand by adding infrastructure to an undeveloped site. New infrastructure associated with the project would be subject to the State Building

Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations. The efficiency standards apply to new construction of non-residential buildings and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The project would not directly require the construction of new energy generation or supply facilities or result in wasteful, inefficient, or unnecessary consumption of energy. Over the lifetime of the project, the fuel efficiency of the vehicles being used by employees is expected to increase. As such, the amount of gasoline consumed during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. As such, operation of the project is expected to use decreasing amounts of petroleum over time, due to advances in fuel economy. Therefore, impacts associated with wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. At a minimum, the proposed project would be subject to and would comply with, the 2019 California Building Code Title 24 (24 CCR, Part 6). Additionally, as discussed in Section 3.8, *Greenhouse Gas Emissions*, the project would not conflict with the City's Climate Action Plan (CAP), which was adopted in 2019 to achieve resource efficiency, including energy (see Table 3.8-3). The project would also not conflict with CARB's Climate Change Scoping Plan, which identifies several strategies to reduce GHG emissions through energy efficiency. As discussed in further detail in Section 3.8, the project would be subject to these strategies as many are state actions requiring no involvement at the project level. As such, implementation of the proposed project would not conflict with applicable plans for energy efficiency and impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.7 Geology and Soils

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR noted that a preliminary geotechnical investigation prepared in 2004 determined that the site was suitable for proposed new commercial development from a geotechnical standpoint. No additional analysis related to potential impacts to geology and soils was included in the PCBP SP EIR.

With regard to paleontological resources, the PCBP SP EIR disclosed that the project area was underlain by the Eocene Santiago Formation which is known to be fossil bearing. Further, the PCBP PS EIR noted that the sandstones and claystones of the Santiago Formation would be encountered during pad excavation and utility trenching and that fossils present could be damaged or destroyed (damage or destruction was determined to be a significant

impact requiring mitigation). The following mitigation measures were included in the PCBP SP EIR to reduce impacts to a less than significant level:

- Prior to the issuance of grading permits, the applicant shall confirm to the City of Oceanside that a qualified paleontologist has been retained to carry out the mitigation program. A quality paleontologist is defined as an individual with a M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques. The paleontologist shall attend pre-grading meetings to consult with grading and excavation contractors.
- A paleontological monitor shall be onsite during grading operations to evaluate the presence of fossils within previously undisturbed sediments of the Santiago Formation to inspect cuts for contained fossils. A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor shall work under the direction of a qualified paleontologist.
- When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, the fossil salvage can be completed in a short period of time. Some fossil specimens (such as a complete whale skeleton) may require an extended salvage time. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading. To allow recovery of small fossil remains such as isolated mammal teeth, it may be necessary in certain instances to set up a screen -washing operation on the site.
- Prepared fossils along with copies of all pertinent field notes, photos, and maps shall be deposited (with the applicant's permission) in a scientific institution with paleontological collections such as the San Diego Natural History Museum. A final summary report shall be completed and distributed to the City and other interested agencies which outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/ No Impact	Reduced Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact/ No Impact	Reduced Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Fault rupture is the ground surface displacement that results from a seismic event (i.e., earthquake or fault creep) that typically occurs on a Holocene-active fault. A Holocene-active fault is defined by CGS as a fault showing evidence for activity within the last 11,700 years. According to the geotechnical investigation prepared for the project (Appendix D), the Project site is not located in or intersected by a State of California Alquist-Priolo Earthquake Fault Zone. The closest Holocene-active fault to the Project site, the Rose Canyon Fault, is located approximately 5 miles off-shore from the Project site. Therefore, based on the location of the Project site and relative distance to Holocene-active faults, the potential for fault rupture at the site is considered negligible and there would be no impact.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

ii) Strong seismic ground shaking?

The Project site is located in a seismically active Southern California region with numerous Holocene-active faults that are capable of producing substantive seismic events. According to the US Geological Survey (USGS) Working Group, the Southern California region has a 93% probability of experiencing a 6.7

Magnitude or greater earthquake sometime before 2045 (USGS 2015). An earthquake of that magnitude could cause substantial damage in structures that are not designed appropriately. The amount of ground shaking experienced at any one site is dependent on a number of factors including distance to the source of the earthquake, magnitude of the event, duration of shaking, and characteristics of the underlying materials. The project would result in the development of a two-level fire station. In addition to the recommendations of the Project-specific Geotechnical Investigation prepared by Geocon Incorporated (2022), all proposed improvements would be required to adhere to the most current version of the California Building Code (CBC) with any applicable local amendments. The CBC includes seismic design requirements that would be required to be incorporated into the Project design prior to building permit approval. In addition, considering that the proposed structure would be considered an Essential Services Building in accordance with the Essential Services Buildings Seismic Safety Act (codified in California Health and Safety Code, Chapter 2, sections 16000 through 16022, the Fire Station would have to be designed and constructed to resist the forces generated by earthquakes and other disasters in order to provide post disaster services. The responsibility for enforcement lies with the City Building Department and the Division of the State Architect (DSA). Therefore, with adherence to the recommendations of the Project-specific Geotechnical Investigation, seismic requirements of the CBC, local amendments, and DSA regulatory oversight, the proposed Project would not directly or indirectly cause potential substantial adverse effects including the risk of loss, injury, or death involving strong seismic ground shaking and impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

iii) Seismic-related ground failure, including liquefaction?

Liquefaction typically occurs when near surface (<50 feet deep), loose (e.g., sandy soils), water-saturated sediments are subject to strong ground shaking causing them to behave more like a liquid than a solid. As indicated in the geotechnical report for the project, the project site does not have a near-surface groundwater table and the dense nature of the underlying materials, the Santiago Formation, make the potential for liquefaction negligible (see Appendix D – Geotechnical Report). In addition, as discussed in (ii) above, the adherence to building code requirements and DSA oversight, there would be additional review and confirmation that liquefaction hazards are not present or are adequately addressed through site preparations and/or foundation design. Therefore, impacts associated with liquefaction would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

iv) Landslides?

The proposed project site has been previously graded and is relatively flat with ground elevations that range between 400 and 406 feet above mean sea level. Based on the existing topography and the lack of any evidence of existing landslides, the potential for adverse effects from slope instability or landslides is considered less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Construction of the proposed Project would require earthwork activities for grading, foundation construction, and trenching for utilities. Due to the relatively flat topography the amount of grading would be relatively light, however any excavation and ground disturbing activities could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. As discussed in Section 3.10, Hydrology and Water Quality, construction of the project would result in more than 1 acre of land disturbance; therefore, the project would be required to obtain a National Pollutant Discharge Elimination System (NPDES) Construction General Permit issued by the California State Water Resources Control Board (SWRCB) which regulates stormwater runoff during construction. Adherence to the Construction General Permit would require preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which would contain best management practices (BMPs) to minimize the potential for erosion and sedimentation. Implementation of these erosion control BMPs have proven effective in preventing erosion and loss of topsoil. Once constructed, the Project would be improved with drainage control features and landscaping which would reduce the potential for soil erosion or loss of topsoil. Introducing more impervious area would result in more surface runoff, which could lead to more soul erosion and loss of topsoil in other areas. However, the geotechnical report concludes that the proposed development would not increase the potential for erosion with adherence to local drainage control requirements (Appendix D). Thus, with conformance to the requirements of the NPDES Construction General permit and existing regulatory requirements for drainage control (and through implementation of recommendations from the Project-specific Geotechnical Report), the proposed project would not result in substantial soil erosion or loss of topsoil and impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

The Project site is covered by a thin (approximately one foot thick) veneer of topsoil which is underlain by the Santiago Formation. This formation consists of interbedded hard, damp to moist, silty to sandy claystone and a very dense clayey sandstone (Appendix D). According to the geotechnical report, the Santiago Formation is generally considered suitable to support structural loads (Appendix X). As noted in (iv) above, the site is relatively flat and not susceptible to landslides either on- or off-site. Lateral spreading is related to liquefaction and occurs when a block of liquefiable materials moves toward an open sloped area. As noted in (iii) above, the site characteristics are such that the potential for liquefaction is negligible. As a result, the potential for lateral spreading would also be negligible. Subsidence or collapse could occur if the underlying materials at the site were not sufficient to support the proposed improvements. However, as required by the CBC, prior to issuance of a building, a final design level geotechnical report would be required that would provide all site preparations and foundation designs necessary to adequately support the proposed improvements including both the fire station and the water storage tank. Therefore, considering the general assessment of the underlying Santiago Formation to be suitable to support structural loads and the required building code standards, the potential for encountering unstable soils or causing unstable soils would be considered a less than significant impact.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

The Project site is underlain by topsoil and the Santiago Formation. The Santiago Formation reportedly has a high to very high expansion potential, that if not appropriately addressed could damage proposed improvements. See Appendix D. Expansive soils will change in volumetric size along with changes in moisture content where over time these cyclical changes can lead to structural damage of foundations, walkways, and roads. However, the proposed improvements would be required to adhere to the CBC with local amendments as well as DSA oversight. Building code requirements include standards for expansion and measures to minimize the potential for expansion would be included in the final design level geotechnical report. Expansive soil hazards are typically addressed by use of engineered fills or treatment of any near surface expansive soils in accordance with building code requirements. Therefore, with adherence to building code requirements the potential for adverse effects related to expansive soils would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project would not include septic tanks or other alternative wastewater treatment methods. Therefore, implementation of the project would result in no impact associated with soils incapable of supporting septic systems or alternative wastewater treatment methods. Therefore, impacts associated with adequacy of soils and septic systems would not occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project site is located within the Coastal Plains Region of the Peninsular Ranges Geomorphic Province. This province is a 900-mile long northwest-southeast-trending structural block that extends from the tip of Baja California to the Transverse Ranges (i.e., the San Bernardino and San Gabriel Mountains in Southern California). Regionally, the Peninsular Ranges are bounded to the east by the Colorado Desert and the west by the continental shelf and offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente) (Norris and Webb 1990; CGS 2002). Regional mountain ranges in the Peninsular Ranges Geomorphic Province include the Santa Ana, San Jacinto, and Santa Rosa Mountains. Geologically, these mountains are dominated by Mesozoic, plutonic igneous and metamorphic rocks that are part of the Peninsular Ranges Batholith (Southern California Batholith) (Jahns 1954).

According to surficial geological mapping by Kennedy (2007) at a scale of 1:100,000, the study area is entirely underlain by Santiago Formation (map unit Tsa) that is middle Eocene-age (~49 million years

ago(mya) – 40 mya). The Santiago Formation was named for deposits in the northwestern Santa Ana Mountains, where it is composed of marine to nonmarine sediments up to 2,690 feet thick (Kennedy and Tan, 2005). This formation is often divided into three units, a lower unit: Member A, a middle unit: Member B, and an upper unit: Member C (Prothero, 2001). In general, the lower portions of the formation appear to be marine in origin, while the upper portions are nonmarine in origin (Morton et al., 1976; Prothero, 2001; Schoellhamer et al., 1981).

A paleontological records search request was sent to the San Diego Natural History Museum (SDNHM) on October 10, 2022, and the results were received on October 20, 2022. According to the records search, no previously recorded fossil localities were recorded within the proposed project site. However, 78 recorded fossil localities from the Santiago Formation occur within the 1-mile radius of the project site. These localities have produced trace fossils (e.g., coprolites and burrows), as well as fossil impressions and remains of green algae, vascular plants, marine invertebrates (e.g., bryozoans, barnacles, ostracods, crabs, ghost shrimp, clams, oysters, snails, bubble snails, sea urchins, and sand dollars), marine vertebrates (e.g., sharks, rays, skates, and bony fish), nonmarine invertebrates (e.g., mussels and snails), and terrestrial vertebrates (e.g., amphibians, lizards, snakes, turtles, crocodiles, opossums, rodents, rabbits, insectivores [including shrews], protoreodonts, leptoreodonts, camels, tapirs, brontotheres, horses, primates [including "tarsier-like" and "adapid-like" primates], carnivorans, bats, and birds). According to the SDNHM, elsewhere in northern San Diego County, the Santiago Formation has produced significant terrestrial fossil vertebrate localities, along with assemblages of marine and estuarine mollusks, and is considered to have a high paleontological sensitivity (Deméré and Walsh, 1993).

No paleontological resources were identified within the proposed project area as a result of the institutional records search, and desktop geological and paleontological review, but the proposed project site is underlain by a unique geologic feature. The majority of the proposed project area is mapped as being underlain by Santiago Formation deposits. Santiago Formation has a high paleontological sensitivity in San Diego County and there is the presence of fossil localities within, and in the immediate vicinity of the project site which suggest that the proposed project to result in impacts to paleontological resources. In the event that intact paleontological resources are located beneath the proposed project site, ground-disturbing activities associated with construction of the proposed project, such as grading during site preparation and large diameter drilling (more than 2 feet diameter), have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of PCBP SP EIR mitigation measures, impacts would be reduced to below the level of significance. Impacts of the proposed project are considered less than significant with mitigation incorporated during construction.

Mitigation Measures: The following mitigation measures from the PCBP SP EIR are applicable to the proposed project:

- Prior to the issuance of grading permits, the applicant shall confirm to the City of Oceanside that a qualified paleontologist has been retained to carry out the mitigation program. A quality paleontologist is defined as an individual with a M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques. The paleontologist shall attend pre-grading meetings to consult with grading and excavation contractors.

- A paleontological monitor shall be onsite during grading operations to evaluate the presence of fossils within previously undisturbed sediments of the Santiago Formation to inspect cuts for contained fossils. A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor shall work under the direction of a qualified paleontologist.
- When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, the fossil salvage can be completed in a short period of time. Some fossil specimens (such as a complete whale skeleton) may require an extended salvage time. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading. To allow recovery of small fossil remains such as isolated mammal teeth, it may be necessary in certain instances to set up a screen -washing operation on the site.
- Prepared fossils along with copies of all pertinent field notes, photos, and maps shall be deposited (with the applicant's permission) in a scientific institution with paleontological collections such as the San Diego Natural History Museum. A final summary report shall be completed and distributed to the City and other interested agencies which outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.8 Greenhouse Gas Emissions

Prior Environmental Findings

PCBP SP EIR

At the time the PCBP SP EIR was adopted, an evaluation of Greenhouse Gas Emissions (GHG) emission impacts could have been known with the exercise of reasonable diligence but was not an explicit part of the CEQA Guidelines checklist. The PCBP SP EIR did not include a GHG analysis as part of its air quality analysis. However, previously certified EIRs for the PCPB area including the 2009 PCPB SEIR and the 2017 PCPB Phase II Addendum did include GHG analyses. While the 2009 PCPB SEIR concluded that impacts associated with greenhouse gas emissions would be potentially significant absent mitigation, the 2017 PCPB Phase II Addendum determined that a total GHG emission reduction of 40 percent below "business as usual" could be accomplished through incorporation of federal and state-induced GHG reductions and project design features. Accordingly. no additional or new GHG impacts would occur because of the 2017 project and Impacts were determined to be less than significant. In the 2017 PCPB Phase II Addendum, conflicts with plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions were also determined to be less than significant.

Impact Analysis

This Addendum provides an analysis of GHG emissions impact based on the information available at this time consistent with the City's current GHG threshold. and demonstrates that the proposed project does not result in a significant impact.

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

As discussed above, at the time the PCBP SP EIR was adopted, an evaluation of GHG emissions was possible, but not an explicit part of the CEQA Guidelines; however, since then California laws have expanded in regard to GHG emissions with the passage of the California's Global Warming Solutions Act of 2005 [Assembly Bill (AB) 32] and Senate Bill (SB) 32. Although CEQA requires an evaluation of potential GHG emission impacts of a project, based on the findings of *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, GHG impacts are not the type of information that constitutes "new information" triggering preparation of an EIR or supplemental negative declaration because with the exercise of reasonable diligence, there was adequate information about GHG emissions available prior to 1993 that it could have been analyzed in a prior EIR or negative declaration that did not analyze GHG impacts. In *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, the Court upheld the use of an Addendum to a 1994 EIR that contained no GHG analysis to approve a revised project. Citing the CEQA principle that once a CEQA document is certified, it enjoys benefits of finality and alleged errors in its analysis are not subject to new challenge., the Court rejected a challenge that GHG emissions is the type of new information that triggers the need for a new or supplemental CEQA analysis, instead of an Addendum. In doing so, the Court affirmed that the standards for requiring supplemental environmental review under CEQA are narrow and the challenger has the burden of proof to show additional review is required.

Accordingly, the new GHG emissions analysis for the project is not new information that triggers an EIR or supplemental negative declaration. The GHG emissions from the project are presented herein to understand the potential magnitude of project-generated emissions, although project-generated construction and operational emissions are anticipated to be less than those if quantified in the PCBP SP EIR because the project involves less square footage of building development than evaluated in the PCBP SP EIR. As shown below, the Project is consistent with the City's planning and zoning uses and densities anticipated in its 2019 Climate Action Plan. As detailed below, the Project would not generate GHG emissions over 900 $MTCO_2e$ emissions. Further, the project has less-than-significant impacts because it complies with the CAP Checklist.

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, on-road vendor trucks, and worker vehicles.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.3, Air Quality. Construction of the project was assumed to last a total of 15 months. Table 3.8-1 presents construction emissions for the project in 2023 from construction emission sources.

Table 3.8-1. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
2025	259.60	0.01	0.01	0.11	262.78
2026	132.10	0.01	<0.01	0.05	133.59
				Total	396.36
				30-year Amortized Construction Emissions (MT CO_2e per year)	13.21

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; R = refrigerants; CO_2e = carbon dioxide equivalent; MT = metric tons; <0.01 = reported emissions are less than 0.01.
See Appendix A for complete results.

As shown in Table 3.8-1, the estimated total GHG emissions during construction of would be approximately 396 MT CO_2e. Estimated project-generated construction emissions amortized over 30 years would be approximately 13 MT CO_2e per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would be short term in nature, lasting only for the duration of the construction period (15 months), and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Operational Emissions

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; generation of electricity associated with water supply, treatment, and distribution and wastewater treatment, and stationary source equipment (e.g., emergency generator). The estimated operational year project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, water usage and wastewater generation, and the emergency generator are shown in Table 3.8-2.

Table 3.8-2. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Mobile	122.94	0.01	0.01	0.17	124.74
Area	0.29	<0.01	<0.01	–	0.29
Energy	45.93	0.01	<0.01	–	46.20
Water Supply and Wastewater	2.11	0.15	<0.01	–	6.91
Solid Waste	2.19	0.22	0.00	–	7.65
Refrigerants	–	–	–	0.85	0.85
Emergency Generator	2.57	<0.01	<0.01	–	2.58
				Operational Emissions	*189.22*
				30-Year Amortized Construction Emissions	*13.21*

Table 3.8-2. Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Operation plus Amortized Construction Total					202.43

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; refrigerants; CO_2e = carbon dioxide equivalent; <0.01 = reported emissions are less than 0.01.
See Appendix A for complete results.
The values shown are the annual emissions for operational year 2024.
Totals may not add due to rounding.

As shown in Table 3.8-2, estimated annual project-generated GHG emissions would be approximately 189 MT CO_2e per year as a result of project operations only. Estimated annual project-generated operational emissions plus amortized project construction emissions would be approximately 202 MT CO_2e per year. Thus, the project's estimated GHG emissions would not exceed the 900 MT CO_2e, screening threshold and the project's GHG emissions would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project generate conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. Applicable plans for the proposed project site include the City of Oceanside General Plan, the City of Oceanside's CAP, SANDAG's Regional Plan, and CARB's 2017 Scoping Plan. Each of these plans is described below along with an analysis of the proposed project's potential to conflict with the related GHG emission reduction goals.

Consistency Analysis with City of Oceanside General Plan

The project also would be consistent with the goals set forth in the City's General Plan Energy and Climate Action Element, Land Use Element, and Circulation Element that are designed to reduce the emissions of GHGs, reduce energy use in buildings and infrastructure, and promote the use of renewable energy sources, conservation, and other methods of efficiency. Table 3.8-3 outlines the project's consistency with applicable General Plan goals.

Table 3.8-3. City of Oceanside General Plan – Project Consistency Analysis

Goal	Consistency Analysis
Environmental Resource Management Element[a]	
Air Quality. Cooperate with County, State, and federal agencies in continuing programs of air quality improvement.	*Consistent*. The project would not impair the City's ability to work with the County, state, and other local agencies.
Land Use Element[b]	
Air Quality. The City shall cooperate with the San Diego County Air Pollution Control	*Consistent*. The project would not impair the City's ability to work with the SDAPCD Board or RAQS.

Table 3.8-3. City of Oceanside General Plan – Project Consistency Analysis

Goal	Consistency Analysis
Board and participate in the Regional Air Control Strategy (RAQS).	
Bicycle Facilities. Policy A: Development shall provide Class II Bikeways (Bike Lanes) on all secondary, major, and prime arterials.	*Consistent.* The project consists of developing a new fire station in an already urbanized area of the City. The project would not add or modify any secondary, major, and prime arterials.
Pedestrian. Policy A: The construction of five (5) foot wide sidewalks adjacent to the curb shall be required in all new developments and street improvements.	*Consistent.* The project construction will include five (5) foot wide sidewalks adjacent to the curb as applicable.
Transit System. Policy A: The City shall coordinate and encourage the existing bus system to serve newly developed areas.	*Consistent*. The project would not impair the City's ability to coordinate and encourage the existing bus system to serve newly developed areas. The project is located within an existing developed area of the City.
Energy. Policy A. The City shall encourage the design, installation, and use of passive and active solar collection systems.	*Consistent.* The project will meet Title 24 requirements for solar energy. 2,025 square feet of carport/building roof would be installed with solar panels.
Energy. Policy B. The City shall encourage the use of energy efficient design, structures, materials, and equipment in all land developments or uses.	*Consistent.* The project would incorporate integrated energy efficiency measures such as energy-efficient appliances.
Circulation Element[c]	
Policy 2.5. The City will strive to incorporate complete streets throughout Oceanside.	*Not applicable.* The project would not impair the City's ability to incorporate complete streets throughout the City.
Pedestrian Facilities. Support walking as a primary means of transportation.	*Not applicable.* The project would not impair the City's ability to improve the walkability throughout the City.
Intelligent Transportation System Technologies. Improve air quality and reduce greenhouse gas emissions through traffic signal optimization and the use of advanced signal control technologies.	*Not applicable.* The project would not impair the City's ability to optimize traffic signals or use advanced signal control technologies.
Transportation Demand Management. The City shall look for opportunities to incorporate Transportation Demand Management (TDM) programs into their Energy Roadmap that contributes to state and regional goals for saving energy and reducing greenhouse gas emissions.	*Not applicable.* The project would not impair the City's ability to incorporate TDM strategies into their Energy Roadmap.
Energy Climate Action Element[d]	
Policy ECAE-1a-2: Require that new development supply a portion of its energy demand through renewable sources, to the extent practical and financially feasible. Policy ECAE-1a-3: Continue to pursue the expansion of solar photo-voltaic systems in municipal facilities, to both reduce the	*Consistent.* As indicated on the Site Plan, approximately 135 solar panels covering 2,025 square feet of carport/building roof may be installed on the Project Site. A battery storage facility is also proposed and would be housed within a two hour rated container with its own HVAC and fire detection system.

Table 3.8-3. City of Oceanside General Plan – Project Consistency Analysis

Goal	Consistency Analysis
carbon footprint of municipal operations and achieve long-term cost savings.	

Sources:
[a] City of Oceanside 1975; [b] City of Oceanside 1986; [c] City of Oceanside 2002, City of Oceanside 2019a.

As shown in Table 3.8-3, the project would be consistent with applicable and goals and policies of the City's General Plan to the extent feasible.

Consistency with the City of Oceanside's Climate Action Plan

The City prepared a GHG emissions inventory and a CAP, both of which inform the E-CAP (City of Oceanside 2019b). The City's Final CAP was adopted on May 8, 2019. The CAP demonstrates that, with implementation of applicable General Plan objectives and policies, coupled with state and federal actions and execution of CAP measures and actions, the City will reduce GHG emissions in alignment with state goals established by SB 32 and maintain a trajectory to meet its proportional share of the 2050 state target identified in Executive Order (EO) S-3-05. Since the project would result in total GHG emissions that would not exceed the bright line threshold of significance for GHG emissions impacts: 900 MT annually, the project would not conflict with the City's CAP.

Consistency with SANDAG'S San Diego Forward: The Regional Plan

The 2021 Regional Transportation Improvement Program (RTIP) incrementally implements San Diego Forward: The 2019 Federal Regional Transportation Plan (2019 Federal RTP), the long-range transportation plan for the San Diego region approved by the SANDAG Board of Directors on October 25, 2019. Table 3.8-4 illustrates the project's consistency with applicable goals and policies of the San Diego Forward: 2019 Federal RTP.

Table 3.8-4. San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
The Regional Plan – Policy Objectives		
Habitat and Open Space Preservation	Focus growth in areas that are already urbanized, allowing the region to set aside and restore more open space in our less developed areas. Protect and restore our region's urban canyons, coastlines, beaches, and water resources.	*Consistent.* The project would develop fire station Number 8 in an already urbanized area of the City.
Regional Economic Prosperity	Invest in transportation projects that provide access for all communities to a variety of jobs with competitive wages. Build infrastructure that makes the movement of freight in our	*Not applicable.* The project would not impair the ability of SANDAG to Invest in transportation projects or to build infrastructure that makes the movement of freight in our community more efficient and environmentally friendly

Table 3.8-4. San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
	community more efficient and environmentally friendly.	
Environmental Stewardship	Make transportation investments that result in cleaner air, environmental protection, conservation, efficiency, and sustainable living. Support energy programs that promote sustainability	*Not applicable.* The project would not impair the ability of SANDAG to make transportation investments that result in cleaner air, environmental protection, conservation, efficiency, and sustainable living. Support energy programs that promote sustainability
Mobility Choices	Provide safe, secure, healthy, affordable, and convenient travel choices between the places where people live, work, and play. Take advantage of new technologies to make the transportation system more efficient and accessible	*Not applicable.* The project would not impair the ability of SANDAG to provide safe, secure, healthy, affordable, and convenient travel choices between the places where people live, work, and play. Take advantage of new technologies to make the transportation system more efficient and accessible
Partnerships/ Collaboration	Collaborate with Native American tribes, Mexico, military bases, neighboring counties, infrastructure providers, the private sector, and local communities to design a transportation system that connects to the mega-region and national network, works for everyone, and fosters a high quality of life for all. As we plan for our region, recognize the vital economic, environmental, cultural, and community linkages between the San Diego region and Baja California	*Not Applicable.* The project would not impair the ability of SANDAG to Collaborate with Native American tribes, Mexico, military bases, neighboring counties, infrastructure providers, the private sector, and local communities.
Healthy and Complete Communities	Create great places for everyone to live, work, and play. Connect communities through a variety of transportation choices that promote healthy lifestyles, including walking and biking. Increase the supply and variety of housing types – affordable for people of all ages and income levels in areas with frequent transit service and with access to a variety of services.	*Not Applicable.* The project would not impair the ability of SANDAG to connect communities through a variety of transportation choices that promote healthy lifestyles.
Sustainable Communities Strategy (SCS) – Strategies		
Strategy No. 1	Focus housing and job growth in urbanized areas where there is existing and planned	*Consistent.* The project consists of developing a new fire station located in an already urbanized area of the City.

Table 3.8-4. San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
	transportation infrastructure, including transit.	
Strategy No. 2	Protect the environment by preserving sensitive habitat, open space, and farmland	*Consistent.* The project would not impact any sensitive habitat or open space as it would be located on existing developed land.
Strategy No. 3	Invest in a transportation network that gives people transportation choices and reduces GHG emissions.	*Not Applicable.* The project would not impair SANDAG's ability to invest in transportation network choices that reduce GHG emissions.
Strategy No. 4	Address the housing needs of all economic segments of the population.	*Not Applicable.* The project would develop a new fire station.
Strategy No. 5	Implement the 2019 Federal RTP through Incentives and Collaboration	*Not Applicable.* The project would not impair the ability of SANDAG to implement the Regional Transportation Plan through incentives and collaborations.

Source: SANDAG 2021.

As shown in Table 3.8-4, the project would not conflict with applicable policy objectives and strategies from the Regional Plan.

Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014, 2017, and 2022) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects or cities/counties (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions), nor is it intended to be used for project-level evaluations. Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions, and new regulations adopted by the state agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down.

The project would be required to adhere to the programs and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32 and SB 32, and in the future per AB 1279. For example, the project would be required to meet the CALGreen and Building Energy Efficiency Standards in effect at the time when applying for building permits. Furthermore, compliance with the City's CAP and General Plan includes goals, policies, and programs that would help reduce GHG emissions and therefore help achieve GHG reduction goals. Therefore, implementation of the project would not obstruct implementation of the CARB Scoping Plan.

Consistency with Senate Bill 32, Assembly Bill 1279, and Executive Order S-3-05

EO S-3-05 identified the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. AB 1279 establishes a policy of the state to achieve net zero GHG emissions no later than 2045 and for statewide anthropogenic GHG emissions to be reduced to at least 85% below 1990 levels by 2045.

Each Scoping Plan builds upon the successful framework established by the initial Scoping Plan and subsequent updates, while also identifying new, technologically feasible, and cost-effective strategies to ensure that California meets increasingly stringent GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Scoping Plan updates have continued to express optimism in meeting future year targets of 2050 and 2030, as evaluated in the 2014 and 2017 Scoping Plans (respectively), and most recently, the 2045 goal addressed in the 2022 Scoping Plan under EO B-55-18, which AB 1279 codified and expanded on.

While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasted in the 2014 Scoping Plan that compliance with the current Scoping Plan would put the state on a trajectory of meeting the long-term 2050 GHG goals, although the specific path to compliance was unknown at the time (CARB 2014). The 2017 Scoping Plan outlined a strategy to achieve the 2030 GHG reduction target. The proposed scenario in the 2022 Scoping Plan lays out a path not just to carbon neutrality by 2045, but also to the 2030 GHG emissions reduction target (CARB 2022). The modeling indicates that, if the plan described in the proposed scenario is fully implemented, and done so on schedule, the state is on track to reduce its emissions to 260 MMT CO_2e by 2030 (CARB 2022).

The project would not interfere with implementation of any of the above-described GHG reduction goals for 2030, 2045, or 2050 because the project would not exceed the 900 MT CO_2e threshold of significance for GHG emissions impacts. Therefore, the project would be consistent with SB 32, AB 1279, and EO S-3-05, and impacts related to GHG emissions would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.9 Hazards and Hazardous Materials

Prior Environmental Findings

PCBP SP EIR

While no specific evaluation of hazards and hazardous materials impacts was included in the PCBP SP EIR, the PCBP SP EIR stated that a Phase I Environmental Site Assessment had been recently completed for the PCBP area. No hazards or hazardous materials impacts were identified in the PCBP SP EIR.

The project would be developed within the existing PCBP area, which was evaluated in the context of the below significance thresholds in the 2005 PCBP EIR, 2009 PCBP SEIR, and 2017 PCBP Phase II Addendum. The previously certified EIRs determined the project would result in less than significant impacts related to hazards and hazardous materials.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) 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 significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction Impacts

Construction activities would likely require the use of limited quantities of hazardous materials such as fuels, oils, and lubricants for construction equipment; paints and thinners; and solvents and cleaners. These hazardous materials are typically packaged in consumer quantities and used in accordance with manufacturer recommendations and would be transported to and from the project site. If not managed appropriately, the handling of these hazardous materials and wastes could result in adverse health effects to workers or the public.

Transportation of hazardous materials is regulated by the U.S. Department of Transportation (DOT) and Caltrans. Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the exposure of hazardous materials. In addition, businesses that use hazardous materials, including construction companies, are required to prepare and implement Hazardous Material Business Plans (HMBPs) describing procedures for the handling, transportation, generation, and disposal of hazardous materials. The Hazardous Materials Division of the San Diego County Department of Environmental Health, as the Certified Unified Program Agency (CUPA) agency, would be responsible for ensuring compliance with these regulations including, but not limited to, the Hazardous Waste Control Act, the Hazardous Waste Generator Program, the Hazardous Materials Release Response Plans and Inventory Program, the California Accidental Release Prevention Program, and the Aboveground Storage Tank Program.

Therefore, considering the comprehensive set of federal, State, and local laws and regulations that regulate the transportation, management, and disposal of hazardous materials and wastes, the potential for construction of the proposed Project to result in a significant hazard due to exposure of the public or the environment to hazardous materials or wastes during construction would be considered less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Operational Impacts

Operation of the proposed Project would not include bulk storage or use of large quantities of hazardous materials but would likely include the use of common hazardous materials associated with maintenance activities and workplace functions that would occur as part of the operation of the proposed project. Hazardous chemicals common in similar settings include paints, lubricants, solvents, cleaning supplies and relatively small quantities of fuels, oils, and other petroleum-based products. In addition, the fire station could include firefighting chemical extinguishing agents or fire retardants that are specific to this land use. These products commonly contain polyfluoroalkyl substances, known as PFAS, which are long lasting chemicals the components of which break down very slowly and are increasingly showing links to harmful health effects in humans and animals. The two most widely used PFAS substances (PFOA and PFOS) are being considered by the USEPA to be considered hazardous under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA).However, the majority of the hazardous materials, including any substances containing PFAS, that would be associated with the proposed Project are typically handled and transported in small quantities, and because the health effects associated with them are

generally not as serious as industrial uses, operation of a majority of the new uses at the site would not cause an adverse effect on the environment with respect to the routine transport, use, or disposal of general office and household hazardous materials.

As required by the County Hazardous Materials Division, any storage of hazardous materials and/or waste at the site would be required to submit business information and hazardous materials inventory forms contained in Hazardous Materials Management Plan and Hazardous Materials Business Plan. In addition, the proposed facility would be subject to inspection every three years. The Hazardous Materials Division of the San Diego County Department of Environmental Health, as the CUPA, requires all users to follow applicable regulations and guidelines regarding storage and handling of hazardous waste. All hazardous materials are required to be stored and handled according to manufacturer's directions and local, State, and federal regulations including the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in Title 22 of the California Code of Regulations (CCR).

Therefore, with adherence to existing regulatory requirements long-term operational impacts associated with creation of a hazard to the public or the environment would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As noted above in a), construction activities would require the use of limited quantities of hazardous materials that are normal requirements of the construction process, including fuels, oils, and lubricants for construction equipment; paints and thinners; and solvents and cleaners. These materials would be transported to and from the project site for use during construction activities. The improper handling and transport of hazardous materials could result in accidental release of hazardous materials, thereby exposing the public or the environment to hazardous materials.

Construction activities would disturb more than one acre and, thus, would be required to implement requirements of the NPDES General Construction Permit. This permit requires implementation of best management practices (BMPs) that would include measures to address the safe handling of hazardous materials, and in the unlikely event of an inadvertent release, also requires spill response measures to contain any release of hazardous materials. The use of construction BMPs implemented as part of a Storm Water Pollution Prevention Plan (discussed further in Section 3.10, Hydrology and Water Quality) as required by the NPDES General Construction Permit would minimize the potential adverse effects from accidental release of hazardous materials or wastes. If a spill of hazardous materials on the construction site were to occur, the spilled materials would typically be relatively localized because of the relatively small quantities involved and would be cleaned up in a timely manner in accordance with identified BMPs.

Therefore, given the required protective measures (i.e., BMPs) and the quantities of hazardous materials typically needed for construction projects, such as the proposed project, the potential hazard or threat to the public or environment from upset and accident conditions during construction would be considered less than significant. No new or more severe impacts would occur compared with the level identified in the PCBP SP EIR. No new mitigation measures are required.

During operations, any use of hazardous materials during the operation of the proposed project would be conducted pursuant to the provisions of programs administered by the Hazardous Materials Division of the San Diego County Department of Environmental Health as the CUPA agency. The storage of all hazardous materials onsite, including any fuels, oils, solvents, cleaning products or landscaping pesticides or herbicides, would be required to adhere to facility-specific HMBPs. The preparation and implementation of facility-specific HMBPs would identify safe measures to store, handle, and dispose of hazardous materials such that accident and upset conditions are minimized. The HMBPs would also include spill response measures to ensure that in the unlikely event that a release does occur, protocols would be implemented to contain and control any accidental release in a manner that is protective of human health and the environment. Such protocols could include employee training, the location of absorbent materials to contain a release, and notification requirements to ensure that human health and the environment is protected from any exposure. The adequacy of and compliance with the HMBPs would be overseen and enforced by the County Hazardous Materials Division. Because a comprehensive set of enforced laws and regulations govern the management of hazardous materials to reduce the potential hazards to the public and environment, this impact would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The closest school to the project site is the Ivey Ranch Elementary School which is approximately 3,650 feet (0.69 miles) to the west. Therefore, there is no school within a quarter mile of the project site and as a result there would be no impact related to emissions or handling of hazardous materials within a quarter mile of a school.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) 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 significant hazard to the public or the environment?

The proposed Project site is not listed on the Geotracker, Envirostor, or National Priorities List (Superfund) database list for sites with documented releases of hazardous materials (SWRCB, 2022, DTSC, 2022, and EPA 2022). In addition, there are no other sites listed within a quarter mile of the Project site making the potential for releases from other sites to adversely affect the Project site remote. As discussed in Section 3.5, Cultural Resources, a search of archival topographic maps and historic aerial images of the project area determined that the site has not had any development during the period of 1938 to 2018. The Project site has never been historically occupied or developed; and the western section of the project area has been occupied by agricultural activities from 1978 to 1991. While pesticides and herbicides could have been historically associated with these past agricultural activities, they do degrade over time and are not likely to be present in quantities that would pose substantive health risks to workers or the public today. Therefore, based on a review of available databases and the known site history, impacts associated with hazardous materials sites would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The nearest airport to the project site is the Oceanside Municipal Airport which is approximately 3.4 miles to the west of the site. Therefore, no impacts associated with public airport and private airstrip hazards would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The proposed Project would construct a new fire station and associated improvements on a site that is currently undeveloped. The proposed project does not include any permanent road closures or changes to the existing transportation network but could involve partial lane closures during construction activities. However, any lane closures necessary for construction would be temporary in nature and conducted in accordance with a Transportation Management Plan consistent with City requirements such that there would be no substantive interference with emergency response or evacuation. Once constructed, the proposed project would increase the number of workers at the site. However, the overall objective of the proposed project is to improve emergency response and assistance during evacuations. As such, the proposed project's impacts on emergency response and evacuation plans would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The project site is located within an urban area that is largely developed and surrounded by developed areas. The site is outside of the Very High Fire Hazard Severity Zone and State Responsibility Area. While even urban areas can be susceptible to wildfires, the risk is generally reduced in urban areas that are not immediately adjacent to open wilderness areas (such as the project site). In addition, the proposed project would be required to meet current California Fire Code requirements and thus should have adequate fire protection and fire suppression improvements. Therefore, considering the project location and fire safety requirements that would be incorporated into the project design along with the proposed use as a fire station, the potential impact related to wildland fires would be considered less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.10 Hydrology and Water Quality

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR disclosed that runoff from Lots 13 through 23 and 26 through 30 will be collected in the storm drain constructed in Street C, the southern portion of Street A and Street B, and then south and west to the storm drain in Avenida del Oro. Further, runoff from each of the 30 individual lots will be directed into grass swales prior to discharging into the public storm water conveyance system. In summary, the project (PCBP SP) would not be expected to significantly impact downstream Loma Alta Creek, Loma Alta Slough, and the Pacific Ocean and sediment transport would likely be reduced with the project. Further, there are no changes in the vicinity's priority hydrologic properties that would be considered a condition of concern for downstream water bodies. There are less than significant increases in runoff volume, outfall velocity, and time of concentration. Downstream velocities in the existing storm drains will remain virtually unchanged and impacts to water quality degradation would be reduced to below a level of significant with implementation of Best Management Practices (BMPs) in the Storm Water Mitigation Plan. No mitigation would be required.

While the PCBP SP EIR did not specifically discuss flood hazard, tsunami, and/or seiche zones, the PCBP SP is not within a flood hazard, tsunami, and/or seiche zone.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction Impacts

Construction of the project would include earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Stormwater runoff during the construction phase may contain silt and debris, resulting in a short-term increase in the sediment load of the municipal storm drain system. Substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project site and subsequently conveyed via stormwater to nearby drainages, watersheds, and groundwater.

For stormwater discharges associated with construction activity in the State of California, the State Water Resources Control Board (SWRCB) has adopted the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs one acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify water quality BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

Because land disturbance for project construction activities would exceed one acre, the Project Applicant would be required to obtain coverage under the Construction General Permit issued by the SWRCB prior to the start of construction within the Project site. Specifically, the Construction General Permit requires that the following be kept on-site at all times: (i) a copy of the Notice of Intent to Comply with Terms of the General Permit to Discharge Water Associated with Construction Activity; (ii) a waste discharge identification number issued by the SWRCB; (iii) a SWPPP and Monitoring Program Plan for the construction

activity requiring the construction permit; and (iv) records of all inspections, compliance and non-compliance reports, evidence of self-inspection, and good housekeeping practices.

The SWPPP requires the construction contractor to implement water quality BMPs to ensure that water quality standards are met, and that stormwater runoff from the construction work areas do not cause degradation of water quality in receiving water bodies. The SWPPP must describe the type, location, and function of stormwater BMPs to be implemented, and must demonstrate that the combination of BMPs selected are adequate to meet the discharge prohibitions, effluent standards, and receiving water limitations contained in Construction General Permit. As such, through compliance with the Construction General Permit, the project would not adversely affect water quality.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Operational Impacts

Once constructed, stormwater runoff from the project could contribute pollutants to offsite discharges if not managed appropriately. During storm events, the first few hours of moderate to heavy rainfall could wash a majority of pollutants from the paved areas where, without proper stormwater controls and BMPs, those pollutants could enter the municipal storm drain system before eventually being discharged to adjacent waterways. Most pollutants entering the storm drain system in this manner would be dust, litter, possibly residual petroleum products (e.g., motor oil, gasoline, diesel fuel), bacteria and chemicals. Certain metals, along with nutrients and pesticides from landscape areas, can also be present in stormwater runoff. Between periods of rainfall, surface pollutants tend to accumulate, and runoff from the first significant storm of the year ("first flush") would likely have the largest concentration of pollutants.

Stormwater quality within the San Diego Region (of which the project site is a part) is managed by the San Diego Regional Water Quality Control Board (RWQCB), which administers the *NPDES Permit and Waste Discharge Requirements for the San Diego Region* (Municipal Separate Storm Sewer System [MS4] Permit). The MS4 Permit includes the City of Oceanside among the co-permittees that are subject to waste discharge requirements under the permit. The MS4 Permit requires co-permittees to implement a development planning program to address stormwater pollution. These programs require project applicants for certain types of projects to implement a Water Quality Management Plan (WQMP) throughout the operational life of each project. The purpose of a WQMP is to reduce the discharge of pollutants in stormwater and to eliminate increases in pre-existing runoff rates and volumes by outlining BMPs, which must be incorporated into the design plans of new development and redevelopment.

Per the MS4 Permit, the proposed project must include drainage control features in the project design to ensure that water quality in any offsite discharges is protected. The project would be required to manage and treat stormwater flows to the maximum extent practicable to control pollutants, pollutant loads, and runoff volume emanating from the project site by: (1) minimizing the impervious surface area and implementing source control measures, (2) controlling runoff from impervious surfaces using structural BMPs (e.g., infiltration, bioretention, and/or rainfall harvest and re-use), and (3) ensuring all structural BMPs are monitored and maintained for the life of the Project. Per the Project Stormwater Quality Management Plan, stormwater management would be facilitated through proposed onsite structural BMPs including biofiltration for pollutant removal and an underground stormwater detention vault for hydromodification. In addition, runoff from the offsite improvements identified in Section 2.2, Project

Characteristics, above, would be treated via the existing downstream flow through unit that was previously constructed to service streets for the PCBP SP area.

In summary, project grading and construction would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. Storm water runoff during project operations would be managed through a mixture of strategies that would be designed to remove pollutants from on-site runoff prior to discharge into the storm drain system to the maximum extent practicable, as required by MS4 and as will be demonstrated in the project-specific WQMP. Therefore, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality and water quality impacts. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The City's water supplies include raw and treated water purchased from San Diego County Water Authority, desalinated local groundwater from the Mission Basin, and non-potable recycled water (City of Oceanside 2021). According to the City's 2020 Urban Water Management Plan, the local groundwater is pumped from the Mission Basin and treated at the Mission Basin Groundwater Purification Facility (MBGPF). Through its Pure Water Oceanside facility which opened in March 2022, the City developed indirect potable reuse as a future supply. Fully advanced treated (FAT) water is produced at the City's Advanced Water Treatment facility and injected into the Mission Basin for eventual extraction and treatment at the MBGPF for potable use (City of Oceanside 2021). Groundwater only represents about 10% of total water supplies and projections of groundwater use out to 2045 remain at a constant level (City of Oceanside 2021). As such, the project area is supplied partially by groundwater supplies from the local basin (Mission Basin of the Lower San Luis Rey River Valley).

The Mission Basin is considered by the California Department of Water Resources as part of the Sustainable groundwater Management Act (SGMA) Basin Prioritization as a "very low priority basin" (City of Oceanside 2021). The basin is not adjudicated but is estimated to have a natural safe yield of 7,000 to 10,000 AFY. However, according to the 2020 UWMP, the current actual use in 2020 was 2,302 AF and projected groundwater use would remain at a constant 2,800 AFY out to 2045.

Given that the current and projected groundwater demands is well below the calculated safe yield of the basin, and projected groundwater demands would include anticipated growth of the City such as the proposed Project, the additional demands of the Project would not substantially decrease groundwater supplies. Therefore, impacts associated with groundwater supplies would be less than significant.

The project site is currently undeveloped and unpaved. However, the project site does not exhibit any characteristics with locations typically associated with significant groundwater recharge (e.g., earthen bottom creeks and streams, lakes, and spreading basins). Therefore, the project site likely does not allow for significant groundwater recharge. Following construction, the project would increase the area of impervious surface within the project site. However, as discussed above, stormwater management would

be facilitated through proposed onsite structural BMPs including biofiltration for pollutant removal and an underground stormwater detention vault for hydromodification. Therefore, impacts associated with groundwater recharge would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard

c) 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 or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site?

There are no streams or rivers located on or near the project site. Project construction would involve some earth-disturbing activities, including grading, that could expose on-site soils to erosion and surface water runoff. However, inclusion of project BMPs would reduce erosion and siltation from the project site occurring from construction activities. In addition, the project site is located within a developed area. As such, the development of the project would not cause a significant change to surface bodies of water in a manner that could cause siltation or erosion. In addition, as discussed above in a), construction of the project would include drainage control features in accordance with MS4 permit requirements which would reduce the potential for any erosion or siltation as demonstrated in the project-specific WQMP. Therefore, impacts associated with existing drainage patterns would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

As discussed in the response to a), the project would increase the area of impervious surfaces on the project site. As such, stormwater runoff would be directed to catch basins on site in accordance with drainage control requirements which would include measures for volume control. Further, the project would comply with existing local, state, and federal regulations related to drainage and runoff. As such, the project would not result in flooding on or off site. Therefore, impacts associated with altering the existing drainage pattern and runoff velocities would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

As previously discussed in response to a), the project site is currently undeveloped and upon completion the project would increase the area of impervious surfaces on the project site. Thus, the project could increase the amount of runoff water entering the stormwater drainage systems if not designed appropriately. Runoff would flow to the proposed onsite treatment BMP (i.e., biofiltration unit) via surface flow and subsurface stormwater pipes. The treatment BMP would be sized according to City requirements

to attenuate peak flows before then connecting to the municipal storm drain network in Rocky Point Drive through a new pipe connection. The project's contribution to runoff water is not expected to exceed the capacity or existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. However, should excess flows occur, runoff water would then be routed to the public storm drain system.

Additionally, as discussed in a), project construction would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts. Surface water runoff during project operations would be managed through the treatment BMP that would be designed to remove pollutants from on-site runoff prior to discharge into the storm drain system to the maximum extent practicable, as required by MS4 and as required in a project-specific WQMP**.** Therefore, impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

iv) Impede or redirect flood flows?

The project site is not located within a Federal Emergency Management Agency 100-year flood hazard zone (FEMA 2022). Therefore, no impacts associated with impeding or redirecting flood flows would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The project would not be susceptible to flood hazards, tsunami, or seiche. Seiche is generally associated with oscillation of enclosed bodies of water typically caused by ground shaking associated with a seismic event; however, the project site is not located near an enclosed body of water. Flooding from tsunami conditions is not expected since the project site is located approximately 5 miles from the Pacific Ocean. In addition, the project site and immediate surrounding area is not located within a flood zone, thus the project would not risk release of pollutants due to inundation. Therefore, no impacts associated with seiche, tsunami, or flooding would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The project site is located within the jurisdiction of the San Diego Regional Water Quality Control Board (RWQCB). As discussed above in a), the project would comply with all regional and local regulations related to water quality control of site runoff which is consistent with the policies and objectives of the San Diego RWQCB Basin Plan. The project is not located within an identified groundwater basin or subbasin that is being managed by a sustainable groundwater management plan and the proposed project is replacing an existing facility. In addition, groundwater only represents about 10% of total water supplies for the city and projections of groundwater use out to 2045 remain at a constant level. Therefore, the project would not

conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.11 Land Use and Planning

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that land use and planning would not be significantly impacted. Land uses proposed are those called for in the General Plan and the Specific Plan for the area and there are no conflicts with habitat conservation plans or natural community conservation plans.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☒	☐
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

a) Would the project physically divide an established community?

The physical division of an established community typically refers to the construction of a linear feature (such as a major highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and outlying area. The proposed project would include the construction of the City's Fire Station Number 8. The proposed project site consists of approximately 2.15 acres of vacant land, which is surrounded by existing development on all sides. On-site improvements would not impede access to any portion of the existing community. Therefore, impacts associated with the physical division of an established community would not occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The proposed project site has an Industrial General Plan designation (City of Oceanside 2022) and site development is regulated by the development regulations of the Pacific Coast Business Park Industrial Master Development Plan. See Figure 10, General Plan Land Use Designations. The specific Industrial designation (i.e., Limited Industrial) proves for a wide range of (1) moderate to low intensity industrial capable of being located adjacent to residential areas with minima buffering and attenuation measures and (2) commercial services and light manufacturing. "Small scale" Public Safety Facilities such as a fire station are permitted in the Limited Industrial designation with the approval of a use permit. The project site is regulated by the development regulations of Pacific Coast Business Park Industrial Master Development Plan. Specifically, Section 4, Development Regulations, of the Pacific Coast Business Park Industrial Master Development Plan establishes criteria for minimum site landscaping (15%), maximum height of structures (80 feet), and maximum lot coverage (75 percent). As depicted in Figure 5, the maximum height of the proposed fire station would be approximately 38 feet high, and the overall lot coverage on the site (assuming building footprint of 13,237 square feet and gross square footage of 93,654 square feet for the site) would be below the 75 percent maximum permitted by the zoning ordinance. Lastly, and according to the Conceptual Landscape Plan, the tree canopy alone would amount to approximately 15,632 square feet or approximately 16 percent of the site.

The proposed project is consistent with the Specific Plan, Master Industrial Development Plan, City Zoning Ordinance, and General Plan, as this use is allowable within the underlying IL zone with approval of a use permit. Overall, the project's mandatory compliance with the building and development regulation standards, including floor area ratio (FAR) requirements, building height restrictions, landscaping and parking requirements, would be in accordance with the Specific Plan, Master Industrial Development Plan, and Zoning Ordinance. As such, the proposed project would not conflict with any applicable land use plan, policy, or regulation. Lastly and as previously stated in Section 3.4, Biological Resources, the proposed project fully complies with the provisions of the Oceanside Subarea Plan.

Potential environmental impacts associated with the implementation of the proposed project are analyzed throughout this document. The proposed project will incorporate applicable mitigation measures to reduce environmental impacts. Therefore, the proposed project would not be in conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.12 Mineral Resources

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that because no mineral resources of value to the region or locally-important recovery sites are present on the property, mineral resources would not be significantly impacted.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XII. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

a) ***Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?***

and

b) ***Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?***

The proposed project site is located within an area designated as Mineral Resource Zone (MRZ) 3, which are that contain known or inferred mineral resource occurrences of undetermined mineral resource significance (CGS 2017). The proposed project site is zoned PD-1 (IL) and consists of approximately 2.15 acres of previously disturbed land. Operation of mineral extraction uses (i.e., heavy machinery and rock processing equipment) would be incompatible with the underlying land use designations of the site or surrounding area. Additionally, the City's General Plan restricts mining activities to areas designated in Figure LU-22 of the General Plan. The proposed project site is not designated as an area that would allow for mining activities (City of Oceanside 2002). As such, the proposed project would not result in any loss of availability of mineral resources. Therefore, the project would not result in impacts associated with mineral resources.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.13 Noise

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that sensitive noise receptors would not be significantly impacted by the project. While some short-term noise would be expected from grading and construction, adherence to the City's Noise Ordinance as it relates to permitted hours and days would reduce potential impacts. In addition, installation of a proposed noise wall would shield the off-site habitat area to the northwest of the project from substantial noise.

Impact Analysis

Noise Fundamentals and Existing Conditions

A brief background on the fundamentals of environmental acoustics is helpful in understanding how humans perceive various sound levels and framing the assessment and presentation of significant noise impacts. Although extremely loud noises can cause temporary or permanent damage, the primary environmental impact of noise is annoyance. The objectionable characteristic of noise often refers to its loudness. Loudness represents the intensity of the sound wave, or the amplitude of the sound wave height measured in decibels (dB). Decibels are calculated on a logarithmic scale; thus, a 10 dB increase represents a 10-fold increase in acoustic energy or intensity, and a 20 dB increase represents a 100-fold increase in intensity. Decibels are the preferred measurement of environmental sound because of the direct relationship between a sound's intensity and the subjective "noisiness" of it. The A-weighted decibel (dBA) system is a convenient sound measurement technique that weighs selected frequencies based on how well humans can perceive them.

The range of human hearing spans from the threshold of hearing (approximately 0 dBA) to that level of noise that is beyond the threshold of pain (approximately 120 dBA). In general, human sound perception is such that a change in sound level of 3 dB in a normal setting (i.e., outdoors or within a structure) is just noticeable, and a change of 5 dB is clearly noticeable. A change of 10 dB is perceived as a doubling (or halving) of sound level. Noise levels are generally considered low when they are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Noise levels greater than 85 dBA can cause temporary or permanent hearing loss if exposure is sustained.

Ambient environmental noise levels can be characterized by several different descriptors. Energy equivalent sound level (L_{eq}) describes a constant decibel level having the same time-varying acoustic energy over a specified period of time; hence, an L_{eq} value provides a useful measure of fluctuating noise exposure levels on sensitive receptors over a period of time that can be compared with a quantified standard. Other descriptors of noise incorporate a decibel weighting system that accounts for a person's susceptibility to noise irritations at night. For example, Community Noise Equivalent Level (CNEL) is a descriptor of cumulative noise exposure over a 24-hour period, with a 5 dB penalty added to evening hours (7:00 p.m. to 10:00 p.m.) and a 10 dB penalty added to night hours (10:00 p.m. to 7:00 a.m.). Since CNEL is a 24-hour average noise level, a surveyed location could have sporadic loud noise levels above 65 dBA and still yield an average lower than this value over the entire 24-hour period. Day-night sound level (L_{dn}) is similar to CNEL but treats the 7:00 p.m. to 10 p.m. evening hours as "daytime" hours that are not adjusted. In practice, Ldn and CNEL are often considered comparable or interchangeable, and both will always be greater than an unadjusted 24-hour L_{eq} value.

Existing Conditions

Currently, the project site is between two different types of land uses and corresponding sound environments: to the north are recently developed rows of multi-family residences (Pacific Ridge at Rancho Del Oro) along Old Grove Road, Via Lucero, and Via Candelas; and to the south are large warehouses and similar commercial enterprises along Rocky Point Drive. To the east and west of the project site are smaller but nonetheless commercial land uses and their grade-level parking areas.

Outdoor ambient sound pressure level (SPL) measurements were conducted near the project site on October 18, 2022 to quantify and help characterize the existing noise environment. The daytime, short-term (15-minute) staff-attended SPL measurements were taken with Rion NL-52 sound level meter (SLM) equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The SLM meets the current American National

Standards Institute (ANSI) standard for a Type 1 instrument. The SLM accuracy was verified with a field calibrator before and after the measurement survey, which was conducted with the SLM microphone positioned approximately five feet above the ground on a portable tripod mount.

The measurement locations are shown in Figure 11, Baseline Noise Measurement Locations, and sample metrics of the measured SPL appear in Table 3.13-1. More detailed SPL data, including field notes and photographs of the survey locations (i.e., the SLM deployment positions and surroundings) can be found in Appendix E. The primary noise sources at the measurement locations consisted of nearby roadway traffic, with secondary noise sources including distant conversations, bird song, landscaping activities, and rustling leaves. As shown in Table 3.13-1, the samples of existing daytime ambient noise level ranged from approximately 50 to 55 dBA L_{eq}.

Table 3.13-1. Measured Samples of the Existing Outdoor Sound Environment

Survey Position	Location/Address	Date (mm/dd/yy)	Start and End Times (hh:mm)	L_{eq} (dBA)	L_{max} (dBA)
ST1	Old Grove Road	10/18/22	14:00 to 14:15	55.0	63.6
ST2	1282 Rocky Point Drive	10/18/22	13:10 to 13:25	49.8	57.7
ST3	Southwest corner of Old Grove Road and Trestles Street	10/18/22	13:40 to 13:55	54.4	62.2

Notes: Leq = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibel; Lmax = maximum sound level during the measurement interval.

Thresholds of Significance

Regulatory Setting and Guidance

City of Oceanside General Plan

The Noise Element of the City of Oceanside General Plan (City of Oceanside 1974) establishes target maximum noise levels in the City. The Noise Element provides the following limitations on construction noise:

1. It should be unlawful for any person within any residential zone of 500 feet there from to operate any pile driver, power shovel, pneumatic, power hoist, or other construction equipment between 8:00 p.m. and 7:00 a.m. generating an ambient noise level of 50 dBA at any property line unless an emergency exists;
2. It should be unlawful for any person to operate any construction equipment at a level in excess of 85 dBA at 100 feet from the source; and
3. It should be unlawful for any person to engage in construction activities between 6:00 p.m. and 7:00 a.m. when such activities exceed the ambient noise level by 5 dBA. A special permit may be granted by the Director of Public Works if extenuating circumstances exist.

In addition, the Noise Element addresses nuisance noise and states that it should be unlawful for any person to make or continue any loud, unnecessary noise that causes annoyance to any reasonable person of normal sensitivity. The City's Noise Element also outlines general goals, objectives, and relevant noise policies that include the following:

- Noise levels shall not be so loud as to cause danger to public health in all zones except manufacturing zones where noise levels may be greater;

- Noise shall be controlled at the source where possible;
- Noise shall be intercepted by barriers or dissipated by space where other controls fail or are impractical;
- Noise levels shall be considered in any change to the Land Use and Circulation Elements of the General Plan; and
- Noise levels of City vehicles, construction equipment, and garbage trucks shall be reduced to acceptable levels.

In a manner similar to the state's land use planning guidelines, the City's Noise Element also features an implementation recommendation (#5) that puts attention to the careful planning of future residents in areas "subjected to noise levels of 65 dBA or higher" (City of Oceanside 1974).

For interior noise, the Noise Element also refers to an earlier version of the California Title 24 noise insulation standard: 45 dBA CNEL as the maximum acceptable level for inhabited rooms when exterior noise levels are 60 dBA CNEL or more. This implies that if windows and doors are required to be closed to meet this standard, then mechanical ventilation (i.e., air conditioning) shall be included in the project design.

City of Oceanside Municipal Code

Section 38.12 of the Oceanside Municipal Code enumerates maximum 1-hour average sound levels for various land uses for operational noise, which include as follows:

- Residential Estate, Single-Family Residential, Medium Density Residential, Agricultural, Open Space – 50 dBA (7:00 a.m. to 9:59 p.m.) and 45 dBA (10:00 p.m. to 6:59 a.m.);
- High Density, Residential Tourist – 55 dBA (7:00 a.m. to 9:59 p.m.) and 50 dBA (10:00 p.m. to 6:59 a.m.);
- Commercial – 65 dBA (7:00 a.m. to 9:59 p.m.) and 60 dBA (10:00 p.m. to 6:59 a.m.); and
- Industrial – 70 dBA (7:00 a.m. to 9:59 p.m.) and 65 dBA (10:00 p.m. to 6:59 a.m.).

Construction activities are subject to Section 38.17 of the Noise Ordinance, which specifically prohibits the operation of any pneumatic or air hammer, pile driver, steam shovel, derrick, steam, or electric hoist, parking lot cleaning equipment or other appliance, the use of which is attended by loud or unusual noise, between the hours of 10:00 p.m. and 7:00 a.m.

Section 38.16 prohibits nuisance noise as recommended in the General Plan Noise Element. It is unlawful for any person to make, continue, or cause to be made or continued, within the limits of the City of Oceanside, any disturbing, excessive, or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity.

Section 38.6 defines emergency work as the following: "work made necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from imminent exposure to danger or damage or work by public or private utilities when restoring utility service". Using this definition, Section 38.18 exempts emergency work, "provided that the city has been notified as soon as practical and any vehicle, device, apparatus or equipment used with the emergency work is designed, modified, or equipped to reduce sounds produced to the lowest possible level consistent with effective operation of such vehicle, device, apparatus, or equipment."

City of Oceanside Engineering Manual

Construction noise in Oceanside is governed by the City Engineering Manual. Construction is normally limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Friday. However, Saturday construction is allowed by

permit. More specifically, the City Engineering Manual (Engineers Design and Processing Manual Appendix Construction Guidelines and Requirements) states the following on pages 139 and 159:

- All operations conducted on the premises, including the warming up, repair, arrival, departure, or running of trucks, earthmoving equipment, construction equipment, and any other associated equipment shall be limited to the period between 7:00 a.m. and 6:00 p.m. each day, Monday through Friday, and no earthmoving or grading operations shall be conducted on the premises on Saturdays, Sundays or legal holidays, unless waived by the City Engineer.
- Hours of Operation (515) (34): 7:00 am to 6:00 p.m. M-F; including equipment warm-up.
- Saturday Operation: Requires filing a permit by 2:30 p.m. on the preceding Thursday.

Summarized Assessment Criteria

In light of the three CEQA noise impact significance assessment topics appearing in the above matrix, and relative to the preceding summarized regulations and policies, this analysis uses the following standards to evaluate potential noise and vibration impacts.

- Construction noise – Although Chapter 38 of the Oceanside Municipal Code does not quantify a threshold for allowable construction noise, the City's General Plan allows noise from construction equipment operation to be as high as 85 dBA at 100 feet from the source. Applying the principles of sound propagation for a point-type source, this level could be interpreted to mean 91 dBA at 50 feet, which is greater than the maximum sound levels of most operating construction equipment (DOT 2006) and would thus imply all but the loudest construction activities (e.g., pile driving) could be compliant with this standard. However, most construction equipment and vehicles on a project site do not operate continuously; therefore, consistent with Federal Transit Administration (FTA) guidance, this analysis will use 80 dBA Leq over an 8-hour period as the construction noise impact criterion during daytime hours (7:00 a.m. to 6:00 p.m.). If construction work were to occur outside these hours, the impact threshold would align with the City's General Plan requirement during such hours: i.e., no more than a 5 dBA increase over existing ambient noise levels.
- Off-site project-attributed roadway traffic noise – For purposes for this analysis, a direct roadway noise impact would be considered significant if increases in roadway traffic noise levels attributed to the proposed project were greater than 3 dBA CNEL at an existing noise-sensitive land use.
- Off-site project-attributed stationary noise – For purposes for this analysis, a noise impact would be considered significant if noise from typical operation of heating, ventilation, and air conditioning and other electro-mechanical systems associated with the proposed project exceeded 70 dBA hourly Leq at the project property line from 7:00 a.m. to 9:59 p.m., and 65 dBA hourly Leq from 10:00 p.m. to 6:59 a.m.
- Construction vibration – Guidance from Caltrans indicates that a vibration velocity level of 0.1 ips PPV received at a structure would be considered annoying by occupants within (Caltrans 2020). As for the receiving structure itself, Caltrans guidance recommends that a vibration level of 0.5 ips PPV would represent the threshold for building damage risk.

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XIII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Short-Term Construction Impacts

Construction noise and vibration are temporary phenomena. Construction noise and vibration levels vary from hour to hour and day to day, depending on the equipment in use, the operations performed, and the distance between the source and receptor. Equipment that would be in use during construction would include, in part, graders, backhoes, rubber-tired dozers, loaders, cranes, forklifts, cement mixers, pavers, rollers, and air compressors. Typical maximum noise levels from operation of these kinds of heavy construction equipment at a distance of 50 feet are presented are usually less than 85 dBA (FTA 2018) and would therefore comply with the City's 85 dBA at 100 feet criterion. Furthermore, construction equipment usually operates in alternating cycles of full power and low power, producing average noise levels over time that are less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates onsite.

On-Site Construction Noise

Aggregate noise emission from proposed project construction activities, broken down by sequential phase, was predicted at two distances to the nearest existing noise-sensitive receptor: 1) from the nearest position of the construction site boundary and 2) from the geographic center of the construction site, which serves as the time-averaged location or geographic acoustical centroid of active construction equipment for the phase under study. The intent of the former distance is to help evaluate anticipated construction noise from a limited quantity of equipment or vehicle activity expected to be at the boundary for some period of time, which would be most appropriate for phases such as site preparation, grading, and paving. The latter

distance is used in a manner similar to the general assessment technique as described in the FTA guidance for construction noise assessment, when the location of individual equipment for a given construction phase is uncertain over some extent of (or the entirety of) the construction site area. Because of this uncertainty, all the equipment for a construction phase is assumed to operate—on average—from the acoustical centroid. Given the project site location with respect to the nearest noise-sensitive receivers on the north side of Old Grove Road, the acoustic centroid distance is 250 feet, and the distance to the nearest project site boundary is 125 feet.

At the site boundary, this analysis assumes that up to only one piece of equipment of each listed type per phase will be involved in the construction activity for a portion of or the entirety of the 8-hour period utilized to assess compliance with respect to the FTA guidance-based 80 dBA 8-hour L_{eq} threshold at a residential receptor. In other words, at such proximity, the operating equipment cannot "stack" or crowd the vicinity and still operate. For the acoustical centroid case, which intends to be a geographic time-average position for all equipment during the indicated phase, this analysis assumes that the equipment may be operating up to all 8 hours per day.

A Microsoft Excel–based noise prediction model emulating and using reference data from the Federal Highway Administration Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest occupied noise-sensitive land use. An isometric view of the FHWA model setup is included as Figure 12. Although the RCNM was funded and promulgated by the Federal Highway Administration, it is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are often used for other types of construction.) Input variables for the predictive modeling consist of the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (a.k.a., "acoustical usage factor" [AUF] as coined by the RCNM, which is the percentage of time within a specific time period, such as an hour, when the equipment is expected to operate at full power or capacity, and the distance from the noise-sensitive receiver. The predictive model also considers how many hours that equipment may be on site and operating (or idling) within an established work shift. Conservatively, no topographical or structural shielding was assumed in the modeling. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis, which is detailed in Appendix E, and produce the predicted results displayed in Table 3.13-2.

Table 3.13-2. Predicted Construction Noise Levels per Activity Phase

Construction Phase (and Equipment Types Involved)	8-Hour L_{eq} at Nearest Noise-Sensitive Receptor to Construction Site Boundary (dBA)	8-Hour L_{eq} at Nearest Noise-Sensitive Receptor to Acoustical Centroid of Site (dBA)
Demolition (dump truck)	58.1	51.0
Site preparation (grader, scraper, backhoe)	73.0	65.9
Grading (dozer, grader, backhoe)	72.3	65.6
Building construction (crane, man-lift, backhoe, generator, welder/torch)	66.9	61.1
Paving (paver, roller, other equipment, concrete mixer, backhoe)	73.2	66.5
Architectural Coating (compressor)	61.8	54.7

Source: SANDAG 2021.

Although construction noise levels would not exceed applicable thresholds, the noise during project construction would be higher than existing ambient noise levels. Therefore, the following best management practices (BMP) are recommended to reduce noise from construction:

BMPs – Construction:

1. Ensure that all noise-producing project equipment and vehicles using internal combustion engines are equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features are in good operating condition that meet or exceed original factory specification. Ensure that mobile or fixed "package" equipment (e.g., arc-welders, air compressors) are equipped with shrouds and noise control features that are readily available for that type of equipment.
2. Ensure that all mobile or fixed noise-producing equipment used on the project that are regulated for noise output by a local, state, or federal agency complies with such regulation while in the course of project activity.
3. Implement construction noise reduction methods such as shutting off idling equipment and maximizing the distance between construction equipment staging areas and adjacent residences where feasible.
4. Material stockpiles and mobile equipment staging, parking, and maintenance areas should be located as far as practicable from noise-sensitive receptors.
5. Establish and enforce construction site and access road speed limits of 15 miles per hour during the construction period.
6. Ensure that the use of noise-producing signals, including horns, whistles, alarms, and bells, be for safety warning purposes only.
7. Ensure that project-related public address or music systems are not audible at any adjacent receptor.

Long-Term Operational Impacts

Increase Offsite Roadway Traffic Noise

The proposed project would result in the creation of additional vehicle trips on local roadways (e.g., Old Grove Road), which could result in increased traffic noise levels at adjacent noise-sensitive land uses. Potential noise effects from vehicular traffic were assessed using the Federal Highway Administration's Traffic Noise Model (TNM) version 2.5 (FHWA 2004). Information used in the model included the roadway geometry, posted traffic speeds, and traffic volumes for the following scenarios: existing, existing plus project, future without project, and future plus project as shown below in Table 3.13-3. TNM input/output sheets can be found in Appendix E.

Table 3.13-3. Traffic Volumes with Average Daily Traffic

Roadway Segment	Project Traffic	Existing Year Average Daily Traffic			Buildout Year Average Daily Traffic		
		Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
Old Grove Road	18	732.35	15.1	7.55	1207.65	24.9	12.45

Traffic noise levels were predicted at the baseline field survey positions shown in Figure 11 and at four project building façade locations shown in Figure 12, the latter of which was done to help predicted exterior noise levels at the new fire station. The prediction results are summarized in Table 3.13-4.

Table 3.13-4. Predicted Traffic Noise Levels (CNEL)

Receptor Position	Existing	Existing plus project	Difference (dB)	Future	Future plus project	Difference (dB)
ST1	56.9	57	0.1	59.1	59.2	0.1
ST2	48.7	48	0.3	50.9	50.2	-0.7
ST3	59.9	60	0.1	62.1	62.2	0.1

At all three offsite exterior locations, the predicted CNEL values are less than 65 dBA, and thus compatible with the City's guidance for exterior noise levels. Further, the added traffic contribution from the project results in less than an imperceptible 1 dB change and is thus considered a less-than-significant impact to the community.

Although not required for CEQA, for purposes of information disclosure, the predicted traffic noise levels at the four modeled project building façade locations M1, M2, M3, and M4 as illustrated in Figure 12 would also be expected to be not greater than 65 dBA CNEL. For such exterior noise levels, and assuming closed fenestration (windows, doors), the background interior sound levels would be anticipated to be compliant with California Building Code (CBC) standard of 45 dBA CNEL for inhabited spaces and 50 dBA hourly L_{eq} for non-residential occupied spaces on the basis of a reasonably expected exterior-to-interior noise reduction afforded by the building structure of at least 20 dBA.

On-Site Operational Noise

The project would result in the operation of a community-serving fire station, which could have occupants within the building 24 hours per day. Hence, the building will be served by outdoor-exposed rooftop-mounted heating, ventilation and air conditioning (HVAC) equipment that would create noise at any time. Additionally, on-site fire apparatus maintenance activities would also take place at the project site and contribute noise to the environment on an intermittent basis.

HVAC Equipment Noise

For the analysis of noise from HVAC equipment operation, based on known project information as of this writing, it was assumed that an area of the roof would be occupied by up to six packaged air handling units (AHU) with air-cooled condensing units to serve up to thirty-six (36) tons of refrigeration. Additionally, there are two noise sources that may operate under the right conditions:

1. an emergency generator of 400 kW capacity, contained within a "level 2" sound enclosure and thus exhibiting up to 75 dBA Leq at a distance of 7 meters; and
2. a battery energy storage system (BESS) from a major supplier of such equipment, with a reference sound power of 95 dBA.

With this data, the Datakustik CadnaA sound propagation prediction model was used to calculate combined noise level from all HVAC units for the following three cases:

1. operation of only the rooftop HVAC systems, with prediction results appearing in Figure 13;
2. operation of the rooftop HVAC *and* the emergency generator, with prediction results appearing in Figure 14;
3. operation of the rooftop HVAC *and* the BESS, with prediction results appearing in Figure 15.

Calculation parameters utilized by the CadnaA sound modeling program, which applies algorithms per International Organization of Standardization (ISO) 9613-2, includes the following:

- Ground acoustical absorption equal to a 0.5 coefficient value (on a scale of zero to one, and thus representing an average mix of reflective [street pavement] and absorptive [grassy landscape] surfaces);
- Reflection order = 1 (i.e., up to one reflection of a sound path upon the first encountered intervening surface);
- Temperature = 68 degrees Fahrenheit; and
- Relative humidity = 50%.

Prediction results for the three modeled onsite operation scenarios appear in Table 3.13-5 for the two studied nearest offsite residential receptors appearing in the three aforementioned Figures 13, -14, and -15. And as shown by Figures 13 and 15, predicted operation noise levels at the project property line for the HVAC-only case and the HVAC-plus-BESS case are expected to be compliant with City daytime and nighttime standards of 70 dBA and 60 dBA L_{eq1h}, respectively.

Table 3.13-5. Predicted Onsite (Stationary Source) Operation Noise Levels

Receptor Position	Scenario 1: Rooftop HVAC System Operation only (hourly L_{eq}, dBA)	Scenario 2: Rooftop HVAC System Operation *and* Emergency Generator (hourly L_{eq}, dBA)	Scenario 3: Rooftop HVAC System Operation *and* BESS (hourly L_{eq}, dBA)
PRRDO East	30.8	49.2	39.2
PRRDO West	32.2	53.4	42.7

Notes: PRRDO = Pacific Ridge at Rancho Del Oro; Leq = energy equivalent sound level; BESS = battery energy storage system.

When the emergency generator would be operating in the event of an actual emergency, its noise emission would be exempt from City standards. Under testing conditions, however, which are likely to be once per month and up to a duration of approximately 15 to 20 minutes, operation of the emergency generator could exceed City standards for the hour during which such expected monthly testing would occur. Figure 14 illustrates that the predicted aggregate sound emission level for the fire station, dominated by emergency generator operation noise, during Scenario 2 would cause spillover noise along the eastern project boundary that exceeds 70 dBA and would—under that limited circumstance—create a significant impact.

As a best management practice, testing of the emergency generator shall only occur during daytime hours (and thus apply the more generous 70 dBA limit for industrial land uses); and any gaps in the partial enclosure solid surfaces formed by the property line concrete masonry unit (CMU) wall and nearby structural overhangs shall be covered, extended, or otherwise supplemented so that emergency generator noise

cannot emit directly towards the east. Occluding generator noise in this direction would lead to lower noise levels beyond the project's eastern property line, and thus yield a less than significant impact.

Fire Station Apparatus Noise

After relocation of equipment and personnel from the existing Fire Station Number 8 is completed, the project would operate 24 hours a day/7 day a week year-round and would be the primary base of operations for calls for fire protection services and emergency medical personnel in the City's Ivey Rancho/Rancho Del Oro neighborhood. During operations, the apparatus' assigned to the new Fire Station 8 would respond to 16 to 19 incidents per day (Campbell 2022).

Noise generally associated with normal activities from a fire station is attributed to the ingress and egress of fire apparatus responding to emergencies. Although most emergency responses occur during daytime hours when people are awake and alert, they can happen at any time. Each emergency call would include the noise from vehicles first leaving the project site, then returning after call response. Under the right conditions, ancillary equipment may be checked and tested after such returns to the project site. When emergency calls occur during nighttime hours, there is a potential for sleep disturbance at nearby residences depending upon factors such as distance between the receptor and the project site, the sound insulation of the receptor's location (i.e., open or closed windows on the exterior façade exposed to the vehicle noise) and background noise environment. But because the City exempts the performance of such emergency work from its noise restrictions (per Section 38.18), and due to these emergency call responses being momentary sources of outdoor ambient noise increase over the course of an hour, these noise increases would be considered lawful and represent a less than significant impact. For instance, a siren emitting noise at a magnitude of 85 dBA L_{max} at 50 feet for thirty (30) seconds would have an hourly L_{eq} value of 60 dBA at a distance of 120 feet, which would be compliant with the City's nighttime ordinance at the project property line.

Other onsite project noise-producing activity could include diagnostic maintenance of apparatus (e.g., engine pulls, cab tilts, fluid checks, pump runs, and tests of air brakes). Noise measurements conducted at similar fire stations during the morning equipment checkout and weekly maintenance of equipment indicate that maximum noise (L_{max}) levels at distance of 50 feet from the activity can reach 80 to 85 dBA (City of San Mateo 2018). With these reference sound levels, anticipated noise exposures at facades of the nearest residences north of Old Grove Road, as close as 225 feet away from the fire station garage, would range from 67 to 72 dBA L_{max}. While these project-related operation noise levels are somewhat higher than the L_{max} values at ST1 and ST3 shown in Table 3.13-1, their duration-dependent L_{eq} values would be less and compliant with the 70 dBA L_{eq} limit at the project property line. For these reasons, onsite fire apparatus operational noise is considered a less than significant noise impact.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Operation of the project would include onsite electro-mechanical equipment that would produce negligible levels of groundborne vibration. Project construction activities can produce groundborne vibration that, at sufficient magnitudes, might expose offsite buildings to damage risk and occupants to annoyance levels that could be considered significant impacts. Groundborne vibration information related to construction

activities (including demolition) has been collected by the California Department of Transportation (Caltrans 2020), which indicates that continuous vibrations with a peak particle velocity (PPV) of approximately 0.1 inches per second (ips) begins to annoy people. The heavier pieces of construction equipment expected to work the project site, such as bulldozers, would have peak particle velocities of approximately 0.089 inches per second or less at a distance of 25 feet (FTA 2018).

Groundborne vibration attenuates, even over relatively short distances from the point of origin, due to propagation of the vibrational energy through masses of soils and rock strata and at the interface of these ground conditions with a receiving building foundation (often called a "coupling loss"). At the nearest offsite vibration-sensitive receivers (i.e., the residences located to the north of the project site across Old Grove Road) that are no closer than approximately 125 feet to onsite construction activities, the estimated PPV from an onsite bulldozer (or comparably massive and powerful piece of operating construction equipment [excavator, backhoe, crane, etc.]) would be 0.008 inches per second. This groundborne vibration velocity level is well below the afore-mentioned vibration annoyance threshold 0.1 ips PPV; therefore, impacts associated with vibration-generated annoyance would be less than significant.

As for building damage risk, the Caltrans-recommended guidance thresholds are higher: for continuous or frequently intermittent vibration sources, 0.5 ips PPV for newer residential structures (of timber construction) like those north of Old Grove Road. Since the anticipated groundborne vibration velocity exposure level is only 0.008 ips PPV per the preceding paragraph, it is well below 0.5 ips PPV threshold for building damage risk. Therefore, on this basis impacts associated with vibration-produced offsite building damage would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard

c) ***For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?***

The closest public airport is Oceanside Municipal Airport, located approximately 3.4 miles west-northwest of the project site. The airport's noise contour map from its Airport Land Use Compatibility Plan (ALUCP), reproduced herein as Figure 16, shows that potentially impactful aviation noise exposure levels of 65 dBA CNEL diminish at a point well west of the project site. Similarly, the next-closest apparent airfield is associated with Marine Corps Air Station (MCAS) Camp Pendleton, over 7 miles to the north-northwest. Figure 17 illustrates that the military aviation noise 65 dBA CNEL contour is well within the base boundary. Therefore with both nearest sources of aviation noise exposure sufficiently distant from the project site, no impacts associated with airport and aircraft noise would be expected to occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.14 Population and Housing

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that population would not be significantly impact because the PCBP SP land uses had been defined by General Plan (and Specific Plan) and are part of the overall balance of land uses in the City.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

a) ***Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?***

Project construction would result in a temporary direct increase in construction jobs. However, the demand for construction employment would likely be met within the existing and future labor market in the City and in the greater San Diego County area. If construction workers live outside of the City, these workers would likely commute during the temporary construction period.

The proposed project would allow for the relocation of the existing Fire Station Number 8 and would provide expanded facilities. Upon completion of construction, the proposed project would better serve the existing and projected demand for fire protection services within the Fire Station Number 8 service area. Operation of the proposed project would not induce substantial unplanned population growth. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed project site does not contain any existing housing or provide other means of housing the public. As such, project implementation would not displace existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.15 Public Services

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that public services would not be significantly impacted because the project (PCBP SP) follows the land uses and densities called for in the Specific Plan and the area had adequate fire and police protection. For similar reasons, the PCBP SP EIR concluded that public services (including schools, parks, and other public facilities including libraries) would not be significantly impacted.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

The proposed project would include the construction of the City's Fire Station Number 8, which would allow for the relocation of the existing Fire Station Number 8 and provide expanded facilities. As such, the proposed project would result in a new physically altered governmental facility. Potential environmental impacts associated with the implementation of the proposed project are analyzed throughout this Addendum. Upon completion of construction, Fire Station Number 8 would better accommodate the existing and projected demand of the service area. As such, impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Police protection?

As discussed in Section 3.14, Population and Housing, the proposed project would not induce substantial unplanned population growth in the area. The proposed project would include the construction of the City's Fire Station Number 8. Project implementation would not result in an increase in demand for police protection. No impact would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Schools?

The proposed project would not induce substantial unplanned population growth in the area. The proposed project would include the construction of the City's Fire Station Number 8. Project implementation would not result in an increase in demand for schools. No impact to schools would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Parks?

The proposed project would not induce substantial unplanned population growth in the area. The proposed project would include the construction of the City's Fire Station Number 8. Project implementation would not result in an increase in demand for parks. No impact to parks would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Other public facilities?

Given the lack of population growth that would result from the project, the project would not increase the use of libraries and other public facilities. Therefore, no impacts associated with other public facilities would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.16 Recreation

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR concluded that recreation would not be significantly impacted. No formal recreational facilities were proposed in the PCBP area and while future employees of industrial and commercial businesses would walk for exercise or the area would be used on weekends by walkers and bicycle riders, none of these activities would result in impacts to recreational resources.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The project consists of the construction and operation of a fire station. Neither the construction nor the operation of the project would generate new permanent residents that would increase the use of existing parks and recreational facilities such that substantial physical deterioration of recreational facilities would occur or be accelerated. Therefore, no impacts associated with recreational facilities would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The proposed project would include the construction of the City's Fire Station Number 8. The proposed project would not require the construction or expansion of recreational facilities. No impact would occur.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.17 Transportation

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR used a level of service (LOS) method of analyzing transportation impacts. The PCBP SP EIR included the preparation of a traffic study that analyzed 49 roadway segments and 56 intersection. The EIR focused on the roadway segments and intersection that presently had or were projected to have significant impacts to traffic flow. At buildout, the PCBP was provided to generate 16,800 trips on a daily basis with an AM peak of 2,088 trips and a PM peak of 2,096 trips.

In terms of intersections, five intersections were determined to be significantly impacted under one or more of the evaluated scenarios:

- El Camino Real/Mesa Drive in the PM peak hour
- El Camino Real/Oceanside Boulevard in the PM peak hour
- Ocean Ranch Road/Old Grove Road in the AM peak hour
- Avenida de la Plata/Corporate Center Drive in the AM and PM peak hours
- Rancho Del Oro/Oceanside Boulevard in the PM peak hour

Three street segments were determined to be significantly impacted under one or more of the evaluated scenarios:

- SR 76 between EL Camino Real and Old Grove Road
- Oceanside Boulevard between College Boulevard and Gateway Center
- College Boulevard between SR-76 and SR-78

In total, the PCBP SP EIR included approximately 10 mitigation measures to address identified impacts to intersections and street segments associated with buildout of the PCBP. With the exception of College Boulevard between SR-76 and SR-78, transportation-related impacts could be reduced to a less than significant level with mitigation. Impacts College Boulevard between SR-76 and SR-78 remains significant and unavoidable as no feasible measures were identified to increase capacity by means of additional through lanes along College Boulevard.

As noted above, the PCBP SP EIR used LOS as the basis of its transportation analysis. LOS has since been replaced by vehicle miles traveled (VMT) as the method of transportation analysis. This updated Addendum therefore uses VMT as the threshold, but also analyzes impacts using LOS as a way of providing that additional information to the public.

Background

Since the time of adoption of the PCBP SP EIR, state law has required that transportation impacts be based on vehicle miles traveled (VMT) instead of LOS. In 2013, the California Legislature adopted Senate Bill 743 (SB 743), which amended CEQA to require transportation impacts to be determined using a threshold that balances congestion management with greenhouse gas reductions by measuring vehicle miles traveled (VMT) and directed the Office of Planning and Research (OPR) to revise the CEQA Guidelines to reflect this change.[1]

The resulting CEQA Guideline section setting VMT as the transportation significance metric requires the change to be implemented by July 1, 2020.[2] In January 2019, California's Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of the SB 743 modifications. The changes were approved by the Office of Administrative Law and are now in effect. As such, as of July 1, 2020, LOS can no longer be the basis for determining an environmental effect under CEQA, and the analysis of impacts to transportation is now based on VMTs.

Oceanside adopted its own VMT significance guidelines in August 2020. The City's Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment provide that projects in low VMT areas identified on the SANDAG SB 743 VMT Screening Map are screened out and need not conduct VMT analysis. SANDAG's map uses the generally accepted State OPR guidance for industrial uses: VMT 15% below regional average. OPR's 2018 Technical Advisory also notes that most state VMT comes from residential and office uses, not industrial uses.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XVII. TRANSPORTATION – Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☒
d) Result in inadequate emergency access?	☐	☐	☒	☒

[1] Public Resources Code Section 21099(b)(2) provides that "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division."

[2] CEQA Guidelines section 15064.3(b)(1), (b)(4), and (c) provide that "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or any other measure. A lead agency may use models to estimate a project's vehicle miles traveled. Beginning on July 1, 2020, the provisions of this section shall apply statewide."[2]

a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

This transportation analysis in this section is based on the City of Oceanside Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT)[5] and Level of service (LOS)[6] Assessment, August 2020, Final Version. The City's guidelines serve as a guide to analyzing transportation impacts to ensure local and state legislative requirements are met. A Project Information Form (PIF) showing the project's VMT and LOS screening is provided as Appendix F.

Project Type and Trip Generation

The Fire Station No. 8 project (proposed project) would construct an approximately 13,240 square feet building and associated site improvements including driveways, parking spaces, emergency diesel generator and fuel storage areas, and site landscaping. The San Diego Association of Governments (SANDAG) *Brief Guide of Vehicular Trip Generation Rates for the San Diego Region*, April 2002 does not include a trip rate for a Fire Station. The trip rate for Fire Station in the Institute of Transportation Engineers (ITE) Trip Generation Manual provides only a PM peak hour rate. Since no published trip rate is available for Fire Stations, the project's trip generation estimates were developed based on operational data for crew members, vehicles and projected emergency responses.

Table 3.17-1 presents the trip generation for the proposed project.

Table 3.17-1. Project Trip Generation

Land Use	Number/Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Crew Member[1]	10 members	60	10	0	10	0	10	10
Emergency Responses[2]	10 incidents	80	0	4	4	4	0	4
Emergency Responses – Non Fire[2]	9 incidents	36	0	2	2	2	0	2
Non-Emergency[3]	2 members	4	1	0	1	0	1	1
Deliveries[3]	1 truck	2	1	0	1	0	1	1
Project Trip Generation		**182**	**12**	**6**	**18**	**6**	**12**	**18**

Notes:

1 Per project description, there would be a maximum of 10 crew members including fire fighters and rescue staff at the Fire Station. It is assumed that there would be three 8-hour shifts per day. Each crew member is assumed to drive separately, hence each

5 Pursuant to Senate Bill (SB) 743, the focus of transportation analysis changed from level of service or vehicle delay to vehicle miles traveled. The related updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018. This new methodology is being used statewide since July 1, 2020, for projects qualifying to meet documentational requirements under the CEQA.

6 The City recognizes the need to maintain consistency with the most recently adopted Circulation Element and may require a Local Transportation Study (LTS) or Local Transportation Assessment (LTA). Per criteria in the City's Traffic Impact Analysis Guidelines:

- A LTS will be required if a project exceeds 1,000 ADT and is consistent with the adopted General Plan. If a project is inconsistent with the adopted General Plan, an LTS will be required if the project exceeds 500 ADT.
- A LTA will be required to analyze the following scenarios based on the thresholds identified for the project's ADT
  - A project that generates between 200-500 ADT will be required to analyze existing conditions and existing conditions plus project.
  - A project that generates between 500-1,000 ADT will be required to analyze existing conditions, existing conditions plus project, existing conditions plus near-term cumulative projects, and existing conditions plus near-term cumulative projects plus project

member would generate two daily trips (one inbound and one outbound). One crew of 10 members was assumed to commute in the AM and PM peak hour.

2 It is projected that the Fire Station would respond to a maximum of 16-19 emergency responses per day of which 10 have been conservatively assumed to be fire-related responses. A fire-related emergency response would require four vehicles i.e. an engine, a ladder truck, an ambulance, and a battalion chief vehicle. Therefore, four vehicles and two trips per vehicle (one inbound and one outbound) are assumed to estimate daily trips per fire related emergency response. Other incidents or non-fire emergencies would require two vehicles. Therefore, two vehicles and two trips per vehicle (one inbound and one outbound) are assumed to estimate daily trips per non-fire emergency or incident. It is not possible to estimate how many emergencies would occur during the peak hours, therefore, the daily trips for emergency responses are distributed evenly over the duration of 24-hour to estimate the AM and PM peak hour trips.

3 A small number of non-emergency and delivery trips would occur on a daily or weekly basis.

As shown in the table, the proposed project would generate 182 daily trips, 18 AM peak hour trips and 18 PM peak hour trips. It should be noted that the estimated trip generation for the proposed project is conservative because it assumes maximum number of emergency responses that could occur on a peak day. Additionally, the proposed project would be relocating and expanding the existing facility at 1935 Avenida Del Oro, therefore, the trips generated at the existing Fire Station would cease once this facility is operational. However, no existing trip credit was applied, or net new trip generation was calculated for the staff or vehicles due to the relocation of the existing Fire Station to the proposed project site. Therefore, the calculated trip generation is a conservative estimate for the proposed project.

As shown in project's trip generation estimate (Table 3.17-1) because the project would generate less than 200 average daily trips (ADT), the project would not have the potential to cause any operational deficiency to the roadways and intersections in its vicinity. It would not result in a measurable effect on the circulation system and a Local Transportation Assessment (LTA) would not be required.

Roadway Facilities

Old Grove Road is built to the classification of a major arterial between Frazee Road and College Boulevard. Old Grove Road is a four-lane divided roadway in the vicinity of the project. On-street parking is not permitted along Old Grove Road.

Trestles Street is a two-lane local collector street between Old Grove Road and Rocky Point Drive. Trestles Street is a short roadway segment which provides access to parcels and development located to the west, east and south of the project site. Parking is allowed on either side of Trestles Street.

Rocky Point Drive is a local street that provides access to several properties and has turn-arounds at its termini. It is a two-lane undivided street. Parking is generally permitted on both sides of this street.

Vehicular access to the project site would be Trestles Street and Rocky Point Drive.

Transit, Bicycle, and Pedestrian Facilities

North County Transit District (NCTD) provides public transit bus service in the vicinity of the proposed project. The nearest bus stops are located at the College Boulevard/Old Grove Road intersection and the Avenida Del Oro/Old Grove Road intersection. NCTD Breeze Route 315 operates between Carlsbad Village Drive and 14 Area via College Boulevard. It operates at a frequency of approximately an hour on weekdays and Saturdays. Route 323 operates between the College Boulevard SPRINTER Station and Quarry Creek. It operates at a frequency of approximately an hour on weekdays. Route 623 operates between the College

Boulevard Station and Sage Creek High School. On weekdays, it operates at 7:15 AM going southbound and a 2:45 and 3:45 PM going northbound.

The NCTD Sprinter rail travels from east to west with stations from Tremont Street in Oceanside to Valley Parkway in Escondido. The service operates at a frequency of 30 minutes Monday through Sunday. The closest Sprinter station is the College Boulevard Station, which approximately, 1.3 mile south of the project site.

There are existing paved sidewalks along both sides of Old Grove Road, Trestles Street and Rocky Point Drive. There is a Class II bike lane along both sides of Old Grove Road. The project would not preclude implementation of any plans or policies regarding existing or proposed bicycle or pedestrian facilities in the area. As such, the project is a community institution and would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, impacts associated with programs, plans, ordinances, and policies addressing the circulation system would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

This section analyzes the potential impacts of the project based on CEQA Guidelines Section 15064.3(b), which focuses on criteria of VMT for determining the significance of transportation impacts. The CEQA Guidelines state that "generally, VMT is the most appropriate measure of transportation impacts," and define VMT as "the amount and distance of automobile travel attributable to a project." "Automobile" refers to on-road passenger vehicles, specifically cars and light trucks. The Governor's Office of Planning and Research (OPR) has clarified in its Technical Advisory (OPR 2018) that heavy-duty truck VMT is not required to be included in the estimation of a project's VMT. Other relevant considerations may include the effects of a project on transit and non-motorized traveled.

The section is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. The proposed project would be categorized under CEQA Guidelines Section 15064.3(b)(1), as a land use project, for the purpose of VMT analysis. A project's VMT analysis follows the guidelines are contained within the City's Traffic Impact Analysis Guidelines and provides the screening criteria and methodology for VMT analysis. Projects that pass at least one screening criteria[7] are generally expected to cause a less than significant impact without conducting a detailed VMT analysis. This is consistent with OPR's Technical Advisory which states that projects that meet the screening thresholds based on their location and project type may be presumed to result in a less-than-significant transportation impact (OPR 2018).

Project Screening for VMT

As shown in Table 2 – Screened Out Projects, of the City's Traffic Impact Analysis Guidelines, there are project types that can be presumed to be considered VMT reducing or local serving or are based on

[7] SB 743 eliminates the need for some projects to be analyzed for CEQA purposes that support VMT reduction, these projects are considered screened out for VMT analysis. Screened out is defined as projects not needed to be analyzed for CEQA purposes that already support VMT reduction.

substantial evidence provided by the OPR Technical Advisory Committee supporting SB 743 implementation to cause less than significant VMT impact.

The project is classified as a community institution which would improve proximity and access to emergency service for City's Ivey Rancho/Rancho Del Oro neighborhood and therefore is considered a local-serving community need. Therefore, the project is screened out and a less than significant transportation impact determination can be made. Hence, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). Impact would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Vehicular access to the project site would be provided via Trestles Street and Rocky Point Drive. Inbound emergency vehicles would enter the project site using Rocky Point Drive and outbound emergency vehicles would exit via Trestle Street using the Trestles Street-Via Pacifico/Old Grove Street intersection. Passenger cars and other vehicles would enter and exit the site from Rocky Point Drive and use the parking lot provided in the rear of the project site. A few service vehicles such as garbage truck would use the driveway and parking spaces provided off Trestles Street. The Trestles Street-Via Pacifico/Old Grove Street intersection is signalized and has pedestrian crosswalks on all four legs with pedestrian push button and curb ramps.

The following measures will facilitate the operation of engine and other emergency vehicles at the Trestles Street-Via Pacifico/Old Grove Street intersection and project driveways:

- Vehicle pre-emption, on-vehicle and/or via a hard-wired switch in the proposed fire station, would be incorporated into the traffic signal at the Trestles Street-Via Pacifico/Old Grove Street intersection to prioritize entry and exit of emergency vehicles from Trestles Street.
- All regulatory and warning signs installed would be consistent with current California Manual on Uniform Traffic Control Devices (MUTCD) standards and guidelines.
- The project would provide proper pavement markings and associated stop bars at the project driveways.
- Any proposed landscaping at the project driveways along Trestles Street should be low enough and/or set back sufficiently so as not to create any sight distance constraints at the access driveways.
- As shown on the site plan, the fire station building would be setback at least 35 feet to provide adequate throat depth on-site for outbound emergency vehicles.
- For any lane closures or sidewalk closures during construction, a temporary traffic control plan per City's Engineers Design and Processing Manual (City of Oceanside 2017) shall be prepared to ensure assure that adequate consideration is given to the safety and convenience of motorists, pedestrians, and workers.

With above mentioned features, the access to the proposed project would be designed to provide for the safe movement of passenger cars and emergency vehicles and would not include any hazardous design features or propose any incompatible uses. Therefore, impacts associated with hazardous design features would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

*d) **Would the project result in inadequate emergency access?***

Construction of the proposed project is not anticipated to require road closures in public right-of-way or driveway closures that could impede emergency access; construction staging would be within the project site. For any lane closures or sidewalk closures during construction, a temporary traffic control plan would be prepared. Upon completion, the vehicular access to the project site would be via Trestles Street and Rocky Point Drive as shown on Figure 2, Site Plan. The project would be designed and constructed per applicable fire station design standards and comply with emergency access requirements of the fire department. Therefore, the construction or operation of the proposed project would not result in inadequate emergency access. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Mitigation Measures: While the PCBP SP EIR identified mitigation measures to address identified impacts to intersections and street segments (the PCBP SP EIR stated that some of the measures were the sole responsibility of the PCBP project and some required the project to contribute on a fair-share basis), the current project would not result in significant transportation-related impacts. Therefore, the PCBP SP EIR transportation-related mitigation measures are not applicable to the current project and are not included in this document.

3.18 Tribal Cultural Resources

Prior Environmental Findings

PCBP SP EIR

Since the adoption of the PCBP SP EIR, the CEQA Guidelines Appendix G Environment Checklist was updated to include Tribal Cultural Resources (TCRs) as an additional resource area to be analyzed. Therefore, TCRs were not previously explicitly analyzed in the PCBP SP EIR.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

As described in Section 3.5, a Cultural Resources Inventory Report for Addendum No. 3 to the Regional Recycled Water Project Program EIR was prepared by Dudek in July 2018 and is provided in Appendix C. The current 2.15-acre project area was covered by the 2018 cultural resources study. The evaluation of potential impacts to Tribal Cultural Resources (TCRs) is based primarily on the findings of the Cultural Resources Inventory Report for Addendum No. 3 to the Regional Recycled Water Project Program EIR. Background research conducted to inform this analysis include the results of a California Historical Resources Information System records search conducted at SCIC and results of the Sacred Lands File search conducted at NAHC.

Dudek staff conducted a records search at the South Coastal Information Center (SCIC) for the project area of potential effects (APE) for the Addendum No. 3 to the Regional Recycled Water Project Program EIR and a 1-mile radius buffer around the APE in January 2017. The records search identified 178 previously recorded cultural resources within 1 mile of the APE. None of the previously recorded cultural resources are located within the proposed current project area.

As part of the Regional Recycled Water Project Program EIR effort, a search of the Native American Heritage Commission Sacred Lands File was conducted for the APE on January 25, 2017. The NAHC responded with positive results, however, the results did not indicate if the resources are located within the project APE or within the proximity of the project. The NAHC also and advised that the San Luis Rey Band of Mission Indians and the La Jolla Band of Luiseño Indians be contacted. The response also included a list of Native American

representatives who should be contacted for information about these sites. Outreach letters were mailed on January 26, 2017, to all Native American representatives included on the NAHC contact list. Tribal cultural resources were not identified within the proposed current project area during the cultural resources inventory outreach. Therefore, impacts associated with tribal cultural resources would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Native American tribe. TCRs include "non-unique archaeological resources" that, instead of being important for "scientific" value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of tribal cultural resources within their traditionally and culturally affiliated geographic area (PRC 21080.3.1[a]). As previously stated, tribal cultural resources were not identified within the proposed current project area during the cultural resources inventory outreach. Therefore, impacts associated with tribal cultural resources would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.19 Utilities and Service Systems

Prior Environmental Findings

PCBP SP EIR

The PCBP SP EIR determined that utilities and service systems would not be significantly impacted because utilities and service systems had been planned for and adequate waste water and landfill facilities are present in the area.

Impact Analysis

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the	☐	☐	☒	☐

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
construction or relocation of which could cause significant environmental effects?				
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a) ***Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

Water Facilities

project site is located in an area of Oceanside that is highly developed with commercial, office, warehouse, and residential development in all direction. Water service for the project would be provided by the City's Water Utilities Department. Water supply to the proposed project would come from the City's Peacock Hills Pressure Zone. Development of the proposed fire station would result in an increase in the intensity of uses on site, resulting in increased water use. CalEEMod default water usage rates were used to estimate the anticipated water demand of the proposed project. Based on the CalEEMod generation rates, combined water and wastewater demand per year would be approximately 5,023,909 gallons (Appendix A). As discussed in the City's Urban Water Management Plan, adopted in 2021, the City currently has two direct sources of potable water, including a blend of imported and desalinated seawater from the San Diego County Water Authority and local groundwater from Mission Basin of the Lower San Luis Rey River Valley. In 2025, the City is projected to supply a total of 24,041 acre-feet per year to its service area, or 21.44 million gallons a day. As such, the proposed project's anticipated demand of 5,023,909 gallons per year would be negligible compared to the City's supplies. Therefore, impacts associated with water facilities would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Wastewater Treatment Facilities

The City's Water Utilities Department also provides wastewater treatment services to the project site. The City's wastewater treatment facilities include over 450 miles of pipeline, two WWTPs, 34 sewer lift stations, and an industrial waste inspection program (City of Oceanside 2022). The two WWTPs in the City are the San Luis Rey WWTP, which collects wastewater from the central and eastern portions of the City, as well as the City of Vista and Rainbow Municipal Water District, and the La Salina WWTP. The La Salina WWTP has historical collected wastewater from the western portion of the City. However, the City is currently in the process of decommissioning the La Salina WWTP (City of Oceanside 2021). As such, it is assumed that the proposed project would be served by the San Luis Rey WWTP. The San Luis Rey WWTP had a secondary treatment capacity of 13.5 million gallons a day which is anticipated to increase to 17.4 million gallons a day by 2045 (City of Oceanside 2021).

CalEEMod default water usage rates were used to estimate the anticipated water demand of the proposed project. Wastewater use was derived using indoor water use. Based on the CalEEMod generation rates, combined water and wastewater generation would be approximately 5,023,909 gallons per year (Appendix A). As such, wastewater generated by the proposed project would be negligible/less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Stormwater Drainage Facilities

With implementation of the project, approximately 54% of the currently undeveloped site would be developed with impervious surfaces. Stormwater runoff from the impervious roof, parking and road areas would be intercepted by detention basins that would provide stormwater attenuation prior to conveyance to the municipal storm drain network. The proposed drainage design would connect to the municipal storm drain network in Rocky Point Drive through a new pipe connection. Thus, the project would be served by sufficient drainage facilities and relocation of construction of new or expanded facilities would not be required. In addition and once developed, the site would include three Connections to existing nearby service lines would provide sufficient water, power, natural gas, and telecommunications services to the project and the relocation or construction of new or expanded facilities would not be required. Therefore, impacts associated with stormwater drainage facilities would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Electric Power and Natural Gas

Electricity used during construction would be minimal. Typical demand would stem from the use of electrically powered hand tools. During operations, the proposed project is estimated to have a total electrical demand of 257,008 kilowatt-hour per year. The proposed fire station building would be built in accordance with the current Title 24 standards at the time of construction and California Green Building Standards Code and would also incorporate solar panels the building rooftop. Therefore, due to the limited amount of electricity use, and the inherent increase in efficiency of building code regulations, the proposed project would be adequately served by existing electric power facilities and would not result in the relocation or construction of new or expanded electric power facilities. Impacts would be less than significant.

Natural gas is not anticipated to be required during construction of the proposed project. During operations, natural gas would be directly consumed throughout operation of the proposed project, primarily through building heating. The proposed project is estimated to use 6,387 therms of natural gas per year. Therefore, due to the limited amount of natural gas use, and the inherent increase in efficiency of building code regulations, the proposed project would be adequately served by existing natural gas facilities and would not result in the relocation or construction of new or expanded natural gas facilities. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

Telecommunications

No specific systems upgrades are proposed with this proposed project, and the location and extent of future facilities is not known at this time. Thus, the proposed project would not result in physical impacts associated with the construction of communications systems. Impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As previously stated in Section 3.11, Land Use and Planning, "small scale" Public Safety Facilities such as a fire station are permitted in the underlying Limited Industrial zoning designation applied to the site. According to the City's Urban Water Management Plan, the City has sufficient water to meet its customers' needs through 2045 in normal precipitation, single-year dry, and multiple dry year scenarios (City of Oceanside 2021). Further, the project site would be developed in compliance with the California Green Building Code (which implements water efficiency standards for appliances and fixtures), which would further reduce proposed project water usage. As such, because the proposed project would result in a negligible increase in the City' s normal, single-dry year, and multiple-dry year demand, and because the proposed project would be designed with water efficiently standards, the City would have sufficient water supplies available to serve the proposed project and reasonably foreseeable future development. Therefore, existing water supplies are anticipated to adequately serve operational needs of the proposed project and impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

It is assumed that the proposed project would be served by the San Luis Rey WWTP. The San Luis Rey WWTP had a secondary treatment capacity of 13.5 million gallons a day which is anticipated to increase to 17.4 million gallons a day by 2045 (City of Oceanside 2021).

CalEEMod default water usage rates were used to estimate the anticipated water demand of the proposed project. Wastewater use was derived using indoor water use. Based on the CalEEMod generation rates, combined water and wastewater generation would be approximately 5,023,909 gallons per year (Appendix A). As such, wastewater generated by the proposed project would be negligible. The proposed project would not result in a substantial increase in sewage generation, and other than connection to existing infrastructure, no off-site sewer improvements would be needed to provide sewer service to the proposed project. The minimal increase in sewage generated would not require a determination by the wastewater treatment provider and impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

As with the rest of the City, solid waste services for the proposed project would be provided by Waste Management. The solid waste collected from the City is disposed of at El Sobrante Landfill located in Corona, California. El Sobrante Landfill has a maximum permitted throughput of 16,054 tons per day, with an estimated remaining capacity of 143,977,170 tons and a projected closure date of January 1, 2051 (CalRecycle 2022). According to the conceptual grading plan for the project, construction of the proposed project would require a net import of approximately 2,066 cubic yards of fill and as such, export of soil to a landfill would not be required. In addition, the proposed project would be required to recycle and/or salvage 65% of nonhazardous construction and demolition waste in accordance with California's Building Code (California Building Standards Commission 2016). Therefore, given that the El Sobrante Landfill has sufficient remaining capacity to serve the project and other land uses, and because the project would comply the recycling and/or salvage requirements of the California Building Code, impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The proposed project would be subject to the City's Zero Waste Plan, which is aligned with California Assembly Bill 341. The goal of both Assembly Bill 341 and the Zero Waste Plan is to divert 75% to 90% of waste by 2020 (City of Oceanside 2022). The proposed project would be required to collaborate with the solid waste providers that service the City, such as Waste Management, Agri Service Inc., and Moody's Recycling Facility, to ensure proper compliance with the Zero Waste Plan. Collaboration with the applicable solid waste service providers would ensure compliance with the Zero Waste Plan and the relevant statutes that the plan addresses. During both construction and operation, the proposed project would comply with the City's Solid Waste and Recycling Code (Chapter 13 of the City's Municipal Code) by separating recyclables from solid waste. The proposed project would also be required to comply with mandatory solid waste and recycling measures as provided in the California Green Building Code (California Building Standards Commission 2022). Therefore, impacts would be less than significant.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.20 Wildfire

Prior Environmental Findings

PCBP SP EIR

Since the adoption of the PCBP SP EIR, the CEQA Guidelines Appendix G Environment Checklist was updated to include wildfire as an additional resource area to be analyzed. Therefore, wildfire was not previously explicitly analyzed in the PCBP SP EIR.

California courts have held that where a new guideline or threshold is adopted after the certification of an EIR, an Addendum to the EIR need not include additional environmental analysis relating to that guideline or threshold where the potential environmental impact at issue in the new guideline or threshold was known or could have been known at the time the EIR was certified. (See *Citizens Against Airport Pollution v. City of San Jose* (2014) 227 Cal.App.4th 788, 806 [even though State CEQA Guidelines were amended on March 18, 2010 to address greenhouse gas emissions, lead agency's 2010 Addendum to a 1997 EIR did not require analysis of greenhouse gas emissions because "information about the potential environmental impact of greenhouse gas emissions was known or could have been know at the time the 1997 EIR and the 2003 Supplemental EIR for the [project] were certified"]; *Concerned Dublin Citizens v. City of Dublin* (2013) 214 Cal.App.4th 1301, 1319-1320 ["the adoption of guidelines for analyzing and evaluating the significance of data does not constitute new information if the underlying information was otherwise known or should have been known at the time the EIR was certified"]; see also *Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2011) 196 Cal.App.4th 515, 532.)

Impact Analysis

A brief analysis of potential wildfire hazards associated with the project, consistent with the current CEQA Guidelines, has been included below.

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

As shown in Figure 18, the project site is not located within or near a State Responsibility Area (SRA) or Very High Fire Hazard Severity Zone (VHFHSZ) and the nearest SRA or VHFHSZ is located 3.0 miles to the northeast. Given that the project site is not located within or near a Very High Fire Severity Zone or within a State Responsibility Area (CAL FIRE 2007,2009) no impacts to emergency response or emergency evacuation plans would occur. Additionally, since the project includes the construction of the City's Fire Station Number 8 with expanded facilities, upon completion the new station would better accommodate the existing and projected demand of the service area during emergencies. Therefore, no impacts would occur and no mitigation would be required.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Given that the project is not located within or near a VHFHSZ or a SRA, and does not contain slopes, wind conditions, or other factors that could contribute to exacerbating wildfire risk, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire. No impact would occur and no mitigation would be required.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

As discussed in Section 3.19, the proposed project would connect to existing utilities. Connections to existing facilities would be sufficient for providing water, power, natural gas, and telecommunications services, and

the project would not require the installation or maintenance of new roads, fuel breaks, emergency water sources, power lines or other utilities that could exacerbate fire risk. Given that the project is not located within or near a VHFHSZ or a SRA, the installation or maintenance of associated infrastructure from the project would not exacerbate fire risk. In addition, all appropriate codes and regulations would be followed to ensure that project construction and any infrastructure installed would not result in significant impacts to the environment. As such, the project would result in no impact and no mitigation would be required.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

d) ***Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?***

As discussed in Section 3.10, the project site is not located within a Federal Emergency Management Agency 100-year flood hazard zone and would not substantially alter drainage patterns such that flooding, erosion, or landslides would occur. The proposed project site has been previously graded, is relatively flat, and has no evidence of existing landslides. As discussed in Section 3.7, all construction and operational activities would result in less than significant impacts related to slope instability. Additionally, the project would comply with existing local, state, and federal regulations related to drainage and runoff resulting in no in flooding on or off site. Additionally, the project site is surrounding by developed land that is relatively flat and does not present a risk of post-fire slope instability. Given that the project is not located within a VHFHSZ or a SRA, combined with the existing conditions of the project site, which do not present hazardous conditions related to flooding, landslides or slope instability, the project would not expose people or structures to significant risks. This results in no impact and accordingly, no mitigation measures are required.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

3.21 Mandatory Findings of Significance

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐

	New Potentially Significant Impact	New Impact Requiring New Mitigation	No New Impact No Impact	Reduced Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a) ***Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?***

Previous CEQA analyses concluded that the PCBP SP would not have a significant impact on biological resources or cultural resources.

As analyzed throughout this Initial Study/Addendum, the proposed project would not impact the quality of environment with respect to sensitive plant and wildlife species or habitats, as the site has been previously cleared and graded with no existing sensitive biological resources. No rare or endangered plants or animals would be impacted; however, there is potential for nesting birds to occur in the site and to reduce the potential for impacts, appropriate pre-construction surveys would be conducted. Also, the proposed project (i.e., construction of a fire station on Lot 26) is lesser in scope compared to the original contemplated project (i.e., development of the PCBP area) and would not result in impacts to historical resources. Potential impacts to human remains during ground-disturbing construction activities would be addressed through compliance with existing regulations.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

b) ***Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)***

Cumulative impacts for the Specific Plan area were included as part of the PCBP SP EIR Section VII. With the exception of impacts to College Boulevard between SR-76 and SR-78, all cumulatively considerable impacts associated with implementation of the Specific Plan were concluded to be less than significant.

When combined with other approved and proposed projects in the City and outlying areas, Implementation of the proposed project would not be expected to contribute to cumulative degradation of the environment because the proposed project complies with the allowed development parameters specified in the PCBP Specific Plan and Zoning Ordinance. In addition, all needed infrastructure exists to accommodate the proposed development and as such, no cumulatively considerable impacts would occur.

The proposed project does not have impacts that are individually limited, but cumulatively considerable. Site-specific analyses for traffic, greenhouse gas, geotechnical, drainage, and water quality were conducted and concluded that the impacts in these areas were either similar to or reduced as compared to the analysis conclusions in previous CEQA analyses. Therefore, it was determined that no new or significant increase in impacts would occur from the proposed project or from the proposed project in combination with PCBP SP buildout. Existing and planned infrastructure with the PCBP SP area and the surrounding area have been planned to accommodate buildout of the PCBP SP.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

As indicated in this Initial Study/Addendum, no substantial increase in impacts were identified with construction- or operational-related air quality emissions, greenhouse gas emissions, geotechnical hazards, hazardous materials, or noise. As detailed throughout this Initial Study/ Addendum, the proposed project would not result in new or a significant increase in impacts which will have substantial adverse effects on human beings, directly or indirectly.

Conclusion: No New Impact. The changes associated with the proposed project would not result in any new impacts nor increase the severity of impacts in this regard.

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4 References Cited

Caltrans. 2022. State Scenic Highway Map. Accessed September 2022. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

California Department of Finance. 2022. Estimates-E1 Population Estimates for Cities, Counties, and the State – January 1, 2021 and 2022, https://dof.ca.gov/forecasting/demographics/estimates-e1/. Accessed October 16, 2022.

California Geological Survey. 2002. California Geomorphic Provinces: Note 36. 4 pp.

CalRecycle. 2022. SWIS Facility. Site Activity Details: El Sobrante Landfill (33-AA-0217). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2280?siteID=2402. Accessed October 23, 2022.

California Building Standards Commission. 2022. California Green Building Standards Code. https://www.dgs.ca.gov/BSC/CALGreen#:~:text=The%20California%20Green%20Building%20Standards%20Code%E2%80%94Part%2011%2C%20Title,greenhouse%20gases%20%28GHG%29%20to%201990%20levels%20by%202020. Accessed October 23, 2022.

CARB (California Air Resources Board). 2014. *First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006*. May 2014. Accessed May 2019. http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

CARB 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. November 2022. Accessed April 2023. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf

CDFW (California Department of Fish and Wildlife). 2022a. RareFind, Version 5. California Natural Diversity Database (Commercial Subscription). Sacramento: CDFW, Biogeographic Data Branch. Accessed October 2022. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

CGS (California Geological Survey). 2017. Updated Mineral Lands Classification Map for Portland-Grade Aggregate in the Western San Diego County Production-Consumption Region, California. https://www.conservation.ca.gov/cgs/Documents/Publications/Special-Reports/SR_240-MLC-Plate01.pdf.

City of Oceanside. 1975. *Oceanside General Plan, Environmental Resource Management Element*. September 24, 1975. http://www.ci.oceanside.ca.us/ civicax/filebank/blobdload.aspx?BlobID=24756.

City of Oceanside. 1986. *Oceanside General Plan, Land Use Element*. September 10, 1986. http://www.ci.oceanside.ca.us/civicax/filebank/ blobdload.aspx?BlobID=25117.

City of Oceanside. 2002. City of Oceanside General Plan. https://www.ci.oceanside.ca.us/gov/dev/planning/general.asp.

City of Oceanside. 2005. Final Environmental Impact Report for the Proposed Pacific Coast Business Park. June.

City of Oceanside. 2010. *Final Oceanside Subarea Plan*. Accessed October 2022. https://www.ci.oceanside .ca.us/gov/dev/planning/subarea.asp.

City of Oceanside. 2017. Engineers Design and Processing Manual. Revised September 26, 2017.

City of Oceanside. 2019a. General Plan Update – Energy Climate Action Element. May.

City of Oceanside. 2019b. Oceanside Climate Action Plan. Accessed October 2022. https://www.ci.oceanside.ca.us/ civicax/filebank/blobdload.aspx?BlobID=50403

City of Oceanside 2020. Traffic Impact Analysis Guideline for Vehicle miles Traveled (VMT) and Level of Service (LOS) Assessment, August 2020. Final Version

City of Oceanside. 2021. 220 Urban Water Management Plan. Final.

City of Oceanside. 2022. Zero Waste Program Home. https://www.ci.oceanside.ca.us/gov/water/ services_programs/recycling/default.asp. Accessed October 23, 2022.

Department of Conservation (DOC. 2017). California Williamson Act Map. http://www.sjgov.org/commdev/ cgi-bin/cdyn.exe/file/Planning/EIR%20Schulte%20Road%20Logistics%20Center%20Draft/ CDOC%202016_State%20of%20CA%20Williamson%20Act%20Map.pdf

DOC (California Department of Conservation). 2020. San Diego County Important Farmland 2018 (Sheet 1 of 2). Accessed October 2022. https://www.conservation.ca.gov/dlrp/fmmp/Pages/SanDiego.aspx.

Federal Emergency Management Agency (FEMA), 2022. National Flood Hazard Layer FIRMette, https://msc.fema.gov/arcgis/rest/directories/arcgisjobs/nfhl_print/mscprintb_gpserver/j0bf1d115053a 401c8432a95b25967333/scratch/FIRMETTE_881982e2-0339-4e66-9cc4-b57a0f0d6afc.pdf, accessed October 18, 2022.

CARB (California Air Resources Board). 2014. *First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006.* May 2014. http://www.arb.ca.gov/cc/scopingplan/2013_update/ first_update_climate_change_scoping_plan.pdf.

CARB. 2019. "Glossary." Accessed January 2019. https://ww2.arb.ca.gov/about/glossary.

CARB. 2021. Advanced Clean Cars Program. Accessed December 2021 at https://ww2.arb.ca.gov/ our-work/programs/advanced-clean-cars-program/about.

CARB 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. November 2022. Accessed April 2023. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf

CDPH (California Department of Public Health). 2019. *Epidemiologic Summary of Coccidioidomycosis in California, 2018.* July 2019. https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ CocciEpiSummary2018.pdf.

County of San Diego. 2007. *Guidelines for Determining Significance and Report and Format and Content Requirements – Air Quality*. Land Use and Environment Group, Department of Planning and Land Use. March 19, 2007. http://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf.

EPA (U.S. Environmental Protection Agency). 2019. AERMOD Modeling System. April. https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models#aermod.

Geocon Incorporated. 2022. Geotechnical Investigation: Oceanside Gire Station No. 8 Southeast Corner of Old Grove Road and Trestles Street, Oceanside California. April 2022.

IPCC (Intergovernmental Panel on Climate Change). 2007. IPCC Fourth Assessment Report. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller. Cambridge, United Kingdom: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf.

Nelson, J. 2019. "Coccidioidomycosis Data Requests." Email from J. Nelson (County of San Diego Health & Human Services Agency Epidemiologist II) to A. Poll (Dudek). October 2019.

OEHHA (Office of Environmental Health Hazard Assessment). 2015. *Air Toxics Hot Spots Program, Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments.* Accessed August 2017. https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

OPR 2018. OPR (California Governor's Office of Planning and Research). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. December 2018.

SANDAG (San Diego Association of Governments). 2021. 2021 Regional Transportation Improvement Program. February 26, 2021. https://www.sandag.org/index.asp?classid=13&projectid=604&fuseaction=projects.detail.

SDAPCD (San Diego County Air Pollution Control District). 2009. "Regulation IV: Prohibitions; Rule 55: Fugitive Dust." June 24, 2009. http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R55.pdf.

SDAPCD. 2015. "Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings." June 24. Accessed May 2017. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/ Rules_and_Regulations/Prohibitions/APCD_R67-0-1.pdf.

SDAPCD. 2016. "Rule 20.2 - New Source Review" https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Permits/APCD_20.2-2016.pdf.

The Climate Registry. 2021. 2021 Default Emission Factors. Accessed October 2021. https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf.

USGS (U.S. Geological Survey). 2000. *Operational Guidelines (version 1.0) for Geological Fieldwork in Areas 1 Endemic for Coccidioidomycosis (Valley Fever).* USGS Open File Report 00-348. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.486.1526&rep=rep1&type=pdf

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SOURCE: SanGIS 2019

DUDEK

0 500 1,000 Feet

FIGURE 1

Project Location

Oceanside Fire Station 8 MND

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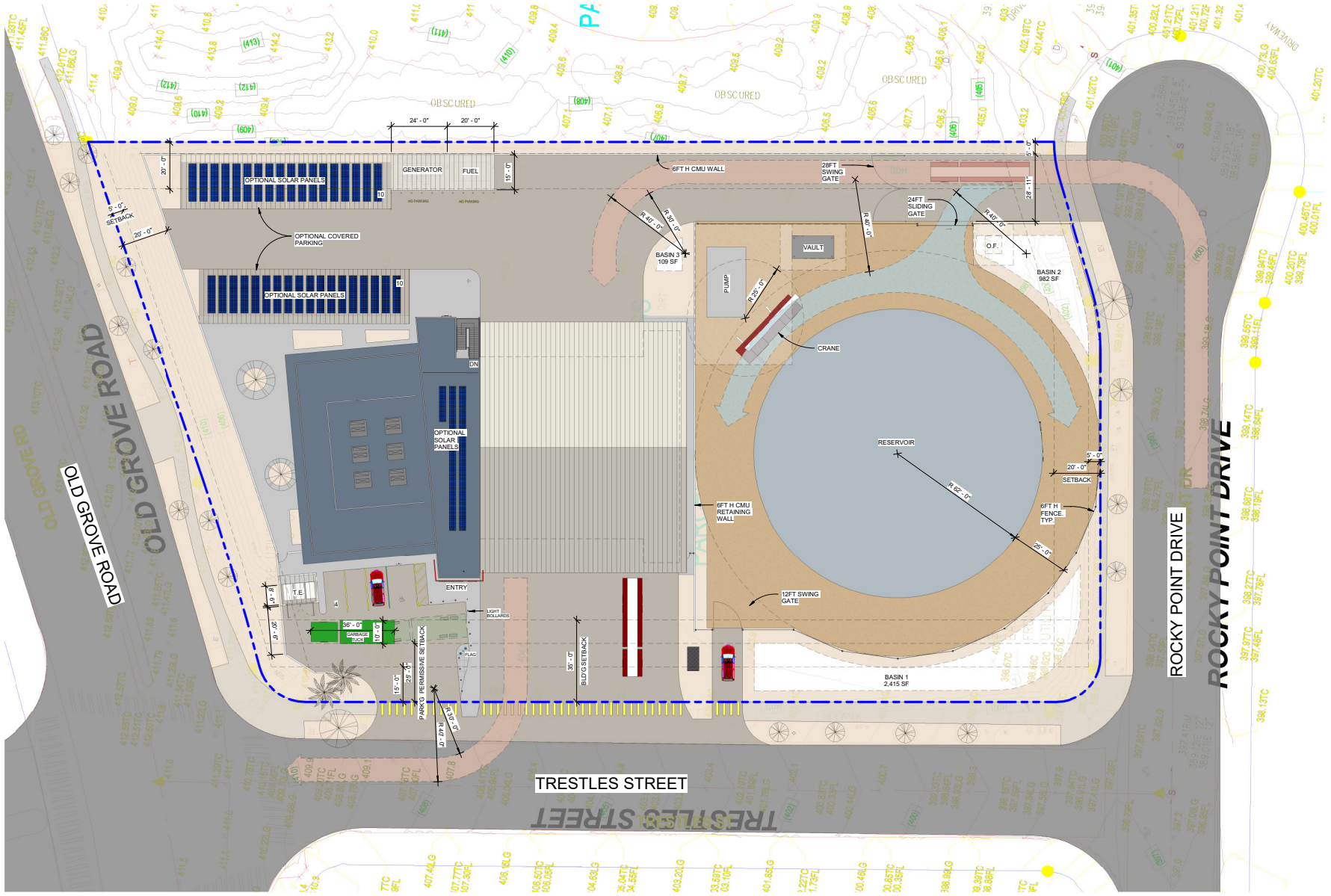

SOURCE: STK Architecture, Inc. 2022

FIGURE 2
Site Plan
Oceanside Fire Station 8 MND

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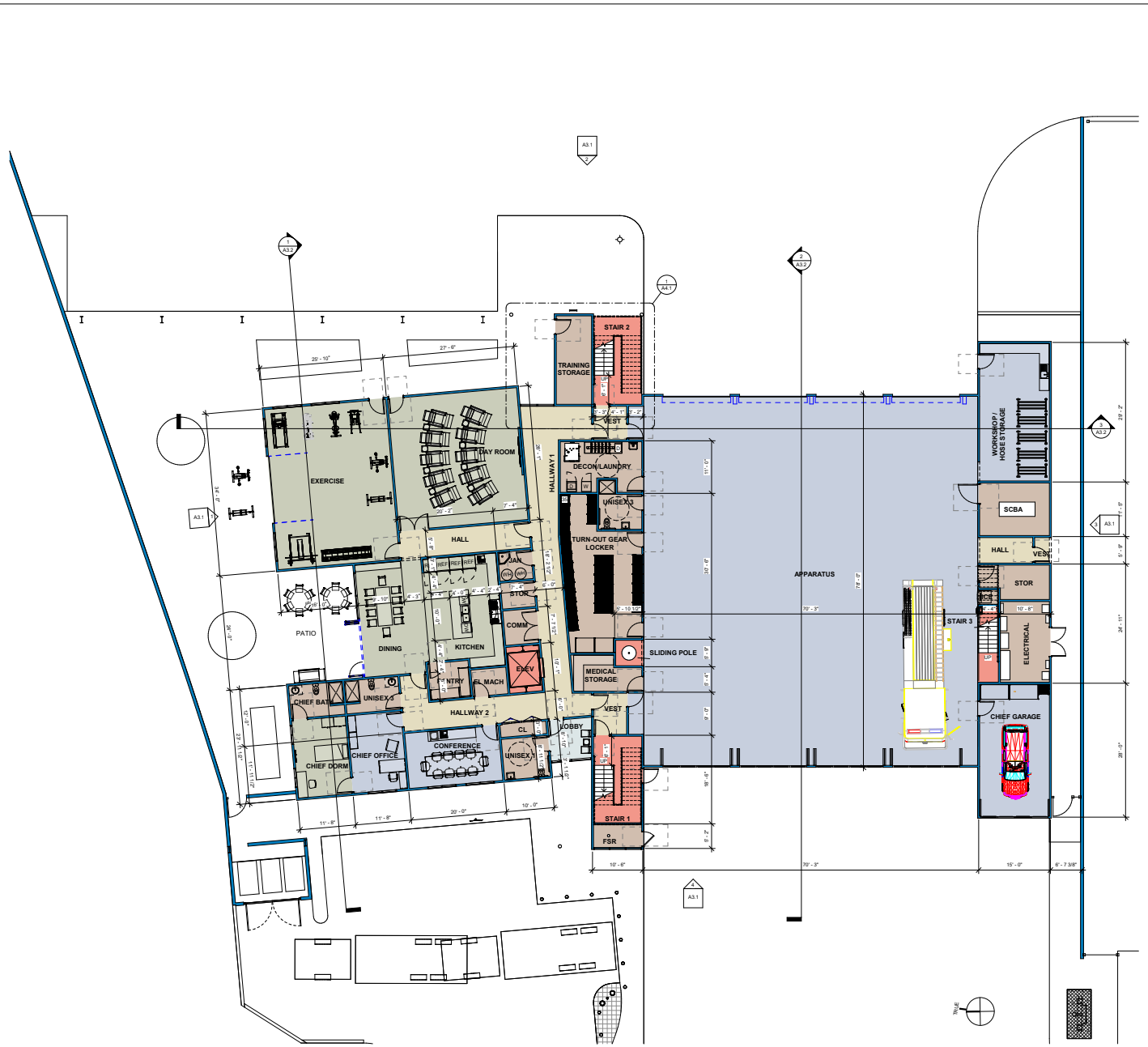

KEY NOTE

ROOM SCHEDULE	
Name	Area
LEVEL 1	
APPARATUS	5438 SF
CHIEF BATH	76 SF
CHIEF DORM	183 SF
CHIEF GARAGE	402 SF
CHIEF OFFICE	183 SF
CL	25 SF
COMM	50 SF
CONFERENCE	226 SF
DAY ROOM	745 SF
DECON/LAUNDRY	167 SF
DINING	325 SF
EL MACH	41 SF
ELECTRICAL	173 SF
ELEV	67 SF
EXERCISE	854 SF
FSR	50 SF
HALL	59 SF
HALL	149 SF
HALLWAY 1	466 SF
HALLWAY 2	201 SF
ICE	12 SF
JAN	42 SF
KITCHEN	353 SF
LOBBY	76 SF
MEDICAL STORAGE	95 SF
PANTRY	65 SF
SCBA	160 SF
SLIDING POLE	29 SF
STAIR 1	182 SF
STAIR 2	187 SF
STAIR 3	65 SF
STOR	95 SF
STOR	37 SF
TRAINING STORAGE	136 SF
TURN-OUT GEAR LOCKER	448 SF
UNISEX 1	82 SF
UNISEX 3	76 SF
UNISEX 3	76 SF
VEST	59 SF
VEST	48 SF
VEST	16 SF
WORKSHOP / HOSE STORAGE	419 SF
	12640 SF
LEVEL 2	
A.C. ROOM	155 SF
ADMIN STOR	149 SF
BATH 1	82 SF
BATH 2	82 SF
BATH 3	82 SF
BATH 4	82 SF
BATH 5	83 SF
CAP 1 BATH	88 SF
CAPT 2 BATH	95 SF
CAPTAIN 1	218 SF
CAPTAIN 2	238 SF
COMM	50 SF
DECK 1	304 SF
DECK 2	136 SF
HALLWAY 4	706 SF
HALWAY 3	603 SF
JAN / WH	140 SF
LAUNDRY	103 SF
LOCKER 1	142 SF
LOCKER 2	155 SF
LOCKER 3	142 SF
MEZZANINE / STORAGE	1016 SF
OFFICE / QUARTER	177 SF
OFFICE / QUARTER	179 SF
QUARTER 1	158 SF
QUARTER 2	158 SF
QUARTER 4	152 SF
QUARTER 5	128 SF
QUARTER 6	128 SF
QUARTER 7	128 SF
QUARTER 8	128 SF
QUARTER 9	145 SF
QUARTER 10	145 SF
STOR / QUARTER	170 SF
STOR / QUARTER	170 SF
STUDY / LIBRARY	327 SF
	7148 SF
Grand total	19786 SF

SPACE LEGEND

- CIRCULATION
- LIVING
- PUBLIC
- SERVICE
- VERTICAL CIRCULATION
- WORK

SOURCE: STK Architecture, Inc. 2022

DUDEK

FIGURE 3

Floor Plan - Lower Level

Oceanside Fire Station 8 MND

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SPACE LEGEND

- CIRCULATION
- LIVING
- SERVICE
- VERTICAL CIRCULATION
- WORK

SOURCE: STK Architecture, Inc. 2022

DUDEK

FIGURE 4

Floor Plan - Upper Level

Oceanside Fire Station 8 MND

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SOURCE: STK Architecture, Inc. 2022

FIGURE 5

Elevations

Oceanside Fire Station 8 MND

DUDEK

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NOTES:

1. ALL PLANTING AND IRRIGATION SHALL CONFORM TO THE CITY OF OCEANSIDE ORDINANCES AND STANDARDS.
2. AN IRRIGATION SYSTEM SHALL BE UTILIZED FOR THIS PROJECT PER THE CITY OF OCEANSIDE'S WATER CONSERVATION ORDINANCE.
3. ALL MATURE PLANTING SHALL NOT INTERFERE WITH UTILITY LINES OR TRAFFIC SITE LINES.
4. ALL UTILITIES SHALL BE SCREENED W/ PLANTING TYP.

FINAL LANDSCAPE PLANS SHALL ACCURATELY SHOW PLACEMENT OF TREES, SHRUBS, AND GROUNDCOVERS.

LANDSCAPE ARCHITECT SHALL BE AWARE OF UTILITY, SEWER, STORM DRAIN EASEMENT AND PLACE PLANTING LOCATIONS ACCORDINGLY TO MEET CITY OF OCEANSIDE'S REQUIREMENTS.

ALL REQUIRED LANDSCAPE AREAS SHALL BE MAINTAINED BY OWNER OR AS STATED IN ANY LEGAL DOCUMENT SUCH AS BUT NOT LIMITED TO A LEASE AGREEMENT. THE LANDSCAPE AREAS SHALL BE MAINTAINED PER CITY OF OCEANSIDE REQUIREMENTS.

AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED TO PROVIDE COVERAGE FOR ALL PLANTING AREAS SHOWN ON THE PLAN. LOW VOLUME EQUIPMENT SHALL PROVIDE SUFFICIENT WATER FOR PLANT GROWTH WITH A MINIMUM WATER LOSS DUE TO WATER RUN-OFF. IRRIGATION SYSTEMS SHALL USE HIGH QUALITY, AUTOMATIC CONTROL VALVES, CONTROLLERS AND OTHER NECESSARY IRRIGATION EQUIPMENT. ALL COMPONENTS SHALL BE OF NON-CORROSIVE MATERIAL. ALL DRIP SYSTEMS SHALL BE ADEQUATELY FILTERED AND REGULATED PER THE MANUFACTURER'S RECOMMENDED DESIGN PARAMETERS. ALL IRRIGATION IMPROVEMENTS SHALL BE OF NON-CORROSIVE MATERIAL. ALL DRIP SYSTEMS SHALL BE ADEQUATELY FILTERED AND REGULATED PER THE MANUFACTURER'S RECOMMENDED DESIGN PARAMETERS. ALL IRRIGATION IMPROVEMENTS SHALL FOLLOW THE CITY OF OCEANSIDE GUIDELINES AND WATER CONSERVATION ORDINANCE.

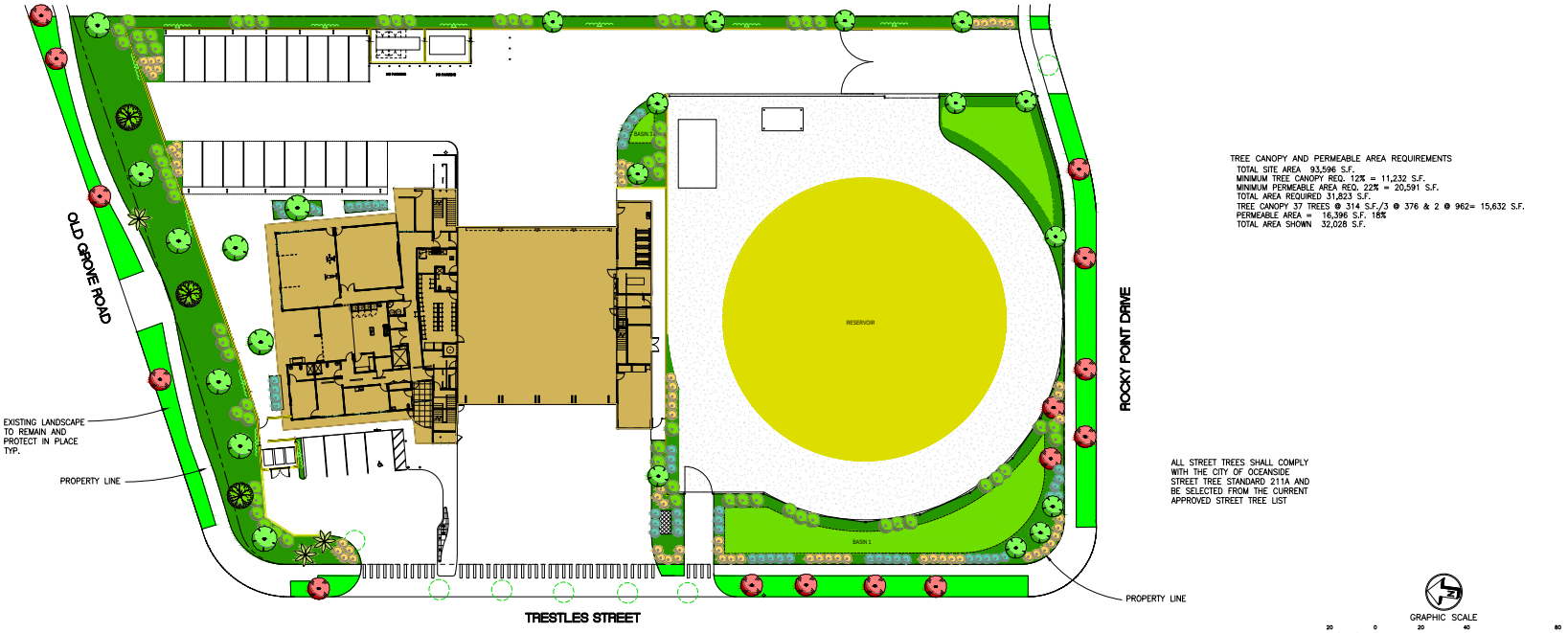
THE SELECTION OF PLANT MATERIAL IS BASED ON CULTURAL, AESTHETIC, AND MAINTENANCE CONSIDERATIONS. ALL PLANTING AREAS SHALL BE PREPARED WITH APPROPRIATE SOIL AMENDMENTS, FERTILIZERS, AND APPROPRIATE SUPPLEMENTS BASED UPON A SOILS REPORT FROM AN AGRICULTURAL SUITABILITY SOIL SAMPLE TAKEN FROM THE SITE. GROUND COVERS OR BARK MULCH SHALL FILL IN BETWEEN THE SHRUBS TO SHIELD THE SOIL FROM THE SUN, EVAPOTRANSPORATION AND RUN OFF. ALL THE FLOWER AND SHRUB BEDS SHALL BE MULCHED TO A 3" DEPTH TO HELP CONSERVE WATER, LOWER THE SOIL TEMPERATURE AND REDUCE WEED GROWTH. THE SHRUBS SHALL BE ALLOWED TO GROW IN THEIR NATURAL FORMS. ALL LANDSCAPE IMPROVEMENTS SHALL FOLLOW THE CITY OF OCEANSIDE GUIDELINES.

THE CURRENT GENERAL NOTES BELOW REFER TO PLACEMENT OF THE TREES AND THEIR DISTANCES FROM HARDSCAPE AND OTHER UTILITIES/ STRUCTURES. PLEASE SHOW THE CITY OF OCEANSIDE'S CURRENT TREE PLANTING DISTANCES/ SPACING ON THE CLP AND SPACE PROPOSED TREES ACCORDINGLY. STREET TREES AND OTHER TREES SHALL BE SPACED: 8 FT (PREVIOUSLY 3FT) FROM TRANSFORMERS, CABLES, AND PULL BOXES. 5 FT FROM HYDRANTS (ALL SIDES). 10 FT FROM CENTERLINE (PREVIOUSLY 7FT) OF ALL UTILITY LINES (WITHOUT EASEMENT) (SEWER, WATER, STORM DRAINS, DOUBLE CHECK DETECTORS, AIR RELIEF VALVES AND GAS). 10FT FROM EASEMENTS BOUNDARIES (SEWER, WATER, STORM DRAINS, ACCESS OR OTHER UTILITIES). 10FT FROM DRIVEWAYS (UNLESS A LINE OF SIGHT IS DETERMINED BY THE TRAFFIC DIVISION TO BE OTHERWISE). 10FT FROM TRAFFIC AND DIRECTIONAL SIGNS. 15FT (MINIMUM) FROM STREETLIGHTS, OTHER UTILITY POLES, (DETERMINED BY SPECIFICATIONS). STREET TREES SHALL BE PLANTED 3' OUTSIDE RIGHT-OF-WAY IF THE RIGHT-OF-WAY DOES NOT ALLOW SPACE, TO THE CITY ENGINEER'S APPROVAL. LINE OF SIGHT AT ARTERIALS, COLLECTOR AND LOCAL STREETS SHALL BE REVIEWED AND DETERMINED BY TRAFFIC ENGINEER. A MINIMUM OF TWENTY-FIVE FEET (25') FROM STREET INTERSECTION OR AS APPROVED BY THE TRAFFIC ENGINEER. MINIMUM FIFTEEN FT (15') STREETLIGHT AND STOP SIGN OR CLEARANCE DETERMINED BY SPECIFICATIONS. SCREEN ALL UTILITIES ACCORDING TO SPECIFIC AGENCY REQUIREMENTS. ROOT BARRIERS SHALL BE INSTALLED ADJACENT TO ALL PAVING SURFACES WHERE A PAVING SURFACE IS LOCATED WITHIN 6FT OF A TREE TRUNK ON SITE (PRIVATE) AND WITHIN 10FT OF TREE TRUNK IN THE RIGHT-OF-WAY (PUBLIC). ROOT BARRIERS SHALL EXTEND 5FT IN EACH DIRECTION FROM THE CENTERLINE OF THE TRUNK, FOR A TOTAL DISTANCE OF 10FT. ROOT BARRIERS SHALL BE A MINIMUM 24 INCHES IN DEPTH. INSTALLING A ROOT BARRIER AROUND THE TREE'S ROOT BALL IS UNACCEPTABLE.

PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	NUMBER	REMARKS	WATER USE
	TREES:					
	COCOS PLUMOSA	QUEEN PALMS	EXISTING	3	EXISTING TO REMAIN 376 S.F CANOPY	M
	EXISTING TREES	EXISTING	EXISTING	15	EXISTING TO REMAIN 314 S.F CANOPY	M
	EXISTING TREES	EXISTING TO REMOVE	EXISTING	7	EXISTING TO REMOVE	
	ARBUTUS 'MARINA'	MARINA MADRONE	24" BOX	22	DOUBLE STAKE / HEIGHT 8-10' , SPREAD 3'-4' MIN. 314 S.F.	L
	QUERCUS AGRIFOLIA	COAST LIVE OAK	24" BOX	3	DOUBLE STAKE / HEIGHT 8-10' , SPREAD 3'-4' MIN. 962 S.F.	L
	SHRUBS:					
	DIANELLA 'LITTLE REV'	LITTLE REV FLAX	1 GAL	51	FULL & BUSHY	L
	ANIGOZANTHUS FLAVIDUS 'RED'	RED KANGAROO PAW	1 GAL	66	FULL & BUSHY	L
	LEUCOPHYLLUM FRUTESCENS 'GR. CLOUD'	GREEN CLOUD TEXAS RANGER	5 GAL	64	FULL & BUSHY	L
	BASINS:					
	JUNCUS PATENS	CALIFORNIA RUSH	1 GAL	AS REQ'D.	TRIANGULAR SPACING @ 3' O.C. IN BASIN BOTTOM	M
	BACCHARIS PILULARIS 'TWIN PEAKS'	PROSTRATE COYOTE BRUSH	1 GAL.	AS REQ'D.	TRIANGULAR SPACING @ 5' O.C.	L
	VINES:					
	DOXANTHA 'UNGUIS CATI'	CAT'S CLAW VINE	5 GAL	11	ATTACH TO WALL	L
	MULCH:					
NOT SHOWN	FOREST FLOOR WOOD MULCH	MEDIUM GRIND WOOD MULCH	3" MAX.	AS REQ'D.	3" DEEP-CONTACT: PLANT'S CHOICE @ (619) 585-9909	

FIRE NOTES
LANDSCAPE IMPROVEMENT PLAN SET AND INSTALLATION ARE REQUIRED TO IMPLEMENT APPROVED FIRE DEPT. REGULATIONS, CODES, AND STANDARDS AT THE TIME OF PROJECT APPROVAL. ALL FIRE HYDRANTS, DOUBLE CHECK DETECTORS, POST INDICATING VALVES, AND FIRE DEPARTMENT CONNECTIONS SHALL BE PROVIDED WITH 3FT CLEARANCE AROUND ALL FIRE APPARATUSES. ALL TREES AT MATURITY SHALL MEET A HORIZONTAL CLEARANCE FOR A ONE STORY BUILDING IS 28FT WIDE. ALL TREES AT MATURITY SHALL MEET A VERTICAL CLEARANCE OF 14FT FROM THE TOP ROADWAY TO THE LOWEST BRANCHES. FENCES, GATES, WALLS, RAISED GARDEN PLANTERS, AND DECORATIVE PAVING. CALL OUT PAVING (BOTH DECORATIVE AND STANDARD) IN THE PEDESTRIAN AREAS TO INCLUDE THE TYPE OF PAVING, PATTERN, AND COLOR ON THE CLP. ALL PEDESTRIAN PAVING SHALL INCLUDE A NOTE STATING THE FOLLOWING LANGUAGE: ALL PEDESTRIAN PAVING (BOTH DECORATIVE AND STANDARD) SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE AMERICAN DISABILITY ACT. A CONCEPTUAL DETAIL OF ALL PROPOSED FENCES, GATES, WALLS, RETAINING WALLS, AND PLANTABLE WALLS (WHERE APPLICABLE) SHOWING SPECIFICALLY LAYOUT AND HEIGHT SHALL BE SHOWN ON THE CLP. PLEASE SHOW ALL EXISTING AND/OR PROPOSED FENCES, GATES, WALLS, RETAINING WALLS, AND PLANTABLE WALLS WITH A SYMBOL AND CALLOUT ON THE CLP. CLEARLY DESIGNATE ON PLAN ALL EXISTING FENCES, WALLS, AND RETAINING WALLS, ON CLP TO BE PROTECTED IN PLACE INCLUDING ALL ITEMS IN THE PUBLIC R.O.W. OBTAIN PLANNING DIVISION APPROVAL FOR THE ITEMS ABOVE PRIOR TO DEEMING THE PROJECT APPROVED FOR ENTITLEMENT AND PRIOR TO PUBLIC HEARING.



SOURCE: Alhambra Group 2022

DUDEK

FIGURE 6

Conceptual Landscape Plan

Oceanside Fire Station 8 MND

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SOURCE: Bing Maps 2022

DUDEK

0 250 500 Feet

FIGURE 7

Surrounding Land Uses

Oceanside Fire Station 8 MND

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View north from SW corner of site

View northeast from SW corner of site

View northwest from SE corner of site

View southwest from NE corner of site

FIGURE 8

Existing Conditions

Oceanside Fire Station 8 MND

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SOURCE: Bing Maps 2022

DUDEK

0 25 50 Feet

FIGURE 9

Biological Resources

Oceanside Fire Station 8 MND

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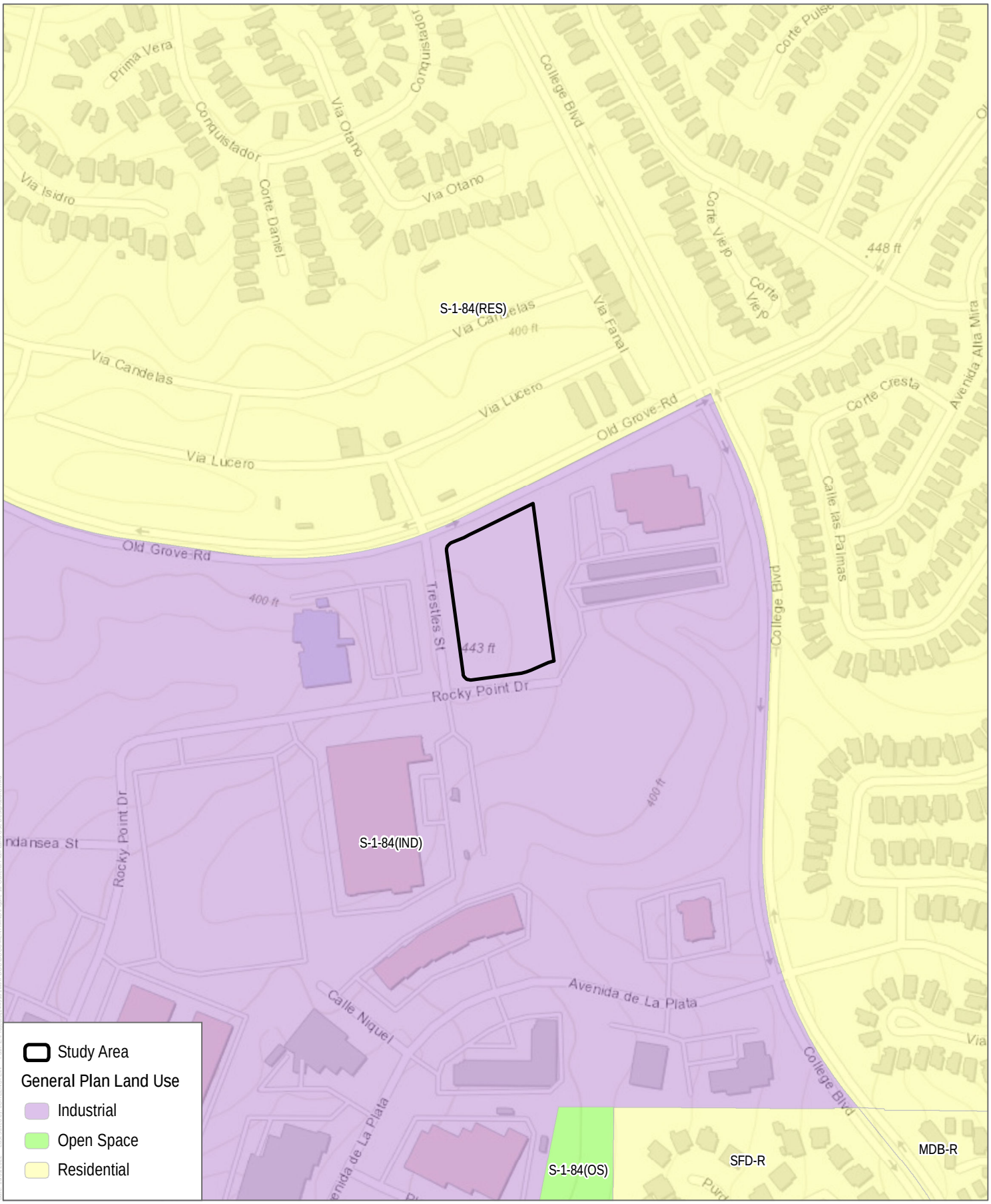

SOURCE: Esri 2022; City of Oceanside 2022

FIGURE 10

General Plan Land Use Designations

Oceanside Fire Station 8 MND

DUDEK

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SOURCE: Dudek 2022

DUDEK

0 50 100 Feet

FIGURE 11

Baseline Noise Measurement Locations

Oceanside Fire Station #8 (Dudek No. 14491)

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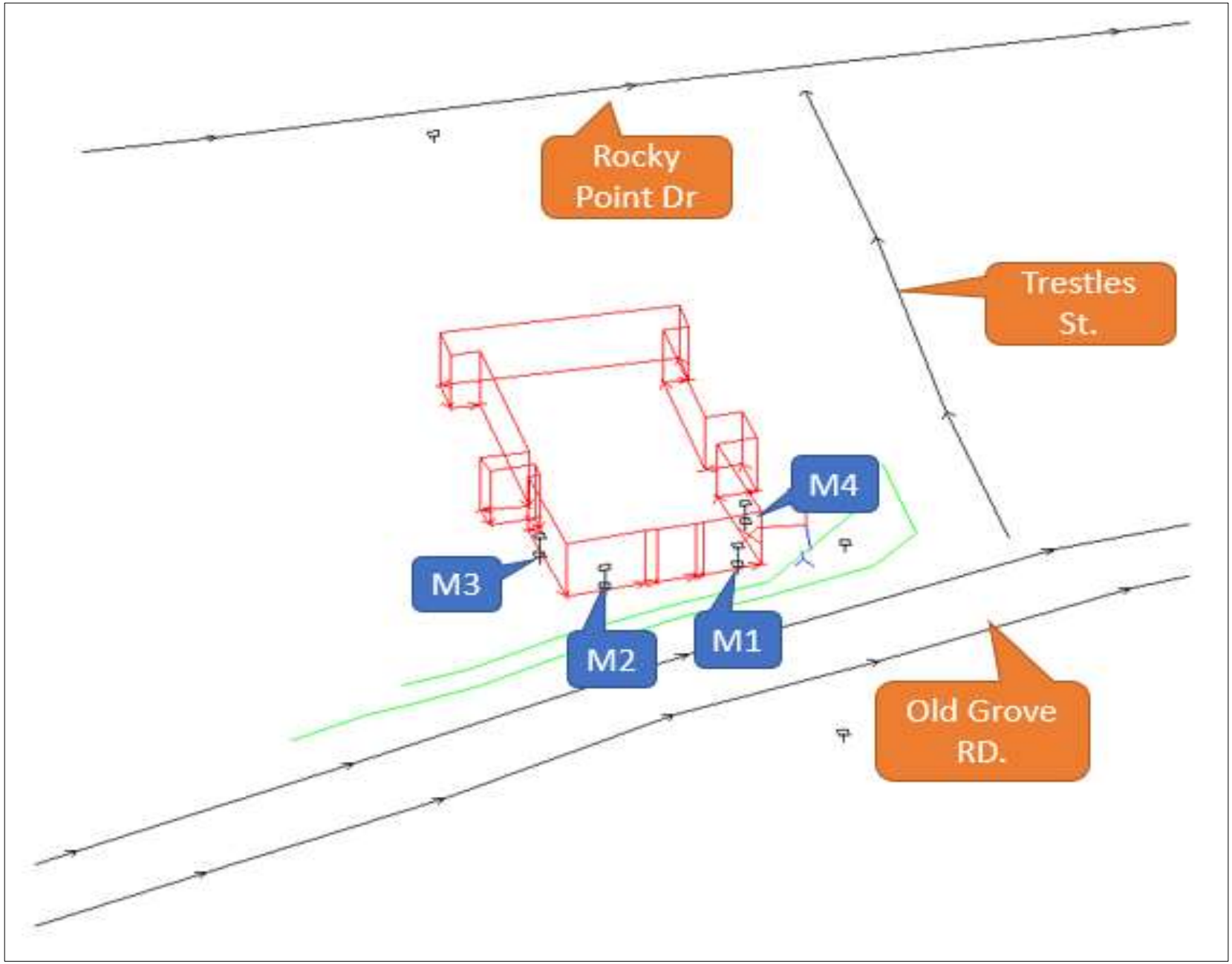

SOURCE: Dudek 2022

DUDEK

FIGURE 12

Isometric View of FHWA Traffic Noise Model (version 2.5) Setup for Project Vicinity

Oceanside Fire Station #8 (Dudek No. 14491)

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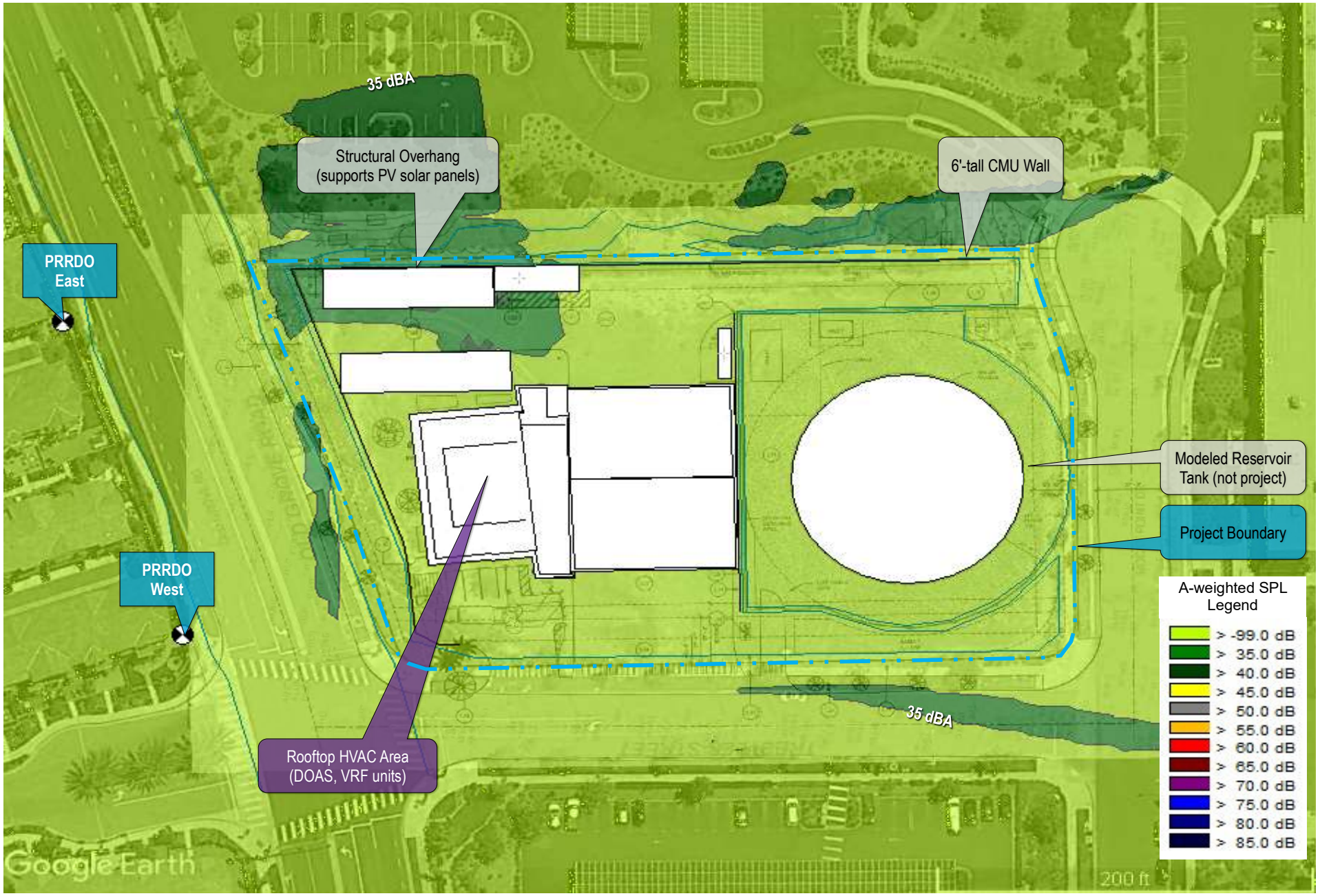

SOURCE: Dudek 2022

DUDEK

0 29.5 59 Feet

FIGURE 13

Predicted Project Operation Noise Levels (rooftop HVAC only)

Oceanside Fire Station #8 (Dudek No. 14491)

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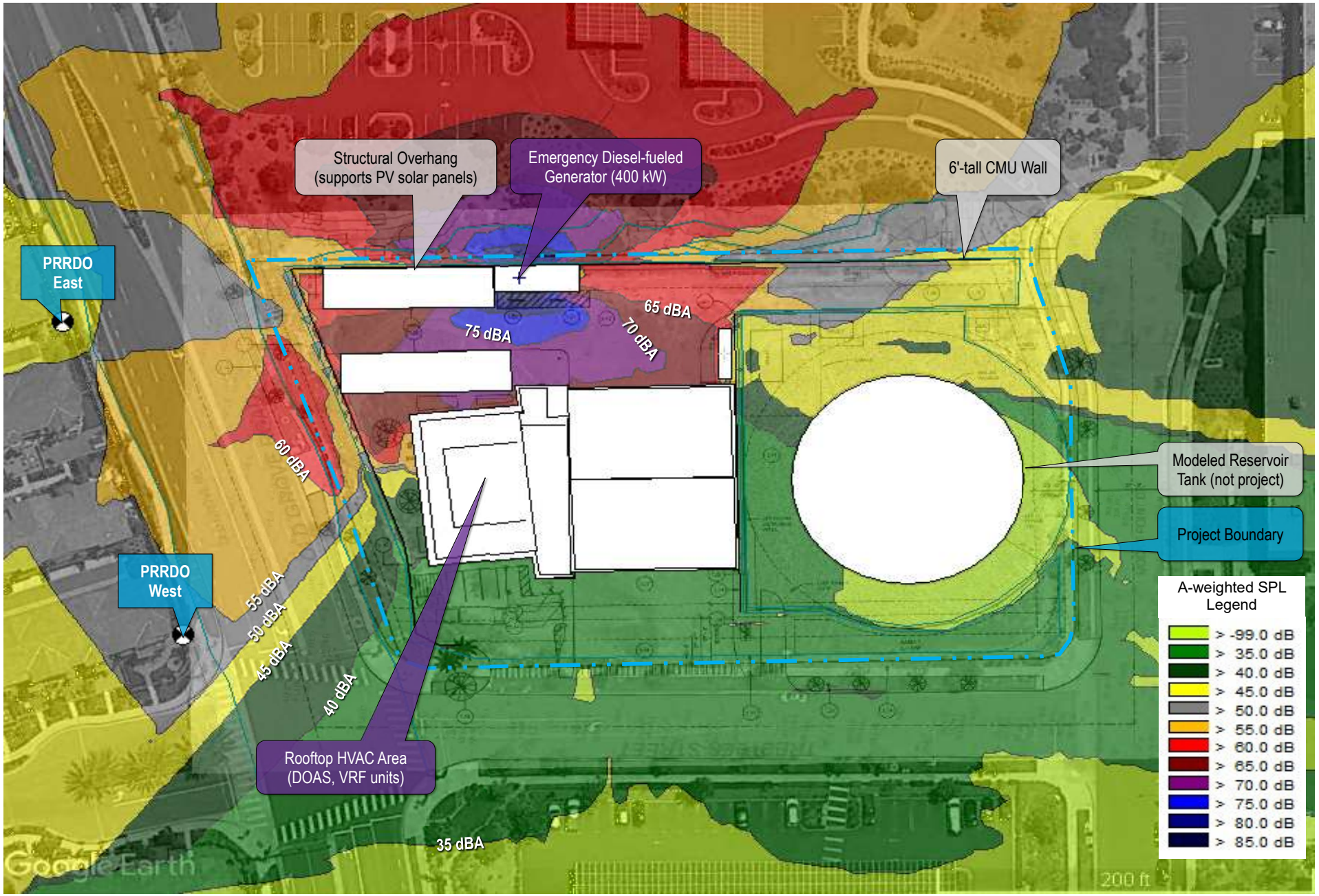

SOURCE: Dudek 2022

DUDEK

0 29.5 59 Feet

FIGURE 14

Predicted Project Operation Noise Levels (rooftop HVAC plus emergency generator)

Oceanside Fire Station #8 (Dudek No. 14491)

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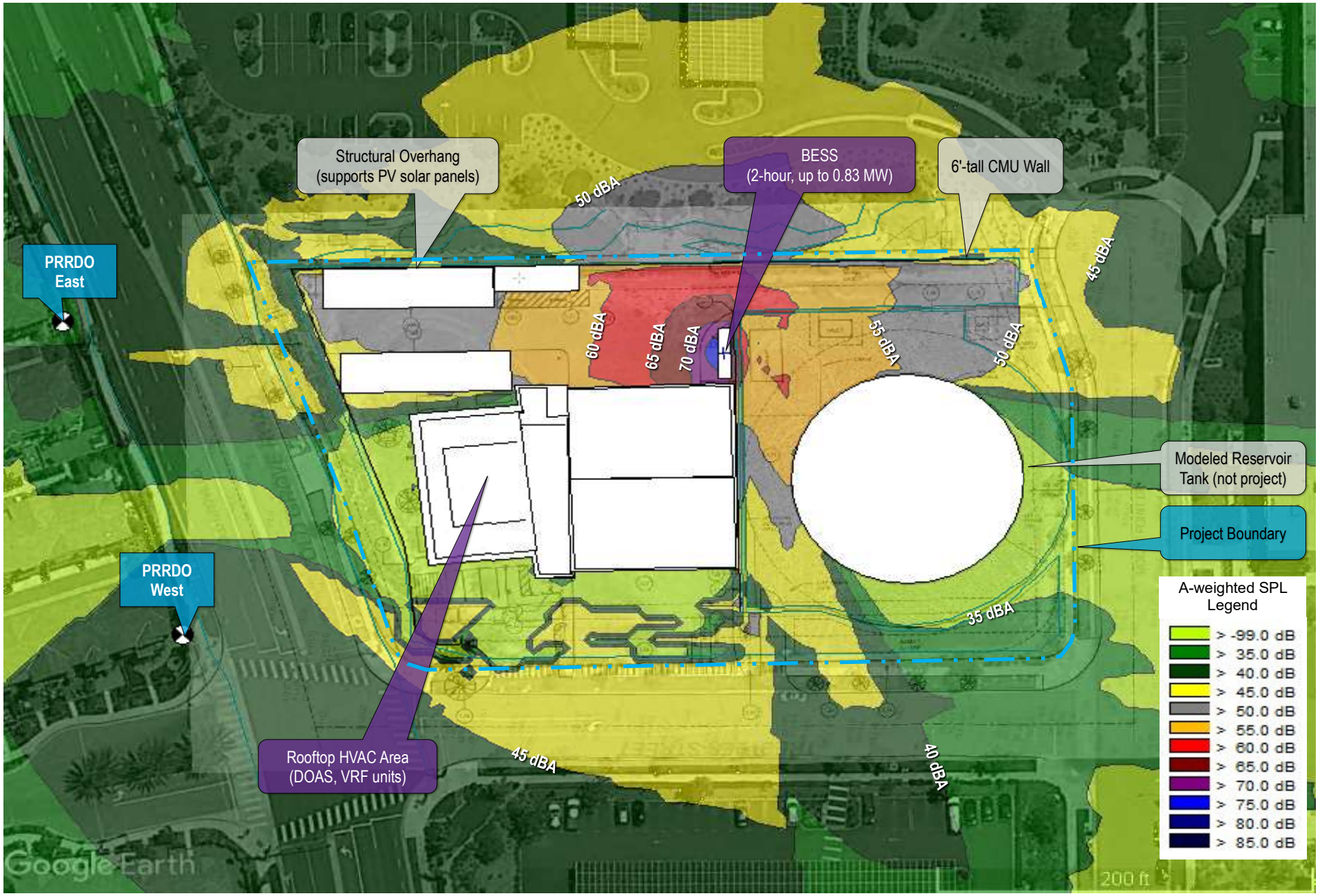

SOURCE: Dudek 2022

DUDEK

0 29.5 59 Feet

FIGURE 15

Predicted Project Operation Noise Levels (rooftop HVAC plus BESS)

Oceanside Fire Station #8 (Dudek No. 14491)

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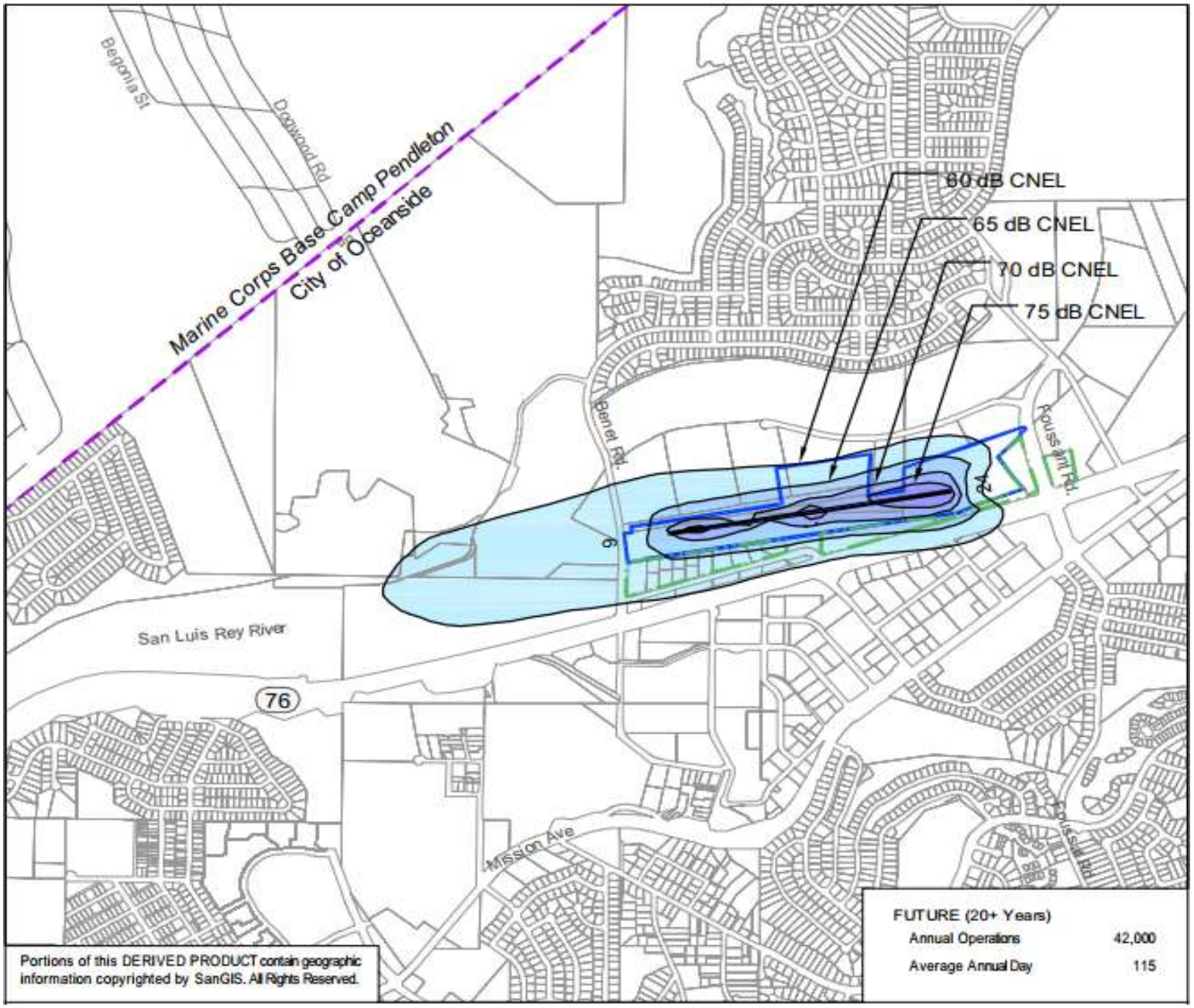

SOURCE: San Diego County Airport Land Use Commission 2010

DUDEK

0 585.5 1171 Feet

FIGURE 16

Oceanside Municipal Airport - Airport Noise Contours (Future Conditions [2026])

Oceanside Fire Station #8 (Dudek No. 14491)

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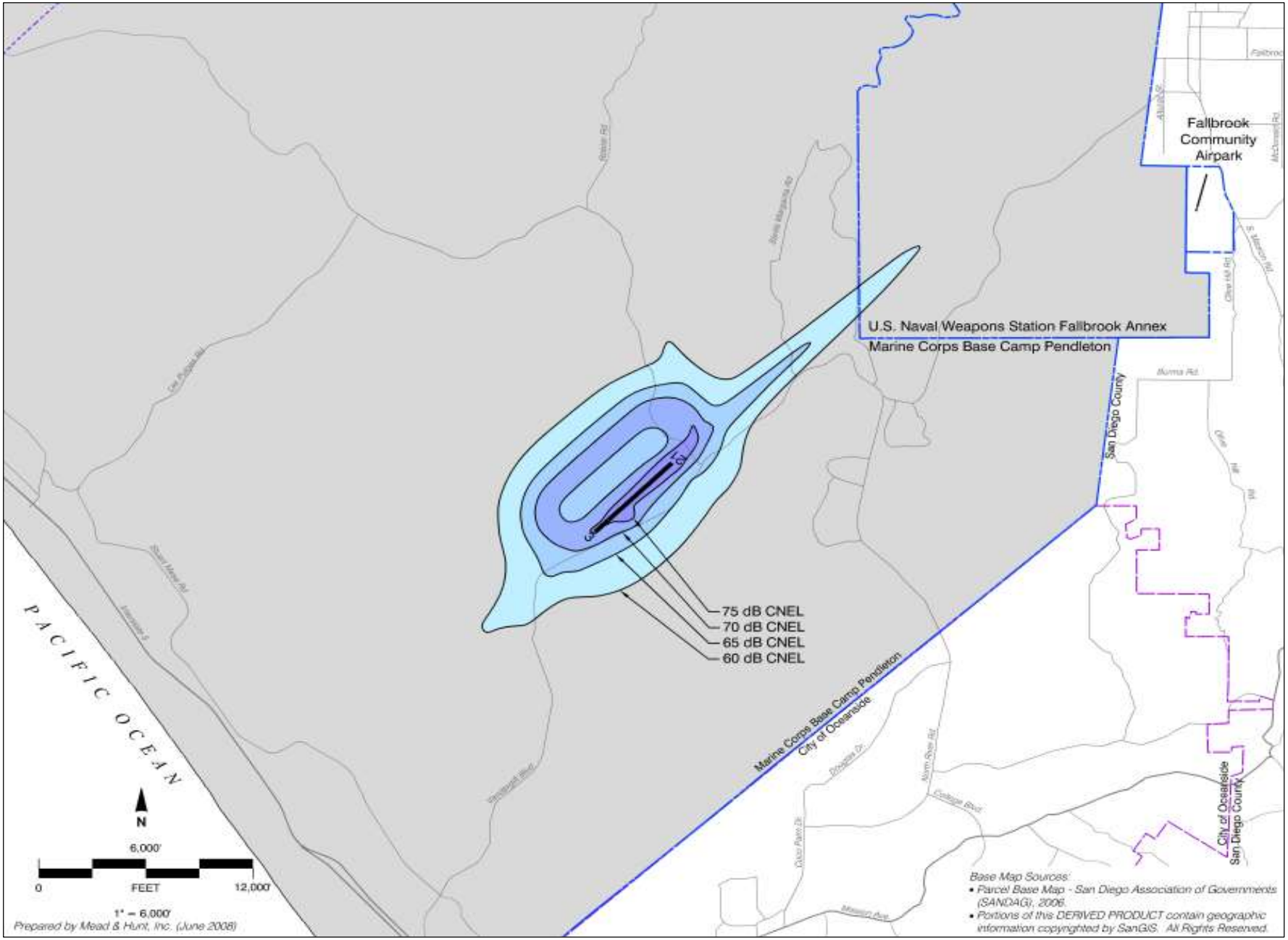

SOURCE: San Diego County Airport Land Use Commission 2008

DUDEK

0 3200 6400 Feet

FIGURE 17

MCAS Camp Pendleton - Compatibility Policy Map (Noise)

Oceanside Fire Station #8 (Dudek No. 14491)

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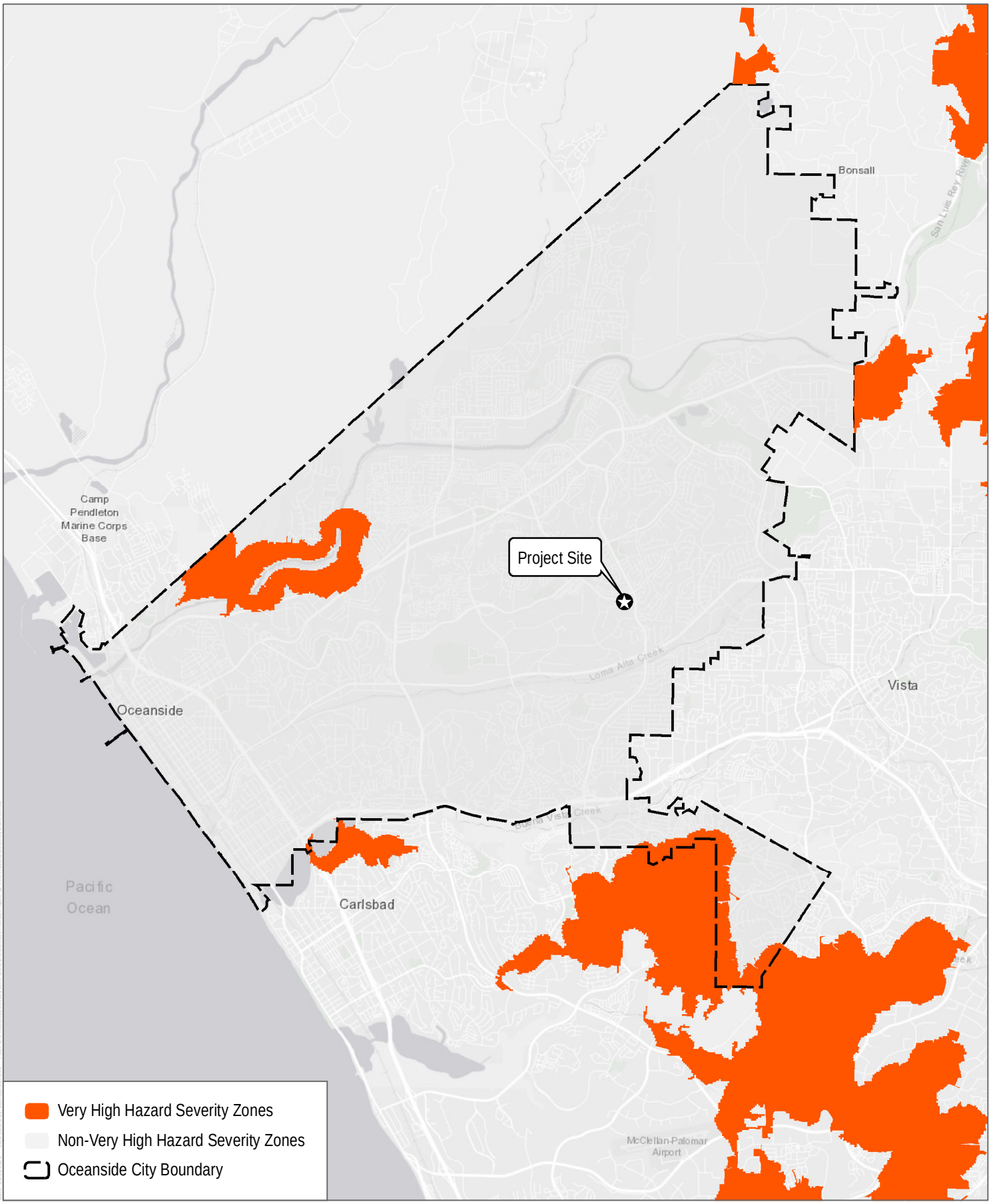

SOURCE: Esri 2022; SanGIS 2022; CalFire 2022

FIGURE 18

Fire Hazard Severity Zones

Oceanside Fire Station 8 MND

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Appendix A

Air Quality and Greenhouse Gas Emissions Calculations

Oceanside Fire Station #8 Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Oceanside Fire Station #8
Construction Start Date	3/4/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	20.6
Location	33.210466933392325, -117.37718165041724
County	San Diego
City	Oceanside
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6240
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.19

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Light Industry	19.8	1000sqft	0.45	19,750	16,553	0.00	—	—
Other Asphalt Surfaces	37.3	1000sqft	0.86	0.00	0.00	0.00	—	—
Other Non-Asphalt Surfaces	0.46	Acre	0.46	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.33	9.90	9.08	10.5	0.02	0.33	0.11	0.42	0.30	0.02	0.33	—	1,961	1,961	0.08	0.03	0.51	1,972
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.98	1.59	16.6	15.8	0.03	0.68	3.33	4.01	0.63	1.49	2.11	—	4,406	4,406	0.21	0.32	0.11	4,505
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.81	0.67	5.63	6.36	0.01	0.21	0.17	0.38	0.19	0.07	0.26	—	1,230	1,230	0.05	0.02	0.17	1,239
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.12	1.03	1.16	< 0.005	0.04	0.03	0.07	0.03	0.01	0.05	—	204	204	0.01	< 0.005	0.03	205

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.33	1.10	9.08	10.5	0.02	0.33	0.09	0.42	0.30	0.02	0.33	—	1,961	1,961	0.08	0.03	0.51	1,972
2026	1.26	9.90	8.69	10.4	0.02	0.29	0.11	0.38	0.27	0.02	0.29	—	1,958	1,958	0.08	0.03	0.46	1,969
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.98	1.59	16.6	15.8	0.03	0.68	3.33	4.01	0.63	1.49	2.11	—	4,406	4,406	0.21	0.32	0.11	4,505
2026	1.26	1.05	8.70	10.3	0.02	0.29	0.09	0.38	0.27	0.02	0.29	—	1,953	1,953	0.08	0.03	0.01	1,964
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.81	0.67	5.63	6.36	0.01	0.21	0.17	0.38	0.19	0.07	0.26	—	1,230	1,230	0.05	0.02	0.17	1,239
2026	0.40	0.63	2.74	3.30	0.01	0.09	0.03	0.12	0.09	0.01	0.09	—	616	616	0.03	0.01	0.07	619
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.15	0.12	1.03	1.16	< 0.005	0.04	0.03	0.07	0.03	0.01	0.05	—	204	204	0.01	< 0.005	0.03	205
2026	0.07	0.11	0.50	0.60	< 0.005	0.02	0.01	0.02	0.02	< 0.005	0.02	—	102	102	< 0.005	< 0.005	0.01	103

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.91	1.28	1.16	5.21	0.01	0.06	0.74	0.80	0.06	0.19	0.24	22.0	1,248	1,270	2.30	0.06	7.73	1,352

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.75	1.13	1.18	4.15	0.01	0.06	0.74	0.80	0.05	0.19	0.24	22.0	1,207	1,229	2.30	0.06	5.21	1,309
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.96	0.61	3.58	0.01	0.03	0.66	0.69	0.03	0.17	0.20	22.0	1,041	1,063	2.29	0.05	6.15	1,143
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.18	0.11	0.65	< 0.005	< 0.005	0.12	0.13	< 0.005	0.03	0.04	3.63	172	176	0.38	0.01	1.02	189

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.49	0.45	0.32	3.37	0.01	0.01	0.74	0.75	0.01	0.19	0.19	—	850	850	0.04	0.03	2.59	863
Area	0.15	0.60	0.01	0.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.53	3.53	< 0.005	< 0.005	—	3.54
Energy	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	277	277	0.04	< 0.005	—	279
Water	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Stationary	0.24	0.22	0.62	0.80	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	113	113	< 0.005	< 0.005	0.00	114
Total	0.91	1.28	1.16	5.21	0.01	0.06	0.74	0.80	0.06	0.19	0.24	22.0	1,248	1,270	2.30	0.06	7.73	1,352
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.48	0.44	0.35	3.16	0.01	0.01	0.74	0.75	0.01	0.19	0.19	—	812	812	0.04	0.03	0.07	823

Area	—	0.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	277	277	0.04	< 0.005	—	279
Water	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Stationary	0.24	0.22	0.62	0.80	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	113	113	< 0.005	< 0.005	0.00	114
Total	0.75	1.13	1.18	4.15	0.01	0.06	0.74	0.80	0.05	0.19	0.24	22.0	1,207	1,229	2.30	0.06	5.21	1,309
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.43	0.40	0.31	2.87	0.01	0.01	0.66	0.67	0.01	0.17	0.17	—	743	743	0.04	0.03	1.01	753
Area	0.08	0.53	< 0.005	0.42	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.74	1.74	< 0.005	< 0.005	—	1.75
Energy	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	277	277	0.04	< 0.005	—	279
Water	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Stationary	0.03	0.03	0.08	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.5	15.5	< 0.005	< 0.005	0.00	15.6
Total	0.57	0.96	0.61	3.58	0.01	0.03	0.66	0.69	0.03	0.17	0.20	22.0	1,041	1,063	2.29	0.05	6.15	1,143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.08	0.07	0.06	0.52	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	—	123	123	0.01	< 0.005	0.17	125
Area	0.01	0.10	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.29	0.29	< 0.005	< 0.005	—	0.29
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.9	45.9	0.01	< 0.005	—	46.2
Water	—	—	—	—	—	—	—	—	—	—	—	1.45	0.66	2.11	0.15	< 0.005	—	6.91
Waste	—	—	—	—	—	—	—	—	—	—	—	2.19	0.00	2.19	0.22	0.00	—	7.65
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.85	0.85
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	2.57	2.57	< 0.005	< 0.005	0.00	2.58
Total	0.10	0.18	0.11	0.65	< 0.005	< 0.005	0.12	0.13	< 0.005	0.03	0.04	3.63	172	176	0.38	0.01	1.02	189

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.31	12.1	12.1	0.02	0.56	—	0.56	0.52	—	0.52	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movemen:	—	—	—	—	—	—	2.44	2.44	—	1.17	1.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	28.3	28.3	< 0.005	< 0.005	—	28.4
Dust From Material Movemen:	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.68	4.68	< 0.005	< 0.005	—	4.70

Dust From Material Movemen:	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.30	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	67.2	67.2	< 0.005	< 0.005	0.01	68.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.80	1.51	14.1	14.5	0.02	0.64	—	0.64	0.59	—	0.59	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movemen:	—	—	—	—	—	—	2.77	2.77	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.3	67.3	< 0.005	< 0.005	—	67.5
Dust From Material Movemen:	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1	11.1	< 0.005	< 0.005	—	11.2
Dust From Material Movemen:	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	89.6	89.6	< 0.005	< 0.005	0.01	90.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.14	0.04	2.53	0.92	0.01	0.03	0.48	0.51	0.03	0.13	0.17	—	1,862	1,862	0.10	0.29	0.10	1,952
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	51.0	51.0	< 0.005	0.01	0.05	53.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.44	8.44	< 0.005	< 0.005	0.01	8.86

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	8.95	10.0	0.02	0.33	—	0.33	0.30	—	0.30	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	8.95	10.0	0.02	0.33	—	0.33	0.30	—	0.30	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.59	4.94	5.54	0.01	0.18	—	0.18	0.17	—	0.17	—	994	994	0.04	0.01	—	997
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.90	1.01	< 0.005	0.03	—	0.03	0.03	—	0.03	—	165	165	0.01	< 0.005	—	165
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.38	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	78.7	78.7	< 0.005	< 0.005	0.30	79.9
Vendor	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	81.0	81.0	< 0.005	0.01	0.21	84.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.34	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	74.3	74.3	< 0.005	< 0.005	0.01	75.3
Vendor	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	81.1	81.1	< 0.005	0.01	0.01	84.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.4	41.4	< 0.005	< 0.005	0.07	42.0
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.7	44.7	< 0.005	0.01	0.05	46.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.85	6.85	< 0.005	< 0.005	0.01	6.95
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.40	7.40	< 0.005	< 0.005	0.01	7.73
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.22	1.01	8.57	9.96	0.02	0.29	—	0.29	0.27	—	0.27	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.22	1.01	8.57	9.96	0.02	0.29	—	0.29	0.27	—	0.27	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.55	2.96	0.01	0.09	—	0.09	0.08	—	0.08	—	536	536	0.02	< 0.005	—	538

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.47	0.54	< 0.005	0.02	—	0.02	0.01	—	0.01	—	88.7	88.7	< 0.005	< 0.005	—	89.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	77.1	77.1	< 0.005	< 0.005	0.27	78.3
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	79.5	79.5	< 0.005	0.01	0.19	83.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.8	72.8	< 0.005	< 0.005	0.01	73.8
Vendor	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	79.6	79.6	< 0.005	0.01	0.01	83.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.03	22.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.7	23.7	< 0.005	< 0.005	0.03	24.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	0.01	3.67
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.92	3.92	< 0.005	< 0.005	< 0.005	4.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.41	6.48	0.01	0.18	—	0.18	0.17	—	0.17	—	991	991	0.04	0.01	—	995
Paving	—	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.18	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	27.2	27.2	< 0.005	< 0.005	—	27.3
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.50	4.50	< 0.005	< 0.005	—	4.51
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.05	0.05	0.03	0.54	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	116	116	0.01	< 0.005	0.41	118
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.03	3.03	< 0.005	< 0.005	< 0.005	3.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	9.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.02	4.02	< 0.005	< 0.005	—	4.04
Architectural Coatings	—	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.05	15.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.45

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.49	0.45	0.32	3.37	0.01	0.01	0.74	0.75	0.01	0.19	0.19	—	850	850	0.04	0.03	2.59	863
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.49	0.45	0.32	3.37	0.01	0.01	0.74	0.75	0.01	0.19	0.19	—	850	850	0.04	0.03	2.59	863
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	0.48	0.44	0.35	3.16	0.01	0.01	0.74	0.75	0.01	0.19	0.19	—	812	812	0.04	0.03	0.07	823
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.48	0.44	0.35	3.16	0.01	0.01	0.74	0.75	0.01	0.19	0.19	—	812	812	0.04	0.03	0.07	823
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.08	0.07	0.06	0.52	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	—	123	123	0.01	< 0.005	0.17	125
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.07	0.06	0.52	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	—	123	123	0.01	< 0.005	0.17	125

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	21.9	21.9	0.02	< 0.005	—	22.9

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	21.9	21.9	0.02	< 0.005	—	22.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	21.9	21.9	0.02	< 0.005	—	22.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	21.9	21.9	0.02	< 0.005	—	22.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.63	3.63	< 0.005	< 0.005	—	3.79
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.63	3.63	< 0.005	< 0.005	—	3.79

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	255	255	0.02	< 0.005	—	256
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	255	255	0.02	< 0.005	—	256
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	255	255	0.02	< 0.005	—	256
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.21	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	255	255	0.02	< 0.005	—	256
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.3	42.3	< 0.005	< 0.005	—	42.4
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.3	42.3	< 0.005	< 0.005	—	42.4

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.15	0.14	0.01	0.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.53	3.53	< 0.005	< 0.005	—	3.54
Total	0.15	0.60	0.01	0.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.53	3.53	< 0.005	< 0.005	—	3.54
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.29	0.29	< 0.005	< 0.005	—	0.29
Total	0.01	0.10	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.29	0.29	< 0.005	< 0.005	—	0.29

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.75	4.00	12.8	0.90	0.02	—	41.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.45	0.66	2.11	0.15	< 0.005	—	6.91
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.45	0.66	2.11	0.15	< 0.005	—	6.91

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.2	0.00	13.2	1.32	0.00	—	46.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.19	0.00	2.19	0.22	0.00	—	7.65
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.19	0.00	2.19	0.22	0.00	—	7.65

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.14	5.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.85	0.85
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.85	0.85

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.24	0.22	0.62	0.80	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	113	113	< 0.005	< 0.005	0.00	114
Total	0.24	0.22	0.62	0.80	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	113	113	< 0.005	< 0.005	0.00	114
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency	0.24	0.22	0.62	0.80	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	113	113	< 0.005	< 0.005	0.00	114
Total	0.24	0.22	0.62	0.80	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	0.00	113	113	< 0.005	< 0.005	0.00	114
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.01	0.01	0.02	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	2.57	2.57	< 0.005	< 0.005	0.00	2.58
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	2.57	2.57	< 0.005	< 0.005	0.00	2.58

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	3/4/2025	3/10/2025	5.00	5.00	—
Grading	Grading	3/11/2025	3/24/2025	5.00	10.0	—
Building Construction	Building Construction	3/25/2025	6/1/2026	5.00	310	—
Paving	Paving	6/2/2026	6/15/2026	5.00	10.0	—
Architectural Coating	Architectural Coating	6/16/2026	6/30/2026	5.00	11.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29

Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	7.63	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	0.00	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	12.0	LDA,LDT1,LDT2
Grading	Vendor	0.00	7.63	HHDT,MHDT
Grading	Hauling	25.9	20.0	HHDT
Grading	Onsite truck	0.00	0.00	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	8.29	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	3.24	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	0.00	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	12.0	LDA,LDT1,LDT2
Paving	Vendor	0.00	7.63	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	0.00	0.00	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.66	12.0	LDA,LDT1,LDT2
Architectural Coating	Vendor	0.00	7.63	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	29,625	9,875	3,439

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	7.50	0.00	—
Grading	2,066	0.00	38.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.32

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%
Other Asphalt Surfaces	0.86	100%
Other Non-Asphalt Surfaces	0.46	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	589	0.03	< 0.005
2026	0.00	589	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	114	45.6	115	38,021	1,040	417	1,049	347,653
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	29,625	9,875	3,439

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

General Light Industry	177,225	45.1	0.0330	0.0040	797,194
Other Asphalt Surfaces	0.00	45.1	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	45.1	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	4,567,188	247,368
Other Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	24.5	—
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	1.00	50.0	135	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.71	annual days of extreme heat
Extreme Precipitation	2.95	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	21.9	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	32.1
AQ-PM	47.1
AQ-DPM	69.0
Drinking Water	54.3
Lead Risk Housing	69.4
Pesticides	0.00
Toxic Releases	15.9
Traffic	71.4
Effect Indicators	—
CleanUp Sites	37.6
Groundwater	36.2
Haz Waste Facilities/Generators	90.8
Impaired Water Bodies	77.3
Solid Waste	63.7
Sensitive Population	—
Asthma	29.4
Cardio-vascular	27.5

Low Birth Weights	55.9
Socioeconomic Factor Indicators	—
Education	81.8
Housing	90.0
Linguistic	56.9
Poverty	93.8
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	28.62825613
Employed	13.29398178
Median HI	16.68163737
Education	—
Bachelor's or higher	28.6154241
High school enrollment	100
Preschool enrollment	14.43603234
Transportation	—
Auto Access	18.40112922
Active commuting	55.0878994
Social	—
2-parent households	31.18182985
Voting	31.73360708
Neighborhood	—
Alcohol availability	37.5465161

Park access	81.35506224
Retail density	39.95893751
Supermarket access	76.09393045
Tree canopy	19.20954703
Housing	—
Homeownership	12.65238034
Housing habitability	39.3301681
Low-inc homeowner severe housing cost burden	72.65494675
Low-inc renter severe housing cost burden	55.87065315
Uncrowded housing	25.7153856
Health Outcomes	—
Insured adults	13.11433338
Arthritis	56.7
Asthma ER Admissions	71.6
High Blood Pressure	81.9
Cancer (excluding skin)	68.9
Asthma	27.9
Coronary Heart Disease	47.4
Chronic Obstructive Pulmonary Disease	31.1
Diagnosed Diabetes	35.6
Life Expectancy at Birth	25.0
Cognitively Disabled	23.2
Physically Disabled	15.4
Heart Attack ER Admissions	79.2
Mental Health Not Good	23.2
Chronic Kidney Disease	35.4
Obesity	31.6

Pedestrian Injuries	85.0
Physical Health Not Good	32.1
Stroke	39.4
Health Risk Behaviors	—
Binge Drinking	19.3
Current Smoker	24.1
No Leisure Time for Physical Activity	27.5
Climate Change Exposures	—
Wildfire Risk	2.4
SLR Inundation Area	95.3
Children	27.6
Elderly	52.4
English Speaking	29.2
Foreign-born	54.3
Outdoor Workers	12.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	20.1
Traffic Density	66.6
Traffic Access	66.4
Other Indices	—
Hardship	66.9
Other Decision Support	—
2016 Voting	38.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	72.0

Healthy Places Index Score for Project Location (b)	20.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction would begin Spring 2025, over 15 months.
Construction: Dust From Material Movement	2066.2 cubic yards of import.
Operations: Vehicle Data	Adjusted trip rates per traffic.

Appendix B
Biological Resources Letter Report

DRAFT

Biological Resources Letter Report

Fire Station Number 8

OCTOBER 2022

Prepared for:

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Summary

This biological resources letter report was prepared to provide a description of the current existing conditions of the Fire Station Number 8 Project site (project area) located in the City of Oceanside in northern San Diego County, and to provide an evaluation of the impacts the proposed project would have on biological resources. The project area refers to the approximately 2.15–acre project site analyzed in this report. The Oceanside Subarea Plan is used as a guidance document for development projects in the City of Oceanside, but has yet to be approved by the Oceanside City Council.

Dudek conducted a biological reconnaissance survey of the project area in October of 2022 which included vegetation mapping, an inventory of plant and wildlife species present, and a general habitat assessment for special-status plants and wildlife. This report documents the results of Dudek's fieldwork and provides an analysis of the potential biological impacts related to the proposed project.

The project area was previously graded and is surrounded by existing development. The site is situated adjacent to one to two-story office and medical office building development (and associated parking lots) to the east and west, concrete title up warehouse buildings to the south (and southwest), and gated, condominium and single-family residential development (Pacific Ridge Rancho Del Oro) to the north across Old Grove Road.

Based on species composition and general physiognomy, Dudek mapped three vegetation communities and land covers within the project area: disturbed habitat (1.91 acres), urban/developed (0.02 acres), and ornamental (0.23 acres). The project area does not support native or sensitive vegetation communities, nor does it contain jurisdictional aquatic resources. The majority of the project area is comprised of disturbed habitat, with ornamental and urban/developed land covers occupying the remainder of the project area along the project boundaries. Native plants present within the project area are sparse and scattered.

No special-status plants or wildlife species were observed during the reconnaissance survey. Focused surveys were not conducted, but are not expected to be necessary. The project area is relatively small, highly disturbed, lacks native vegetation communities and dense vegetative cover, and is surrounded by development. Thus, the project area is not expected to support special-status plants or wildlife species, and has limited value in terms of facilitating wildlife movement or dispersal. The project area and adjacent ornamental vegetation have the potential to support common species of nesting birds, which are protected by the Migratory Bird Treaty Act (MBTA). Nesting potential is limited to species which are tolerant of the existing levels of disturbance,

For the purposes of this biological resources analysis, it is assumed that the entire project area will be permanently impacted, and the proposed project would result in 2.15 acres of on-site permanent direct impacts associated with the grading and development of the proposed project.

Potential direct and/or indirect impacts to protected nesting birds would be a significant impact if they were to occur as a result of the proposed project. No significant impacts to sensitive vegetation communities, special-status plants, special-status wildlife species or designated critical habitat, jurisdictional resources, or wildlife corridors/habitat linkages are expected to result from the proposed project.

Mitigation to reduce potential impacts to a less-than-significant level would be achieved through the implementation of pre-construction nesting bird surveys to avoid impacts to nesting birds during the avian breeding season.

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1 Location and Project Description

1.1 Project Location

The proposed project site is located in the City of Oceanside (City), in the northern portion of San Diego County (Figure 1, Project Location). Nearby cities include Vista to the east and Carlsbad to the south. Federal lands associated with Marine Corps Base Camp Pendleton are located to the north of the City and the Pacific Ocean lies to the immediate west of City limits. The proposed project site is approximately 2.15 acres and is located on a vacant, previously disturbed property in the City's Ivey Rancho/Rancho Del Oro neighborhood. More specifically, the proposed project site borders Old Grove Road to the north, Trestles Street on the west, Rocky Point Drive on the south, and an existing two-story office building and surface parking lot (1278 Rocky Point Drive) to the east.

1.2 Environmental Setting

The proposed project site is located on a previously graded, City-owned site fronting Old Grove Road and Trestle Street. The project site is situated approximately 4.7 miles west of Interstate 5, 35 miles north of downtown San Diego, and 1.8 miles south of State Route 76. Local vehicular access is provided via College Boulevard, Old Grove Road, Trestle Street, and Rocky Point Drive.

The project site is located in a developed urban area of the City and is situated adjacent to one to two-story office and medical office building development (and associated parking lots) to the east and west, concrete title up warehouse buildings to the south (and southwest), and gated, condominium and single-family residential development (Pacific Ridge Rancho Del Oro) to the north across Old Grove Road.

The project site is zoned as PD-1 (IL) Planned District 1 – Rancho Del Oro (Limited Industrial) has a General Plan designation of Light Industrial (City of Oceanside 2022). The project site is currently vacant but has been previously graded.

1.3 Summary of Proposed Project

The proposed project would involve the construction of the City's Fire Station Number 8 which includes a two-level structure (approximately 37 feet 6 inches in total height) and associated site improvements including driveways, parking spaces, emergency diesel generator and fuel storage areas, and site landscaping. The fire station structure would include an apparatus bay and accompanying chief garage, workshop and storage/electrical rooms. In addition, the fire station facility would include a dedicated lobby, multiple restrooms, conference/meeting spaces, dining, day and exercise rooms, storage rooms, a study /library, locker room, and living quarters for staff. The design for the project area includes a water reservoir which will occupy a large portion of the southern half of the area. The building footprint would be approximately 13,240 square feet and the parking/paved area would equate to approximately 37,300 square feet.

Landscaped areas would be generally located along the perimeter of the site with several planting areas features trees and shrubs to be located in interior planting areas. Pursuant to City Code, approximately 12% of the Project Site square footage must support a tree canopy and a minimum of 22% of the Project Site square

footage must consist of permeable materials. While existing trees and vegetation within parkways aligned along Old Grove Road, Trestles Street, and Rocky Point Drive would remain in place (several trees along Trestle Street would be removed to construct site access/a new driveway), all vegetation within the interior of the site would be removed to accommodate the proposed fire station development. A perimeter fence would be installed around the entire project site and existing sidewalks adjacent to Trestles Street and Rocky Point Drive would be demolished and rebuilt.

Fire Station 8 would incorporate best management practices (BMPs) to reduce stormwater runoff from the site. The proposed drainage design will direct site runoff to the on-site treatment BMP (i.e., modular wetland system) via surface flow and subsurface stormwater pipes. The modular wetland system feature outlet will connect to the municipal storm drain network in Rocky Point Drive through a new pipe connection. The project's proposed wetland system is designed to achieve and exceed treatment requirements.

Vehicular access to the project site would be via Trestle Street. Covered and uncovered parking spaces would be provided in the northeast corner of the site and west of the proposed fire station building. Covered parking would be located behind the facility fence and used by fire department personnel. Uncovered spaces would be located off Trestle Street and be accessible to the public.

Lighting at the Fire Station 8 entrance would be limited to the immediate vicinity sufficient to create a visual welcoming gateway. The public parking lot and public entry would be lit for safety, but would use shielded overhead lighting. The Apparatus Bay apron would require down-lighting at the front and rear overhang or would be down lit from the walls. Low level path lighting or bollards on motion sensors would illuminate walkways to employee parking and accessory site.

Construction of the project would include concrete removal/demolition; site preparation; grading; underground utility construction (trenching); building construction; paving, architectural coating, and fencing and landscaping. Demolition would involve the removal of existing concrete located along the perimeter of the site. Additional site clearing and rough grading would occur during the site preparation phase. Construction is expected to begin in March 2023 and end in June 2024, for an approximated construction duration of approximately 15 months. Construction equipment would be staged either on site or in the adjacent parking lot.

2 Regulatory Context

2.1 Federal

2.1.1 Federal Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS) for most plant and animal species, and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service for certain marine species. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. The ESA defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under the ESA, it is unlawful to take any listed species, and "take" is defined as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

The ESA allows for the issuance of incidental take permits for listed species under Section 7, which is generally available for projects that also require other federal agency permits or other approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement. Upon development of a habitat conservation plan, USFWS can issue incidental take permits for listed species.

No incidental take permits are expected to be required for the proposed project as the project site does not contain habitat that support federally listed species.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The primary motivation for the international negotiations was to stop the "indiscriminate slaughter" of migratory birds by market hunters and others. Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA protects over 800 species of birds and prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). USFWS reviews actions that might affect these species.

Two species of eagles that are native to the United States, the bald eagle (Haliaeetus leucocephalus) and golden eagle (Aquila chrysaetos), were granted additional protection within the United States under the Bald and Golden Eagle Protection Act (16 USC 668–668d) to prevent the species from becoming extinct.

2.1.3 Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into "waters of the United States." The term "wetlands" (a subset of waters of the United States) is defined in Title 33 of the Code of Federal Regulations, Section 328.3(b), as "those areas that are

inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark (OHWM), which is defined in Title 33 of the Code of Federal Regulations, Section 328.3(e).

2.2 State

2.2.1 California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA) (California Fish and Game Code (CFGC) Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the California Fish and Game Commission as endangered or threatened in California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

Sections 3511, 4700, and 5515 of the CFGC designate certain birds, mammals, and fish as "fully protected" species. These species may not be taken or possessed without a permit from the Fish and Game Commission, and such take may only occur pursuant to scientific research or in connection with an authorized Natural Communities Conservation Plan (NCCP). No "incidental take" of fully protected species is allowed.

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (CFGC Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

Section 2081(b) and (c) of the CFGC authorize take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. In such cases, CDFW issues the applicant an incidental take permit, which functions much like an incidental take statement in the federal context. Sections 2081(b) and (c) also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal incidental take statement or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. As mentioned above, CDFW may not issue a Section 2081(b) incidental take permit for take of "fully protected" species. The CFGC lists the fully protected species in Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish).

2.2.2 California Fish and Game Code

Streambed Alteration Agreement

Pursuant to Section 1602 of the CFGC, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement (CFGC Section 1602 et seq.) is required for impacts on jurisdictional resources, including streambeds and associated riparian habitat.

Birds and Mammals

According to Sections 3511 and 4700 of the CFGC, which regulate birds and mammals, a fully protected species may not be taken or possessed. CDFW may not authorize the take of such species except (1) for necessary scientific research, (2) for the protection of livestock, and (3) when the take occurs for fully protected species within an approved NCCP, such as the East County Multiple Species Conservation Plan (ECMSCP), which, if developed and approved will cover the BSA.

Resident and Migratory Birds

The CFGC provides protection for wildlife species. It states that no mammals, birds, reptiles, amphibians, or fish species listed as fully protected can be "taken or possessed at any time." In addition, CDFW affords protection over the destruction of nests or eggs of native bird species (CFGC Section 3503), and it states that no birds in the orders of Falconiformes or Strigiformes (birds of prey) can be taken, possessed, or destroyed (CFGC Section 3503.5). CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (CFGC Section 3511). Separate from federal and state designations of species, CDFW designates certain vertebrate species as Species of Special Concern (SSC) based on declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGC Sections 1900–1913) directed CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare," and to protect endangered and rare plants from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel ESA. CESA categorized all rare animals as threatened species under CESA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the CFGC, and mitigation measures for impacts on rare plants are specified in a formal agreement between CDFW and project proponents.

2.2.3 Porter-Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act (Porter–Cologne Act) protects water quality and the beneficial uses of water. It applies to surface water and groundwater. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the Regional Water Quality Control Boards (RWQCBs) develop regional

basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of statewide plans and basin plans. Waters regulated under the Porter–Cologne Act include isolated waters that are not regulated by USACE. Developments with impacts on jurisdictional waters must demonstrate compliance with the goals of the Porter–Cologne Act by developing stormwater pollution prevention plans (SWPPPs), standard urban stormwater mitigation plans, and other measures to obtain a Clean Water Act Section 401 certification.

2.2.4 California Environmental Quality Act

California Environmental Quality Act (CEQA; California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.) require identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guidelines Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in CEQA Guidelines Section 15380(b)(2) as a species that, although not currently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

2.3 Local

2.3.1 Oceanside Subarea Plan

The overall goal of the Oceanside Subarea Plan is to contribute to regional biodiversity and the viability of rare, unique, or sensitive biological resources throughout the City of Oceanside and the larger region while allowing public and private development to occur consistent with the City's General Plan and Capital Improvement Program. In addition, the plan calls for the conservation of 90% to 100% of all hardline conservation areas; conservation of a minimum of 2,511 acres of existing native habitats as a biological preserve in the City of Oceanside; conservation of a minimum of 95% of rare and narrow endemic species populations within the preserve and a minimum of 80% throughout the City as a whole; and restoration of a minimum of 164 acres of coastal sage scrub habitat within the City of Oceanside, of which 145 acres will be within a wildlife corridor planning zone. Parcels within the wildlife corridor planning zone contribute to the north–south regional gnatcatcher steppingstone corridor. Although the Oceanside Subarea Plan is used as a guidance document for development projects in the City of Oceanside, the Subarea Plan has yet to be approved by the Oceanside City Council, and incidental take authority has therefore not been transferred to the City of Oceanside from USFWS and CDFW.

The Oceanside Subarea Plan identifies undeveloped lands within the City where conservation and management will achieve the Subarea Plan's biological goals while minimizing adverse effects on lands uses, economics, or private property rights. In addition, the Subarea Plan establishes preserve planning zones, the existing biological conditions

and goals of which were used as foundations for their designation; however, the zones are defined for effective implementation of the Subarea Plan. Brief descriptions of the preserve planning zones are provided below:

- **Wildlife Corridor Planning Zone.** The Wildlife Corridor Planning Zone extends from U.S. Marine Corps Base Camp Pendleton south to Buena Vista Creek. This zone varies in width from 1 to 2 miles along most of its length and is centered roughly on El Camino Real and the associated San Diego Gas & Electric Company (SDG&E) electric transmission corridor. It encompasses those habitat parcels that potentially contribute to the north–south, regional gnatcatcher steppingstone corridor, recognizing that existing Preserve lands north of the San Luis Rey River complete the steppingstone corridor connection to U.S. Marine Corps Base Camp Pendleton. The project area is located outside of the Wildlife Corridor Planning Zone.
- **Pre-Approved Mitigation Areas.** These areas represent land areas that have significant resource value and therefore will qualify for on-site mitigation credit. Development is allowed in pre-approved mitigation areas, subject to planning guidelines to avoid, minimize, and fully mitigate impacts. The project area is not located within a pre-approved mitigation area and is located within Offsite Mitigation Zone II (City of Oceanside 2010).
- **Agricultural Exclusion Zone.** This zone includes lands north of the San Luis Rey River that are planned for agricultural uses under the Oceanside General Plan. Ongoing agricultural practices may continue in this area as long as they do not remove existing natural habitats. The project area is not located within an agricultural exclusion zone (City of Oceanside 2010).
- **Off-Site Mitigation Zone.** This zone includes all other parcels within the City of Oceanside that support natural vegetation outside of the Wildlife Corridor Planning Zone, agriculture exclusion zone, and coastal zone. The off-site mitigation zone includes several pre-approved mitigation areas. The project area is located within Offsite Mitigation Zone II (City of Oceanside 2010).
- **Coastal Zone.** This zone all areas within the City's coastal zone where the federal Coastal Zone Management Act and California Coastal Act policies apply. The project area is not located within the coastal zone.

In addition to preserve planning zones, the Subarea Plan also identifies specific "hardline" and "softline" preserves. Generally, hardline preserves are areas that are already preserved to Subarea Plan standards and softline preserves are areas specifically targeted for preservation through application of Subarea Plan standards and policies. The Oceanside Subarea Plan describes hardline preserves as areas specifically targeted for future preservation through the application of the Subarea Plan standards and policies. Hardline preserves are also considered part of Focused Planning Areas. Preserve areas within the Subarea Plan area prohibit the following land uses: all forms of development, agricultural uses, active recreation, mineral extraction, landfills, itinerant worker camps, roads or other transportation facilities, most flood control projects, and brush control or fuel management, except for existing firebreaks that must be maintained for safety reasons within 100 feet of existing buildings (City of Oceanside 2010). Any implementation of these prohibited land uses within the preserve would require written concurrence from the City and CDFW and USFWS (the wildlife agencies) through an amendment process. Conditionally allowed land uses in preserve areas include passive recreation (i.e., hiking, birdwatching, and fishing); utility projects that include full restoration of temporarily impacted habitat, flood control, or siltation basins that support natural vegetation and habitat value; and maintenance of existing firebreaks adjacent to existing buildings. The project area is not located within a hardline or softline preserve.

Wetland Buffers

Wetland buffers generally refer to an area that extends perpendicularly into upland areas from the delineated edge of wetland or riparian areas. Wetland buffer areas establish an upland zone adjacent to wetlands designed to avoid

and minimize indirect effects on wetland functions (e.g., species habitat, water quality maintenance, flood capacity). Under Section 5.2.4 of the Subarea Plan (City of Oceanside 2010):

> Wherever development or other discretionary actions are proposed in or adjacent to riparian habitats (not including the San Luis Rey River), the riparian area and other wetlands or associated natural habitats shall be designated as biological open space and incorporated into the Preserve. In addition, a minimum 50-foot biological buffer, plus a minimum 50-foot planning buffer (total width of both equals 100 feet) shall be established for upland habitats, beginning at the outer edge of riparian vegetation. The planning buffer serves as an area of transition between the biological buffer and specified land uses on adjoining uplands. Foot paths, bikeways, and passive recreational uses may be incorporated into planning buffers, but buildings, roads, or other intensive uses are prohibited. The following uses are prohibited in the 50-foot biological buffer: (1) new development, (2) foot paths, bikeways, and passive recreational uses not already planned, and (3) fuel modification activities for new development. In the event that natural habitats do not currently (at the time of proposed action) cover the 50-foot buffer area, native habitats appropriate to the location and soils shall be restored as a condition of project approval. In most cases, coastal sage scrub vegetation shall be the preferred habitat to restore within the biological buffer.

However, since the Subarea Plan has not been approved by the City, these buffers and setbacks are subject to reduction based on approval from the City and the wildlife agencies.

No wetlands are mapped in or adjacent to the project area that would require a wetland buffer.

3 Methods

3.1 Literature Review

Prior to conducting the field survey, Dudek reviewed regional California Natural Diversity Database occurrence data (CDFW 2022a), California Rare Plant Inventory (CNPS 2022), U.S. Fish and Wildlife Service (USFWS) occurrence data and critical habitat (USFWS 2022a), the San Diego Natural History Museum's Plant Atlas (SDNHM 2022), Mammal Atlas (Tremor 2017) and Bird Atlas (Unitt 2004), the National Wetlands Inventory (USFWS 2022b), and the U.S. Department of Agriculture's Natural Resources Conservation Service Web Soil Survey (USDA 2022a) to analyze the occurrence potential of special-status species and jurisdictional waters that are known to occur or may potentially occur within the project area. Dudek also reviewed historic aerial imagery of the project area (NetrOnline 2022).

General information regarding wildlife species present in the region was obtained from Unitt (2004) for birds, Tremor et al. (2017) for mammals, and Stebbins (2003) for reptiles and amphibians.

Special-status plant species considered in this report are those that are (1) species listed by federal and/or state agencies, proposed for listing as threatened or endangered, or are candidate species (CDFW 2022b); (2) species with a CRPR (CNPS 2022); or (3) species listed on the Oceanside Subarea Plan Proposed Covered Species list (City of Oceanside 2010).

Special-status wildlife species considered in this report are those that are (1) listed by federal and/or state agencies, proposed for listing as threatened or endangered, or are candidate species (CDFW 2022c); (2) Species of Special Concern and Bird of Conservation Concern species (CDFW 2022c; USFWS 2021); (3) fully protected species (CDFW 2022c); or (4) listed on the Oceanside Subarea Plan Proposed Covered Species list (City of Oceanside 2010).

3.2 Reconnaissance Survey

A reconnaissance survey of the project area was conducted by Dudek biologist Olivia Koziel on October 5, 2022. The site visit was conducted from 9:00 AM to 11:59 AM, with temperatures ranging from 67 to 75°F, cloud cover ranging from 10 to 100%; and wind speeds ranging from zero to three miles per hour.

Vegetation communities within the project area were evaluated and mapped in the field using an ArcGIS smartphone mobile application. The entire property was traversed on foot in meandering transects to ensure full coverage of the project area. Vegetation communities and land covers were mapped according to the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) or the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). In some areas, Dudek generated an additional site-specific vegetation community or land cover classification where vegetation communities observed in the field would not be adequately described by communities included in Holland (1986) or Oberbauer et al. (2008).

During the site visit, an inventory of plant and animal species detected by sight, calls, tracks, scat, or other signs was compiled and recorded. Binoculars (10×50) were used to aid in the identification of observed wildlife. A habitat assessment was conducted for potentially occurring sensitive resources that would not be apparent at the time of the survey (e.g., rare annual plants and special-status wildlife species).

Dudek also examined the site for the presence of potential jurisdictional aquatic features. These features include "waters of the United States," including wetlands, under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the City of Oceanside as well as streambeds and associated riparian habitat regulated by CDFW.

4 Physical Characteristics

4.1 Existing and Surrounding Land Use

The project site is currently vacant but has been previously graded for development. The project site is located in a developed urban area of the City and is situated adjacent to one to two-story office and medical office building development and associated parking lots to the east and west, concrete warehouse buildings to the south and southwest, and gated, condominium and single-family residential development to the north across Old Grove Road. A review of historic aerial imagery reveals that the project area has been disturbed since 1946 or earlier, and the area including the project area was used for agriculture through at least 1991 (NetrOnline 2022).

4.2 Topography

Elevations on site range from approximately 394 feet above mean sea level near the southeastern corner of the project area to 410 feet above mean sea level along the northern project boundary. The graded pad that comprises the majority of the project area is mostly flat, with small, landscaped slopes/berms present along the northern and eastern boundaries of the project area.

4.3 Soils

The project area consists of one soil map unit: Las Flores loamy fine sand, 5 to 9 percent slopes (USDA 2022a). This soil type is rated as predominantly non-hydric (USDA 2022b). Las Flores soils are usually slightly acidic, loamy sands on gentle to strong slopes, and they are found on marine terraces at elevations of less than 700 feet amsl (USDA 2022a).

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5 Results

5.1 Vegetation Communities

Three vegetation communities or land cover types were mapped within the project area. The majority of the project area is comprised of disturbed habitat, with ornamental and urban/developed land covers occupying the remainder of the project area. The project area does not support any native or sensitive vegetation communities. Native vegetation cover throughout the project area is very limited and includes few native coyote brush (*Baccharis pilularis*) shrubs, one small western sycamore (*Platanus racemosa*) among the ornamental vegetation near the northern boundary of the project area, and one very young Fremont cottonwood (*Populus fremontii*) sapling sprouting near the eastern side of the project area. Native plants are scattered and tend to occur near the edges of the project area. The existing acreages of each vegetation community or land cover type are included in Table 1, and each community or land cover is described in further detail below.

Table 1. Vegetation Communities and Land Cover Types Within the Project Area

Vegetation Community or Land Cover Type	Numeric Code[1]	Acreage Within the Project Area
Disturbed Habitat	11000	1.91
Urban/Developed	12000	0.02
Ornamental	N/A	0.23
	Total Acres[2]	**2.15**

Notes:
1 Numeric code assigned to the vegetation community or land cover type according to Oberbauer et. al (2008).
2 Total may not sum precisely due to rounding.

5.1.1 Disturbed Habitat

Disturbed habitats are areas that have been physically disturbed and are no longer recognizable as a native or naturalized vegetation association (Oberbauer et al. 2008). These areas may continue to retain soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Examples of these areas may include graded landscapes or areas, graded firebreaks, graded construction pads, temporary construction staging areas, off-road-vehicle trails, areas repeatedly cleared for fuel management, parking lots, or trails (Oberbauer et al. 2008).

The majority of the project area is previously graded disturbed habitat which is comprised of bare ground and mostly non-native, weedy herbaceous plant species and invasive grasses such as red brome (*Bromus rubens*) and ripgut brome (*Bromus diandrus*). Few native plants occur sporadically throughout the project area.

5.1.2 Urban/Developed

Urban/developed refers to areas that have been constructed on or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008).

Urban/developed land is mapped along the southern boundary of the project area. The project area is surrounded by paved sidewalks to the north, south, and west.

5.1.3 Ornamental

Ornamental vegetation is typically associated with development, and refers to exotic vegetation that was planted intentionally and for aesthetic purposes. While not recognized in Oberbauer et al. 2008 as a vegetation community separate from urban/developed or disturbed habitat, this mapping unit was used in order to characterize site conditions in greater detail.

This vegetation community is present along the northernmost side of the project area, as well as along the eastern project boundary. In the project area, this mapping unit is comprised of mostly non-native species of common landscape succulents, shrubs such as Indian hawthorn (*Raphiolepis indica*), and relatively small, planted trees such as Chinese pistache (*Pistacia chinensis*).

5.2 Flora and Fauna

5.2.1 Plants

A total of 28 plants were observed during the October 2022 reconnaissance survey, including 7 native (25%) and 21 non-native (75%) species. A cumulative list of plant species observed by Dudek during the reconnaissance survey is presented in Appendix B, Plant Species Observed Within the Project Area. Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2022), and common names follow the California Natural Community list (CDFW 2022d) or the U.S. Department of Agriculture Natural Resources Conservation Service Plants Database (USDA 2022c).

5.2.1.1 Special-Status Plants

No special-status plants were observed during the 2022 reconnaissance survey. While focused surveys were not conducted, no special-status plant species are expected to occur within the project area due to the highly disturbed condition of the project area. Special-status plants evaluated but that have low potential or are not expected to occur are described in Appendix C, Special Status Plant Species Not Expected or with Low Potential to Occur in the Project Area.

5.2.2 Wildlife

A total of 10 wildlife species were observed during 2022 reconnaissance survey, including nine birds and one invertebrate species. All wildlife observed were common species and no special-status wildlife was detected within the project area during the survey. Wildlife species observed or detected during the surveys were recorded and are presented in Appendix B, Wildlife Species Observed Within the Project Area.

The project area has limited potential to support nesting birds during the avian breeding season due to the disturbed nature of the site, lack of native vegetation communities, and surrounding development. Nesting potential within the project area is low and would likely be limited to small, common bird species which are tolerant of human disturbance. Scattered ornamental trees present near the boundaries of the project area could support nesting of

small species such as hummingbirds (*Calypte* spp. or *Selasphorus* spp.), while disturbed areas could support species such as mourning dove (*Zenaida macroura*) which sometimes nest on the ground. Acacia scrub immediately to the east of the project area, dominated by ornamental coastal wattle (*Acacia cyclops*) with associated toyon (*Heteromeles arbutifolia*) provides denser cover for wildlife and has a higher potential to support common, small nesting birds during the avian breeding season.

5.2.2.1 Special-Status Wildlife

No special-status wildlife species were observed during the reconnaissance survey conducted in October 2022. Special-status wildlife species evaluated but that have low potential or are not expected to occur are described in Appendix D, Special Status Plant Species Not Expected or with Low Potential to Occur in the Project Area.

No suitable burrows are present in the project area to support burrowing owl (*Athene cunicularia*). Few small mammal (rodent) burrows were observed in the project area.

The project area does not contain any designated critical habitat for special-status wildlife species. One historical CNDDB occurrence for Stephens' kangaroo rat (*Dipodomys stephensi*) overlaps the project area. The occurrence is from 1973, has a 1-mile reported location accuracy, and the population has since been extirpated by development according to the specific occurrence report (CDFW 2022a).

5.3 Jurisdictional Aquatic Resources

The project area does not support any potentially jurisdictional aquatic resources. Irrigation sprinklers which are present along the top of landscaped berms which border the site are likely responsible for causing the presence of some visible soil cracks and a small erosional feature leading to a drain in southeastern corner of the site, as well as the very sparse and scattered cover of plant species present in the northwestern portion of the project area which are typically associated with wet areas, such as mulefat (*Baccharis salicifolia*; one individual present) and invasive tamarisk (*Tamarix ramossisima*; few individuals present). The cover of these species was limited to a few individual plants and was not enough to constitute a vegetation community, and would not be regulated by CDFW since there are no associated stream channels present.

5.4 Wildlife Corridors/Habitat Linkages

The project area is located outside of the Wildlife Corridor Planning Zone designated by the Oceanside Subarea Plan (City of Oceanside 2010). The project area is relatively small, highly disturbed, lacks native vegetation communities and dense vegetative cover, and is surrounded by development. Thus, the project area has very limited value in terms of facilitating wildlife movement or dispersal.

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6 Impacts and Significance Analysis

This section addresses direct, indirect, and cumulative impacts to biological resources that would result from implementation of the proposed project.

Direct impacts are defined as those that result in the direct removal of a biological resource through clearing, grubbing, and/or grading. Permanent impacts refer to the buildings, roads, and other permanent structures. Indirect impacts primarily result from adverse "edge effects" as either short-term indirect impacts related to construction activities or long-term indirect impacts associated with the proximity of apartments to open space areas.

Cumulative impacts refer to incremental individual environmental effects over the long-term implementation of the project when considered together with other impacts from other projects in the area. These impacts taken individually may be minor, but can become collectively significant as they occur over a period of time.

6.1 Direct Impacts

For the purposes of this letter report, it is assumed that the entire project area will be directly and permanently impacted.

6.1.1 Vegetation Communities and Land Cover Types

The proposed project would result in permanent direct impacts to disturbed habitat, urban/developed land, and ornamental vegetation. According to Table 5-2, Mitigation Standards for Impacts to Natural Vegetation and Habitat, in the Subarea Plan (City of Oceanside 2010), impacts to the vegetation communities and land covers present in the project area do not require mitigation.

The proposed project would not result in direct impacts to any native or sensitive vegetation communities, and no special-status plant species are expected to occur and thus would not be impacted. Permanent direct impacts to disturbed habitat totaling 1.91 acres, disturbed/developed land totaling 0.02 acres, and 0.23 acres of ornamental vegetation are not considered significant, and no mitigation is required. A summary of the impacts which would result from the proposed project is provided in Table 2.

Table 2. Impacts to Vegetation Communities and Land Covers in the Project Area

Vegetation Community or Land Cover Type	Permanent Direct Impacts Per Project Component (Acres)		Total Impacts (Equal to Acres Existing in Project Area)	Mitigation Ratio[1]	Mitigation Required (Acres)
	Fire Station	Water Reservoir			
Disturbed Habitat	1.30	0.61	1.91	None (0)	0.00
Urban/Developed	0.02	0.00	0.02	None (0)	0.00
Ornamental	0.23	0.00	0.23	None (0)	0.00
Total Acres[2]	**1.54**	**0.61**	**2.15**		**0.00**

Notes:
1 Per Table 5-2 in the Final Subarea Plan (City of Oceanside 2010).
2 Totals may not sum precisely due to rounding.

6.1.2 Special-Status Plant Species

No special-status plants were observed during the 2022 reconnaissance survey. While focused surveys were not conducted, no special-status plant species are expected to occur within the project area due to the highly disturbed condition of the project area; therefore the proposed project would not result in direct impacts to special-status plant species. Special-status plants evaluated but not expected to occur are described in Appendix C.

6.1.3 Special-Status Wildlife Species and Nesting Birds

While focused wildlife surveys were not conducted, no special-status wildlife species were observed during the 2022 reconnaissance survey. The highly disturbed condition of the project area, with limited vegetative cover and surrounded by development, is not suitable habitat for most special-status wildlife.

The project area and adjacent vegetation have the potential to support nesting birds which are tolerant of disturbance during the avian breeding season. The California Fish and Game Code protects bird nests and the MBTA prohibits the intentional take of any migratory bird or any part, nest, or eggs of any such bird. If clearing, grubbing, or other activities that result in the removal of vegetation occur during the nesting bird season, any impacts to active nests or the young of nesting bird species would be potentially significant. This impact shall be mitigated to less than significant through nesting bird surveys and establishment of appropriate nest buffers, as described in MM-BIO-1 (Nesting Bird Surveys), provided in Section 7 below.

6.1.4 Wildlife Corridors/Habitat Linkages

The project site is located outside of the Wildlife Corridor Planning Zone designated by the Oceanside Subarea Plan (City of Oceanside 2010), and has extremely limited value in terms of facilitating wildlife movement or dispersal, as described further in Section 5.4 above. Thus, the impact of the proposed project would be less than significant.

6.1.5 Jurisdictional Aquatic Resources

There are no jurisdictional aquatic resources within or adjacent to the project area, thus there will be no direct impact to jurisdictional resources as a result of the proposed project.

6.2 Indirect Impacts

6.2.1 Vegetation Communities and/or Special-Status Plants

There are no native or sensitive vegetation communities within or adjacent to the project area, and no special-status plant species are expected to occur within or adjacent to the project area. The existing condition of the project area and surrounding landscaped and developed land is already highly disturbed and supporting few native plant species. Therefore, the proposed project would not result in significant indirect impacts to any native or sensitive vegetation communities or special-status plant species.

6.2.2 Special-Status Wildlife Species and Nesting Birds

Short-Term Indirect Impacts

While no special-status wildlife species are expected to occur, short-term or temporary indirect impacts to protected nesting birds that have the potential to occur within or adjacent to the project area could result from construction activities. Potential temporary indirect impacts to nesting birds could occur as a result of excessive noise and increased human activity in close proximity to an active nest. These impacts are described in detail in the following paragraphs and shall be mitigated to less than significant through nesting bird surveys and establishment of appropriate nest buffers, as described in MM-BIO-1 (Nesting Bird Surveys), provided in Section 7 below.

Noise. Construction-related noise in excess of baseline noise levels could occur from equipment used during vegetation clearing and construction of the residences and associated infrastructure. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, cited in Lovich and Ennen 2011).

Increased Human Activity. Increased human activity associated with the construction activities can deter wildlife from using habitat areas near the proposed project footprint.

Long-Term Indirect Impacts

The proposed project is not expected to result in significant long-term or permanent indirect impacts to special-status wildlife species or nesting birds. The project area already contains primarily non-native vegetation and a high level of human disturbance due to surrounding land use and development.

6.2.3 Jurisdictional Aquatic Resources

There are no jurisdictional aquatic resources present within or adjacent to the proposed project area, therefore no significant impacts will occur as a result of the proposed project.

As stated in the project description, the proposed project would incorporate best management practices (BMPs) to reduce stormwater runoff from the site. The proposed drainage design will direct site runoff to the on-site treatment BMP (i.e., modular wetland system) via surface flow and subsurface stormwater pipes. The modular wetland system feature outlet will connect to the municipal storm drain network in Rocky Point Drive through a new pipe connection. The project's proposed wetland system is designed to achieve and exceed treatment requirements.

6.2.4 Wildlife Corridors/Habitat Linkages

The project site is located outside of the Wildlife Corridor Planning Zone designated by the Oceanside Subarea Plan (City of Oceanside 2010), and has extremely limited value in terms of facilitating wildlife movement or dispersal, as described further in Section 5.4 above. Thus, the proposed project would not result in significant short or long-term indirect impacts to wildlife movement.

The buildings and parking areas associated with the proposed project would include lighting designed to minimize light pollution and preserve dark skies, while enhancing safety, security, and functionality.

6.2.5 Cumulative Impacts

The proposed project complies with the terms of the Oceanside Subarea Plan (City of Oceanside 2010). No native or sensitive vegetation communities or jurisdictional resources are present within the project area, and no special-status plant or wildlife species are expected to occur. The project would implement standard best management practices. As with all other projects, the proposed project would be required to comply with the California Fish and Game Code and MBTA to avoid impacts to nesting birds. Therefore, the project is not anticipated to result in significant cumulative impacts to regional biological resources.

6.3 Consistency with Oceanside Subarea Plan

The proposed project fully complies with the goals and objectives of the Oceanside Subarea Plan (2010). The project area is not located within a pre-approved mitigation area and is located within Offsite Mitigation Zone II (City of Oceanside 2010). No impacts to sensitive vegetation communities would occur as a result of the proposed project, thus no offsite mitigation would be required.

Furthermore, the project area is not located within a hardline or softline preserve area (City of Oceanside 2010). No wetlands as defined and regulated by the City are mapped in or adjacent to the project area, thus no wetland buffers are required. The project area is located outside of the Wildlife Corridor Planning Zone (City of Oceanside 2010) and is surrounded by existing development, thus has limited value with regards to facilitating wildlife movement. Finally, the project area is located outside of the Coastal Zone (City of Oceanside 2010).

7 Avoidance, Minimization, and Mitigation Measures

Since the proposed project would not result in impacts to native habitat, sensitive vegetation communities, jurisdictional resources, or special-status plant and wildlife species, mitigation is not required for these resources.

Migratory birds, which could nest within the project area or in the ornamental vegetation adjacent to the project area, are protected by the MBTA. In order to comply with the MBTA and avoid potential direct or indirect impacts to nesting birds, a pre-construction nesting bird survey shall be conducted prior to the start of clearing and grubbing if clearing or grubbing occurs within the nesting season (January 15 to August 31).

The following measure shall be implemented to reduce potential direct and indirect impacts to less than significant.

AMM-BIO-1 Nesting Bird Surveys. Construction-related ground-disturbing activities (e.g., clearing/grubbing, grading, and other intensive activities) that occur during the breeding season (January 15 through August 31) shall require a one-time biological survey for nesting bird species to be conducted within the limits of grading and a 500-foot buffer (where accessible, and habitat is present) within 72 hours prior to construction. This survey is necessary to ensure avoidance of impacts to nesting raptors and/or birds protected by the federal Migratory Bird Treaty Act and California Fish and Game Code, Sections 3503 and 3513. If any active nests are detected, the area shall be flagged and mapped on the construction plans or a biological resources figure, and the information provided to the construction supervisor and any personnel working near the nest buffer. Active nests will have buffers established around them (e.g., 250 feet for passerines to 500 feet for raptors) by the project biologist in the field with brightly colored flagging tape, conspicuous fencing, or other appropriate barriers or signage. The project biologist shall serve as a construction monitor during those periods when construction activities occur near active nest areas to ensure avoidance of inadvertent impacts to nesting birds. The project biologist may adjust the 250-foot or 500-foot setback at his or her discretion depending on the species and the location of the nest (e.g., if the nest is well protected in an area buffered by dense vegetation, or the species is more tolerant of human disturbance). Once the qualified biologist determines the nest to be no longer active, the biologist will remove the buffer and construction may proceed in the setback areas.

If construction activities, particularly clearing/grubbing, grading, and other intensive activities, stop for any period more than 3 days, an additional nesting bird survey shall be conducted to avoid potential impacts to nesting birds.

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8 References

CDFW (California Department of Fish and Wildlife). 2022a. RareFind, Version 5. California Natural Diversity Database (Commercial Subscription). Sacramento: CDFW, Biogeographic Data Branch. Accessed October 2022. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

CDFW. 2022b. "Special Vascular Plants, Bryophytes, and Lichens List." California Natural Diversity Database. Sacramento: CDFW, Biogeographic Branch. October 2022. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline.

CDFW. 2022c. "Special Animals List." California Natural Diversity Database. Sacramento: CDFW, Biogeographic Branch. October 2022. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline.

CDFW. 2022d. "California Natural Communities List." Sacramento: CDFW. July 5, 2022. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

City of Oceanside. 2010. *Final Oceanside Subarea Plan*. Accessed October 2022. https://www.ci.oceanside.ca.us/gov/dev/planning/subarea.asp.

CNPS (California Native Plant Society). 2022. *Inventory of Rare and Endangered Plants of California* (online edition, v9-01 1.5). Accessed October 2022. http://www.rareplants.cnps.org.

Crother, B.I. 2017. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding*, edited by J.J. Moriarty. 8th ed. Society for the Study of Amphibians and Reptiles (SSAR); Herpetological Circular No. 43.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.

Jepson Flora Project. 2022. Jepson eFlora. Berkeley, California: University of California. http://ucjeps.berkeley.edu/interchange/index.html.

Lovich, J.E., and J.R. Ennen. 2011. "Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States." *BioScience* 61(12): 982–992.

NABA (North American Butterfly Association). 2016. "Checklist of North American Butterflies Occurring North of Mexico." Adapted from North American Butterfly Association (NABA) Checklist & English Names of North American Butterflies, eds. B. Cassie, J. Glassberg, A. Swengel, and G. Tudor. 2nd ed. Morristown, New Jersey: NABA. http://www.naba.org/pubs/enames2_3.html.

NetrOnline. 2022. Historic Aerials. Accessed October 2022. https://www.historicaerials.com/viewer.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R.F. Holland, October 1986. March 2008.

SDNHM 2022. San Diego County Plant Atlas Project. https://www.sdnhm.org/science/botany/projects/plant-atlas/.

Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians.* 2nd ed. Peterson Field Guide Series. Boston, Massachusetts: Houghton Mifflin Company.

Tremor, S., ed. 2017. *San Diego County Mammal Atlas*. Illustrated by J. Zee. San Diego, California: San Diego Natural History Museum.

Unitt, P. 2004. *San Diego County Bird Atlas*. San Diego, California: San Diego Natural History Museum.

USDA. 2022a. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed October 2022. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

USDA. 2022b. "State Soil Data Access (SDA) Hydric Soils List." https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1389479.html.

USDA. 2022c. "California." State PLANTS Checklist. http://plants.usda.gov/dl_state.html.

USFWS. 2021. *Birds of Conservation Concern*. U.S. Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management. Updated 2021. https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf.

USFWS. 2022a. "Critical Habitat and Occurrence Data" [map]. USFWS Geospatial Services. Accessed October 2022. http://www.fws.gov/data.

USFWS. 2022b. "National Wetlands Inventory (NWI) Wetlands Mapper." https://www.fws.gov/wetlands/Data/Mapper.html.

SOURCE: USGS National Map 2022

DUDEK

0 500 1,000 Feet

FIGURE 1

Project Location

Oceanside Fire Station 8

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SOURCE: Bing Maps 2022

DUDEK

0 25 50 Feet

FIGURE 2

Biological Resources

Oceanside Fire Station 8

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SOURCE: Bing Maps 2022

DUDEK

0 25 50 Feet

FIGURE 3

Impacts

Oceanside Fire Station 8

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Appendix A

Plant Species Observed Within the Project Area

Plant Species

Dicots

ANACARDIACEAE – SUMAC FAMILY

* *Pistacia chinensis* – Chinese pistache
* *Searsia lancea* – African sumac

APIACEAE – CARROT FAMILY

* *Foeniculum vulgare* – fennel

APOCYNACEAE – DOGBANE FAMILY

* *Carissa macrocarpa* – natal plum

ASTERACEAE – SUNFLOWER FAMILY

Baccharis pilularis – coyote brush
Baccharis salicifolia – mulefat
Corethrogyne filaginifolia – sand-aster
* *Dittrichia graveolens* – stinkwort
* *Erigeron bonariensis* – asthmaweed
Erigeron canadensis – Canadian horseweed
* *Helminthotheca echioides* – bristly oxtongue
* *Lactuca serriola* – prickly lettuce
* *Sonchus oleraceus* – common sowthistle

CARYOPHYLLACEAE – PINK FAMILY

Spergularia macrotheca – sticky sandspurry

CHENOPODIACEAE – GOOSEFOOT FAMILY

* *Salsola tragus*– prickly Russian thistle

EUPHORBIACEAE – SPURGE FAMILY

* *Euphorbia peplus* – petty spurge

FABACEAE – LEGUME FAMILY

* *Acacia cyclops* – coastal wattle

OLEACEAE – OLIVE FAMILY

* *Ligustrum japonicum* – Japanese privet

PLATANACEAE – PLANE TREE, SYCAMORE FAMILY

Platanus racemosa – California sycamore

PLUMBAGINACEAE – LEADWORT FAMILY

* *Limonium sinuatum* – wavyleaf sea lavender

ROSACEAE – ROSE FAMILY

* *Raphiolepis indica* – Indian hawthorn

SALICACEAE – WILLOW FAMILY

Populus fremontii – Fremont cottonwood

TAMARICACEAE – TAMARISK FAMILY

* *Tamarix ramosissima* – tamarisk

Monocots

ARECACEAE – PALM FAMILY

* *Syagrus romanzoffiana* – queen palm
* *Washingtonia robusta* – Washington fan palm

POACEAE – GRASS FAMILY

* *Bromus diandrus* – ripgut brome
* *Bromus rubens* – red brome
* *Cynodon dactylon* – Bermudagrass

* signifies introduced (non-native) species

Appendix B

Wildlife Species Observed Within the Project Area

Wildlife Species

Vertebrates

Birds

CATHARTIDAE – NEW WORLD VULTURES

Cathartes aura – turkey vulture

COLUMBIDAE – PIGEONS AND DOVES

Zenaida macroura – mourning dove

CORVIDAE – JAYS AND CROWS

Corvus brachyrhynchos – American crow

FRINGILLIDAE – FINCHES

Carpodacus mexicanus – house finch

Carduelis psaltria – lesser goldfinch

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

TYRANNIDAE – FLYCATCHERS

Sayornis nigricans – black phoebe

Tyrannus vociferans – Cassin's kingbird

Invertebrates

Butterflies

NYMPHALIDAE – BRUSH-FOOTED BUTTERFLIES

Junonia coenia – common buckeye

Appendix C

Special Status Plant Species Not Expected or with Low Potential to Occur in the Project Area

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia villosa var. *aurita*	chaparral sand-verbena	None/None/1B.1	Chaparral, Coastal scrub, Desert dunes; Sandy/annual herb/(Jan)Mar–Sep/245–5,245	Not expected to occur. No suitable vegetation present. The site is highly disturbed. The site is surrounded by urban development.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay, Openings/annual herb/Apr–June/35–3,145	Not expected to occur. The habitat onsite is highly disturbed. The site is surrounded by urban development. The closest collection is in southern Carlsbad, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for San Diego thorn mint.
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1	Coastal dunes, Coastal scrub/annual herb/ Mar–June(July)/0–35	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. The site is surrounded by urban development. Nuttall's acmispon occurs on the coastline exclusively within coastal dune habitat (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Adolphia californica	California adolphia	None/None/2B.1	Chaparral, Coastal scrub, Valley and foothill grassland; Clay/perennial deciduous shrub/Dec–May/35–2,425	Not expected to occur. California adolphia would have been observed during reconnaissance field survey. In addition, the site is highly disturbed. The site is surrounded by urban development.
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1	Coastal bluff scrub, Coastal scrub/perennial leaf/Sep–May/ 10–395	Not expected to occur. No suitable vegetation present. Shaw's agave would have been observed during reconnaissance studies.
Allium marvinii	Yucaipa onion	None/None/1B.2	Chaparral/perennial bulbiferous herb/Apr–May/2,490–3,490	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Alkaline (sometimes), Clay (sometimes), Disturbed areas (often), Loam (sometimes), Sandy (sometimes)/perennial rhizomatous herb/Apr–Oct/ 65–1,360	Not expected to occur. San Diego ambrosia would have been observed during reconnaissance field survey. In addition, the site is highly disturbed. The site is surrounded by urban development. The closest collection is within Vista de la Via preserve (CCH 2022; San Diego plant atlas 2022; Calflora 2022).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Aphanisma blitoides	aphanisma	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/annual herb/ Feb–June/5–1,000	Not expected to occur. No suitable vegetation present. The site is surrounded by urban development. Aphanisma occurs only directly on coastal bluffs. Aphanisma has a distribution coastline distribution exclusively (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1	Chaparral/perennial evergreen shrub/June–Apr/0–1,195	Not expected to occur. Del mar manzanita would have been observed during reconnaissance studies. No suitable vegetation present. Del mar is limited to chaparral communities which are not present onsite Del Mar manzanita has a coastline chaparral distribution (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Arctostaphylos rainbowensis	Rainbow manzanita	None/None/1B.1	Chaparral/perennial evergreen shrub/Dec–Mar/675–2,195	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Rainbow manzanita would have been observed during reconnaissance studies.
Artemisia palmeri	San Diego sagewort	None/None/4.2	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Mesic, Sandy/perennial deciduous shrub/(Feb)May–Sep/50–3,000	Not expected to occur. No suitable vegetation present. San Diego sagewort would have been observed during the reconnaissance study. San Diego sagewort occurs within mesic habitats, riparian habitat and riparian woodlands which are not present onsite. The closest collection is near Camp Pendleton in native undisturbed habitat (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/SE/1B.1	Coastal bluff scrub, Coastal dunes, Coastal prairie; Mesic (often), Vernally Mesic (often)/annual herb/Mar–May/ 5–165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Coastal dunes milk-vetch occurs in coastal mesic areas and bluff scrub not present onsite. The site is highly disturbed and surrounded by development. Coastal dunes milkvetch occurs exclusively on the coast line and is documented only near Coronado, CA and Del Mar, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Atriplex coulteri	Coulter's saltbush	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Alkaline (sometimes), Clay (sometimes)/perennial herb/Mar–Oct/10–1,505	Not expected to occur. The site is highly disturbed. Coulter's saltbush is sensitive to high levels of disturbance and more likely to be to occur in alkaline habitat. The closest collection is within Camp Pendleton on the coastline (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Coulter's saltbush.
Atriplex pacifica	south coast saltscale	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0–460	Not expected to occur. No suitable vegetation present. The site is highly disturbed.
Baccharis vanessae	Encinitas baccharis	FT/SE/1B.1	Chaparral, Cismontane woodland; Sandstone/perennial deciduous shrub/Aug–Nov/195–2,360	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Encinitas baccharis would have been observed during reconnaissance studies in full bloom. The site is surrounded by urban development.
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/perennial bulbiferous herb/Apr–May/165–1,525	Low potential to occur. The site is highly disturbed and surrounded by urban development. Soils are so disturbed that this bulb species couldn't sustain the level of disturbance. The closest collections are south of Escondido, CA. No collections have been made near the city of Oceanside, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for San Diego goldenstar.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	Chaparral, Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)/perennial bulbiferous herb/Mar–June/80–3,670	Low potential to occur. The site is highly disturbed. Soils are so disturbed that bulb species couldn't sustain the level of disturbance. Thread-leaved brodiaea is collected within Mission mountain in Oceanside in undisturbed habitat (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for thread-leaved brodiaea.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay, Mesic/perennial bulbiferous herb/May–July/100–5,550	Low potential to occur. The site is highly disturbed and surrounded by urban development. Soils are so disturbed that bulb species couldn't sustain the level of disturbance. The closest collections are near San Marcos, CA and Vista, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Orcutt's brodiaea.
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2	Chaparral, Closed-cone coniferous forest/perennial evergreen shrub/Apr–June/ 770–2,475	Not expected to occur. Lakeside ceanothus occurs near the town of Lakeside, CA and Ramona, CA. The closest collection of Lakeside ceanothus to the site is in Mira Mesa (CCH 2022; San Diego plant atlas 2022; Calflora 2022). Lakeside ceanothus would have been observed during reconnaissance surveys. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2	Chaparral/perennial evergreen shrub/Dec–May/5–1,245	Not expected to occur. No suitable vegetation present. Wart-stemmed ceanothus would have been observed during the reconnaissance study. The site is highly disturbed and surrounded by urban development. The closest collection is near Carlsbad, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1	Marshes and swamps, Valley and foothill grassland, Vernal pools/annual herb/May–Nov/ 0–1,570	Low potential to occur. The site is highly disturbed and surrounded by development. Southern tarplant would have been observed during the reconnaissance study if present. Southern tarplant occurs in ponds, marshes, pools, mesic meadows and vernal pools which are not present onsite.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; Alkaline/annual herb/Apr–Sep/0–2,095	Low potential to occur. The site is highly disturbed and surrounded by development. Smooth tarplant would have likely been observed during the reconnaissance study if present. The closest recent collection is within Camp Pendleton. No collections have been made near the site (CCH 2022; San Diego plant atlas 2022; Calflora 2022).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1	Coastal bluff scrub, Coastal dunes/annual herb/Jan–Aug/ 0–330	Not expected to occur. No suitable vegetation present. Orcutt's pincushion occurs on sandy dunes and sandy coastal bluffs. The site has not habitat for this species.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE/1B.1	Chaparral, Closed-cone coniferous forest, Coastal scrub; Openings, Sandy/annual herb/Mar–May/10–410	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. The closest collection of Orcutt's spineflower is near Encinitas, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay (often)/annual herb/ Apr–July/100–5,015	Low potential to occur. The site is highly disturbed and surrounded by urban development. Long-spined spineflower is sensitive to disturbance. The closest collection is near Encinitas, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for long-spined spineflower.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2	Chaparral, Cismontane woodland/perennial evergreen shrub/Apr–June/100–2,590	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Summer holly would have been observed during reconnaissance studies. The closest collection is east of Vista, CA and other collection near and south of Carlsbad, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1	Chaparral, Coastal bluff scrub, Coastal scrub; Sandy/perennial herb/May–Sep/15–490	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development.
Cryptantha wigginsii	Wiggins' cryptantha	None/None/1B.2	Coastal scrub; Clay (often)/annual herb/Feb–June/ 65–900	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Wiggin's cryptantha is sensitive to any disturbance. The closest collection is near Camp Pendleton, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022). The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Wiggen's cryptantha.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1	Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Clay (often), Rocky, Serpentinite/perennial herb/Apr–June/15–1,475	Low potential to occur. The site is highly disturbed. Blochman's Dudleya is sensitive to any disturbance. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Blochman's Dudleya.
Dudleya multicaulis	many-stemmed dudleya	None/None/1B.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay (often)/perennial herb/Apr–July/ 50–2,590	Low potential to occur. The site is highly disturbed. Many stemmed Dudleya is sensitive to any disturbance. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for many-stemmed Dudleya.
Dudleya variegata	variegated dudleya	None/None/1B.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/perennial herb/ Apr–June/10–1,900	Low potential to occur. The site is highly disturbed and surrounded by urban development. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for variegated Dudleya.
Dudleya viscida	sticky dudleya	None/None/1B.2	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub; Rocky/perennial herb/May–June/35–1,800	Not expected to occur. No suitable vegetation present. No disturbance is required for sticky Dudleya. The site is highly disturbed.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1	Chaparral, Coastal scrub; Mesic/perennial evergreen shrub/(July)Sep–Nov/100–1,965	Not expected to occur. No suitable vegetation present. The closest collection is south of Carlsbad, CA but generally in south San Diego county near Rancho San Diego, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1	Coastal scrub, Valley and foothill grassland, Vernal pools; Mesic/annual/perennial herb/Apr–June/65–2,030	Low potential to occur. No vernal pools are present onsite. The site is highly disturbed and surrounded by urban development.
Eryngium pendletonense	Pendleton button-celery	None/None/1B.1	Coastal bluff scrub, Valley and foothill grassland, Vernal pools; Clay, Vernally Mesic/perennial herb/Apr–June(July)/50–360	Low potential to occur. The site is highly disturbed and surrounded by urban development. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Pendleton button celery.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2	Chaparral, Coastal dunes, Coastal scrub; Openings, Sandy/perennial herb/Feb–June (July–Aug)/0–195	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Euphorbia misera	cliff spurge	None/None/2B.2	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; Rocky/perennial shrub/ (Oct)Dec–Aug/35–1,640	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. Cliff spurge would have been observed during reconnaissance studies.
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/perennial stem/ May–June/10–1,475	Low potential to occur. San Diego barrel cactus would have been observed during reconnaissance studies. The site is highly disturbed.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Openings/annual herb/ Mar–May/65–3,130	Low potential to occur. The site is highly disturbed. Palmer's grapplinghook is sensitive to disturbance. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Palmer's grapplinghook requires clay soils which are not present onsite.
Hazardia orcuttii	Orcutt's hazardia	None/ST/1B.1	Chaparral, Coastal scrub; Clay (often)/perennial evergreen shrub/Aug–Oct/260–280	Not expected to occur. No suitable vegetation present. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Orcutt's hazardia.
Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	None/None/1B.1	Chaparral, Coastal dunes, Coastal scrub/perennial herb/Mar–Dec/0–4,015	Not expected to occur. No suitable vegetation present. Beach goldenaster is sensitive to disturbance. The site is highly disturbed. Beach golden aster would have been observed during reconnaissance studies.
Horkelia truncata	Ramona horkelia	None/None/1B.3	Chaparral, Cismontane woodland; Clay, Gabbroic/ perennial herb/May–June/ 1,310–4,265	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Ramona horkelia.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2	Chaparral, Coastal scrub/perennial shrub/ Apr–Nov/35–445	Not expected to occur. No suitable vegetation present. Decumbent goldenbush would have been observed during reconnaissance studies. The site is highly disturbed.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Iva hayesiana	San Diego marsh-elder	None/None/2B.2	Marshes and swamps, Playas/perennial herb/Apr–Oct/ 35–1,640	Not expected to occur. No suitable vegetation present. Marshes, swamps, riparian corridors are required for San Diego Marsh elder. San Diego marsh elder would have been observed during reconnaissance studies.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	Marshes and swamps, Playas, Vernal pools/annual herb/ Feb–June/5–4,000	Not expected to occur. No suitable vegetation present. No marshes, swamps or vernal pools are present which are required for Coulter's goldfields.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3	Chaparral, Coastal scrub/annual herb/Jan–July/5–2,900	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. Robinson's pepper-grass is sensitive to disturbance and occurs within coastal scrub and chaparral not present onsite.
Leptosyne maritima	sea dahlia	None/None/2B.2	Coastal bluff scrub, Coastal scrub/perennial herb/ Mar–May/15–490	Not expected to occur. No suitable vegetation present. The site is disturbed and surrounded by urban development. Sea dahlia would have been observed during reconnaissance studies.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2	Chaparral, Cismontane woodland/perennial rhizomatous herb/June–Aug/985–5,165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1	Valley and foothill grassland, Vernal pools/annual herb/ Mar–June/65–2,095	Low potential to occur. No vernal pools are present onsite. The site is highly disturbed.
Nama stenocarpa	mud nama	None/None/2B.2	Marshes and swamps/annual/perennial herb/ Jan–July/15–1,640	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Mud nama requires marshes or swamps which are not present onsite.
Navarretia fossalis	spreading navarretia	FT/None/1B.1	Chenopod scrub, Marshes and swamps, Playas, Vernal pools/ annual herb/Apr–June/ 100–2,145	Not expected to occur. No suitable vegetation present. Vernal pools are required for spreading navarretia which are not present onsite. The site is highly disturbed.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2	Coastal dunes/annual herb/Apr–Sep/0–330	Not expected to occur. No suitable vegetation present. Coast woolly heads occur in coastal dunes which are not present onsite. Current collections of Coast woolly heads occur on the coastline exclusively (CCH 2022; San Diego plant atlas 2022; Calflora 2022).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2	Coastal dunes, Desert dunes, Sonoran desert scrub/annual herb/(Mar)Apr–May/-,165–1,310	Not expected to occur. No suitable vegetation present. Slender cottonheads are very sensitive to disturbance and the site is highly disturbed and surrounded by urban development. Currently collections of Slender cottonheads occur on the coastline exclusively (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Nolina cismontana	chaparral nolina	None/None/1B.2	Chaparral, Coastal scrub; Gabbroic (sometimes), Sandstone (sometimes)/ perennial evergreen shrub/(Mar)May–July/460–4,180	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Chaparral nolina would have been observed during reconnaissance studies. The closest collection is east of Pala Mesa, CA (CCH 2022; San Diego plant atlas 2022; Calflora 2022).
Orcuttia californica	California Orcutt grass	FE/SE/1B.1	Vernal pools/annual herb/ Apr–Aug/50–2,165	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. California Orcutt grass is found within vernal pools which are not present onsite.
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2	Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy/perennial herb (parasitic)/Apr–Oct/10–1,000	Not expected to occur. No suitable vegetation present. No coastal dune habitat, coastal bluff scrub or coastal scrub is present onsite. Short-lobed broomrape is sensitive to disturbance. The site is highly disturbed and surrounded by development.
Phacelia stellaris	Brand's star phacelia	None/None/1B.1	Coastal dunes, Coastal scrub/annual herb/Mar–June/ 5–1,310	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Brand's star phacelia is sensitive to disturbance and occurs on coastal bluffs and coastal dunes not present onsite.
Pogogyne abramsii	San Diego mesa mint	FE/SE/1B.1	Vernal pools/annual herb/ Mar–July/295–655	Not expected to occur. No suitable vegetation present. The site is highly disturbed and no vernal pools are present onsite.
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; Gravelly, Sandy/perennial herb/(July)Aug–Nov(Dec)/0–6,885	Not expected to occur. No suitable vegetation present. The site is highly disturbed. White rabbit tobacco is sensitive to disturbance. Collection are within northern Camp Pendleton (CCH 2022; San Diego plant atlas 2022; Calflora 2022).

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1	Chaparral, Closed-cone coniferous forest, Coastal scrub; Clay, Loam, Sandy/perennial evergreen shrub/Feb–Apr(May–Aug)/50–1,310	Not expected to occur. No suitable vegetation present. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for Nuttall's scrub oak.
Salvia munzii	Munz's sage	None/None/2B.2	Chaparral, Coastal scrub/perennial evergreen shrub/Feb–Apr/375–3,490	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. Munz's sage would have been observed during reconnisance studies.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)/annual herb/Jan–Apr(May)/50–2,620	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. Chaparral ragwort is highly sensitive to any disturbance.
Sidalcea neomexicana	salt spring checkerbloom	None/None/2B.2	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; Alkaline, Mesic/perennial herb/Mar–June/50–5,015	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. Salt spring checkerbloom would have been observed during reconnaissance studies.
Sphaerocarpos drewiae	bottle liverwort	None/None/1B.1	Chaparral, Coastal scrub; Openings/ephemeral liverwort//295–1,965	Not expected to occur. No suitable vegetation present. The site has no cryptogamic crusts present since the soils is so disturbed and is surrounded by urban development.
Sphenopholis interrupta ssp. *californica*	prairie false oat	None/None/1B.1	Chaparral; Clay/annual herb/Apr/50–50	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. The project site consists of Las Flores loamy fine sand, 5 to 9 percent slopes (Soil Web 2022). Clay soils are required for prairie false oat.
Stemodia durantifolia	purple stemodia	None/None/2B.1	Sonoran desert scrub/perennial herb/(Jan)Apr–Dec/590–985	Not expected to occur. No suitable vegetation present. Purple stemodia also occurs in cobbly washes which are not present onsite. Sonoran desert scrub is not present.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Suaeda esteroa	estuary seablite	None/None/1B.2	Marshes and swamps/perennial herb/(Jan–May)July–Oct/0–15	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. No marshes or swamps or coastal lagoon habitat is present onsite.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2	Chaparral, Coastal scrub/perennial deciduous shrub/Apr–May/540–3,280	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. Parry's tetracoccus would have been observed during reconnaissance studies.

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Appendix D

Special Status Wildlife Species Not Expected or with Low Potential to Occur in the Project Area

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. No suitable vegetation present. No washes, riparian areas, sandy riverbanks, palm oasis, or sandy wet bank habitat onsite. The site is highly disturbed. No arroyo toad has been documented within 3 miles of the project site in all directions (CNDDB 2022).
Spea hammondii	western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Not expected to occur. No suitable vegetation present. The site is highly disturbed. No ponding water or areas with the potential for ponding water is present. No western spadefoot has been documented within 3 miles of the project site in all directions (CNDDB 2022).
Birds				
Accipiter cooperii (nesting)	Cooper's hawk	None/WL	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Low potential to occur (nesting). No suitable vegetation present. The site is surrounded by urban development. No oak, riparian woodland or woodland habitats are present, and no water is present. Ornamental vegetation is present and the majority of it is less than 3 ft in height.
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. No suitable vegetation present. No blackberries or cattails are present onsite. No freshwater or emergent wetland is present onsite. No tricolored blackbird has been documented within 3 miles of the project site (CNDDB 2022).
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Not expected to occur. No suitable vegetation present. The site is highly disturbed. No coastal sage scrub, chaparral or rocky and grassy patches within these communities occur onsite. No Southern California rufous crowned sparrow has been documented within 3 miles of the project site (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Aquila chrysaetos (nesting and wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur. No suitable vegetation present. No open cliffs, rim rock terrain or hilly open areas are present onsite. No golden eagle has been documented within 3 miles of the project site (CNDDB 2022).
Artemisiospiza belli belli	Bell's sage sparrow	None/WL	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Not expected to occur. No suitable vegetation present. No coastal sage scrub or chaparral is present onsite. The site is highly disturbed. No Bell's sage sparrow has been documented within 3 miles of the project site (CNDDB 2022).
Buteo swainsoni (nesting)	Swainson's hawk	None/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not expected to occur. No suitable vegetation present. No nesting habitat is present onsite. No grasslands or agriculture is present onsite.
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only)	coastal cactus wren	None/SSC	Southern cactus scrub patches	Not expected to occur. No suitable vegetation present. No cactus or cactus habitat is present onsite or near the site. The site is highly disturbed. No coastal cactus wren has been documented within 3 miles of the project site (CNDDB 2022).
Charadrius nivosus nivosus (nesting)	western snowy plover	FT, BCC/SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. No suitable vegetation present. No sandy marine or estuarine shores are present onsite. The site is highly disturbed and surrounded by urban development. Snowy plover are not documented within 3 miles of the site in all directions (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Circus hudsonius (nesting)	northern harrier	BCC/SSC	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Not expected to occur. No suitable vegetation present. No wetlands, wet meadows or old fields, freshwater and or brackish marshes are present onsite. The site is highly disturbed and surrounded by urban development.
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT/SE	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. No suitable vegetation present. No riparian woodland or riparian forest is present onsite. The site is highly disturbed. No occurrence of western yellow-billed cuckoo occur within 3 miles of the project site (CNDDB 2022).
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Not expected to occur. No suitable vegetation present. White tailed kite nesting habitat is not present onsite. The site is highly disturbed and surrounded by urban development.
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. No suitable vegetation present. No willow riparian habitat is present onsite. The site is highly disturbed. No suitable habitat for nesting. No occurrences of southwestern willow flycatcher have been documented within 3 miles of the project site (CNDDB 2022).
Eremophila alpestris actia	California horned lark	None/WL	This subspecies of horned lark occurs on the state's southern and central coastal slope and in the San Joaquin Valley. Nests and forages in grasslands, disturbed lands, agriculture, and beaches.	Low potential to occur. No suitable vegetation present. The site is highly disturbed and surrounded by urban development. No California horned lark have been documented within 3 miles of the project site in all directions (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to occur. No suitable vegetation present. No willow riparian forest is present onsite. The site is highly disturbed. No suitable habitat for nesting. No yellow breasted chat have been documented within 3 miles of the site in all directions (CNDDB 2022).
Ixobrychus exilis (nesting)	least bittern	None/SSC	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	Not expected to occur. No suitable vegetation present. No freshwater or brackish marshes are present onsite. No aquatic or semi-aquatic vegetation is present. No least bittern have been documented within 3 miles of the site in all directions (CNDDB 2022).
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. No suitable vegetation present. No tidal marshes, shallow freshwater, wet meadows or flooded vegetation is present onsite. The site is highly disturbed. No California black rail have been documented within 3 miles of the site in all directions (CNDDB 2022).
Passerculus sandwichensis beldingi	Belding's savannah sparrow	BCC/SE	Nests and forages in coastal saltmarsh dominated by pickleweed (Salicornia spp.)	Not expected to occur. No suitable vegetation present. The site is highly disturbed. Nests in coastal saltmarsh which is not present onsite. No Belding's savannah sparrow have been documented within 3 miles of the site in all directions (CNDDB 2022).
Plegadis chihi (nesting colony)	white-faced ibis	None/WL	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Not expected to occur. No suitable vegetation present. No shallow marshes, or emergent vegetation, muddy ground, wet meadow, marshes or ponds are present onsite. The site is highly disturbed. No white faced ibis have been documented within 3 miles of the site in all directions (CNDDB 2022).
Polioptila californica californica	coastal California gnatcatcher	FT/SSC	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat;	Not expected to occur. No suitable vegetation present. Coastal California Gnatcatcher occur nearby within the CNDDB but no habitat for Coastal California Gnatcatcher is present onsite.

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
			generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	
Rallus obsoletus levipes	Ridgway's rail	FE/FP, SE	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not expected to occur. No suitable vegetation present. No coastal wetlands, brackish areas, or coastal saline emergent wetlands are present onsite. The site is highly disturbed. No ridgeway's rail has been documented within 3 miles of the site in all directions (CNDDB 2022).
Riparia riparia (nesting)	bank swallow	None/ST	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	Not expected to occur. No suitable vegetation present. No sandy cliffs, vertical banks or bluffs, structures or riparian habitat is present onsite. The site is highly disturbed. No bank swallows have been documented within 3 miles for the site in all directions (CNDDB 2022).
Setophaga petechia (nesting)	yellow warbler	None/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. No suitable vegetation present. No willow riparian habitat is present onsite. The site is highly disturbed. No yellow warblers have been observed within 3 miles of the site in all directions (CNDDB 2022).
Sternula antillarum browni (nesting colony)	California least tern	FE/FP, SE	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Not expected to occur. No suitable vegetation present. No shallow estuaries or lagoons are present onsite. The site is highly disturbed. No California least tern have been observed within 3 miles of the site in all directions (CNDDB 2022).
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur. No suitable vegetation present. No willow riparian habitat is present onsite. The site is highly disturbed.

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Fishes				
Eucyclogobius newberryi	tidewater goby	FE/None	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	Low potential to occur. No brackish water is present onsite or near the site. No brackish water is present onsite. No tidewater goby has been observed within 3 miles of the site in all directions (CNDDB 2022).
Gila orcuttii	arroyo chub	None/SSC	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	Low potential to occur. No streams are present onsite or near the site. No streams are present onsite. The site is highly disturbed. No arroyo chub has been observed within 3 miles of the site in all directions (CNDDB 2022).
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/None	Open grassland and scrub communities supporting suitable floral resources.	Low potential to occur. No suitable floral resources are present onsite. The site is highly disturbed. No crotch bumble bee has been observed within 3 miles of the project site in all directions (CNDDB 2022).
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vegetation present. Vernal pools are required for San Diego fairy shrimp. No vernal pools are present or areas with ponding water. San Diego fairy shrimp has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Cicindela senilis frosti	senile tiger beetle	None/None	Inhabits marine shoreline, from Central California coast south to saltmarshes of San Diego; also found at Lake Elsinore	Not expected to occur. No suitable vegetation present. No shorelines or saltmarshes are present onsite. Senile tiger beetle has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Danaus plexippus pop. 1	monarch	FC/None	Wind-protected tree groves with nectar sources and nearby water sources	Not expected to occur. No suitable vegetation present. No overwintering habitat is present onsite. The site is highly disturbed and has limited nectar resources.

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Streptocephalus woottoni	Riverside fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vegetation present. No vernal pools are present. The site is highly disturbed. Riverside fairy shrimp has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None/None	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County	Low potential to occur. No coastal lagoons, estuaries or saltmarshes are present onsite. California brackish water snail has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Cicindela latesignata	western beach tiger beetle	None/None	Mudflats and beaches in coastal Southern California	Not expected to occur. No suitable vegetation present. No mudflats and or beaches are present onsite. The site is highly disturbed. Western beach tiger beetle has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Mammals				
Aeorestes cinereus	northern hoary bat	None/None	Forest, woodland riparian, and wetland habitats; also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	Not expected to occur. No suitable vegetation present. No forest, woodland riparian, wetland habitat or riparian forest is present. The site is highly disturbed. Roosting habitat is not present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Low potential to occur. No rocky outcrops for roosting occur onsite. The site is highly disturbed and surrounded by development. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Not expected to occur. No suitable vegetation present. No quality habitat occurs onsite for Dulzura pocket mouse. Dulzura pocketmouse has not been observed within 3 miles of the project site in all directions (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	Not expected to occur. No suitable vegetation present. No northwestern San Diego pocket mouse has been observed within 3 miles of the project site in all directions (CNDDB 2022).
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. No suitable vegetation present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Not expected to occur. No suitable vegetation present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Dasypterus xanthinus	western yellow bat	None/SSC	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Not expected to occur. No suitable vegetation present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	Not expected to occur. No suitable vegetation present. No Stephen's kangaroo rat has been observed within 3 miles of the project site in all directions (CNDDB 2022).
Eumops perotis californicus	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Not expected to occur. No suitable vegetation present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Leptonycteris yerbabuenae	lesser long-nosed bat	FPD/SSC	Sonoran desert scrub, semi-desert grasslands, lower oak woodlands	Not expected to occur. No suitable vegetation present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Not expected to occur. No suitable vegetation present. The site is surrounded by urban development. Limited access for San Diego black-tailed jackrabbit is present.
Myotis yumanensis	Yuma myotis	None/None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Low potential to occur. No riparian, arid scrublands or desert habitat associated with water is present. The site is highly disturbed. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Not expected to occur. No suitable vegetation present. San Diego desert woodrat has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not expected to occur. No suitable vegetation present. No sensitive bat species have been observed within 3 miles of the project site in all directions (CNDDB 2022).
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. No suitable vegetation present. Pacific pocket mouse has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. No suitable vegetation present. No badger were observed onsite. American badger has not been observed within 3 miles of the project site in all directions (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Reptiles				
Anniella stebbinsi	southern California legless lizard	None/SSC	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Not expected to occur. No suitable vegetation present. Sandy soils are present onsite but the site is heavily disturbed therefore providing limited potential for southern California legless lizard. Southern California legless lizard has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Arizona elegans occidentalis	California glossy snake	None/SSC	Arid scrub, rocky washes, grasslands, chaparral, open areas with loose soil	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by development. California glossy snake has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Aspidoscelis hyperythra	orange-throated whiptail	None/WL	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by development. Orange throated whiptail has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by development. San Diegan tiger whiptail has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Crotalus ruber	red diamondback rattlesnake	None/SSC	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by development. Red diamondback rattlesnake has not been observed within 3 miles of the project site in all directions (CNDDB 2022).
Diadophis punctatus similis	San Diego ringneck snake	None/None	Moist habitats including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed-conifer forest, and woodland habitats	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by development. No San Diego ringneck snake has been documented in all directions within 3 miles of the project site (CNDDB 2022).

Row Labels	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Emys marmorata	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. No suitable vegetation present. No streams, ponds, lakes or any reservoirs are present onsite. The site is highly disturbed. No western pond turtle was observed within 3 miles of the project site (CNDDB 2022).
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Not expected to occur. No suitable vegetation present. The site is highly disturbed and surrounded by development. Blainville's horned lizard require native habitat which is not present onsite. No Blainville's horned lizard has been observed within 3 miles of the project site (CNDDB 2022).
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	Not expected to occur. No suitable vegetation present. The site is highly disturbed. No Coronado skink has been observed within 3 miles of the project site in all directions (CNDDB 2022).
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Not expected to occur. No suitable vegetation present. The site is highly disturbed. No coast patch-nosed snake has been observed within 3 miles of the project site in all directions (CNDDB 2022).
Thamnophis hammondii	two-striped gartersnake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur. No suitable vegetation present. The site is highly disturbed. No two-striped gartersnake has been observed within 3 miles of the site in all directions (CNDDB 2022).
Thamnophis sirtalis ssp. (Southern California coastal plain from Ventura County to San Diego County, and from sea level to about 850 m)	south coast garter snake	None/SSC	Marsh and upland habitats near permanent water and riparian vegetation	Not expected to occur. No suitable vegetation present. The site is highly disturbed. No south coast garter snake has been observed within 3 miles in all directions of the project site (CNDDB 2022).

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Appendix C

Cultural Resources Inventory Report for Addendum No. 3 to the Regional Recycled Water Project Program EIR (Dudek 2018)

Cultural Resources Inventory Report
for
Addendum No. 3 to the North San Diego Water Reuse Coalition Regional Recycled Water Project Program Environmental Impact Report
(State Clearinghouse No. 2014081028)

Prepared for:

City of Oceanside
300 North Coast Highway
Oceanside, California 92054

Prepared by:

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JULY 2018

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ACRONYMS AND ABBREVIATIONS

APE	area of potential effects
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
City	City of Oceanside
CRHR	California Register of Historical Resources
MLD	most likely descendent
MM	mitigation measure
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
PEIR	Program Environmental Impact Report
PRC	California Public Resources Code
project	Addendum No. 3 to the North San Diego Water Reuse Coalition Regional Recycled Water Project Final Program Environmental Impact Report
RWP	Regional Recycled Water Project

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NATIONAL ARCHAEOLOGICAL DATABASE (NADB) INFORMATION

Authors:	Matthew DeCarlo, MA; Brad Comeau, MSc, RPA; Micah J. Hale, PhD, RPA
Firm:	Dudek
Project Proponent:	City of Oceanside
Report Date:	July 2018
Report Title:	Cultural Resources Inventory Report for Addendum No. 3 to the North San Diego Water Reuse Coalition Regional Recycled Water Project Program Environmental Impact Report (State Clearinghouse No. 2014081028)
Type of Study:	Cultural Resources Inventory
Resources:	CA-SDI-6136, CA-SDI-11970, CA-SDI-12241, CA-SDI-12262, CA-SDI-14784, CA-SDI-13744, CA-SDI-17549
USGS Quads:	Morro Hill, CA (1968), San Luis Rey, CA (1997); Township 10 South, Range 4 West, Sections: 23, 26, 27, 33, 34, and 35; Township 11 South, Range 4 West, Sections: 3–8, 15–22, and 28–30
Acreage:	627
Permit Numbers:	N/A
Keywords:	San Luis Rey River; Luiseño; intensive pedestrian survey; bedrock milling station; handstone; millingstone; biface; flakedstone tool; prehistoric, isolate, CA-SDI-6136, CA-SDI-11970, CA-SDI-12241, CA-SDI-12262, CA-SDI-14784, CA-SDI-13744, CA-SDI-17549

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MANAGEMENT SUMMARY

The City of Oceanside (City) proposes a series of projects to expand tertiary recycled water treatment capacity at the San Luis Rey Waste Water Treatment Plant. These projects are components of the North San Diego Water Reuse Coalition Regional Recycled Water Project (RWP) Program Environmental Impact Report (PEIR); the Final RWP PEIR was certified by Olivenhain Municipal Water District (the lead agency) in October 2015 (North San Diego Water Reuse Coalition 2015a). The City adopted two addendums to the RWP PEIR in February 2016 and April 2017, addressing modifications to the RWP. The City is now proposing another addendum (Addendum No. 3) to the RWP PEIR to address additional minor changes to the locations and sizes of proposed pipelines and facilities within the City. The City contracted Dudek to prepare Addendum No. 3 for the RWP PEIR (project). As a requirement of mitigation measure MM 3.5-2a from the RWP PEIR (North San Diego Water Reuse Coalition 2015b), a cultural resources inventory was conducted for Addendum No. 3 to the RWP PEIR. The City is the lead agency responsible for compliance with the California Environmental Quality Act for the current project.

The cultural resources inventory included seven facilities: Morro Heights Reservoir, Morro Heights Pump Station, Fire Mountain Reservoir, Fire Mountain Pump Station, Mesa Pump Station, Old Grove Reservoir, and Old Grove Pump Station. The proposed project would also include installation of 24 pipeline alignments: L1B, L2B, L3, L4B, L8, L9A, L10, L11A, L12, L15B, L17, L18, L19, U1, U2, U3, U5, U7, U8, U9, U12, U13, U14, and U15. The area of potential effects (APE) for the cultural resources inventory encompasses 627 acres spread throughout the City of Oceanside.

This inventory included a records search of data obtained from the South Coastal Information Center at San Diego State University. The records search found that 436 studies were conducted within 1 mile of the project's APE, and 92 of these studies cover portions of the project's APE (i.e., within the APE). These previous studies identified 178 cultural resources within 1 mile of the project APE, seven of which are located within the APE.

A survey of the project's APE was conducted on December 27, 2017, and May 29, 2018. The APE is located in a highly developed area and it was determined prior to field work that survey of the entire APE would be unnecessary. Large portions of the APE are covered by buildings, pavement, and landscaping, obscuring any remnants of archaeological sites that may be present. The survey team first conducted a reconnaissance survey of the entire APE in a motor vehicle. This allowed the survey team to assess the APE and earmark less developed portions of the APE, which then underwent intensive pedestrian survey. The survey team then revisited previously identified resources within the APE, but did not identify any new resources.

Of the seven cultural resources previously identified within the project APE, two have been demolished (CA-SDI-11970 and CA-SDI-17549), two are located outside of the proposed work areas and can be avoided (CA-SDI-12241 and CA-SDI-13744), and two were determined to be inaccurately mapped and located outside of the project APE. At the final resource (CA-SDI-12262), subsurface observations suggested that no undisturbed sediments or cultural materials are present within the site boundary within the APE. If the City commits to avoiding the extant resources within the project APE, the current project would not impact any known resources.

1 PROJECT DESCRIPTION AND LOCATION

The City of Oceanside (City) proposes a series of projects to expand tertiary recycled water treatment capacity at the San Luis Rey Waste Water Treatment Plant and create two distribution systems, referred to as the Lower San Luis Rey Water Reclamation Facility and Upper San Luis Rey Water Reclamation Facility. These projects are components of the North San Diego Water Reuse Coalition Regional Recycled Water Project (RWP) Final Program Environmental Impact Report (PEIR). The RWP PEIR was certified by Olivenhain Municipal Water District (the lead agency) in October 2015 (North San Diego Water Reuse Coalition 2015a). Since then the City adopted two addendums to the RWP PEIR—in February 2016 and April 2017—to address minor technical changes, to create a Mitigation and Monitoring Reporting Program (MMRP), and to create a California Environmental Quality Act (CEQA) Findings of Fact and Statement of Overriding Considerations for the City's recycled water program. The City is now proposing another addendum (Addendum No. 3) to the RWP PEIR to address minor changes to the locations and sizes of proposed pipelines and facilities (proposed modifications). The City is the lead agency responsible for compliance with CEQA for Addendum No. 3 to the RWP PEIR (project). The City contracted Dudek to prepare the current addendum for the RWP PEIR. As a requirement of mitigation measure (MM) 3.5-2a from the RWP PEIR (North San Diego Water Reuse Coalition 2015b), a cultural resources inventory was conducted for the project's area of potential effects (APE).

The design phase of the project includes seven facilities: Morro Heights Reservoir, Morro Heights Pump Station, Fire Mountain Reservoir, Fire Mountain Pump Station, Mesa Pump Station, Old Grove Reservoir, and Old Grove Pump Station. The project would also include installation of 24 pipeline alignments: L1B, L2B, L3, L4B, L8, L9A, L10, L11A, L12, L15B, L17, L18, L19, U1, U2, U3, U5, U7, U8, U9, U12, U13, U14, and U15. The proposed project components are spread throughout the City of Oceanside (see Figures 1a through 1d, Project Location). The 627-acre APE is located on the Morro Hill and San Luis Rey, California U.S. Geological Survey quadrangles. The APE consists of the project footprints of all proposed project facilities, temporary work areas, and all pipeline routes (see Figures 2a through 2j, APE). To ensure that any adjacent archaeological resources are identified, the APE includes a 100-foot buffer surrounding the proposed pipeline routes. Large portions of the APE are located within highly developed areas, and preferential placement of the pipeline is within existing utility corridors and paved roadways. In compliance with MM 3.5-2a of the RWP PEIR (North San Diego Water Reuse Coalition 2015b), a pedestrian survey has been deemed unnecessary in highly developed areas of the APE with no visible native ground (see Section 3, Methods). The entire APE was subject to a reconnaissance survey in a vehicle so that less-developed areas could be identified and earmarked for pedestrian survey.

This report documents the results of the archaeological resources inventory for the proposed project, including a records search, reconnaissance vehicle survey, pedestrian survey, resource documentation, and Native American participation. The goal of this inventory is to provide data to the City of Oceanside to aid in the management of archaeological resources during implementation of the project.

1.1 Regulatory Context

This project is subject to state and local regulations regarding cultural resources. The following section provides a summary of the applicable regulations, policies, and guidelines relating to the proper management of cultural resources for this project.

1.1.1 California Register of Historical Resources

In California, per the California Public Resources Code (PRC) the term "cultural resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's cultural resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). A resource is eligible for listing in the CRHR if the State Cultural Resources Commission determines that it is a significant resource and that it meets any of the following criteria (PRC Section 5024.1(c)):

1. Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. 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.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Per the California Code of Regulations (CCR), resources less than 50 years old are not considered for listing in the CRHR, but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR, Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the National Register of Historic Places (NRHP), and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local cultural resource surveys. The State Historic Preservation Office maintains the CRHR.

1.1.2 Native American Historic Cultural Sites

The Native American Historic Resources Protection Act (PRC Section 5097 et seq.) addresses the disposition of Native American burials in archaeological sites, and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Native American Heritage Commission (NAHC) to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy a Native American historic or cultural site that is listed or may be eligible for listing in the CRHR.

1.1.3 California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act, enacted in 2001, required all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of those remains and items on or before January 1, 2003, with certain exceptions. The California Native American Graves Protection and Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

1.1.4 California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are relevant to the analysis of archaeological and historic resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define cultural resources. In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change" in the significance of a cultural resource. It also defines the circumstances when a project would materially impair the significance of a cultural resource.
- PRC Section 21074 (a): defines "tribal cultural resources" and Section 21074(b) defines a "cultural landscape."

- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures. Preservation-in-place is identified as the preferred manner of mitigating impacts to significant archaeological sites.

Under CEQA, a project may have a significant impact on the environment if it may cause "a substantial adverse change in the significance of an [sic] cultural resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). A "cultural resource" is any site listed or eligible for listing in the CRHR. The term "cultural resource" also includes any site described in a local register of historic resources, or identified as significant in a cultural resources survey (meeting the requirements of PRC Section 5024.1(q)).

CEQA also applies to "unique archaeological resources." PRC Section 21083.2(g) defines a "unique archaeological resource" as any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In 2014, CEQA was amended through Assembly Bill 52 to apply to "tribal culture resources" as well. Specifically, PRC Section 21074 provides guidance for defining tribal cultural resources as either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: (A) included or determined to be eligible for inclusion in the California Register of Cultural Resources or (B) included in a local register of cultural resources as defined in subdivision (k) of §5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in

> subdivision (c) of §5024.1. In applying the criteria set forth in subdivision (c) of §5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe. A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

All cultural resources and unique archaeological resources—as defined by statute—are presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a cultural resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5(a)). A site or resource that does not meet the definition of a "cultural resource" or "unique archaeological resource" is not considered significant under CEQA and need not be analyzed further (PRC Section 21083.2(a); 14 CCR 15064.5(c)(4)).

Under CEQA, a significant cultural impact results from a "substantial adverse change in the significance of an [sic] cultural resource [including a unique archaeological resource]" due to the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an cultural resource would be materially impaired" (14 CCR 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a cultural resource is materially impaired when a project (14 CCR 15064.5(b)(2)):

1. Demolishes or materially alters in an adverse manner those physical characteristics of an cultural resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of cultural resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an cultural resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a cultural resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, CEQA first evaluates whether a project site contains any "cultural resources," then assesses whether that project would cause a substantial adverse change in the significance of a cultural resource such that the resource's historical significance is materially impaired.

When a project significantly affects a unique archaeological resource, CEQA imposes special mitigation requirements. Specifically (PRC Sections 21083.2(b)(1)–21083.2(b)(4)):

> [i]f it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:
>
> 1. Planning construction to avoid archaeological sites.
> 2. Deeding archaeological sites into permanent conservation easements.
> 3. Capping or covering archaeological sites with a layer of soil before building on the sites.
> 4. Planning parks, greenspace, or other open space to incorporate archaeological sites.

If "preservation in place" options are not feasible, mitigation may be accomplished through data recovery (PRC Section 21083.2(d); 14 CCR 15126.4(b)(3)(C)). PRC Section 21083.2(d) states that:

> [e]xcavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report.

These same requirements are set forth in slightly greater detail in CEQA Guidelines Section 15126.4(b)(3), as follows (14 CCR 15126.4(b)(3)):

A. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between

artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

B. Preservation in place may be accomplished by, but is not limited to, the following:
   1. Planning construction to avoid archaeological sites;
   2. Incorporation of sites within parks, greenspace, or other open space;
   3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site[; and]
   4. Deeding the site into a permanent conservation easement.
C. When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the cultural resource, shall be prepared and adopted prior to any excavation being undertaken.

Note that, when conducting data recovery, "[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation" (14 CCR 15126.4(b)(3)). However, "[d]ata recovery shall not be required for an cultural resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Cultural resources Regional Information Center" (14 CCR 15126.4(b)(3)(D)).

Finally, CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are set forth in PRC Section 5097.98.

1.1.5 California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the county coroner has examined the remains (California Health and Safety Code, Section 7050.5b). If the coroner determines or has reason to believe that the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (California Health and Safety Code Section 7050.5c). The NAHC will notify the most likely descendent (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within

48 hours of the MLD being granted access to the site. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

1.1.6 City of Oceanside Historic Preservation Ordinance

Chapter 14A of the City of Oceanside Municipal Code, referred to as the Historic Preservation Ordinance, identifies evaluation criteria under which a historical site or area may be designated (Section 14A.6, Ordinance No. 82-14, Section 1, 9-8-82):

a) It exemplifies or reflects special elements of the city's cultural, social, economic, political, aesthetic, engineering, or architectural history; or

b) It is identified with persons or events significant in local, state, or national history; or

c) It embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or

d) It is representative of the notable work of a builder, designer, or architect; or

e) It is found by the council to have significant characteristics which should come under the protection of this chapter.

1.2 Project Personnel

Brad Comeau, MSc, RPA, served as principal investigator and co-authored this technical report. Matthew DeCarlo, MA, served as project manager and co-authored this technical report. Scott Wolf and Patrick Hadel served as field leads (see Appendix A, Project Personnel Qualifications). Kenny Teter of Saving Sacred Sites participated in the survey and geotechnical exploration as a Native American monitor.

1.3 Report Structure

Following this introduction, a cultural and environmental context is provided for characterizing cultural resources. Next, archival research and survey methods are reviewed. A description of the archival research and survey results follow. Recommendations and management considerations complete this report. Two sets of appendices (confidential and non-confidential) are attached. The non-confidential appendix is Appendix A, Project Personnel Qualifications. The confidential appendices consist of Appendix B, Records Search Documents; Appendix C, NAHC Sacred Lands File Search and Tribal Correspondence; Appendix D, DPR Site Record Updates; and Appendix E, Resource Location Maps.

2 PROJECT BACKGROUND

2.1 Natural Setting

The project site extends from its southwestern boundary at the proposed Fire Mountain Reservoir facility located between Loma Alta and Buena Vista Creeks, to its northeastern boundary at pipeline U12 near Morro Hill (see Figures 1a through 1d). The elevation of the project site ranges from approximately 100 feet above mean sea level near the crossing of San Luis Rey River by pipeline L1B to nearly 900 feet above mean sea level at pipeline U12. Topography of the project site ranges from generally flat mesa terraces to riparian riverbeds. Large segments of the project are planned within existing developed areas and paved roads, but some segments would traverse undeveloped open space.

2.2 Cultural Setting

Evidence for continuous human occupation in the San Diego County region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769).

2.2.1 Paleoindian (pre-5500 BC)

Evidence in coastal Southern California for Paleoindian occupation is tenuous, especially considering that the oldest dated archaeological assemblages look nothing like the Paleoindian artifacts from the Great Basin. One of the earliest dated archaeological assemblages in coastal Southern California (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2007). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of groundstone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large-stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on China Lake Naval Air Weapons Station near Ridgecrest, California. These sites contained fluted and unfluted

stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site—and MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare and finely made projectile points were common.

Some of the earliest dated assemblages in coastal Southern California are dominated by processing tools, which runs counter to traditional notions of mobile hunter/gatherers traversing the landscape for highly valued prey. Evidence for the latter—that is, typical Paleoindian assemblages—may have been located along the coastal margin at one time, prior to glacial desiccation and a rapid rise in sea level during the early Holocene (pre-7500 BP) that submerged as much as 1.8 kilometers of the San Diego coastline. If this were true, however, it would also be expected that such sites would be located on older landforms near the current coastline. Some sites, such as SDI-210 along Agua Hedionda Lagoon, contained stemmed points similar in form to Silver Lake and Lake Mojave projectile points (pre-8000 BP) that are commonly found at sites in California's high desert (Basgall and Hall 1990). SDI-210 yielded one corrected radiocarbon date of 8520–9520 BP (Warren et al. 2004). However, sites of this nature are extremely rare and cannot be separated from large numbers of milling tools that intermingle with old projectile point forms.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego region that possibly dates to between 10,365 and 8200 BC (Warren et al. 2004, p. 26). Termed San Dieguito (Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in the San Diego region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the San Diego region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and

cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1990).

2.2.2 Archaic (8000 BC–AD 500)

The more than 1,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the San Diego region. If San Dieguito is the only recognized Paleoindian component in the San Diego region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the San Diego region (Hale 2001, 2009).

The Archaic pattern is relatively easy to define, with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the San Diego region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around AD 500, and ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities, and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped groundstone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

2.2.3 Late Prehistoric (AD 500–1769)

The period following the Archaic and prior to Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. In northern San Diego County, the post-AD 1450 period is called the San Luis Rey Complex (True 1980), while the same period in southern San Diego County is called the Cuyamaca Complex and is thought to extend from AD 500 until Ethnohistoric times (Meighan 1959). Rogers (1929) also subdivided the last 1,000 years into the Yuman II and III cultures based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey and Cuyamaca complexes difficult. For this reason, the term "Late Prehistoric" is well-suited to describe the last 1,500 years of prehistory in the San Diego region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric period are poorly understood. This is partly because the fundamental Late Prehistoric assemblage is similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces; bowl mortars are actually rare in the San Diego region. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400. True (1980) argued that acorn processing and ceramic use in the northern San Diego region did not occur until the San Luis Rey pattern emerged after approximately AD 1450. For southern San Diego County, the picture is less clear. The Cuyamaca Complex is the southern counterpart to the San Luis Rey pattern, and is most recognizable after AD 1450 (Hector 1984). Similar to True (1980), Hale (2009) argued that an acorn economy did not appear in the southern San Diego region until just prior to Ethnohistoric times, and that when it did occur, a major shift in social organization followed.

2.2.4 Ethnohistoric (post-AD 1769)

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the San Diego region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and

were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the San Diego region brought more extensive documentation of Native American communities, although these groups did not become the focus of formal, in-depth ethnographic study until the early 20th century (Bean and Shipek 1978; Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; Sparkman 1908; White 1963). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005:32) by recording languages and oral histories within the San Diego region. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early 20th century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities. These accounts supported, and were supported by, previous governmental decisions that made San Diego County the location of more federally recognized tribes than anywhere else in the United States: 18 tribes on 18 reservations that cover more than 116,000 acres (CSP 2009).

Even though there were many informants for these early ethnographies who were able to provide information from personal experiences about native life before the Europeans, a significantly large proportion of these informants were born after 1850 (Heizer and Nissen 1973); therefore, the documentation of precontact, aboriginal culture was being increasingly supplied by individuals born in California after considerable contact with Europeans. As Robert F. Heizer (1978) stated, this is an important issue to note when examining these ethnographies, since considerable culture change had undoubtedly occurred by 1850 among the Native American survivors of California.

The traditional cultural boundaries between the Luiseño and Kumeyaay Native American tribal groups have been well defined by anthropologist Florence C. Shipek (1993 summarized by the San Diego County Board of Supervisors, County of San Diego 2007:6):

> In 1769, the Kumeyaay national territory started at the coast about 100 miles south of the Mexican border (below Santo Tomas), thence north to the coast at the drainage divide south of the San Luis Rey River including its tributaries. Using the U.S. Geological Survey topographic maps, the boundary with the Luiseño then follows that divide inland. The boundary continues on the divide separating Valley Center from Escondido and then up along Bear Ridge to the 2240 contour line and then

north across the divide between Valley Center and Woods Valley up to the 1880-foot peak, then curving around east along the divide above Woods Valley.

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006:34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007:71). The Native American inhabitants of the region of the proposed project (Oceanside) would have generally spoken a Luiseño variety of Takic, although they would have had likely come into regular contact with the Ipai-speaking northern Kumeyaay.

Victor Golla has contended that the amount of variability within specific language groups can be interpreted as being associated with the relative "time depth" of the speaking populations (Golla 2007:80). A large amount of variation within the language of a group represents a greater time depth than language with less internal diversity. One method that Golla has employed is drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (Golla 2007:71). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

Golla suggests that there are two language families associated with Native American groups who traditionally lived throughout the San Diego County region. The northern San Diego tribes have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007:74). These groups include the Luiseño, Cupeño, and Cahuilla. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan circa 2600 BC–AD 1, which was later followed by the diversification within the Takic-speaking San Diego region tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010). The Luiseño are linguistically and culturally related to the Gabrielino, Cupeño, and Cahuilla, and represent the descendants of local Late Prehistoric populations. They are generally considered to have migrated into the area from the Mojave Desert, possibly displacing the prehistoric ancestors of the Yuman-speaking Kumeyaay (Ipai-Tipai) who lived directly to the south during Ethnohistoric times. Luiseño territory encompassed an area roughly from what is now Agua Hedionda Creek on the coast, east to Lake Henshaw, north to Lake Elsinore, and west through San Juan Capistrano to the coast (Bean and Shipek 1978; Kroeber 1925). The Luiseño shared boundaries with the Gabrielino and Serrano to the west and northwest, the Cahuilla from the deserts to the east, the Cupeño to the southeast, and the Kumeyaay to the south. Southern Native American tribal groups of the San Diego region

have traditionally spoken Yuman languages, a subgroup of the Hokan Phylum. Golla has suggested that the time depth of Hokan is approximately 8,000 years (Golla 2007:74). The Kumeyaay tribal communities share a common language group with the Cocopa, Quechan, Maricopa, Mojave, and others to east, and the Kiliwa to the south. The time depth for both the Ipai (north of the San Diego River, from Escondido to Lake Henshaw) and the Tipai (south of the San Diego River, the Laguna Mountains through Ensenada) is approximated to be 2,000 years at the most. Laylander has contended that previous research indicates a divergence between Ipai and Tipai to have occurred approximately AD 600–1200 (Laylander 1985). Despite the distinct linguistic differences between the Takic-speaking tribes to the north, the Ipai-speaking communities in central San Diego, and the Tipai southern Kumeyaay, attempts to illustrate the distinctions between these groups based solely on cultural material alone have had only limited success (Pigniolo 2004; True 1966).

The Uto–Aztecan inhabitants of the northern San Diego County region were called Luiseños by Franciscan friars, who named the San Luis Rey River and established the San Luis Rey Mission in the heart of Luiseño territory. Luiseño population estimates at the time of Spanish contact range from 3,000 to 4,000 (Kroeber 1925) to upward of 10,000 (White 1963). In either case, the arrival of the Spanish undoubtedly decimated native peoples through disease and changed living conditions (Bean and Shipek 1978).

The Luiseño were organized into patrilineal clans or bands of 25 to 30 people centered on a chief (Kroeber 1925). Each band had its own territorial land or range where food and other resources were collected at different locations throughout the year (Sparkman 1908). The title of chief was heritable along family lines. Inter-band conflict was most common over trespassing. Sparkman observed that “when questioned as to when or how the land was divided and sub-divided, the Indians say they cannot tell, that their fathers told them that it had always been thus” (Sparkman 1908). Place names were assigned to each territory, often reflecting common animals, plants, physical landmarks, or cosmological elements that were understood as being related to that location. Marriages were generally arranged by parents or guardians. Free and widowed women had the option to choose their partner. Polygamy occurred, although was not common, often with a single man marrying a number of sisters. Shamanism was a major component in tribal life. The physical body and its components was thought to be related to the power of an individual, and wastes such as fluids, hair, and nails were discarded with intent. Hair, once cut, was often carefully collected and buried to avoid being affected negatively or controlled by someone who wishes them harm. Some locations and natural resources were of cultural significance. Springs and other water-related features were thought to be related with spirits. These resources, often a component of origin stories, had power that came with a variety of risks and properties to those who became affected. Puberty ceremonies for both boys and girls were complex and rigorous.

Mourning ceremonies were similar throughout the region, generally involving cutting of the hair, burning of the deceased's clothes a year after death, and redistribution of personal items to individuals outside of the immediate tribal group (Kroeber 1925; Sparkman 1908).

The staple food of the Luiseños during the ethnohistoric period was acorns (Sparkman 1908). Of the at least six oak species within this tribal group's traditional territory, the most desirable of these was black oak (*Quercus kelloggii*) due to its ease of processing, protein content, and digestibility. Acorns were stored in granaries to be removed and used as needed. The acorns were generally processed into flour using a mortar and pestle. The meal was most commonly leached with hot water and the use of a rush basket, but there are also accounts of placing meal into excavated sand-and-gravel pits to allow the water to drain naturally. The acorn was then prepared in a variety of ways, although often with the use of an earthen vessel (Sparkman 1908). Other edible and medicinal plants of common use included wild plums, choke cherries, Christmas berry, gooseberry, elderberry, willow, *Juncus*, buckwheat, lemonade berry, sugar bush, sage scrub, currents, wild grapes, prickly pear, watercress, wild oats, and other plants. More arid plants such as *Yucca, Agave*, mesquite, chia, bird-claw fern, *Datura*, yerba santa, *Ephedra*, and cholla were also of common use by some Luiseño populations. A number of mammals were commonly eaten. Game animals included back-tailed deer, antelope, rabbits, hares, birds, ground squirrels, woodrats, bears, mountain lions, bobcats, coyotes, and others. In lesser numbers, reptiles and amphibians may have been consumed. Fish and marine resources provided food for some portion of many tribal communities, although most notably those nearest the coast. Shellfish would have been procured and transported inland from three primary environments: sandy open coast, bay and lagoon, and rocky open coast. The availability of these marine resources changed with rising sea levels, the siltation of lagoon and bay environments, changing climatic conditions, and intensity of use by humans and animals (Sparkman 1908).

2.2.5 Historic Period

Mission San Luis Rey was founded in 1798 in the northeastern area of what would become Oceanside. After Mexico's successful war for independence in 1821, Mexico passed the Secularization Act of 1833 to combat the potential Spanish influence of the missions, which remained loyal to the Roman Catholic Church in Spain after the war. The Mexican government confiscated mission properties between 1834 and 1836; they broke up the properties and either sold them or gave them away to private citizens. This ushered in the Rancho Era, where large tracts of secularized land were held by private individuals and families until the Mexican–American War began in 1846. Part of the Mission property, approximately 2,260 acres to the west of Mission San Luis Rey, was granted in 1845 by Governor Pio Pico to Andrés and José Manuel, local Luiseño Indians, and became Rancho Guajome (Hoffman 1862). Another rancho,

Rancho Santa Margarita, was located just north of present-day Oceanside, and Rancho Agua Hedionda was located to the south (Alexander 1912).

During the 1870s, early pioneers moved into the region and founded the Township of San Luis Rey. In 1882, railroad construction began between Riverside and San Diego. One year later, Andrew Jackson Myers applied for a Homestead Grant in what would become downtown Oceanside. On July 3, 1888, the City of Oceanside was incorporated and the first train depot was built. Oceanside continued to grow, with expansion during the 1920s spurred on by construction of a highway through the town that connected Los Angeles and San Diego. In 1942, the Navy took control of Rancho Santa Margarita and renamed it Camp Joseph H. Pendleton. Construction of Camp Pendleton led to a population boom in Oceanside as military members and their families moved into the area; by 1950, the population had nearly tripled. The continued presence of Camp Pendleton and the growth of population in Southern California as a whole led to Oceanside becoming the third largest city in San Diego County (City of Oceanside n.d.; Oceanside Historical Society 2018).

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3 METHODS

The purpose of this cultural resources inventory was to compile an inventory of all resources within the project APE to determine possible impacts to cultural resources. To complete the inventory, a review of all known resources and the identification of all new resources was necessary. Because the project APE navigates through highly developed areas, much of the APE has been previously inventoried and most resources have been previously identified. However, since many of these previous surveys were conducted more than 10 years ago, an updated survey was deemed necessary.

3.1 South Coastal Information Center Records Search

In compliance with MM 3.5-2a of the Draft RWP PEIR (North San Diego Water Reuse Coalition 2015b), an examination of existing maps, records, and reports was conducted by Dudek staff to determine if the project could potentially impact previously recorded cultural resources. Dudek staff conducted a records search in January 2017 of data obtained from the South Coastal Information Center at San Diego State University. The search encompassed the APE and a 1-mile buffer around the APE (see Confidential Appendix B). The purpose of the records search was to identify any previously recorded resources that may be located in or adjacent to the project site and to identify previous studies in the project vicinity. In addition to a review of previously prepared site records and reports, the records search also involved review of historical maps of the project site and vicinity; ethnographies; the NRHP; the CRHR; the California Historic Property Data File; and the lists of California State Historical Landmarks, California Points of Historical Interest, and Archaeological Determinations of Eligibility.

3.2 Native American Correspondence

In compliance with MM 3.5-2a of the Draft RWP PEIR (North San Diego Water Reuse Coalition 2015b), a search of the NAHC Sacred Lands File was conducted for the project APE on January 25, 2017 (Confidential Appendix C). A search of this type requires NAHC staff to review the list for the presence of Native American sites, which are organized spatially based on a Public Land Survey System section grid (measuring 1 square mile). The NAHC response letter included a list of Native American representatives who should be contacted for information about these sites.

Outreach letters were mailed on January 26, 2017, to all Native American group representatives included on the NAHC contact list (Confidential Appendix C). These letters attempt to solicit additional information these representatives have relating to resources that may be affected by the project. Native American representatives were requested to define a general area where

known resources intersect the project APE. This helps to guide communications with tribal groups and representatives that maintain traditional associations with the area.

Under CEQA, the lead agency is required to perform formal government-to-government consultation with Native American tribes under Assembly Bill 52. Assembly Bill 52 is applicable to projects that have a notice of preparation or a notice of negative declaration on or after July 1, 2015. Because the current project is an addendum to the RWP PEIR, which released its notice of preparation prior to July 1, 2015, Assembly Bill 52 consultation was not required.

3.3 Survey

In compliance with MM 3.5-2a of the Draft RWP PEIR, a survey of the project APE was conducted on December 27, 2017, and May 29, 2018. The APE is located in a highly developed area, and it was determined prior to field work that survey of the entire APE would be unproductive. Large portions of the APE's surface is covered by buildings, pavement, or landscaping, obscuring any remnants of archaeological sites. The historical significance of these built-environment features are being addressed in another technical study prepared for the project (Dotter 2018). The survey team first conducted a reconnaissance survey of the entire APE in a motor vehicle. This vehicle survey allowed the survey team to assess the APE and identify undeveloped, or at least less developed, portions of the APE where ground surface was visible and archaeological resources could be identified. The survey team also revisited previously identified resources within the APE.

Linear portions of the APE, such as proposed pipeline routes, were surveyed using transects parallel to the route at 10-meter intervals. Larger, more open portions of the APE, such as proposed facility footprints, were surveyed using a combination of north/south and east/west transects at 15-meter intervals. In this manner, all portions of traversable land were subject to pedestrian survey. Portions of the APE that were so steep that they presented a safety risk or were so densely vegetated that ground visibility was completely obscured were not surveyed. Likewise, portions of the APE that were located on private property were not subject to pedestrian survey unless the survey team was granted access.

An iPad Air with georeferenced project maps and GPS capabilities was used to aid surveying and site recordation. Records of sites previously identified within the APE were loaded onto the iPad for field reference. Field work was conducted under the supervision of Dudek archaeologist Matthew DeCarlo. Patrick Hadel served as field lead during the survey, and Kenny Teter of Saving Sacred Sites participated in the survey as the Native American monitor.

The intent of the survey was to identify the presence and status of previously recorded and unrecorded resources within the project APE to determine the possible impacts the project might have on cultural resources. By being aware of their presence, the City can implement measures, when possible, to avoid impacts to the cultural resources in the APE. Because avoidance of cultural resources is the preferred method of mitigation, this inventory assumed avoidability of cultural resources within the APE, meaning that resources that were difficult or unsafe to access, such as those located on private property or beyond some natural barrier such as a hillside or drainage, were not always surveyed, since their avoidability was evident.

Documentation of cultural resources complied with the Office of Historic Preservation's and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Federal Register 44716–44740), and the California Office of Historic Preservation's Planning Bulletin Number 4(a). Any sites identified during this inventory would have been recorded on California Department of Parks and Recreation Form DPR 523 (Series 1/95) using the Instructions for Recording Cultural Resources (Office of Historic Preservation 1995). Updated site forms for each resource encountered are included in Confidential Appendix D and will be submitted to the South Coastal Information Center.

Visibility throughout the project APE was restricted due to development. The areas immediately adjacent to the proposed project facilities have been repeatedly graded. Although this provided excellent ground visibility, it also would have disturbed any cultural resource that may have been present. The northeastern portions of the APE are less developed. The terrain in these areas was dominated by hillsides used for various agricultural activities. This reduced ground visibility to less than 5%, and there is also strong evidence of continued disturbance.

3.4 Geotechnical Exploration Monitoring

To determine if subsurface cultural deposits were present in the vicinity of the proposed Fire Mountain Reservoir and Fire Mountain Pump Station facilities, Dudek archaeologist Scott Wolf and Saving Sacred Sites Native American monitor Rey Mojado observed preliminary geotechnical investigations at the Fire Mountain facilities site. The geotechnical investigation is required for project design and construction considerations, and it also provided Dudek the opportunity to determine the stratigraphy of the proposed construction site and determine if intact subsurface cultural deposits are potentially present. See Section 4.4, Geotechnical Testing Monitoring, for the results of this effort.

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4 RESULTS

This section presents the results of the archival searches and the vehicle and pedestrian surveys.

4.1 South Coastal Information Center Records Search

The records search identified 178 cultural resources within 1 mile of the APE. Of the 178, seven cultural resources fall within the APE (see Table 1 for resources in the APE; see also Confidential Appendix B for the remaining resources). The prehistoric sites in the APE include four lithic and shell artifact scatters and a habitation campsite. The one historic-period site in the APE consists of a refuse dump. The one multicomponent site in the APE consists of a historic residence with outbuildings and two prehistoric bedrock milling features. To date, one of the resources has been recorded as destroyed and one (CA-SDI-12262) has been previously evaluated and recommended eligible for listing in the CRHR.

The records search also identified 436 previous archaeological studies that have been conducted within 1 mile of the APE. Of the 436 studies, 92 studies cover a large portion of the APE (see the table provided in Confidential Appendix B). Although most of the APE has been previously surveyed, 347 of these surveys were conducted more than 10 years ago.

Table 1
Previously Recorded Cultural Resources Within the Project's Area of Potential Effects

Primary Number	Trinomial	Era	Description	NRHP/CRHR Eligibility	Project Component
P-37-006136	CA-SDI-6136	Prehistoric	Lithic and shell scatter	Destroyed	L1B
P-37-011970	CA-SDI-11970	Multi-component	Historic residence and outbuildings and two bedrock milling features	Not evaluated	U1; U3
P-37-012241	CA-SDI-12241	Prehistoric	Flake and groundstone scatter	Not evaluated	U3
P-37-012262	CA-SDI-12262	Prehistoric	Campsite	Recommended CRHR eligible	Fire Mountain Reservoir; Fire Mountain Pump Station
P-37-016290	CA-SDI-14784	Prehistoric	Shell and lithic scatter	Not evaluated	L18
P-37-019037	CA-SDI-13744	Prehistoric	Shell and lithic scatter	Not evaluated	U5
P-37-026841	CA-SDI-17549	Historical	Refuse dump	Not eligible	U1

4.2 Native American Correspondence

A search of the NAHC Sacred Lands File was conducted for the project APE on January 25, 2017 (Confidential Appendix C). The NAHC responded stating that sites have been located

within the project APE, and advised that the San Luis Rey Band of Mission Indians and the La Jolla Band of Luiseño Indians be contacted.

In a telephone conversation with Dudek, Chairman Thomas Rodriguez of the La Jolla Band of Luiseño Indians deferred Native American recommendations to Carmen Mojado of the San Luis Rey Band of Mission Indians. On February 21, 2017, Carmen Mojado and PJ Stoneburner of the San Luis Rey Band of Mission Indians met with Dudek archaeologists to analyze project maps. The group analyzed each facility location and pipeline alignment to determine if the San Luis Rey Band was aware of any cultural resources that might be impacted by the proposed project. Ms. Mojado expressed concern for the developments at Fire Mountain Reservoir and Fire Mountain Pump Station, since previous finds suggest this area is culturally sensitive. Ms. Mojado also expressed concerns for a topographic feature important to the Luiseño that is located adjacent to the project site. Ms. Mojado requested that further review be conducted during fieldwork to ensure that this feature will not be directly or indirectly impacted by the project. The survey results alleviated Ms. Mojado's concerns, and she agrees that the project would not have an impact on the important topographic feature (see Confidential Appendix C).

The NAHC response letter also included a list of other Native American group representatives who should be contacted for information about these sites. Outreach letters were mailed on January 26, 2017, to all Native American group representatives included on the NAHC contact list (Confidential Appendix C). To date, three recipients have responded to the outreach letter. Victoria Harvey, the archaeological monitoring coordinator for the Agua Caliente Band of Cahuilla Indians, responded on February 1, 2017, and stated that the project is not located within the tribe's traditional use area and the tribe defers to other tribes in the area. Shasta Gaughen, tribal historic preservation officer for the Pala Band of Mission Indians, responded on February 16, 2017, and stated that the project is beyond the boundaries of the tribe's traditional use area. However, due to the proximity of the project site, the tribe requested to be on the receiving list for project updates and any documents generated regarding discovered resources. Merri Lopez-Keifer, chief legal counsel for the San Luis Rey Band of Mission Indians, responded to the outreach letter on February 14, 2017, and stated that the tribe is aware of tribal cultural resource sites within proximity to the project site. Ms. Lopez-Keifer urged caution and requested the presence of a Luiseño Native American monitor during all ground-disturbing activities and cultural resource surveys. She also requested an in-person meeting with Ms. Mojado regarding tribal cultural resources in proximity to the project site.

4.3 Survey Results

Using a combination of vehicular and pedestrian survey, the entire project APE was inventoried. The inventory revisited the seven previously identified archaeological resources within the APE,

but did not identify any new resources within the project APE (Table 2). The condition of each of these resources and proximity to the project APE are described below. Resource location maps showing the resource proximity to the APE can be found in Confidential Appendix E.

Table 2
Cultural Resources in Proximity to the Project's Area of Potential Effects

Primary Number	Era	Description	NRHP/CRHR Eligibility	Project Component	Component Proximity
CA-SDI-6136	Prehistoric	Lithic and shell scatter	Not evaluated	L1B	Outside of APE
CA-SDI-11970	Multi-component	Historic residential complex and two bedrock milling features	Destroyed	U1; U3	Intersects APE
CA-SDI-12241	Prehistoric	Flake and groundstone scatter	Not evaluated	U3	Within 100 feet of APE
CA-SDI-12262	Prehistoric	Campsite	CRHR eligible; part of site determined not eligible	Fire Mountain Reservoir; Fire Mountain Pump Station	Intersects APE
CA-SDI-14784	Prehistoric	Shell and lithic scatter	Not evaluated	L18	Outside of APE
CA-SDI-13744	Prehistoric	Shell and lithic scatter	Not evaluated	U5	Within 100 feet of APE
CA-SDI-17549	Historical	Refuse dump	Not eligible; destroyed	U1	Within 100 feet of APE

P-37-006136; CA-SDI-6136

This prehistoric resource was identified in 1978 and included four hammerstones; a lithic scatter; and a scatter of *Chione*, *Argopecten*, *Donax*, and oyster shell (Franklin and Thesken 1978). Situated on a ridgeline, the scatter was described as being previously disturbed by the construction of the San Luis Rey Substation. This resource was revisited in 2014 during monitoring activities for the San Luis Rey Substation. No artifacts were observed and the archaeologist postulated that the site was destroyed by construction of the paved road and transmission line. Upon further review of the original site record (Franklin and Thesken 1978), it appears that there is some confusion as to the location of the resource. The text and the site location map of the site record describe the site as being located 60 meters west of El Camino Real and north of the former alignment of Mesa Road, while the sketch map shows the site to be south of Mesa Road and 40 meters east of El Camino Real.

The current study revisited the recorded location of the site but was unable to identify any remnants of the scatter within the project APE. It is not clear if the site has been destroyed as suggested in the 2014 site record or whether the resource was incorrectly mapped and still extant outside of the project APE. The current site visit did confirm that there is no evidence of the resource within the project APE.

P-37-011970; CA-SDI-11970

This multicomponent resource was identified in 1990. The historical component is a homestead consisting of a large house, a barn, several other outbuildings, and 104 fragments of "historic material." The prehistoric component consists of 32 milling elements on a bedrock outcrop that overlooks the San Luis Rey River. The prehistoric scatter included approximately 100 lithic flakes, six lithic tools, three handstones, and five potsherds.

The current study revisited the recorded site boundary of CA-SDI-11970 and found the area to be completely developed. A residential housing development now covers the resource boundary and there is no remnant of either the historic structures or prehistoric features. Aerial maps show that the resources site boundary was completely graded by 2009, which removed all historic structures, prehistoric milling features, and surface artifacts. Pipeline alignment U3 bisects the northeastern extent of the originally recorded site boundary. Pipeline alignment U1 is adjacent to but outside of the western boundary of the resource.

P-37-012241; CA-SDI-12241

This prehistoric resource was identified in 1991 and consists of a small lithic scatter. Recorded artifacts included 30 felsite, andesite, chert, and chalcedony flakes and a granitic millingstone fragment. The current study revisited CA-SDI-12241 and found it largely undeveloped, but the area had been recently disked. The survey team surveyed the southern portion of the site, which falls within the U3 pipeline alignment portion of the project APE. A possible handstone was identified within the CA-SDI-12241 site boundary but outside of the roadbed where the City proposes installation of the U3 pipeline.

P-37-012262; CA-SDI-12262

This prehistoric resource was originally recorded as SDM-W-140 in the 1930s by Malcolm Rogers as a Luiseño campsite containing midden, ceramic sherds, cobble hearths, and small "tanks cut into sandstone." In 1991 the site was described as located north of Fire Mountain Drive and west of Eternal Hills Memorial Park and Mortuary, and as severely disturbed. The only artifacts identified were a possible flake and a possible handstone. A pocket of midden with shell was present in the southeastern portion of Fire Mountain facility site. In 2000, the eastern portion of CA-SDI-12262

was tested and recommended eligible for listing in the CRHR; the remainder of the site was not evaluated at that time. Additional testing was completed in 2005 south of Fire Mountain Drive that identified one biface, three debitage, one groundstone, three fire-affected rocks, historic glass and ceramics, and a small amount of bone and shell. As a result of the 2005 efforts, the portion of the site south of Fire Mountain Drive was determined not eligible for listing in the CRHR (i.e., it is not a contributing element to the overall eligibility of the site).

The current study revisited the portion of CA-SDI-12262 that falls within the proposed Fire Mountain Reservoir and Fire Mountain Pump facilities. The current study found the resource in the same condition as described in 1991. The area has been heavily developed with construction of an existing tank reservoir, pump house, and graded pad. Proposed work for the project would be located within the graded pad area adjacent to the existing facilities. Only the southeastern portion of the facility has not been heavily developed, and a few shell fragments are observable on the surface in that area. No evidence of the midden deposit was observed during the current survey.

P-37-016290; CA-SDI-14784

This prehistoric resource was identified 1998 as a lithic and shell scatter. The lithic materials include three pieces of debitage and one unifacial tool. The shell scatter consists of *Chione*, *Donax*, and some A*rgopecten*. GIS shapefiles obtained from the South Coastal Information Center suggest that the southwestern portion of the resource is within Fire Mountain Drive. Review of the site record shows that the resource is located "approximately 30 meters north of Fire Mountain Drive," and therefore is outside of the APE. The current survey revisited the mapped portion of the site within the APE, but found no artifacts or shell. The area north of Fire Mountain Drive is blocked by a fence, so no access to that area was possible. The terrain is largely modified north of the road, but the site may still be intact. No cultural resources were identified during the current survey. Pipeline alignment L18 is proposed to be installed in Fire Mountain Drive, approximately 98 feet south of the correctly mapped location of this resource.

P-37-019037; CA-SDI-13744

This prehistoric resource was identified in 1994 as a shell and lithic artifact scatter located on the San Luis Rey River floodplain. No other description of the resource is available. The current study revisited the site boundary of CA-SDI-13744 and found that the site boundary is located within the San Luis Rey River corridor. Heavy vegetation limited access and ground visibility at the resource site, which is located immediately off of the shoulder of North River Road and the U3 pipeline alignment. The survey team surveyed the cleared shoulder of the roadside and found no cultural materials.

P-37-026841; CA-SDI-017549

This historical resource was identified in 2005 as a refuse scatter located in a plowed field on a flat terrace next to a drainage. The site was tested using eight shovel test units and surface collection. Approximately 150 artifacts were collected, including glass, ceramics, metal, brick, and building materials. The excavations determined that the scatter was limited to the upper 20 centimeters of the site. The field had been repeatedly plowed and the artifacts were out of context. As a result of testing, the site was determined to be not eligible for listing in the CRHR.

The current study revisited the recorded site boundary of CA-SDI-17549 and found that the area has been completely developed. A shopping center and parking lot now cover the recorded site boundary. The shallow resource was destroyed during construction of the shopping center. Pipeline alignment U1 is located immediately east of the previous resource boundary.

4.4 Geotechnical Testing Monitoring

The records search identified CA-SDI-12262 (P-37-012262) as within the Fire Mountain facilities site. Archaeological survey of the area did not identify any evidence of the site on the ground surface in the immediate location of the proposed Fire Mountain Reservoir or Fire Mountain Pump Station facility. A small scatter of marine shell was identified in the southeast portion of the Fire Mountain facilities site, but no construction activities are proposed for this section of the property. MM 3.5-2b of the RWP PEIR states that if resources are identified within the project site that cannot be avoided, they must be evaluated to determine if they are eligible for listing in the CRHR (North San Diego Water Reuse Coalition 2015b).

On October 24, 2017, a cultural team monitored the excavation of four geotechnical auger tests at the Fire Mountain facilities site. The four auger tests were placed within the proposed locations of the Fire Mountain Reservoir facility and the Fire Mountain Pump Station. As geotechnical samples were extracted from varying depths, the monitoring team observed the soil types and inspected the samples for evidence of subsurface cultural deposits. Auger tests 1, 2, and 3 revealed dry, loosely compacted sand loams in the upper 0.3 to 0.6 meters and then straight compact sandstone. Under 0.6 meters, the augers struck an old terrace formation similar to Santiago Formation that extended to the augers' terminal depth at 6.4 meters. Auger 4 revealed fine-grained sandstone sands from 0 to 6.4 meters. No cultural materials or evidence of midden were observed in any of the auger tests. Given the general uniformity of the sediments, it was determined that no intact deposits are present in this area.

5 MANAGEMENT CONSIDERATIONS

5.1 Resource Management

This cultural resources inventory of the project APE was conducted in compliance with MM 3.5-2a of the Draft RWP PEIR (North San Diego Water Reuse Coalition 2015b) and per CEQA. This inventory will assist the City in managing cultural resources throughout construction of the proposed project. Because avoidance is the preferred method of managing resources, the current survey focused on the proximity of resources to each proposed project component, and discussed the feasibility of avoiding impacts to the resources. Table 3 summarizes the findings, including project component, resource proximity, current evaluation status, and recommended management measures for each cultural resource within the project APE.

As described in Section 4, Results, of this inventory, seven resources have been identified within the project APE. Of these seven resources, analysis of site records and the current survey confirmed that two are no longer extant. Site visits indicated that these resources have been demolished by construction of a residential neighborhood (CA-SDI-11970) and a shopping center (CA-SDI-26841). Two other sites (CA-SDI-12241 and CA-SDI-13744) are located within the project APE but do not intersect the existing roadbed where proposed pipeline would be installed. Impacts to these two resources would be avoided, provided that all project activities are limited to the existing roadbed. Should project activities extend beyond the existing roadbed and intersect these resources, evaluation of the two resources will be necessary. Review of site records suggests that two resources (CA-SDI-6136 and CA-SDI-14784) were inaccurately mapped and are not located within the project APE. A portion of the remaining site, CA-SDI-12262, is located within the Fire Mountain facility site. The recent survey only identified surface evidence of the resource within a portion of the facility site that will not be subject to construction activities. Archaeological and Native American monitoring of geotechnical tests revealed that there is no potential for subsurface cultural deposits in the proposed location of the Fire Mountain Reservoir or Fire Mountain Pump Station facilities. Measures such as demarking construction limits and protective fencing can be used to avoid inadvertent impacts to the extant portion of CA-SDI-12262 that falls within the Fire Mountain facility site.

There is a potential to encounter buried archaeological resources when conducting ground-disturbing activities in proximity to previously documented cultural resources. Archaeological and Native American monitors should be present during initial ground-disturbing project activities within 100 feet of previously recorded resource locations. A review of site records suggest that two resources, CA-SDI-6136 and CA-SDI-14784, are located outside of the APE. However, due to confusion with their locations, it would be prudent to monitor excavations within 100 feet of the recorded locations of these resources.

There are two exceptions to this monitoring recommendation. Previous subsurface archaeological testing at CA-SDI-17549 revealed that no cultural materials were discovered below 20 centimeters. Mass grading during construction of the shopping center in 2009 would have removed any remnant of CA-SDI-17549. Also, the current study involved observing geotechnical testing at CA-SDI-12262. The testing revealed that the soils were culturally sterile to depths of 6.4 meters. As such, archaeological and Native American monitoring is not necessary within 100 feet of CA-SDI-12262 or CA-SDI-17549.

Table 3
Resource Summary Table

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Component	Project Proximity	Management Recommendation
CA-SDI-6136	Prehistoric	Lithic and shell scatter	Not evaluated	L1B	Outside of APE	Monitor within 100 feet of original site location
CA-SDI-11970	Multi-component	Historic residential complex and two bedrock milling features	Destroyed	U1; U3	Intersects with APE	Monitor within 100 feet
CA-SDI-12241	Prehistoric	Flake and groundstone scatter	Not evaluated	U3	Within 100 feet of APE	Avoidance; monitor within 100 feet
CA-SDI-12262	Prehistoric	Campsite	Recommended CRHR eligible	Fire Mountain Reservoir; Fire Mountain Pump Station	Intersects with APE	Avoidance; temporary fencing during construction
CA-SDI-14784	Prehistoric	Shell and lithic scatter	Not evaluated	L18	Outside of APE	Monitor within 100 feet of original site location
CA-SDI-13744	Prehistoric	Shell and lithic scatter	Not evaluated	U5	Within 100 feet of APE	Avoidance; monitor within 100 feet
CA-SDI-17549	Historical	Refuse dump	Not eligible; destroyed	U1	Within 100 feet of APE	None; no longer extant

5.2 Mitigation Measures

The current project must comply with the mitigation measures dictated in the RWP PEIR. Mitigation Measures 3.5-2a, 3.5-2b, 3.5-2c, 3.5-2d, 3.5-2e, and 3.5-4 would reduce potential adverse impacts to known and previously undiscovered cultural resources. The City will be the lead agency implementing the cultural resource mitigation measures. Below are Dudek's recommendations as they relate to the RWP PEIR mitigation measures; the numbers and letters correspond to the mitigation measures from the RWP PEIR.

MM 3.5-2a **Conduct a Phase I Archaeological Resources Assessment.** This inventory was conducted to comply with Mitigation Measure (MM) 3.5-2a. As such, this inventory included the following specified requirements: a cultural resources records searches through the South Coastal Information Center (SCIC), a Sacred Lands File search through the Native American Heritage Commission and follow-up Native American consultation, and a pedestrian survey of the project's area of potential effects (APE). The findings of this Phase I archaeological resources assessment are that cultural resources are present within the project APE, but they can be avoided. As such, Dudek recommends that implementation of MM 3.5-2b from the RWP PEIR is not required.

MM 3.5-2c **Conduct Archaeological Sensitivity Training for Construction Personnel.** In addition to the topics required by Mitigation Measure 3.5-2c from the RWP PEIR, Dudek recommends that construction personnel training include a discussion concerning resources located in proximity to designated work areas. Resources CA-SDI-12241, CA-SDI-12262, and CA-SDI-13744 are located adjacent to work areas. The potential to impact these resources would be avoided, provided construction personnel do not leave designated work areas.

MM 3.5-2d **Monitor and Report Construction Excavations for Archaeological Resources.** Among other criteria, this mitigation measure states that the frequency of monitoring shall be based on the proximity of construction excavations to known archaeological resources. It further states that full-time monitoring can be reduced to part-time inspections if determined adequate by the archaeological monitor. Due to the proximity of known archaeological resources to proposed work areas, Dudek recommends that full-time monitoring occur within 100 feet of the previously identified resource locations for CA-SDI-6136, CA-SDI-11970, CA-SDI-12241, CA-SDI-14784, and CA-SDI-13744. If initial monitoring reveals that these locations have a low potential to encounter archaeological resources, the monitoring schedule could be reduced, as stated in Mitigation Measure 3.5-2d. Monitors shall also be present during the initial development of the Fire Mountain facilities to ensure avoidance of CA-SDI-12262.

6 REFERENCES

Alexander, William E. 1912. Plat Book of San Diego County, California. Los Angeles: Pacific Plat Book Co.

Basgall, M.E., and M. Hall. 1990. "Adaptive Variation in the North-Central Mojave Desert." Paper presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas, Nevada.

Basgall, M.E., L. Johnson, and M.J. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bean, L.J., and F.C. Shipek. 1978. "Luiseño." In *Handbook of North American Indians, Vol. 8, California*, edited by R.F. Heizer, 550–563. Washington, D.C.: Smithsonian Institution.

Boscana, G. 1846. "Chinigchinich: A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In *Life in California*, edited by A. Robinson, 227–341. New York, New York: Wiley & Putnam.

Byrd, B.F., and S.N. Reddy. 2002. "Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms." In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records*, edited by J.M. Erlandson and T.L. Jones, 41–62. Los Angeles, California: University of California–Los Angeles Press.

City of Oceanside. n.d. "History." Accessed March 19, 2018. http://www.ci.oceanside.ca.us/about/history.asp.

County of San Diego. 2007. Ordinance No. 9890 (N/S). County of San Diego Board of Supervisors. San Diego, California.

CSP (California State Parks). 2009. "Preservation Matters." *The Newsletter of the California Office of Historic Preservation* 2(3):3–21.

Davis, E.L. 1978. *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Los Angeles, California: Natural History Museum of Los Angeles County.

Dotter, Kara. 2018. Built Environment Historical Resources Inventory for Addendum No. 3 to the North San Diego Water Reuse Coalition Regional Recycled Water Project Program Environmental Impact Report (State Clearinghouse No. 2014081028). Prepared for the City of Oceanside, California: Dudek.

Fages, P. 1937. *A Historical, Political, and Natural Description of California (1775)*. Translated by Herbert Ingram Priestly. Berkeley, California: University of California Press.

Franklin and Thesken. 1978. Archaeological Site Record for CA-SDI-6136. On record at South Coastal Information Center, San Diego State University, California.

Gallegos, D.R. 1987. "San Dieguito-La Jolla: Chronology and Controversy." *San Diego County Archaeological Society, Research Paper No. 1*.

Geiger, M., and C.W. Meighan. 1976. *As The Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815*. Santa Barbara, California: Santa Barbara Mission Archive Library.

Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Griset, S. 1996. Southern California Brown Ware. Unpublished PhD dissertation; University of California, Riverside.

Hale, M.J. 2001. Technological Organization of the Millingstone Pattern in Southern California. Master's thesis; California State University, Sacramento.

Hale, M.J. 2009. San Diego and Santa Barbara: Socioeconomic Divergence in Southern California. PhD dissertation; University of California, Davis.

Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." *Smithsonian Miscellaneous Collections* 92(4).

Hector, S.M. 1984. Late Prehistoric Hunter-Gatherer Activities in Southern San Diego County. PhD dissertation; University of California, Los Angeles.

Hector, S.M. 2007. Archaeological Investigations at University House Meeting Center and Chancellor Residence, CA-SDI-4669 (SDM-W-12), University of California at San Diego, La Jolla, California. ASM Affiliates.

Heizer, R. 1978. "Introduction." In *California*, edited by R.F. Heizer, 1–6. Handbook of North American Indians, Vol. 8, edited by W.C. Sturtevant. Washington, D.C.: Smithsonian Institution.

Heizer, R., and K.M. Nissen. 1973. *The Human Sources of California Ethnography*. Berkeley, California: University of California Archaeological Research Facility, Berkeley.

Hoffman, Ogden. 1862. Reports of Land Cases Determined in the United States District Court for the Northern District of California, Numa Hubert, San Francisco.

Johnson, J.R., and J.G. Lorenz. 2006. "Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages." *Journal of California and Great Basin Anthropology* 26:33–64.

Kroeber, A. 1925. *Handbook of the Indians of California*. Washington D.C.: Smithsonian Institution.

Laylander, D. 1985. "Some Linguistic Approaches to Southern California's Prehistory." *San Diego State University Cultural Resource Management Center Casual Papers* 2(1): 14–58.

Laylander, D. 2000. *Early Ethnography of the Californias, 1533–1825*. Salinas, California: Coyote Press Archives of California Prehistory.

Laylander, D. 2010. "Linguistic Prehistory." Research Issues in San Diego Prehistory. Accessed August 31, 2012. http://www.sandiegoarchaeology.org/Laylander/Issues /index.htm.

Lightfoot, K.J. 2005. *Indians, Missionaries, and Merchants*. Berkeley, California: University of California Press.

Meighan, C.W. 1959. "California Cultures and the Concept of an Archaic Stage." *American Antiquity* 24:289–305.

North San Diego Water Reuse Coalition. 2015a. Regional Recycled Water Project (RWP) Final Program Environmental Impact Report (SCH #2014081028). Prepared by RMC Water and Environment. October 2015. http://nsdwrc.org/pdfs/NSDWRC_Final%20EIR_October2015.pdf.

North San Diego Water Reuse Coalition. 2015b. Regional Recycled Water Project (RWP) Program Environmental Impact Report, Public Draft. Prepared by RMC Water and Environment. April 2015. http://nsdwrc.org/pdfs/Draft%20PEIR_Compiled%20wAppendices_sm.pdf.

Oceanside Historical Society. 2018. "Oceanside History Timeline." Accessed March 19, 2018. http://www.oceansidehistoricalsociety.org/oceanside-history-timeline/.

Office of Historic Preservation. 1995. Instructions for Recording Historical Resources. California State Parks, Office of Historic Preservation. March 1995. http://ohp.parks.ca.gov/pages/1054/files/manual95.pdf.

Pigniolo, A.R. 2004. "Points, Patterns, and People: Distribution of the Desert Side-Notched Point in San Diego." *Proceedings of the Society for California Archaeology* 14:27–39.

Rogers, M.J. 1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist* 31:454–467.

Rogers, M.J. 1945. "An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1:167–198.

Sparkman, Philip S. 1908. "The Culture of the Luiseño Indians." *University of California Publications in Archaeology and Ethnology* 8(4):187–234.

True, D.L. 1966. Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California. PhD dissertation; University of California, Los Angeles.

True, D.L. 1980. "The Pauma Complex in Northern San Diego County: 1978." *Journal of New World Archaeology* 3(4):1–39.

Wallace, W.J. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." *Southwestern Journal of Anthropology* 11:214–230.

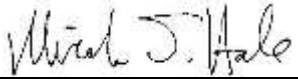
Warren, C.N. 1964. Cultural Change and Continuity on the San Diego Coast. PhD dissertation; University of California, Los Angeles.

Warren, C.N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

White, Raymond C. 1963. "Luiseño Social Organizations." *University of California Publications in American Archaeology and Ethnology* 48(2):1–194.

7 CERTIFICATION

Preparer: Micah Hale, PhD, RPA	**Title:** Archaeologist
Signature: 	**Date:** July 18, 2018

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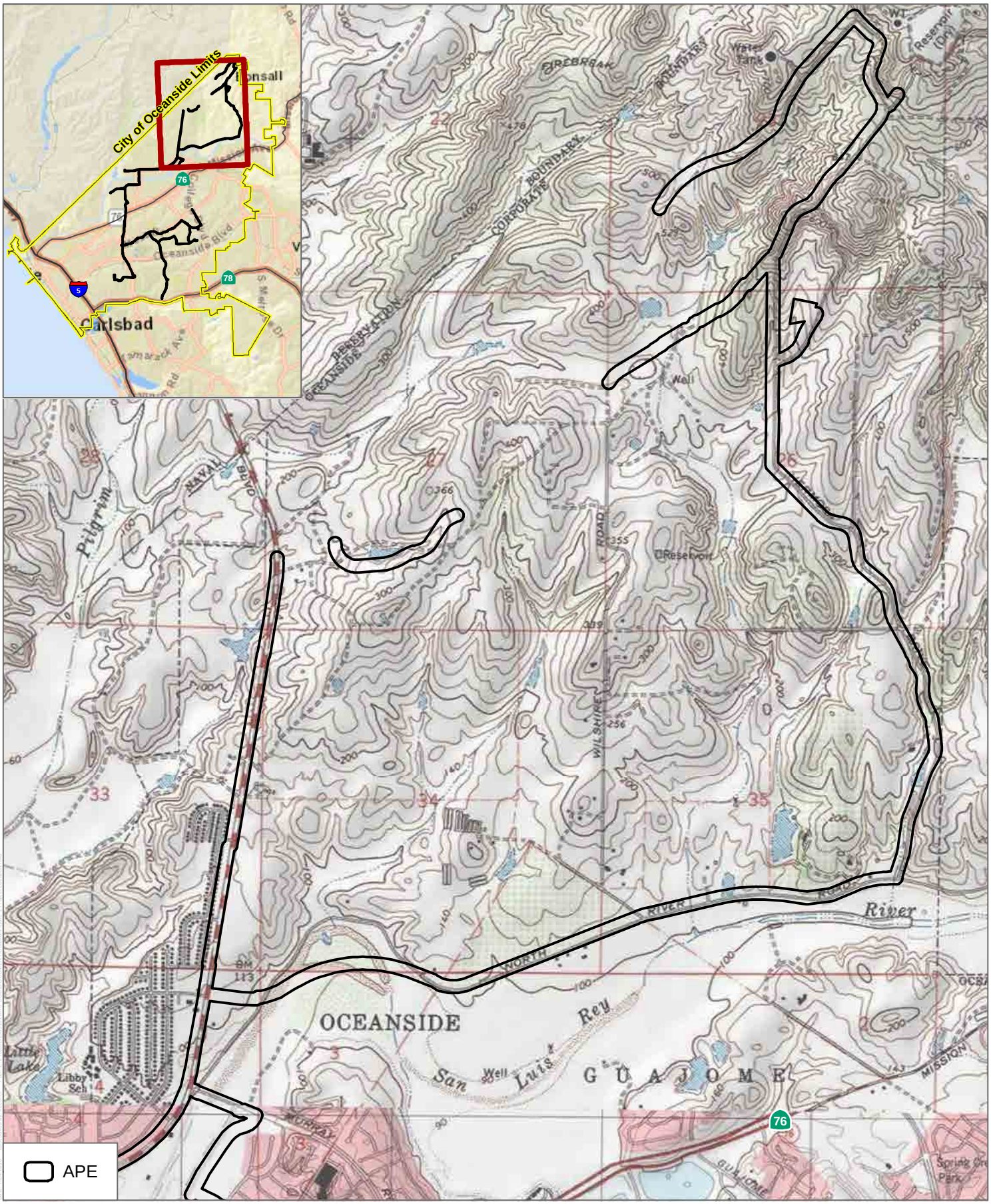

SOURCE: USGS Topo 7.5 Minute Series San Luis Rey, Morro Hill Quadrangles

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FIGURE 1a

Project Location

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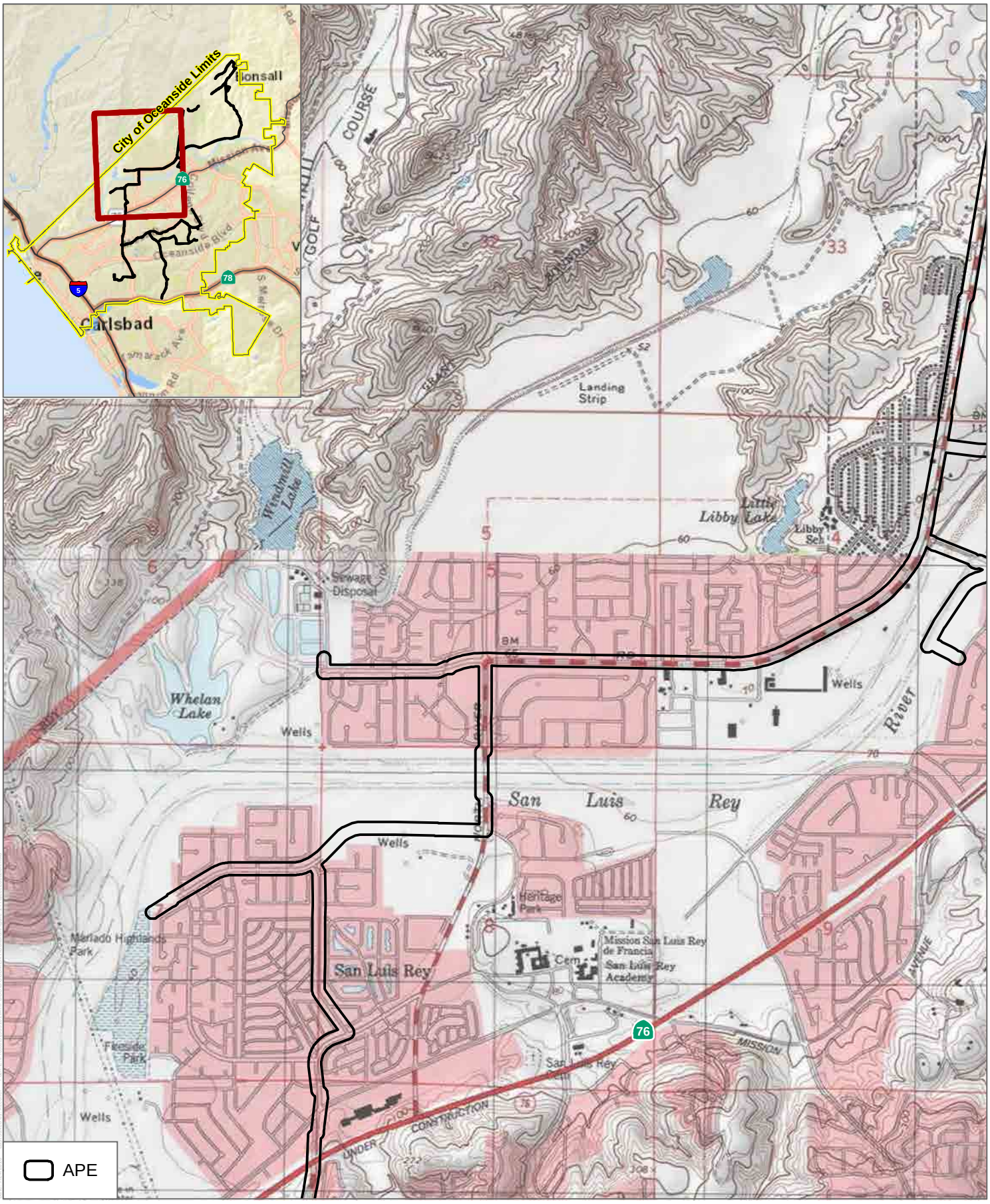

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FIGURE 1b

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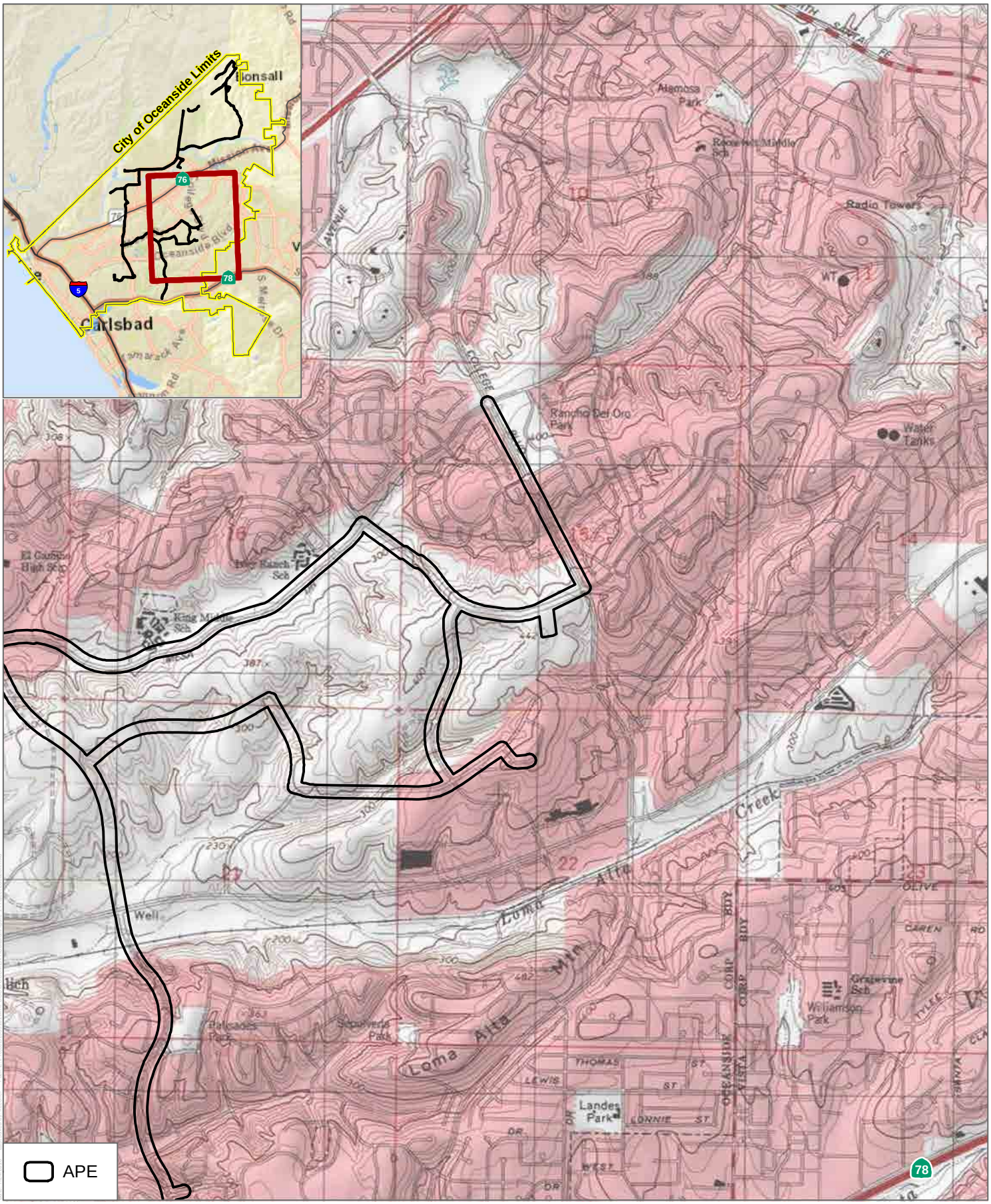

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FIGURE 1c

Project Location

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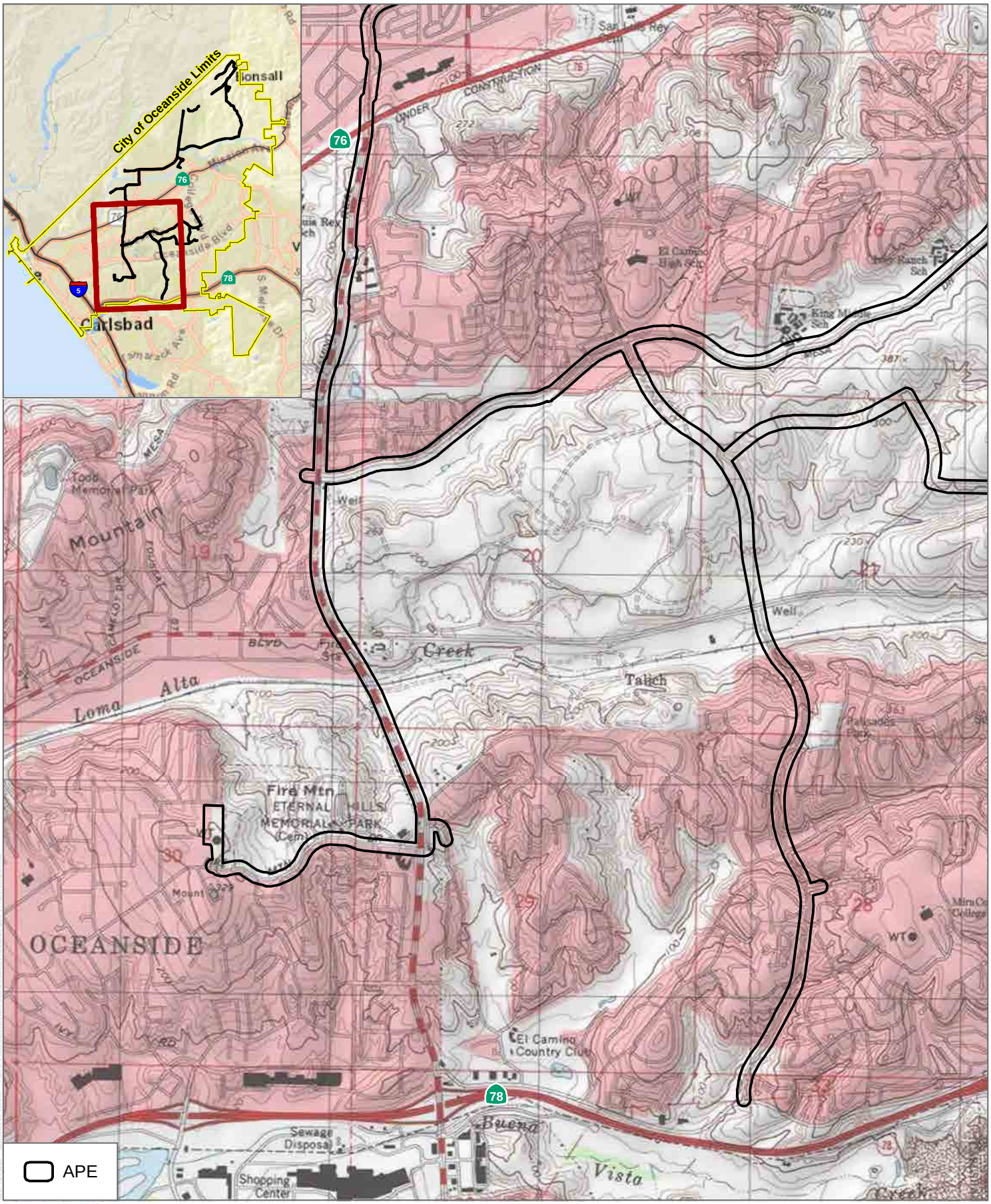

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FIGURE 1d

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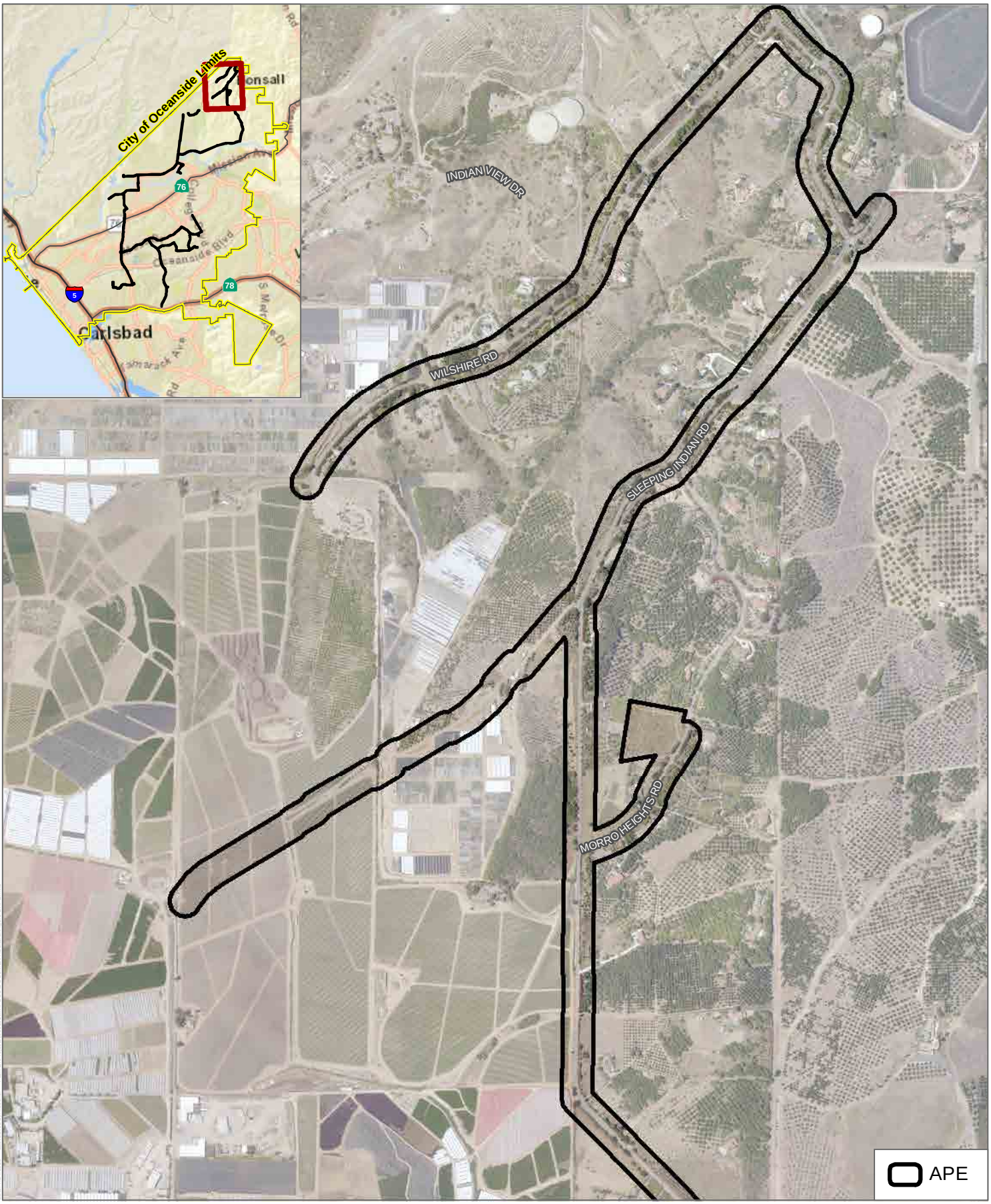

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FIGURE 2a

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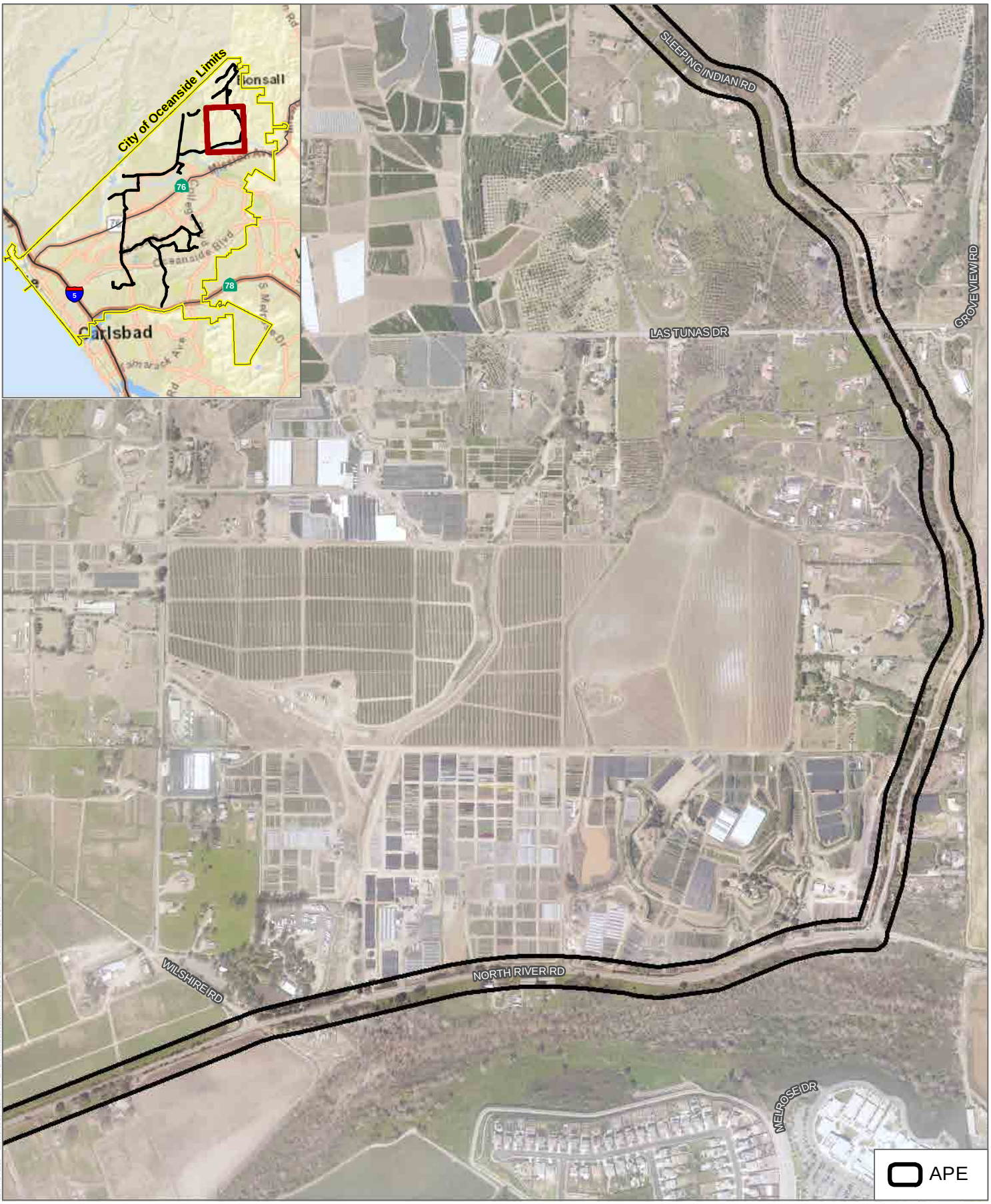

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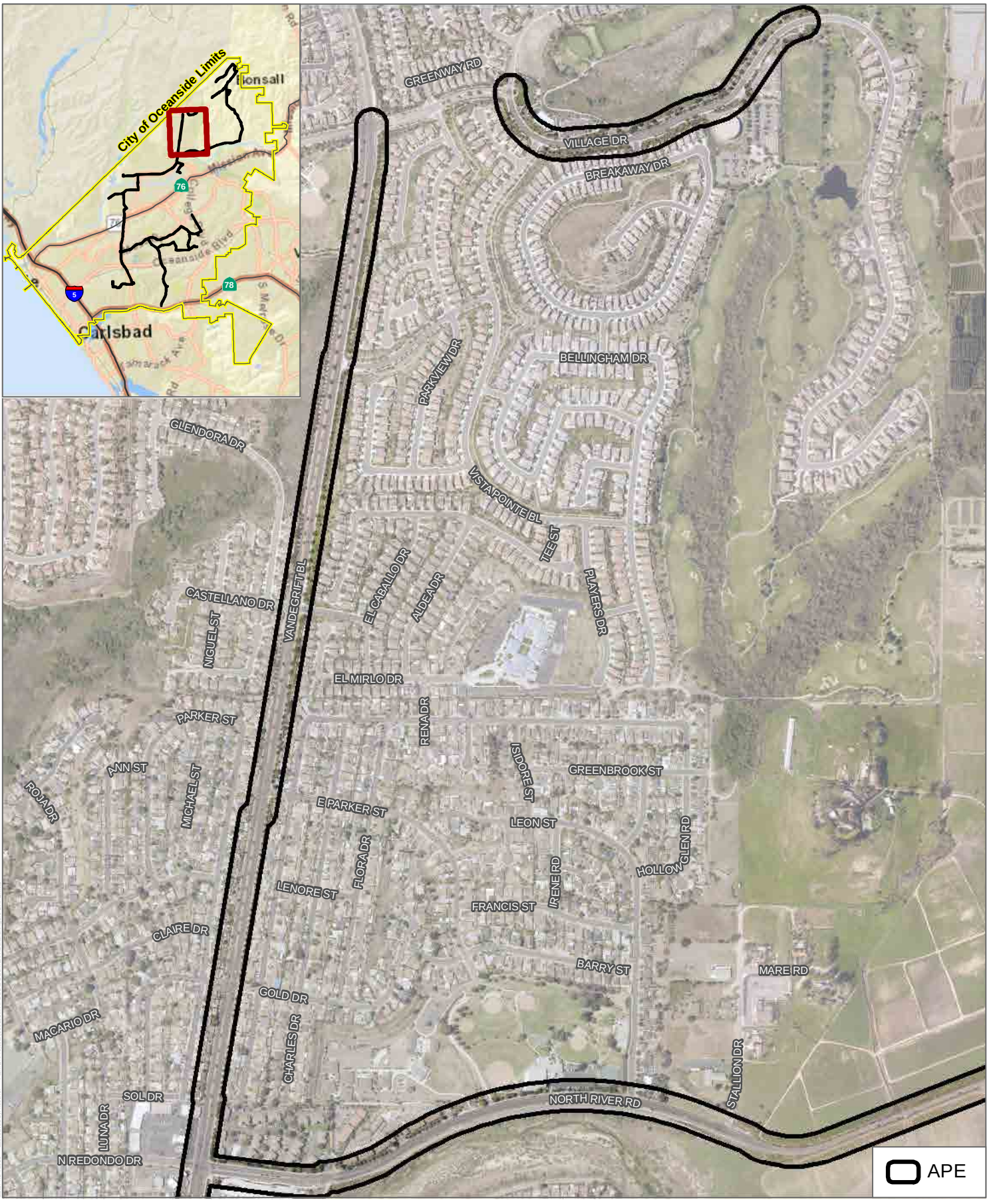

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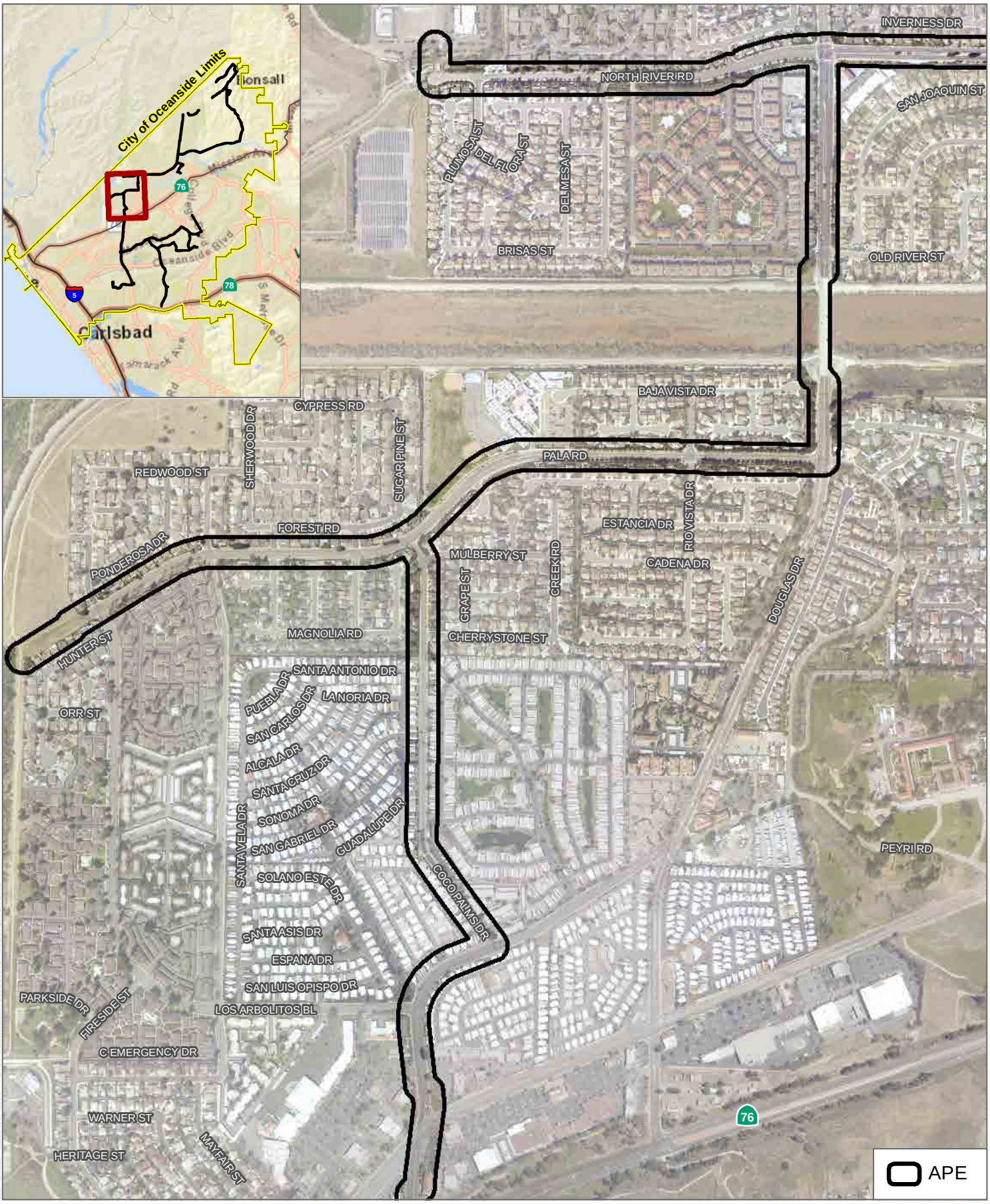

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FIGURE 2e

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FIGURE 2f

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FIGURE 2h

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Cultural Resources Inventory Report

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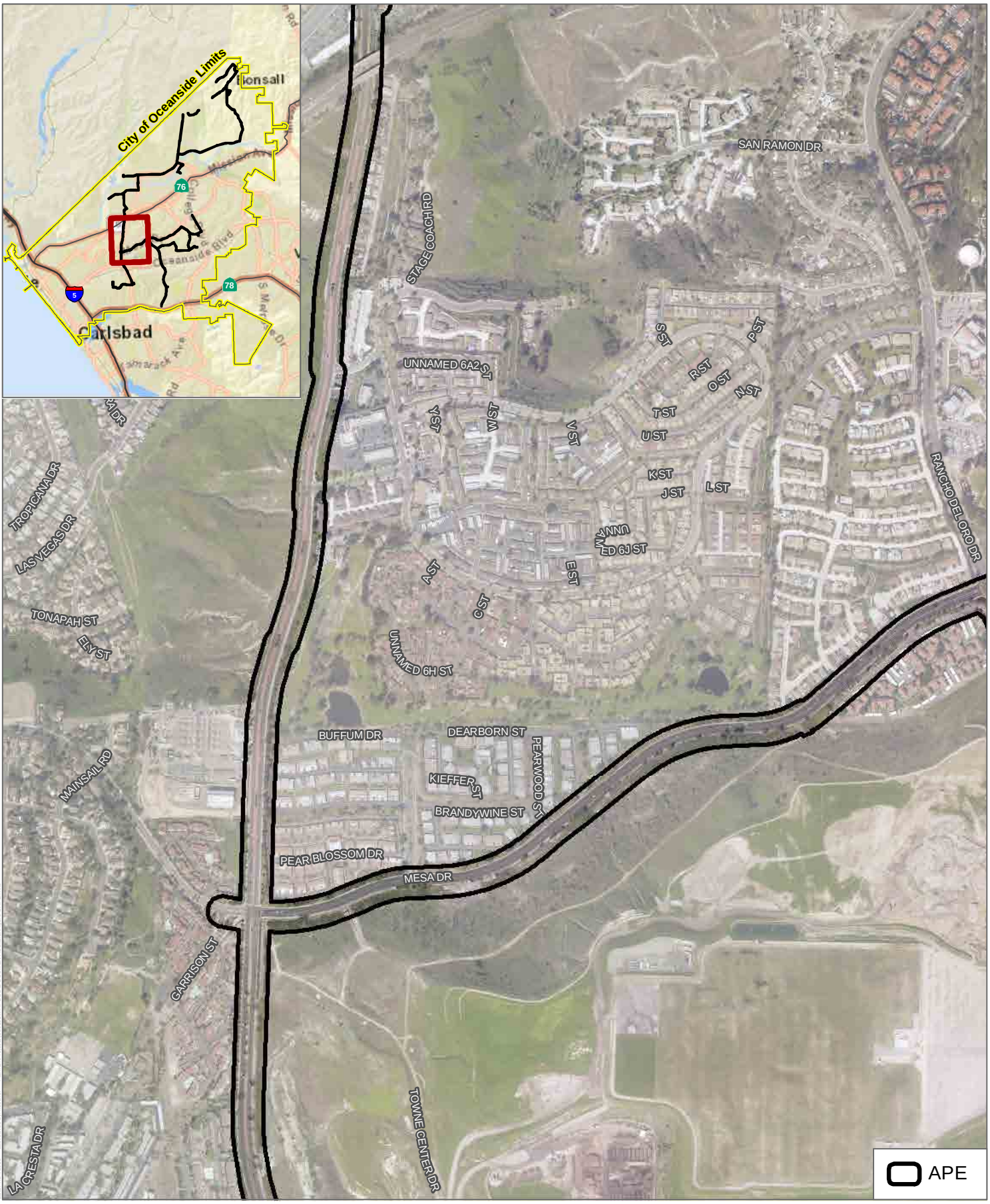

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FIGURE 2i

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FIGURE 2j
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Cultural Resources Inventory Report

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APPENDIX A

Project Personnel Qualifications

Brad Comeau

Archaeologist

Brad Comeau is an archaeologist with over 9 years' experience as a field director, archaeological monitor, and laboratory technician. He has conducted numerous surveys, evaluation excavations, and data recoveries, primarily in Southern California. He has extensive experience in San Diego County, with additional experience in Riverside County, the Mojave Desert, San Joaquin Valley, and Imperial County, as well as Massachusetts, Arizona, and England. His research interests include the role of experimentation in archaeology, copper production techniques, and lithic production.

EDUCATION

University of Sheffield

MS, Experimental Archaeology, 2012

University of Massachusetts, Amherst

BA, Anthropology, 2004

BA, Italian Studies, 2004

CERTIFICATIONS

Occupational Health and Safety Administration Hazardous Waste Operations and Emergency Response 40-hour Course, 2011

City of San Diego, Certified Archaeological Monitor, 2009

PROFESSIONAL AFFILIATIONS

Society for American Archaeology, 2012

Bath and Camerton Archaeological Society, 2012

Society for California Archaeology, 2008

Project Experience

Development

St. John Garabed Church Project, San Diego County, California. As field director, conducted site examinations and limited shovel test pit excavation for an Extended Phase 1 survey; directed a crew of two people; prepared a letter report of findings.

Rhodes Crossing Update, Rhodes Properties, San Diego, California. As field director, led a crew of two people for a Class Ⅲ pedestrian survey of 88 acres; coordinated Native American monitor participation; assisted with preparation of Archaeological Resource Management Report (ARMR).

Gregory Canyon Landfill Environmental Impact Statement PHI Assessments, PCR Services Corporation, Pala, San Diego, California. As field director, conducted pedestrian survey of proposed landfill; relocated and verified previously recorded sites; led a crew of four people; coordinated with Native American monitors; prepared site forms and site descriptions for ARMR report.

Robertson Ranch East Excavation, The Corky McMillin Companies, Carlsbad, San Diego County, California. As field director, conducted controlled grading of two prehistoric sites that required directing excavation activities of multiple types of heavy machinery; led excavation of numerous roasting pit features by a crew of up to 20 people; instructed crew in carbon-14, thermoluminescence, and soil floatation sampling techniques.

Sky Ranch Monitoring, Lennar, Santee, San Diego County, California. As archaeological monitor, monitored mass grading activities for construction of a subdivision.

Sky Ranch Data Recovery, Lennar, Santee, San Diego County, California. As crew chief, conducted data recovery excavation of two prehistoric sites; led a crew of up to eight staff; drew site maps and unit profiles; collected carbon-14 and soil floatation samples.

4S Ranch Data Recovery, 4S Ranch Company, Rancho Bernardo, San Diego County, California. As field technician and crew chief, conducted Phase Ⅲ data recovery of a large Late Prehistoric site; excavated numerous hearth features; drew site maps and unit profiles; created a site grid for unit placement; collected carbon-14 and soil floatation samples.

Atlas Monitoring and Excavation, D. R. Horton, San Diego County, California. As archaeological monitor, monitored building/subterranean parking structure excavation; excavated historic deposits.

The Rock Academy Monitoring, The Rock Church, San Diego, California. As archaeological monitor, monitored building foundation excavation, trenching, and building demolition.

Vantage Point, Point of View Monitoring LLC, San Diego County, California. As archaeological and paleontological monitor, monitored excavation, drilling, and other construction activities during the excavation of a subterranean parking garage and building footings. Recorded and collected artifacts and marine fossils.

Audie Murphy Ranch Monitoring, Woodside Homes, Sun City, Riverside County, California. As archaeological monitor, monitored controlled grading of five sites in collaboration with Native American monitors; excavated hearth features; monitored construction grading.

Roberston Ranch Data Recovery, The Corky McMillin Companies, Carlsbad, San Diego County, California. As field technician, excavated four prehistoric sites as part of a data recovery program, including test unit excavation, wet screening, drawing and photographing profiles, excavating hearth and pit features, and artifact sorting.

LaPozz No. 5 Lode Evaluation, Enviroscientists, Indian Wells Valley, Kern County, California. As field director, led a crew of four people for an evaluation testing program of three prehistoric sites; prepared site form updates and site testing results for the ARMR technical report.

Faraday Data Recovery, Carlsbad, San Diego County, California. As field technician, excavated five prehistoric sites as part of a data-recovery program, including test unit excavation, drawing profiles, wet screening, and sorting artifacts.

Education

Palomar College 7 Building Historic Evaluation, Palomar Community College District, San Marcos, San Diego County, California. As Global Positioning System (GPS) technician and photographer, assisted architectural historians in recording potentially historic buildings; photographed and recorded buildings with Ricoh digital camera, range finder, and Trimble GeoXH GPS.

University House Excavation, University of California, San Diego, San Diego County, California. As crew chief, conducted Phase II test excavation using wet screening; led a crew of five people.

San Marcos Unified School District Monitoring, San Marcos Unified School District, San Diego County, California. As archaeological monitor, monitored transplanting of endangered species by biologists prior to construction grading of site.

Maranatha Excavation, Maranatha Christian School, Rancho Bernardo, San Diego County, California. As field technician, excavated test units for a Phase III data recovery of an archaic period site; drew unit profiles; sorted artifacts.

Energy

Jacumba Solar Extended Phase 1, NextEra, Jacumba, San Diego County, California. As principal investigator, conducted site examinations and limited shovel test pit excavation; directed a crew of two people; prepared a letter report of findings.

San Jacinto Solar Project, NextEra, Riverside County, California. As principal investigator, performed site visit and record search review of project area; prepared constraints analysis assessing the potential for sensitive cultural materials.

Tule Wind Cultural Resources Testing, HDR Inc., McCain Valley, San Diego County, California. As field director, conducted eligibility testing for one prehistoric site, led a crew of four people, and assisted in producing an ARMR report of findings.

Occidental of Elk Hills Block Survey II, Occidental Petroleum, Taft, Kern County, California. As field director, conducted pedestrian survey of 2,560 acres in the Elk Hills Oil Field; led a crew of six people; prepared site forms and site descriptions for technical report.

Class III Cultural Resources Inventory, Occidental Petroleum, Taft, Kern County, California. As field director, conducted pedestrian survey of 2,560 acres in the Elk Hills Oil Field; led a crew of six people; performed records search at the Southern San Joaquin Valley Information Center and Bureau of Land Management (BLM) Bakersfield office; prepared site forms and site descriptions for technical report.

Five Well Pads Cultural Resources Survey, Occidental Petroleum, Kern County, California. As field director, led a crew of two people for a Class III pedestrian survey of 60 acres near McKittrick, California; performed the record searches at the Southern San Joaquin Valley Information Center and BLM Bakersfield office.

Vintage Kern Front Inventory, Vintage Production California LLC, Oildale, Kern County, California. As field director, led a crew of five people for a Class III pedestrian survey of 184 acres in the Kern Front Oil Field; prepared primary record.

Gildred Solar Cultural Resources Survey, Gildred Building Company, Ocotillo Wells, San Diego County, California. As field director, led a crew of four for a Class III pedestrian survey of 440 acres; coordinated Native American monitor participation: assisted with preparation of ARMR technical report.

Silurian Valley West Cultural Resources Study, Iberdrola Renewables, Baker, San Bernardino County, California. As crew chief, led a crew of four people for a Class II pedestrian survey of 4,500 acres within the project right-of-way; assisted the field director in organizing and scheduling two field crews; trained crew members in operation of Bluetooth-enabled laser range finder.

TL 637 Survey Santa Ysabel to Creelman, San Diego Gas & Electric, San Diego County, California. As archaeological monitor, performed pre-construction fielding study with engineers, biologists, and construction managers for an electrical transmission line pole replacement; located previously recorded sites; helped direct new pole locations to avoid site impacts.

East County Substation Survey, Insignia Environmental, Jacumba, San Diego County, California. As crew chief, conducted survey of linear electric transmission line; directed a crew of three people; recorded multiple prehistoric and multicomponent sites; prepared site forms and site descriptions for technical report of findings.

Sunrise Powerlink Evaluations, San Diego Gas & Electric, San Diego and Imperial Counties, California. As field director, conducted subsurface testing of 17 sites; directed a crew ranging from three to six people; helped organize laboratory artifact processing.

Devers–Palo Verde 2 Survey, Southern California Edison, Riverside County, California. As field director, conducted Class III intensive survey of selected portions of a transmission line area of potential effect (APE); relocated and updated previously recorded sites; identified and recorded new sites.

Colorado River Staging Yard Survey, Southern California Edison, Riverside County, California. As crew chief, conducted Class III pedestrian survey of the Colorado River Staging Yard for the Devers–Palo Verde 2 electric transmission line near Blythe; identified and recorded numerous World War II–era sites relating to the Desert Training Center; led a crew of two people.

Tule Wind Project Surveys, HDR Inc., McCain Valley, San Diego County, California. As field director, conducted Class II and Class III intensive pedestrian surveys over 4,900 acres; coordinated multiple survey crews; scheduled and coordinated with Native American monitors; prepared site forms; assisted in producing an ARMR report of findings.

Sunrise Powerlink Survey and Monitoring, San Diego Gas & Electric, San Diego and Imperial Counties, California. As crew chief, led survey crew of four people and two Native American monitors for Class III survey of project APE; coordinated with Native American monitors; created survey schedules in conjunction with the field director and right-of-way agents.

Federal

Bunker Hill Survey, GSR Corporation, Imperial Beach, San Diego County, California. As field director, conducted Class III pedestrian survey of a road improvement and fence construction covering 7.6 acres for the border fence; directed a crew of two people; recorded a previously identified site for a future nomination to the National Register of Historic Places; prepared site form update; prepared ARMR technical report of findings.

Imperial County Drill Sites Survey, United States Geological Survey, Imperial County, California. As field director, conducted survey of two water well drilling sites; coordinated U.S. Border Patrol escort; prepared ARMR technical report of findings.

BLM Western Expansion Survey, TEC Environmental, Johnson Valley, San Bernardino County, California. As crew chief, surveyed various locations throughout the BLM Johnson Valley off-highway vehicle area; identified and recorded new sites; coordinated survey schedule with the field director.

Border Fence Project Survey and Monitoring, U.S. Army Corps of Engineers, San Diego County, California, and Pima, Santa Cruz and Cochise Counties, Arizona. As archaeological monitor, monitored construction of the U.S./Mexico border fence; surveyed locations of proposed construction activity; mapped new archaeological sites; directed construction activities away from archaeological resources.

Military

Fort Irwin Solar Project, Soitec LLC, Fort Irwin, San Bernardino County, California. As principal investigator, directed pedestrian survey of 12 acres for a proposed solar generation facility; also prepared the technical report.

Level 3 Powerline Road Fiber-Optic Project, HP Communications Inc., Fort Irwin, San Bernardino County, California. As principal investigator, conducted intensive pedestrian survey of approximately 10 acres; also prepared the ARMR technical report of findings.

Naval Air Weapons Station (NAWS) Road Survey, Naval Facilities Engineering Command (NAVFAC) Southwest, Ridgecrest, Inyo, San Bernardino, and Kern Counties, California. As field director, conducted Class III pedestrian survey of approximately 129 miles of existing roads; led a crew of four people; scheduled and coordinated with Explosive Ordnance Disposal escorts; prepared ARMR technical report of findings.

NAWS Fiber-Optic Survey, Epsilon Systems Solutions, Ridgecrest, San Bernardino County California. As crew chief, conducted Class III pedestrian survey for a proposed fiber-optic line; led a crew of two people; assisted the field director with scheduling.

Delivery Order (DO) 30 Survey, NAVFAC Southwest, Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, San Bernardino County, California. As crew chief, surveyed numerous proposed landing zones throughout MCAGCC; coordinated scheduling/training area access with the field director; prepared site forms and site descriptions for ARMR report.

53 Aerial Maneuver Zone (AMZ) Survey, NAVFAC Southwest, MCAGCC Twentynine Palms, San Bernardino County, California. As crew chief, surveyed numerous proposed landing zones throughout MCAGCC Twentynine Palms; coordinated scheduling/training area access with the field director; prepared site forms and site descriptions for ARMR report.

Southwest Division (SWDIV)-04/DO 27 Survey, NAWS China Lake, NAVFAC Southwest, Ridgecrest, Inyo County, California. As field technician, participated in a Class III intensive survey under Section 106 of National Historic Preservation Act; operated a Trimble GeoXH for navigation and site recording.

Resource Management

St Algar's Farm Geochemical Testing, English Heritage, Frome, Somerset, United Kingdom. As student volunteer, helped perform a pXRF field survey of a Roman-era glass and metalworking site; excavated a 5-by-5-meter trench.

Transportation

Palomar Station Project Survey, Integral Communities Inc., San Marcos, San Diego County, California. As field director, conducted Class III pedestrian survey of 14.5-acre parcel and prepared ARMR technical report of findings.

Water/Wastewater

Temescal Canyon and Dawson Canyon Pipelines and Non-Potable Water Tank Project, Lee Lake Water District, Riverside County, California. As principal investigator, performed Phase I intensive pedestrian survey of the project APE; also prepared letter report of findings.

Padre Dam Data Recovery, Padre Dam Municipal Water District, Lakeside, San Diego County, California. As field director, conducted a data recovery project of a late prehistoric site using wet screening; led a crew of six; coordinated with Native American monitors; performed shell and ceramic lab analysis studies.

Publications

Professional Presentations

Finding the Smith in Hammerscale Palais: Investigations at an Experimental Iron Production Site. Poster presented at the 39th International Symposium on Archaeometry 2012. Co-author.

Archaeological Investigations at Site CA-SDI-10,611: A Functional and Temporal Analysis of Subterranean Pit Features In Northern San Diego County. Presented at Society for California Archaeology Annual Meeting 2008. Co-author.

The Burghardts of Great Barrington: The View from the W.E.B. Du Bois Boyhood Homesite. Presented at the Society for Historical Archaeology Conference 2005. Co-author.

Technical Reports

2013 *Draft Archaeological Survey Report for the Fort Irwin Solar Project, Fort Irwin, San Bernardino County, California*. Brad Comeau, MSc, and Micah Hale, PhD, RPA.

2012 *Results of Extended Phase 1 Shovel Probing at Potentially Sensitive Archaeological Sites for the Jacumba Solar Project, San Diego County, California*. Brad Comeau, MSc, and Micah Hale, PhD, RPA.

2012 *Cultural Resources Report for the Extended Phase I Survey for the St. John Garabed Church Project, San Diego County, California*. Brad Comeau, MSc, and Micah Hale, PhD, RPA.

2012 *Cultural Resources Survey Report for the Lee Lake Water District Dawson Canyon Non-potable Water Storage Tank and Pipeline Design Project, Riverside County, California*. Brad Comeau, BA, and Micah Hale, PhD, RPA.

2011 *Class III Archaeological Inventory of 2,560 Acres Comprised of the Entire Sections of 10Z, 14D, 20B, 28B, 32G, Elk Hills, Kern County, California*. David Whitley, PhD, RPA; and Brad Comeau, BA; and Michelle Dalope, BA.

2011 *An Archaeological Evaluation of KER-7290, KER-7293 and KER-7294 for the LaPozz No. 5 Lode Claim (CAMC286149), Indian Wells Valley, Kern County, California*. Mark S. Becker, PhD, RPA; Brad Comeau, BA; and Tony Quach, BA.

2011 *Cultural Resources Inventory for the Gildred Solar Project, San Diego County, California.* Chad Willis, MA, RPA; Micah Hale, PhD, RPA; and Brad Comeau, BA.

2011 *Cultural Resources Inventory Report for the Rhodes Crossing Project, San Diego County, California*. Chad Willis, MA, RPA; Micah Hale, PhD, RPA; and Brad Comeau, BA.

2011 *Class II Cultural Resources Inventory for the Silurian Wind Project, Silurian Valley, San Bernardino County, California*. Diane Winslow, MA, RPA; Micah Hale, PhD, RPA; Sherri Andrews, MA, RPA; and Brad Comeau, BA.

2011 *An Archaeological Inventory of Historic and Contemporary Roads at Naval Air Weapons Station China Lake, Inyo, Kern, and San Bernardino Counties, California*. Brad Comeau, BA; Mark A. Giambastiani, PhD, RPA; and Oliver Patsch, BA.

2011 *Cultural Resources Survey Report for the Palomar Station Project, San Marcos, San Diego County, California*. Brad Comeau, BA, and Micah Hale, PhD, RPA.

2011 *An Archaeological Survey of Bunker Hill in Border Field State Park, San Diego County, California*. Brad Comeau, BA, Scott Wolf, BA, and Micah Hale, PhD, RPA.

2010 *Archaeological Survey Report for the Imperial County Drill Sites Project, Imperial County, California*. Brad Comeau, BA, and Jerry Schafer, PhD, RPA.

2010 *Class II and Class III Cultural Resources Inventory Report for the Tule Wind Project, McCain Valley, San Diego County, California*. Micah Hale, PhD, RPA; Brad Comeau, BA; and Chad Willis, MA.

2010 *Draft Study Plan for Cultural Resources: Gregory Canyon Landfill, San Diego County, California*. Don Laylander and Brad Comeau.

2009 *Data Recovery Excavations at CA-SDI-18472 for the Proposed Padre Dam Municipal Water District Secondary Connection Project (Ridge Hill Facilities), Johnstown, San Diego County, California*. Micah Hale, PhD, RPA, with contributions by Brad Comeau and Aaron Sasson.

Master's Dissertation

2012 *Investigating Metallurgical Practice: An Experimental Study of the Sintashta Well-Tunnel-Furnace (WTF) from the Middle Bronze Age, Siberia, Russia*. University of Sheffield.

Volunteer History

2012 Student Placement, English Heritage, Portsmouth, United Kingdom.

Awards/Commendations

1999–2003 Francis Ouimet Scholar

Relevant Previous Experience

- **2012–present Archaeologist, Dudek, Encinitas, California**
- **2009–2011 Associate Archaeologist, ASM Affiliates Inc., Carlsbad, California**
- **2008–2009 Archaeological Monitor, E^{2}m, Denver, Colorado**
- **2008 Archaeological Monitor/Field Technician, URS Corporation, San Diego, California**
- **2005–2008 Field Supervisor, Brian F. Smith and Associates, Poway, California**
- **2003–2004 Field/Lab Technician, University of Massachusetts Archaeological Services, Amherst, Massachusetts**
- **2003 Field School in Archaeology, University of Massachusetts Amherst/Great Barrington, Massachusetts.** As student, participated in site surveying and mapping using theodolite; instructed in and participated in excavation and laboratory methodology; participated in geophysical surveying.

Matthew DeCarlo

Archaeologist

Matthew DeCarlo is an archaeologist with more than 11 years' professional experience leading archaeological surveys and excavations, performing lithic and faunal analyses, constructing and analyzing geographic information system (GIS) data, producing cultural resource management reports, and consulting with clients, agencies, contractors, and Native American representatives.

EDUCATION

California State University, Bakersfield
M.A., Anthropology, pending
University of California, Irvine
B.A., Anthropology, 2006

PROFESSIONAL AFFILIATIONS

San Diego Archaeological Society
Society for American Archaeology
Society for California Archaeology

As acting district archaeologist for the U.S. Forest Service (USFS), Mr. DeCarlo worked intensively with federal regulations and Native American tribal representatives and from this experience, has developed the ability to work collaboratively with consulting groups on multi-phase projects. Within the private sector, Mr. DeCarlo has managed the cultural resource requirements for large-scale utility projects which required extensive cooperation with utility managers, construction efforts, and Native American tribal representatives.

Project Experience

Municipal Waterways Maintenance Plan, City of San Diego, San Diego County, California. Served as cultural resources project lead for the proposed Municipal Waterways Maintenance Plan for the City of San Diego. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Conducted site visits of project facilities while coordinating with a Native American representatives. Produced a report summarizing the finding of the cultural resources inventory including a cultural resources impact analysis, projected resource sensitivities, resource management recommendations, and mitigation measures. Developed a matrix indicating maintenance activities and facility locations that are exempt from further cultural review. (2017 to ongoing)

City of San Diego Underground Utility Program, City of San Diego, San Diego County, California. Served as manager for the cultural resource monitoring of a citywide utility underground program in the City of San Diego. Responsibilities included consultation with program representatives, scheduling and management of field technicians, oversite of daily field logs, recordation of identified cultural resources, and constructing a summary document at the completion of each project phase. (2017 to ongoing)

All-American Canal Surface Waters Seepage Recovery Project, City of El Centro, Imperial County, California. Served as cultural resources project lead for a proposed water recovery project outside the City of El Centro. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area. Produced a report summarizing the finding of the cultural resources inventory including a cultural resources impact analysis comparing alternate project routes, resource management recommendations, and mitigation measures. (2017 to ongoing)

East Highline Reservoir Project, City of El Centro, Imperial County, California. Served as cultural resources project lead for a proposed main canal offline storage reservoir project outside the City of El Centro. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area. Produced a report summarizing the

finding of the cultural resources inventory including an impact analysis of a National Register of Historic Places listed resource, resource management recommendations, and mitigation measures. (2017 to ongoing)

Oceanside Campus Facilities Master Plan Project, City of Oceanside, San Diego County, California. Served as archaeological resources project lead for a proposed renovation and redevelopment of the Oceanside Campus within the MiraCosta Community College District. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Conducted a pedestrian survey of the project area and coordination with a Native American monitor. Aided the District with AB 52 consultation including hosting project site visits with Native American representatives. Produced a report summarizing the finding of the cultural resources inventory and resource management recommendations including mitigation measures. (2017 to 2018)

North City Project, City of San Diego, San Diego County, California. Served as cultural resources project lead for the proposed construction of a water purification program in the City of San Diego. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Aided the City with AB-52 tribal consultation and conducted a pedestrian survey of the project area while coordinating with a Native American monitors. Produced a report summarizing the finding of the cultural resources inventory including a cultural resources impact analysis comparing alternate project routes, resource management recommendations, and mitigation measures. (2016 to 2018)

Morena Pipelines Project, City of San Diego, San Diego County, California. Served as cultural resources project lead for a proposed utility pipeline installation project in the City of San Diego. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area in coordination with a Native American monitor. Produced a report summarizing the finding of the cultural resources inventory and resource management recommendations including mitigation measures. (2018)

1237 West 7th Street Project, City of Los Angeles, Los Angeles County, California. Served as lead analyst and report author for a tribal cultural resources assessment for a proposed urban development project in the City of Los Angeles. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Produced a report indicating the presence and the probability of encountering subsurface tribal cultural resources during construction. (2018)

1375 North Saint Andrews Place Project, City of Los Angeles, Los Angeles County, California. Served as lead analyst and report author for a tribal cultural resources assessment for a proposed urban development project in the City of Los Angeles. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Produced a report indicating the presence and the probability of encountering subsurface tribal cultural resources during construction. (2018)

Fig Project, City of Los Angeles, Los Angeles County, California. Served as lead analyst and report author for a tribal cultural resources assessment for a proposed urban development project in the City of Los Angeles. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Produced a report indicating the presence and the probability of encountering subsurface tribal cultural resources during construction. (2018)

Adams Solar Farm Project, City of Lind, Adams County, Washington. Developed an inadvertent discovery plan for utilization during the development of a solar farm. (2018)

Kaiser Permanente Irwindale Medical Office Building Project, City of Irwindale, Los Angeles County, California. Managed the cultural resource monitoring of the construction of a Kaiser Permanente medical building in the City of Irwindale. Responsibilities included consultation with program representatives, scheduling and management of field technicians, consultation with Native American representatives, oversite of daily field logs, recordation of identified cultural resources, and submitting a summary document at the completion of the project. (2017)

Fairway Business Park Project, Lake Elsinore, Riverside County, California. Managed the cultural resource monitoring of the construction of a business park in the City of Lake Elsinore. Responsibilities included consultation with program representatives, scheduling and management of field technicians, consultation with Native American representatives, oversite of daily field logs, recordation of identified cultural resources, and constructing a summary document at the completion of the project. (2017)

21st Street Ditch Project, City of Del Mar, San Diego County, California. Aided the City of Del Mar with AB-52 compliance for a proposed wastewater improvement project in the City of Del Mar. Drafted Responsibilities included drafting an AB-52 letter on the City's behalf requesting Native American representatives consultation. (2017)

MedVic/MccVic Tower Repair Project, near the City of Yermo, San Bernardino County, California. Served as cultural resources project lead for a proposed electrical transmission tower repair project outside the City of Yermo. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area. Produced a report summarizing the finding of the cultural resources inventory including an impact analysis of a National Register of Historic Places listed resource, resource management recommendations, and avoidance measures. (2017)

Kaiser Permanente Murrieta Valley Medical Center Project, City of Murrieta, Riverside County, California. Managed the cultural resource monitoring of the construction of a Kaiser Permanente medical center in the City of Murrieta. Responsibilities included consultation with program representatives, scheduling and management of field technicians, consultation with Native American representatives, oversite of daily field logs, recordation of identified cultural resources, and submission of a summary document at the completion of the project. (2016 to 2017)

Kettner Lofts Project, City of San Diego, San Diego County, California. Managed the preliminary cultural resources testing and the construction monitoring of the Kettner Lofts housing development in the City of San Diego. Responsibilities included directing construction personnel in the excavation of testing trenches, documentation of subsurface findings, and consulting with program representatives to establish an appropriate monitoring plan. Management of construction monitoring included scheduling and management of field technicians, consultation with Native American representatives, oversite of daily field logs, recordation of identified cultural resources, and submission of a summary document at the completion of the project. (2016 to 2017)

Rincon Del Diablo Sewer Master Plan Project, San Diego County, California. Served as cultural resources project lead for the proposed sewer master plan near the City of Escondido. Responsibilities

included analysis of archived records, aerial photographs, and Native American outreach. Conducted a pedestrian survey of the project area. Produced a report summarizing the finding of the cultural resources inventory including a cultural resources impact analysis comparing alternate project routes and resource management recommendations. (2016)

Terra Vista Development Project, Victorville, San Bernardino County, California. Served as cultural resources project lead for a proposed residential development in Rancho Cucamonga. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area. Produced a report summarizing the finding of the cultural resources inventory including resource management recommendations. (2016)

Commercial Development Project, Morongo Valley, San Bernardino County, California. Served as cultural resources project lead for a proposed commercial development on Twenty-nine Palms Highway, Morongo Valley. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area. Produced a report summarizing the finding of the cultural resources inventory including resource management recommendations. (2016)

South Amargosa Plaza Project, Victorville, San Bernardino County, California. Served as cultural resources project lead for a proposed commercial development in Victorville. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area. Produced a report summarizing the finding of the cultural resources inventory including resource management recommendations. (2016)

RCP Walker Trails Project, City of Santee, San Diego County, California. Served as cultural resources project lead for the proposed construction of a residential community in the City of Santee. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Conducted a pedestrian survey of the project area in coordination with a Native American Monitor. Produced a report summarizing the finding of the cultural resources inventory including a cultural resource impact analysis and management recommendations. (2016)

1836 Columbia Street Project, City of San Diego, San Diego County, California. Served as cultural resources project lead for a proposed urban development project in the City of San Diego. Responsibilities included analysis of archived records, aerial photographs, and Native American outreach. Also conducted a pedestrian survey of the project area and coordination with a Native American monitor. Produced a report summarizing the finding of the cultural resources inventory and mitigation recommendations. (2016)

West of Devers Upgrade Project (WODUP), Southern California Edison (SCE), Riverside and San Bernardino Counties, California. Served as project manager for a cultural resource impact assessment for a dual transmission line upgrade spanning from North Palm Springs to San Bernardino, California. Tasks included implementing archaeological surveys and excavations, producing a cultural resource evaluation report, and participation in construction site visits with SCE staff and construction specialists to resolve construction/resource conflicts. (2014 to 2016)

Devers to Palo Verde 2 (DPV2) Transmission Line Project, SCE, Riverside County, California. Served as field director for the construction of a 500 kV transmission line spanning from Blythe to Romoland,

California. Tasks included conducting archaeological surveys and excavations; managing construction monitoring teams; producing cultural resource records and reports; and consulting with SCE, construction, and Native American representatives. The final cultural resource report has been submitted and is awaiting approval. (2010 to 2015)

Mountain Top Healthy Trees Project, USFS, Mount Pinos Ranger District, Santa Barbara County, California. Served as the acting district archaeologist for a proposed tree thinning project. To ensure that no previously recorded resources were impacted during the tree mastication, Mr. DeCarlo conducted a records search, delineated mastication boundaries, and monitored the mastication activities.

ARRA Wilderness Trails Restoration Project, USFS, Mount Pinos Ranger District, Santa Barbara and Ventura Counties, California. Served as the acting district archaeologist. Fulfilled cultural resource requirements for National Environmental Policy Act (NEPA) compliance to ensure the Mount Pinos Ranger District of the Los Padres Forest received American Recovery and Reinvestment Act (ARRA) federal funds to conduct trail work within wilderness areas. This required consultation with USFS supervisors to construct a viable timetable, completion of a records search, intensive survey of trails, and collaboration with trail maintenance crew chiefs to protect threatened cultural resources.

Cultural Resources Management for the Day Fire Reforestation Project, USFS, Mount Pinos Ranger District, Ventura County, California. Served as the acting district archaeologist for the reforestation of areas burned during the 2007 Day Wildfire. Prior to the planting of pine tree saplings, Mr. DeCarlo performed a records search, conducted an archaeological inventory, and evaluated the post-fire condition of previously identified archaeological sites. A survey report and archaeological site records were submitted to the Los Padres National Forest Headquarters and tree saplings were planted in the spring of 2010.

Sierra Madre Ridge Archaeological Survey and Rock Art Recordation Project, USFS, Mount Pinos Ranger District, Santa Barbara County, California. Served as the field chief for the Sierra Madre Ridge Project, a Section 110 of the National Historic Preservation Act (NHPA) project consisting of three one-week expeditions to update site records and survey previously unrecorded portions of a known archaeological district. Tasks included leading and training volunteer teams in survey and site recordation methods, updating previously recorded archaeological sites, identification of new sites, surveying previously unrecorded land, and managing fuels near significant sites to prevent possible fire damage. A survey report, site records, and GIS mapping were completed and submitted to the Los Padres National Forest Headquarters.

NEPA Compliance for the New Chuchupate Ranger Station, USFS, Mount Pinos Ranger District, Ventura County, California. Served as the acting district archaeologist. To ensure NEPA compliance and ensure acquisition of ARRA federal funds, conducted a records search, collaborated with the Forest Tribal Liaison, updated previously recorded sites, mapped the existing Chuchupate Ranger Station, conducted an intensive survey, contracted an architectural historian, and submitted a report to the Los Padres National Forest Headquarters.

Sapaski (Painted Rock) Tribal Protection Meeting, USFS, Mount Pinos Ranger District, Ventura County, California. Served as the acting district archaeologist for the Sapaski Tribal Protection Meeting, a collaborative effort with tribal representatives and USFS supervisors to protect a significant rock art

resource. Conducted a records search and suggested possible protection strategies to tribal representatives.

Archaeological Investigation for the Yellow Jacket Fire Project, USFS, Mount Pinos Ranger District, Ventura County, California. Served as the acting district archaeologist for the archaeological investigation after the Yellow Jacket Fire. Conducted a records search to identify any previously identified cultural resource within burned or staging areas, appraised sites impacted by both fire and fire-fighting measures, consulted with fire personnel to determine possible impacts, and submitted a report to the Los Padres National Forest Headquarters.

Patrick Hadel

Associate Archaeologist and Paleontological Field Technician

Patrick Hadel is an archaeologist with experience in cultural resource interpretation and preservation, as well as archaeological field methodology. Mr. Hadel has extensive experience in all phases of archaeology, including survey, evaluation, data recovery, and monitoring as field crew and field director. He is also well versed in organizing and managing of small and large teams to complete physically demanding research projects in remote and harsh environments safely and effectively.

EDUCATION

San Diego City College

AA, Anthropology (Awaiting Petition approval)

CERTIFICATIONS

California Archaeological Fieldwork, San Diego City College

Cultural Resource Management Workshop, Archer Institute

PROFESSIONAL AFFILIATIONS

Society for California Archaeology

California Archaeological Site Stewardship Program

American Center for Mongolian Studies

Society for American Archaeology

Project Experience

Development

Palm Avenue Distribution Center, City of San Bernardino, California. Served as archaeological and paleontological technician monitoring excavation for this warehouse/distribution center construction.

235 North La Luna, Phase II Evaluation, City of Ojai, California. Served as archaeological technician for the evaluation of a property located near a well-known prehistoric village site slated for residential development.

Yucaipa Wilson Basin III, Phase II Evaluation, City of Yucaipa, California. Served as archaeological technician for the testing of archaeological sites identified in a residential expansion.

Proctor Valley Village 14, Jackson-Pendo Development Co., San Diego County, California. Served as archaeological technician. Participated in the evaluation excavation of 53 prehistoric and historic sites for a 1,300 acre residential development. Acted a laboratory technician processing artifact collection; assisted with lithic analysis.

Yokohl Ranch Development, Yokohl Ranch Company, Tulare County, California. Served as archaeological technician. Participated in survey of 1,900 acres and excavation of 110 prehistoric and historic archaeological sites in locations for a residential development project; acted as laboratory technician sorting and cataloging artifacts; assisted with preparation of DPR forms.

Archaeological Test Excavation, Monitoring, and Mitigation Project for the Casa de Bandini/Cosmopolitan Hotel in Old Town San Diego State Historic Park, California State Parks, San Diego, California. Served as field technician. Excavated conducted monitoring, testing, and mitigation for the remodeling and restoration of the ca. 1870's Cosmopolitan Hotel. Included test excavations in the interior of the Bandini adobe as well as exterior courtyard and porch.

Energy

Jacumba Solar Project, Baywa/Swinerton/NextEra, Jacumba, San Diego County, California. Served as field director for Phase I pedestrian survey of 200 acre opens space preserve. Acted as field technician for Phase II distributional testing of 100 acre solar facility; acted as field director lead archaeological monitor during project construction. Daily tasks for monitoring phase involved interaction with the construction contractors, facilities

management, biologists, archaeologists, and Native American monitors to facilitate construction in compliance with all local, state and federal regulations in a culturally sensitive area; identified and excavated numerous thermal features, artifact scatters, and human remains during construction.

Cal Flats Solar Project, McCarthy Construction and First Solar Inc.,: Shandon, Monterrey and San Luis Obispo Counties, California. Served as archaeological monitor and crew chief during construction of a 1,700 acre solar facility. Worked closely with construction contractors and Native American monitors to conduct field operations in compliance with all state and federal regulations.

Tule Wind, Bureau of Land Management and Avengrid Renewables Inc., McCain Valley, San Diego County, California. Served as third-party archaeological monitor for the BLM ensuring the project maintained compliance with project mitigation measures and federal regulations.

Blythe Solar Power Project, NextEra, Blythe, California. Served as archaeological monitor for a 6.4 square mile solar field. Ensured construction contractors were in full compliance with project mitigation measures and federal regulations.

California Valley Solar Project, NRG/Sunpower, California Valley, San Luis Obispo County, California. Served as lead archaeological monitor and field director for construction of a 1,900 acre solar project. Managed a crew of 5–10 archaeologists and Native American Consultants. . Duties included: monitoring all soil disturbance for cultural resources, building and maintaining Environmentally Sensitive Area barriers and signage to protect cultural resources from construction impacts, and providing consultation to contractors to facilitate their compliance with all mitigation measures, state and federal cultural regulations, and to maintain an open and healthy cultural dialogue with the local Native American community.

Ocotillo Wind, Pattern Energy, Ocotillo, Imperial County, California. Served as archaeological monitor during construction of a 112 turbine wind farm situated in a very culturally and archaeologically sensitive location. Daily tasks included working closely with Native American monitors and construction personnel to ensure compliance with all mitigation measures and federal regulations.

Tule Wind Project, HDR Inc., San Diego County, California. Served as archaeological technician. Performed Class I and Class II pedestrian survey for 4,900 acre wind energy project; documented over 100 archaeological sites.

Sunrise Powerlink Project, San Diego Gas and Electric, San Diego and Imperial Counties, California. Served as lead archaeological monitor during construction of a 221-mile long high voltage electrical transmission line project. Acted as archaeological technician during the Phase I survey; recorded over 100 prehistoric and historic archaeological sites also acted as a Technician the Phase II evaluation and excavation of sites discovered during the survey portion.

City of San Diego As-Needed Contract, San Diego, California. Served as archaeological monitor for the installation of underground utilities on 10 separate projects throughout the City of San Diego. Acted as archaeological technician wet screening excavated sediments to recover human remains.

Federal

Dry Canyon Munitions Remediation, Army Corps of Engineers / Dawson Technical, Los Padres National Forest, Ventura, County, California. Served as archaeological monitor, accompanied an Unexploded Ordinance team surveying for munitions during reconnaissance cleanup evaluation in a WWII-era

artillery range. Performed a pedestrian survey of munitions sampling areas prior to activities. Documented nine new archaeological sites and updates eight previously recorded site; directed crews to avoid archaeological sites.

Military

Camp Wilson Facilities Upgrade, NAVFAC Southwest, Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, San Bernardino County, California. Served as archaeological monitor during the installation of upgrades to the Camp Wilson training facility on MCAGCC. Documented multiple isolates and directed crews to avoid significant sites in the vicinity of the project.

Delivery Order 30 Survey, NAVFAC Southwest, MCAGCC Twentynine Palms, San Bernardino County, California. Served as archaeological technician, participated in surveying numerous proposed landing zones throughout MCAGCC working closely with BEARMAT range safety and base personnel. Recorded more than a dozen new prehistoric archaeological sites.

Transportation

San Elijo Lagoon Double Track Project, AECOM, Encinitas and Solana Beach, California. Served as archaeological and paleontological monitor during construction of a second mainline railroad track. Coordinated closely with project biologist, Native American monitor, and construction contractors to ensure the project was completed in compliance with all project mitigation measures and state and federal regulations.

Mid Coast Rail Project, PGH Wong Engineering, San Diego, California. Served as archaeological monitor during construction of a second mainline railroad track and the installation of a double-track expansion of the Blue Line Trolley. Daily activities included working closely with biologists, Native American monitors, and construction personnel to complete the project in compliance with all mitigation measures and state and federal regulations.

Water/Wastewater

Barrett Lake Survey, City of San Diego, City of San Diego, California. Served as archaeological technician. Participated in the pedestrian survey of the lake shore area while the lake was at a historic low to identify potential impacts to archaeological sites during water level drawdowns; recorded 35 sites and seven isolates; prepared DPR forms and site descriptions for the survey report.

Otay River Estuary Restoration Project, Poseidon Resources, Imperial Beach, California. Served as archaeological technician. Participated in the evaluation excavation of four prehistoric sites, including an ethnohistoric village site; as laboratory technician, sorted and cataloged recovered materials.

Relevant Previous Experience

Ikh Nart Reserve, Dornogobi Province, Mongolia. Served as staff archaeologist. The Anza-Borrego Foundation, in partnership with Denver Zoo, Earthwatch, and the Mongolian Academy of Sciences, has a cultural resource identification and preservation program at the Ikh Nartiin Chuluu biological reserve in the Northern Gobi region of Mongolia. As a staff archaeologist, led field crews during field survey, excavation, ethnographic research; with the help of local families and herders, local archaeologists, and US-based archaeologists, created a public heritage preservation outreach program for cultural resource conservation; implemented programs to raise international awareness for the preservation of cultural resources.

Gaitaud Development and Design, San Diego, California. Served as construction foreman assistant in high-profile residential construction projects throughout San Diego County. Managed operations of laborers and skilled labor technicians during the process of residential development. Maintained safety standards and environmental compliance for various residential and commercial construction projects throughout San Diego County.

Specialized Training

- Field Data Collection: All Trimble products, ArcGIS, Pathfinder, CalTOPO, Total Station, GPR, Collector Apps, and Digital Theodolite.
- Extensive Construction and Development Knowledge: Operational knowledge of construction methods and terminology, experience working closely with skilled labor and construction management, lifelong experience with the world of construction, development and its various concerns.

Conference Presentations

"Working Towards an Exportable Indigenous Heritage Management and Cultural Ranger Program in the Ikh Nart Nature Reserve, Mongolia." Co-Authored with Terendagva Yadmaa, Ph.D., Joan Schnieder Ph.D., and Jennifer Farquhar, M.A. 2015. Presented at the Society for American Archaeology Annual Conference, San Francisco, California.

"Investigations at Burgas Ni Am Buddhist Monastery in the Northern Gobi, Mongolia." Co-Authored with Tserendagva Yadmaa, Ph.D. and Dalantai Sereuya. 2014. Presented at the Society for American Archaeology Annual Conference, Austin, Texas.

"A Mongolian Quarry Landscape in the Northern Gobi." Co-Authored with Joan Schneider Ph.D. and Tserendagva Yadmaa, Ph.D. 2014. Presented at the Society for American Archaeology Annual Conference, Austin, Texas.

"Toward a Cultural Heritage Management Program for Ikh Nart Nature Reserve, East Gobi Province, Mongolia: A Pioneer International Effort Based on the California State Parks Cultural Resources Preservation Model in the Eastern Gobi Desert of Mongolia." 2013. Poster presented at the Society for American Archaeology Annual Conference, Honolulu, Hawaii.

Scott Wolf

Archaeologist

Scott Wolf is an archaeologist with more than 15 years' experience in professional archaeology. He graduated from the College of Charleston with a bachelor of arts (BA) degree in anthropology in 1996 and has worked in the San Diego area since 2003. Mr. Wolf has most often been involved in field directing or leading in survey, testing, data recovery, paleoecological studies, remote sensing, and construction monitoring throughout California for the last 11 years. He is certified by the City of San Diego as an archaeological monitor and has security clearances for military installations in Southern and central California, including Naval Base Point Loma (NBPL) and San Clemente Island (SCLI) Naval Auxiliary Landing Facility (NALF). Along with being well versed in military history, historic artifact analysis, and the analyses of invertebrate remains, Mr. Wolf specializes in military history and aviation and military-related archaeology. He was among the award-winning team of archaeologists and architects who provided historical evaluation and mitigation services for the Cosmopolitan Hotel in Old Town San Diego State Historic Park for California State Parks (CSP).

EDUCATION

College of Charleston

BA, Anthropology, 1996

Norwich University

MA, History, in progress

CERTIFICATIONS

40-hour training Hazardous Waste Operations and Emergency Response (HAZWOPER) (issued 09/18/2013)

NCTD Railroad Safety

Adult CPR and first aid training

PROFESSIONAL AFFILIATIONS

Society for California Archaeology

Pacific Coast Archaeological Society

San Diego Archaeology Center

Historical Congress of San Diego

San Diego County Archaeological Society

TRAINING

2008–2014, 8-hour HAZWOPER refresher training

2007–2008, Training seminars for aviation archaeology field, lab, and research methods

1996, Paleontology/paleoanthropology field school, Red Desert Basin Project, Red Desert, Wyoming

1995–1996, Laboratory internship at the Nathaniel Russell House, Historic Charleston Foundation, Charleston, South Carolina

AWARDS

2011, Preservation Design Award in Recognition of Outstanding Achievement in the Field of Historic Preservation for the Cosmopolitan Hotel Restoration Project

Employment History

- Senior archaeologist, NWB Environmental Services LLC, San Diego, California, 2014.
- Associate archaeologist, ASM Affiliates Inc., Carlsbad, California, 2003–2014.
- Associate archaeologist, Brockington and Associates, Mount Pleasant, South Carolina, 1997–2014.

Other Capabilities

- San Diego history
- Military history
- Expert artifact identification and analysis
- Invertebrate marine shell speciation
- Cartography
- Global Positioning System (GPS) data collection.

Clearances

- Department of Defense (DoD) clearance for Space and Naval Warfare Systems Command (SPAWAR)
- DoD clearance for NBPL
- DoD clearance for SCLI

- DoD clearance for Marine Corps Base Camp Pendleton (MCBCP)
- DoD clearance for Edwards Air Force Base (EAFB)
- DoD clearance for Twentynine Palms Marine Corps Air Ground Combat Center (MCAGCC)
- Camp Pendleton Range Safety Officer (RSO), non-live fire range certified 2006–2008
- Unexploded ordnance (UXO) safety training for Twentynine Palms MCAGCC and SCLI.

Independent Research

- Military History of San Diego and Southern California and Military Munitions Casing Head-Stamp Identification Database.

Laboratory Experience

- 10 years of laboratory lab analysis for projects spanning Southern California.
- Two internships with Martha Zierden and Ron Anthony of the Charleston Museum, Charleston, South Carolina.

Selected Project Experience

Verizon Wireless Tower Expansion Project, Aarcher Inc., Federal Communication Commission, Southern California. As senior archaeologist and historian, participated in all levels of Phase I cultural and historical investigations, including but not limited to record searches, Native American Heritage Commission (NAHC) consultation, public awareness notification procedures, field surveys, and Archaeological Resources Management Report (ARMR) report preparation for the construction of new Verizon data towers throughout Southern California counties. The specific tower projects to date include:

- The Saint Clair Tower Project, Van Nuys, Los Angeles County, California
- The Ossierra Tower Project, Palmdale, Los Angeles County, California
- The Wild Pony Tower Project, Fontana, Riverside County, California
- The Merchant Tower Project, Los Angeles, Los Angeles County, California
- The Covington Tower Project, Morongo Valley, San Bernardino County, California

1833 Dragoon Officer's Dress Uniform Assessment, Stabilization, and Long-Term Storage Project, CSP, San Diego County, California. As senior archaeologist, military historian, and project lead, participated in the removal of the dragoon uniform from its display case at the San Pasqual Battlefield Museum. Removed the uniform from the non-standard mannequin, assessed and documented the current conditions of the uniform, and stabilized and prepared the uniform for long-term storage at the California Statewide Museum Collections Center in Sacramento, California.

Palo Verde Wilderness Area Survey Project, United States Department of the Interior (USDI) Bureau of Reclamation, Imperial County, California. As associate archaeologist, participated in survey and site recordation for a Class III, 1,339-acre inventory and condition assessment, and re-evaluation of National Register of Historic Places (NRHP) eligibility of the Palo Verde Point Wilderness Area.

Point Fire Rehabilitation Cultural Resource Survey Project, Bureau of Land Management (BLM), Gooding County, Idaho. As associate archaeologist, conducted a Class III cultural resources inventory and survey of 2,782 acres on BLM lands outside of Twin Falls, Idaho.

San Diego Mission de Alcala Collections Management Project, San Diego County, California. As associate archaeologist, participated in the long-term management of the San Diego Mission artifact collections. Upgraded the archaeological collections to current archival and curation standards.

Eastern Service Area (ESA) Secondary Connection Padre Dam Project, Helix Environmental Planning, San Diego County, California. As associate archaeologist, conducted the field survey and initial evaluations of the proposed property area, prepared a report to summarize the status of knowledge concerning cultural studies in the area, and documented sites for the Padre Dam pipelines.

San Diego Gas and Electric (SDG&E) Pole Brushing Survey, SDG&E, San Diego, Orange, and Imperial Counties, California. As associate archaeologist, conducted monitoring of wood-to-steel power pole replacement and made recommendations for mitigation based on cultural resources found in the project area.

Laguna Fire Monitoring Project, SDG&E, San Diego County, California. As associate archaeologist, conducted initial damage evaluations and monitored all clean-up/repair efforts within the historic community for emergency pole and overhead conductor work and facility restoration during the Chariot Fire on Mount Laguna.

Tule Wind Geotechnical Monitoring and NRHP Nomination Project, Iberdrola Renewables, San Diego County, California. As lead project monitor, coordinated and conducted monitoring for geotechnical work during the field operations of the Tule Wind Project.

Tie-Line 605 Underground Conversion Project, SDG&E, San Diego County, California. As associate archaeologist, conducted archaeological monitoring during grading, trenching, excavation, and conversion activities associated with the undergrounding of existing transmission line 605 in Sherman Heights.

Palomar Station Monitoring Project, Integral Properties, San Diego County, California. As lead project archaeologist, conducted the testing and monitoring during field operations, based on a recommendation from a prior ASM Affiliates cultural resource study. Prepared the initial report for the development of the Palomar Station property.

Outlets at the Border Archaeological Monitoring Project, BRG Consulting, San Diego County, California. As associate archaeologist, conducted the initial resource evaluation and monitoring for the proposed development of the Outlets at the Border. Acted as liaisons for the project client.

El Dorado Parkway Survey and Evaluation Project, Helix Environmental Planning, San Diego County, California. As project archaeologist, led and conducted a 0.55-acre survey and excavated three shovel test pits at the El Dorado Parkway. Prepared the initial evaluation report.

Broadstone Balboa Park Monitoring, San Diego Natural History Museum, San Diego County, California. As lead project archaeologist, conducted both the testing and monitoring during grading in Balboa Park for the proposed project. Prepared the initial report for the development project.

San Diego County Fuels Reduction Parcel Preparation, Environmental Resource Solutions, San Diego County, California. As associate archaeologist, led team of Native American monitors and archaeologists during survey and evaluation of identified County resources along State Route (SR) 78/79 and the Whispering Pines community in Julian, California.

Civita Horizon I Development Phase B/M F Project, Sudberry Properties, San Diego County, California. As associate archaeologist, conducted a records search and performed archaeological monitoring for the Quarry Falls Grading Project. Prepared the initial monitoring report.

Juan and Taylor Streets Pothole Monitoring Project, Atkins, San Diego County, California. As associate archaeologist, conducted cultural resource monitoring and initial project evaluations for potholing of existing underground utilities. Prepared the initial monitoring report.

Soitec–Borrego Springs Desert Greens, RBF Consulting, San Diego County, California. As field director, led the Phase I archaeological survey and evaluation of two off-site improvement corridors for the proposed installation of a concentrated CPV solar farm.

Jacumba Historic Trash Scatters Evaluation Project, SDG&E, San Diego County, California. As associate archaeologist, conducted the preliminary assessment of eligibility under California Environmental Quality Act (CEQA) for historic trash deposits located on three mitigation parcels for the Eco Substation Project.

Mission San Diego de Alcala Trench Test Excavations, Mission San Diego de Alcala, San Diego County, California. As field director, led the subsurface testing, excavation, and evaluation of historic features on the project property. Prepared artifacts for curation and authored the final report.

1625 Newton Avenue Cultural Resource Services Project, B&G Consultants, San Diego County, California. As associate archaeologist, prepared the initial negative monitoring report for the construction monitoring performed for the Monarch School Project.

Silurian Valley West Cultural Resources Study, Iberdrola Renewables, San Bernardino County, California. As field archaeologist, conducted a Class III archaeological survey and inventory for the proposed Silurian Valley West solar energy generation facility.

Goetz Road Monitoring Project, Riverside County Transportation Department, Riverside County, California. As associate archaeologist, prepared the initial negative monitoring report for the archaeological and paleontological monitoring performed during geotechnical grading and earth-movement activities during the realignment of Goetz Road.

Sol Orchard Boulevard B Survey and Evaluation Project, RBF Consulting, San Diego County, California. As field director, led the 105-acre pedestrian survey and excavation testing and evaluation of multiple historic sites for the proposed Sol Orchard area in order to relocate and update site documentation. Prepared the initial project report for the project.

Moonlight Beach Emergency Test Excavations and Monitoring, City of Encinitas, San Diego County, California. As lead project archaeologist, conducted the testing and monitoring during field operations at Moonlight Cove. Authored the initial report for the development project.

Campo Wind Farm Supplemental Inventory Survey Project, AECOM, San Diego County, California. As field director, led a team of Native American monitors and archaeologists during survey of additional areas of the Campo Invenergy in support of the proposed development of a wind farm on the Campo Indian Reservation.

Archaeological Testing of the Urbana (10th Avenue) Apartments, H.G. Fenton Company, San Diego County, California. As lead project archaeologist, conducted cultural resource monitoring and field investigations during grading for the Urbana Project, as recommended by an initial evaluation of the project site. Prepared the initial report for the development project.

PN 15220.08 Sorrento to Miramar Double Track, Task 54 Tunnel Alternatives Survey Project, North County Transit District (NCTD), San Diego County, California**.** As associate archaeologist, participated in an evaluation of the existing conditions pertaining to cultural and historical resources within NCTD's project right-of-way (ROW) in the Cities of Cardiff and Del Mar and the Sorrento Valley area of the City of San Diego.

PN 15220.09 Sorrento to Miramar Double Track Phase 1, Task 47 Test Excavations Project, NCTD, San Diego County, California**.** As associate archaeologist, participated in an evaluation of the existing conditions pertaining to cultural and historical resources within NCTD's project ROW in the Cities of Cardiff and Del Mar and the Sorrento Valley area of the City of San Diego.

Naval Auxiliary Landing Airfield SCLI Signage Maintenance Project, Naval Facilities Engineering Command (NAVFAC), Orange County, California. As field archaeologist, assisted with the maintenance of protective signing for over 750 sites on northern and central SCLI in order to keep vehicular traffic and other ground-disturbing activities off marked cultural deposits.

Golden Oasis Exploration Cultural Resources Inventory Project, Enviroscientists, Washoe County, Nevada. As associate archaeologist, conducted a Class III intensive cultural resource inventory for proposed mining exploration on lands administered by BLM in Battle Mountain, Nevada.

Southwestern College Modernization Project, BRG Consulting, San Diego County, California. As associate archaeologist, conducted archaeological monitoring during all earth-movement activities for the modernization of Southwestern College.

North Embarcadero Visionary Plan, Phase 1 Monitoring Project, Atkins, San Diego County, California. As lead archaeological monitor, provided archaeological monitoring during ground-disturbing activities at the project site, as recommended by a previously conducted records search of the project area. Prepared the initial monitoring report.

North Embarcadero Visionary Plan (NEVP) Phase 1 Archaeological Monitoring, San Diego Unified Port, Port of San Diego, San Diego County, California. As associate archaeologist, conducted archaeological monitoring of the NEVP study area.

Sorrento to Miramar Double Track Phase 2, David Evans and Associates, San Diego County, California. As associate archaeologist, participated in an evaluation of the existing conditions pertaining to cultural and historical resources within NCTD's project ROW in the Cities of Cardiff, Del Mar, and Sorrento Valley.

Jeff Valley Parcels Historic Evaluation Project, SDG&E, San Diego County, California. As field director, led excavations testing and evaluating of multiple historic features on the Jeff Valley parcels to aid in the evaluation of eligibility to the NRHP.

15th and Market Archaeological Testing and Monitoring Project, Holland Construction, San Diego County, California. As field director, led excavations testing and evaluation of multiple historic features on the eastern half of Block 175 in the East Village neighborhood of Downtown San Diego. Conducted archaeological monitoring during project development activities and prepared the initial project report for the proposed development.

Quarry Creek Monitoring Project, McMillin Land Development, San Diego County, California. As lead project monitor, conducted three days of archaeological monitoring during geotechnical drilling on the Panhandle Property and prepared the initial monitoring report.

Rough Acres Ranch Cultural Resources Survey, REC Consultants, San Diego County, California. As field director, led excavations testing and evaluation of multiple historic and prehistoric sites on the Rough Acres Ranch property. Prepared the initial project report for the proposed development.

Carmel Valley Road Widening-T4.3 Project, Hunsaker & Associates, San Diego County, California. As associate archaeologist, conducted the initial resource evaluation for the widening of Carmel Valley Road and acted as liaison for the project client.

PN 17850.02 Bunker Hill Monitoring Project, Gulf South Research Inc., San Diego County, California. As field director, led archaeologists and monitors during the survey and then coordinated the subsequent monitoring of Gulf South Research Inc.'s International Border Fence project at Bunker Hill, adjacent to the CSP Friendship Circle Park located at the U.S.–Mexico International Border.

CSP Friendship Circle Unanticipated Discoveries Project, Gulf South Research Inc., San Diego County, California. As project archaeologist, conducted monitoring and feature evaluation during the remodeling of the CSP's Friendship Circle Park Area and International Border Monument located at CSP Friendship Circle Park along the U.S.–Mexico International Border.

San Marcos High School Monitoring Project, San Marcos Unified School District, San Diego County, California. As lead archaeological monitor, conducted field monitoring during rough grading and trenching phases of construction at San Marcos High School. Acted as point of contact and monitoring coordinator.

Palomar College Data Recovery and Mitigation Monitoring Project, RBF Consulting, San Diego County, California. As field director, led the team of archaeologists and monitors during grading activities in order to mitigate the impact of undiscovered buried cultural resources in the project area and conducted the subsequent data recovery at Palomar Community College North Education Center.

Broadstone Little Italy Archaeological Testing and Monitoring, San Diego Natural History Museum, San Diego County, California. As lead project archaeologist, conducted both the testing and monitoring during field operations and prepared the initial report for the project.

Border Plaza Cultural Resource Monitoring, The Shamrock Group, San Diego County, California. As associate archaeologist, conducted the initial resources study and archaeological monitoring during grading of the proposed Plaza at the Border Project.

Rhodes Crossing Data Recovery Project, Sea Breeze Properties LLC, San Diego County, California. As field director, led excavations testing and evaluating multiple historic and prehistoric sites for the Rhodes Crossing Project. Prepared the initial project report for the proposed development.

University House Archaeological Testing and Monitoring Project, UCSD, San Diego County, California. As field director, led excavations and coordinated Phase I archaeological monitoring associated with the cliff stabilization, construction, and revitalization of the University House on the University of California, San Diego campus.

Archaeological Test Excavation, Monitoring, and Mitigation Project for the Casa de Bandini/Cosmopolitan Hotel in Old Town San Diego State Historic Park, CSP, San Diego, California. As field director, conducted monitoring, testing, and mitigation for the remodeling and restoration of the ca. 1870's Cosmopolitan Hotel. Included test excavations in the interior of the Bandini adobe as well as exterior courtyard and porch.

Archaeological Test Excavation and Mitigation Project for the Seeley Windmill/Stables in Old Town San Diego State Historic Park, CSP, San Diego, San Diego County, California. As field director conducted the monitoring, testing, and mitigation for a multiphased project that included the identification and relocation of two ca. 1870s historic windmill/well locations, the identification of cobble foundations for previously unrecorded historic structures, and general testing for subsurface cultural resources potentially impacted by modern disturbances.

Archaeological Resources Survey for the Melrose Station Market Survey Project, Gatlin Development, Oceanside, San Diego County, California. As field director, conducted a pedestrian survey and wrote the initial project report for the proposed development of the Melrose Station Market.

The Archaeological Test Excavation and Monitoring Project for the Walach and Goldman Square in Old Town San Diego State Historic Park, CSP, San Diego County, California. As field director, conducted monitoring and test excavations to determine the presence or absence of cultural resources in the footprint of new structures and remodeling of the commercial Square.

Archaeological Test Excavation and Monitoring Program at El Fandango Restaurant, Old Town San Diego State Historic Park, CSP, San Diego County, California. As field director, conducted test excavation and monitoring and mitigation for subsurface cultural resources that were impacted by the remodeling of the patio and bathrooms for the restaurant and prepared reporting for the client. This project was unique in that during the discovery of an intact brick floor feature, ASM Associates was able to provide rare feature elevations that help to diagnose other historic events for all of Old Town State Historic Park.

Site Survey, Site Record Evaluations, and Site Documentation Activities for Sea-Based Weapons and Advanced Tactics School (SWATS) 4 and 5 Site Documentation Project, NAVFAC Southwest, NALF SCLI, Los Angeles County, California. As associate archaeologist, participated in the archaeological site survey, site record evaluations, and site documentation activities on SCLI.

Archaeological Evaluation of the Otay Mesa Yamamoto Property, Kearny Real Estate Company, San Diego, San Diego County, California. As field director, conducted archaeological testing and evaluation of a portion of prehistoric site CA-SDI-7208/CA-SDI-7857.

Archaeological Study for the South Lake Park Master Plan, Project Design Consultants, San Marcos, San Diego County, California. As field director, conducted cultural resources survey for the South Lake Park property.

NCTD Bridge Replacement Project Existing Conditions – Cultural and Historical Resources, BRG Consulting for NCTD, San Diego County, California. As associate archaeologist, participated in an evaluation of the existing conditions pertaining to cultural and historical resources within NCTD's project ROW in the Cities of Cardiff and Del Mar and the Sorrento Valley area of the City of San Diego.

Archaeological Site Survey, Site Record Evaluations, and Site Documentation Activities for the Infantry Operational Area (IOA) Site Documentation Project, NAVFAC Southwest, SCLI, Los Angeles County, California. As associate archaeologist, participated in archaeological site survey, site record evaluations, and site documentation activities on central and SCLI.

Cultural Resources Survey of the Tulloch Property, Greystone Environmental, Santa Ysabel, San Diego County, California. As associate archaeologist, helped conduct an intensive survey of the existing and the proposed SDG&E utility corridors on the Tulloch property.

Creekside Sewer Lateral Project, Carter Reese & Associates, San Diego, San Diego County, California. As field director, conducted survey of the proposed Creekside Sewer Lateral to determine the presence or absence of potentially significant cultural resources within both of the project boundaries.

Yuma Pivot Point Survey Project, Yuma, Arizona. As associate archaeologist, participated in ground penetrating radar survey (GPR) for archaeological remains of the Southern Pacific Railroad Bridge across the Colorado River. Prepared for the Yuma Crossing National Heritage Area.

Cultural and Paleontological Resource Study for the Towne Center Project, T&B Planning, City of Perris, Riverside County, California. As field director, conducted a cultural resource study to assess the presence or absence of potentially significant resources within the project boundaries for CEQA compliance.

Extended Phase I Testing at Prehistoric Sites CA-SDI-10879, CA-SDI-10880, and CA-SDI-12155 near Bonsall, California Department of Transportation (Caltrans) District 11, San Diego County, California. As associate archaeologist, participated in the testing of four prehistoric archaeological sites along SR-76 to determine whether or not intact subsurface archaeological deposits were present.

Canyon Trails Cultural Resource Phase I and II Studies, T&B Planning, Hemet, Riverside County, California. As field director, led the testing of 13 prehistoric sites located in Reinhardt Canyon.

Cultural Resources Monitoring for the Babbitt Parcel of the Amber 58 Project, California West Homes, Vista, San Diego County, California. As cultural resource monitor, conducted archaeological monitoring of grading associated with residential development on the project property.

Archaeological Investigations at University House, CA-SDI-4669 (SDM-W-12), University of California at San Diego (UCSD), La Jolla, San Diego County, California. As field director led the geotechnical testing phase of the archaeological investigations. Participated in the Canine Forensic Investigation Phase of the University House Project, which proposed the replacement of the existing University House facility at UCSD.

Cultural Resource Survey of 683 Thunderbird Drive, Western Mutual Development Corporation, Oceanside, San Diego County, California. As field director, administered the archaeological survey of the residence located at 683 Thunderbird Drive in Oceanside.

Cultural Resource Inventory for the San Marcos Creek SPA Project, City of San Marcos, San Diego County, California. As associate archaeologist, participated in cultural resources survey covering over a total of 262 acres conducted for the San Marcos Creek Project.

Extended Phase I Testing for Prehistoric Site SDI-16498, Caltrans District 11, Bonsall, San Diego County, California. As field director, conducted extended Phase I testing at CA-SDI-16498 to determine whether or not an intact subsurface archaeological deposit was present.

Records Search and Field Survey for Orienteering Course, NAVFAC Southwest, Coronado, San Diego County, California. As field archaeologist, surveyed 71 orienteering points used by the U.S. Navy as part of a land navigation training exercise conducted by the Naval Special Warfare Center (NSWC) at Laguna Mountain Recreation Area (LMRA).

Cultural Resources Inventory of Johnson Valley Off-Highway Vehicle (OHV) Recreational Use Area, BLM, San Diego County, California. As field archaeologist, conducted an inventory of approximately 2 km2 maintained by BLM for the Scripps Institutes Calico Fault Seismic Study and authored the subsequent technical report.

Cultural Resources Monitoring for the Hotel Circle South Project, San Diego County, California. As cultural resource monitor, observed ground-disturbing activities for the Hotel Circle South Project.

Archaeological Survey of the Morrison Advanced Mitigation Parcels, Caltrans District 11, Bonsall, San Diego County, California. As field archaeologist, conducted an archaeological inventory of the Morrison Advanced Mitigation Parcels.

Archaeological Survey of the Singh Advanced Mitigation Parcel, Caltrans District 11, Oceanside, San Diego County, California. As field archaeologist, conducted an archaeological inventory of the Singh Advanced Mitigation Parcels.

Archaeological Survey of the Groves Advanced Mitigation Parcels near Bonsall, Caltrans District 11, San Diego County, California. As field archaeologist, conducted an archaeological inventory of the Groves Advanced Mitigation Parcels.

SDI-10723 Data Recovery, NAVFAC Southwest, MCBCP**, San Diego County, California.** As archaeologist, assisted with identifying and organizing the artifact collection derived from data recovery of prehistoric site SDI-10723.

Historic Mining Context for the Western Barry M. Goldwater Range and Archaeological Inventory of the Historic Fortuna Mine and Campsite, NAVFAC Southwest, Yuma County, Arizona. As associate archaeologist, participated in the historic mining context survey and Class III archaeological survey and recorded features using Trimble GPS technology.

Archaeological Testing and Evaluation of Four Sites for the Dual Magnet High School Project, Vista Unified School District, San Diego County, California. As field director, conducted test evaluations at four sites potentially impacted by the proposed development of the new Dual Magnet High School. In the lab, supervised the processing, cataloging, analysis, and curation of artifacts recovered during the testing; authored technical report.

Archaeological Survey of the Ridge Creek Property, Leising Builders, Fallbrook, San Diego County, California. As field director, conducted cultural resource survey of the Ridge Creek Property. The project involves the subdivision of a 30.36-acre lot into 14 lots at a minimum of 2.0 acres per lot.

Phase I Cultural Resource Survey of 2,500 Acres in Four Priority Areas, EAFB, Kern and Los Angeles counties, California. As associate archaeologist, participated in Class III cultural resources survey and inventory of approximately 2,500 acres in four "priority areas" located on Mercury Boulevard at the center of EAFB and adjacent to Rogers Dry Lake.

Archaeological Data Recovery for the Hard Rock Hilton, 5th Rock LLP for Centre City Development Corporation, Downtown San Diego, California. As archaeologist, assisted with organizing the artifact collection derived from data recovery of historic features identified during construction monitoring.

Viejas Northwest Grade Evaluation Project, Viejas Band of Kumeyaay Indians, Alpine, San Diego County, California. As field crew, conducted excavation of sites along the northwestern boundary of the Viejas Indian Reservation. Assisted with the collection and processing of artifacts.

Archaeological Survey of the Lee Lake Expansion Project, Lee Lake Water District, Riverside County, California. As field director, conducted archaeological survey of the Lee Lake Reservoir in Riverside County. Coordinated with principal investigator and conducted an additional site visit accompanied by a member of the Pechanga Band of Mission Indians.

Data Recovery Excavations at CA-SDI-16691, SVP Jackson Pendo Development Company, Escondido, San Diego County, California. As field archaeologist, conducted data recovery to mitigate impacts to prehistoric site SDI-16691.

Archaeological Testing and Evaluation of CA-SDI-16069 and CA-SDI-17526, BRG Consulting Inc., San Diego County, California. As field archaeologist, conducted testing to determine the extent and character of potentially significant prehistoric resources situated within the Viejas Indian Reservation on property owned in fee by the Tribe.

Testing and Evaluation of Site CA-SDI-11021 for the Proposed Tecolote Canyon Wetlands Mitigation Project, City of San Diego Metropolitan Wastewater Department, San Diego County, California. As field archaeologist, conducted testing to determine the extent and character of potentially significant prehistoric and historic resources within the Tecolote Canyon Wetlands.

Archaeological Monitoring for the Los Penasquitos North Wetland Creation Project, City of San Diego Metropolitan Wastewater Department, San Diego County, California. As cultural resource monitor, observed ground-disturbing activities for the Los Penasquitos North Wetland Creation Project.

Archaeological Monitoring of CA-SDI-10148, Caltrans District 11, Santee, San Diego County, California. As cultural resource monitor, observed ground-disturbing activities near known archaeological sites partially contained within the Forester Creek biological mitigation site.

Archaeological Testing and Evaluation at Two Sites, CA-SDI-222 (Monument Mesa Site) and CA-SDI-4281 (Lichty Mesa Site), Border Field State Park, CSP, San Diego County, California. As field archaeologist, determined the extent and character of two potentially significant prehistoric resources during evaluation.

Archaeological Survey of Military Family Housing (MFH) Site 8, NAVFAC Southwest, Marine Corps Air Station (MCAS) Miramar, San Diego County, California. As field archaeologist, conducted an archaeological survey at the MFH Site 8 housing area and within areas proposed for development as an access road. Although a portion of the housing project area had been previously surveyed, the area was subsequently burned and the State Historic Preservation Office (SHPO) required additional surveying due to improved visibility. The access road alignment had not been set, and the survey was used in a constraints analysis.

Historical Resources Survey of Black Mountain Open Space Park, City of San Diego, San Diego County, California. As field archaeologist, conducted a cultural resources inventory of this 1,314-acre city park. Assisted with extensive research on the Black Mountain Mine, located on the north slope of the mountain. The project is being conducted to prepare a NRHP mining district nomination form for remnants of the mining operation still existing on-site.

Cultural Resources Survey for a Fuel Reduction Project in the Julian Area, Atkins, San Diego County, California. As field archaeologist, conducted a field survey along five major roadways near the town of Julian: SR-79 from Julian to Lake Cuyamaca, SR-78 from Santa Ysabel to Julian, SR-78 Banner Grade/Whispering Pines, SR-79 South, and Sunrise Highway. The project area consisted of a 200-foot corridor on both public and private lands along both sides of these roads. Four previously recorded sites and 16 newly discovered sites were identified as being near or within areas proposed for tree removal.

Archaeological Testing and Evaluation for the Tank Farm MILCON Project, Shaw Environmental for NAVFAC Southwest, Navy Base Point Loma, San Diego County, California. As field archaeologist, assisted with delineating, recording, and assessing the integrity of a prehistoric locus uncovered by erosion from heavy rains in 2004–2005. Helped to evaluate the integrity and NRHP significance of the site in compliance with Section 106 of the NHPA.

Archaeological Survey of the Lakeland Reservoir, Atkins, Riverside County, California. As field director, conducted survey of the project and identified five historic structures slated for demolition within the proposed project area, including a private ca. 1920s residence located at 17255 Encina Drive, the Adelfa Reservoir, the Encina Pump Station, the Cottrell Reservoir, and the Cottrell Pump Station.

Phase II Test Excavations at Six Sites in the Lavic Lake Training Area, MCAGCC, Twentynine Palms, San Bernardino County, California. As field archaeologist, conducted Phase II test excavations and evaluation of five prehistoric habitation sites and one lithic quarry located south and east of Lavic Lake.

Phase I Cultural Resources Survey of 2,000 Acres in the South Range, Epsilon Systems Solutions, Naval Air Weapons Station (NAWS) China Lake, Ridgecrest, Inyo County, California. As field archaeologist, surveyed 2,000 acres in a rugged portion of the South Range at NAWS. Documented 21 archaeological sites, including prehistoric rockshelter habitations, lithic scatters, isolated rock features, and a historic fence.

Phase I Cultural Resources Survey of 1,640 Acres in the Quackenbush Training Area, MCAGCC Twentynine Palms, San Bernardino County, California. As field archaeologist, conducted Class III survey of 1,640 acres in a relatively disturbed area of the Quackenbush training area. Documented three small lithic quarry sites.

Phase I Inventory of 1,100 Acres and Phase II Evaluation of Archaeological Sites along the Western and Northwestern Base Boundaries, EAFB, Kern County, California. As field archaeologist, conducted a Class III inventory of 1,100 acres. Documented 40 new archaeological sites, more than a dozen "submodern" refuse dumps, and a variety of isolated finds. Conducted excavations revealing intact prehistoric sites with relatively low data potential and historic sites impacted by illegal activities, though retaining good data potential.

All-American Canal Lining Project Survey, Imperial Irrigation District, Imperial County. As field archaeologist, conducted a large-scale Class II and III inventory and random sample survey. Completed survey of the 4,200-acre ROW along approximately 23 miles of the All-American Canal. Conducted a 10% random sample survey that encompassed an additional 743 acres. This project was undertaken for use in planning the placement of quarrying and staging areas for the proposed canal lining project.

Archaeological Survey of the Miramontes Road Property, Helix Environmental, Jamul, San Diego County, California. As field director, conducted archaeological survey of the 19-acre project area. One large habitation site was identified during survey and documented. Prepared an ARMR-format report for submission to the County of San Diego.

San Vicente Emergency Storage Project Cultural Resources Survey, Atkins, San Diego County Water Authority (SDCWA), San Diego County, California. As field archaeologist, assisted with a cultural resources study of the San Vicente Reservoir, which the SDCWA proposes to expand by adding height to the existing dam, resulting in the inundation of additional land. Compiled expanded field survey information for evaluation of potential impacts to NRHP-eligible sites within the project area of potential effect (APE).

Archaeological Monitoring for the Agua Hedionda Lagoon Bridge Replacement, NCTD, Carlsbad, San Diego County, California. As archaeological monitor, observed construction during replacement of the railroad bridge over Agua Hedionda Lagoon in Carlsbad. Coordinated with construction and railway personnel. Certified to survey along railways.

Evaluation of 30 Sites in the Quackenbush Range, TEC Inc., MCAGCC, Twentynine Palms, San Bernardino County, California. As field archaeologist, conducted archaeological excavation of 30 sites within the Quackenbush training area. Assisted with mapping and surface collection of artifacts and artifact processing.

Pankey Ranch Test Excavations, Pardee Homes, San Diego County, California. As field archaeologist, conducted archaeological excavation of an ethnohistoric village located near Bonsall. Observed the excavation of backhoe trenches for testing of the site.

Coachella Canal Data Recovery, Coachella Valley Water District, Riverside County, California. As field archaeologist, conducted data recovery on two prehistoric fish camp sites located on the relic shoreline of ancient Lake Cahuilla that are expected to be impacted by the Coachella Canal Lining Project. Project conducted on lands administered by USDI Bureau of Reclamation.

Caltrans TEA21 Rural Roadside Inventory, Caltrans District 11, San Diego County, California. As field archaeologist, participated in survey of 121 miles of rural roads in eastern San Diego County including SR-76, SR-78, and SR-79. Prepared field mapping and site forms. Thirty-five sites were recorded or updated during the survey.

Archaeological Monitoring for the Lillian Place Apartments, Wakeland Housing and Development, Downtown San Diego, California. As archaeological monitor, observed earthmoving activities for the demolition of three historic buildings and excavation for subsurface utilities at 13th and K Streets in Downtown San Diego.

Extended Phase I Investigations of Archaeological Sites along SR-76, Caltrans District 11, Bonsall, San Diego County, California. As field archaeologist, investigated a series of prehistoric archaeological sites along the ROW between the Bonsall Bridge and Interstate 15. Conducted site survey, mapping, and testing in compliance with Section 106.

NBPL Site Recordation, Commander Navy Region Southwest, Point Loma, San Diego County, California. As field archaeologist, relocated 33 sites on NBPL. Reviewed site documentation and rerecorded sites that were improperly documented by past surveys.

Data Recovery of Locus O, Star Canyon Development, Agua Caliente Band of Cahuilla Indians, Palm Springs, Riverside County, California. As field archaeologist, conducted data recovery mitigation of an archaeological deposit and human remains near Tahquitz Canyon.

Cultural Resource Survey for a Fuel Reduction Project on Palomar Mountain, Atkins, San Diego County, California. As field archaeologist conducted survey along three roads on Palomar Mountain. Surveyed a 200-foot corridor on both public and private lands. Identified four previously recorded sites and one newly discovered site near or within areas proposed for tree removal.

Coachella Canal Replacement Monitoring Program, Bureau of Reclamation and the Coachella Valley Water District, Riverside County, California. As cultural resource monitor, observed ground-disturbing activities near known archaeological sites. Conducted two supplemental surveys, recorded newly found prehistoric sites, performed preliminary significance evaluations, and coordinated with contractors to avoid adverse impacts.

Las Pulgas Corridor Testing, NAVFAC Southwest, MCBCP, California. As field archaeologist, conducted test excavations of 22 hunter–gatherer archaeological sites. Mapped and documented prehistoric sites including shell middens, lithic scatters, and bedrock milling stations. Assisted with geotechnical coring of a prehistoric shell midden (SDI-812/H) to identify and examine previously recorded site boundaries.

Bishop's School Expansion Project Monitoring, CDM Miller for Rudolph and Sletten, La Jolla, San Diego County, California. As cultural resources monitor, evaluated construction of new buildings and facilities at an historic school located in downtown La Jolla. A number of historic trash deposits were identified and evaluated.

Rose–Arizone, Clay, and Photo Drainage and Road Improvement Surveys, NAVFAC Southwest, SCLI, Los Angeles County, California. As field archaeologist, conducted archaeological surveys and assisted with the erection of protective signing on 750 sites.

SCLI Remote Sensing, NAVFAC Southwest, SCLI, Los Angeles County, California. As GPS assistant, helped with data collection and image rectification for a remote sensing project in the detection of archaeological sites on the base.

Eucalyptus Site Data Recovery Project, Caltrans District 11, Chula Vista, San Diego County, California. As field technician, participated in data recovery excavations of an early Archaic period site.

All-American Canal Lining Project Survey, Imperial Irrigation District, Imperial County. As field archaeologist, conducted survey of the 4,200-acre ROW along approximately 23 miles of the All-American Canal. Task 2 involved a 10% random sample survey that encompassed an additional 743 acres.

Locus O Testing, Agua Caliente Band of Cahuilla Indians, Palm Springs, Riverside County, California. As field archaeologist, conducted data recovery excavations of three spatially distinct portions of the prehistoric site, including an intact cremation for proposed housing development.

Salt Creek Ranch Data Recovery, McMillin Companies, Chula Vista, San Diego County, California. As field archaeologist, conducted testing and data recovery excavations of two historic sites and three prehistoric sites at a proposed housing development location. Documented and mapped historic sites and historic period features, including structural remains.

Spangler Hills Survey Project, BLM, Ridgecrest, San Bernardino County, California, 2003. As field archaeologist, participated in survey and inventory of approximately 10,000 acres of the Spangler Hills Area of Critical Environmental Concern (ACEC).

Path 15 Survey, Steigers Corporation, Merced and Fresno Counties, California. As field archaeologist, conducted archaeological survey of proposed transmission line. Identified two prehistoric lithic scatters and conducted preliminary subsurface testing of two additional lithic scatters. Recorded one historic period site.

PF.Net AT&T Monitoring, Land Services, MCBCP, San Diego County, California. As field archaeologist, conducted archaeological monitoring for construction installation of over 10 linear miles of fiber optic line on MCBCP.

APPENDIX B
(CONFIDENTIAL)

Records Search Documents

APPENDIX C
(CONFIDENTIAL)

NAHC Sacred Lands File Search Results and Tribal Correspondence

APPENDIX D
(CONFIDENTIAL)
DPR Site Record Updates

APPENDIX E
(CONFIDENTIAL)

Resources in APE Maps

Appendix D
Geotechnical Report

GEOTECHNICAL INVESTIGATION

OCEANSIDE FIRE STATION NO. 8
SOUTHEAST CORNER OF OLD GROVE ROAD AND TRESTLES STREET
OCEANSIDE, CALIFORNIA

DRAFT

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

STK ARCHITECTURE, INC.
TEMECULA, CALIFORNIA

APRIL 25, 2022
PROJECT NO. G2912-52-01

Project No. G2912-52-01
April 25, 2022

STK Architecture
42095 Zevo Drive, Suite A15
Temecula, California 92590

Attention: Mr. G.V. Salts

Subject: GEOTECHNICAL INVESTIGATION
OCEANSIDE FIRE STATION NO. 8
SOUTHEAST CORNER OF OLD GROVE ROAD AND TRESTLES STREET
OCEANSIDE, CALIFORNIA

Dear Mr. Salts:

In accordance with your request and authorization of our Proposal No. LG-21485 dated October 1, 2021, we herein submit the results of our geotechnical investigation for the subject project. We performed our investigation to evaluate the underlying soil and geologic conditions and potential geologic hazards, and to assist in the design of the proposed building and associated improvements.

The accompanying report presents the results of our study and conclusions and recommendations pertaining to geotechnical aspects of the proposed project. The site is suitable for the proposed buildings and improvements provided the recommendations of this report are incorporated into the design and construction of the planned project.

Should you have questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED

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Disclaimer: This DRAFT is intended for the use of the project team to help with the on-going design of the project and provided as a courtesy for review only. This DRAFT should not be relied upon for final design nor produced and submitted to regulatory agencies until a FINAL document is completed with the signature and stamps of the design professionals.

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of our geotechnical investigation for a proposed fire station in the Rancho Del Oro neighborhood of the City of Oceanside, California (see Vicinity Map).

Vicinity Map

The purpose of the geotechnical investigation is to evaluate the surface and subsurface soil conditions and general site geology, and to identify geotechnical constraints that may affect development of the property including faulting, liquefaction and seismic shaking based on the 2019 CBC seismic design criteria. In addition, we provided recommendations for remedial grading, shallow foundations, concrete slab-on-grade, concrete flatwork, pavement, and retaining walls. We also reviewed the plans titled *Oceanside Fire Station 8, Site Study, Options 3, Oceanside, California*, prepared by STK Architecture, undated.

The scope of this investigation included reviewing readily available published and unpublished geologic literature (see List of References), performing engineering analyses and preparing this report.

We also advanced 7 exploratory borings to a maximum depth of about 16 feet, performed percolation/infiltration testing, sampled soil and performed laboratory testing. Appendix A presents the exploratory boring logs and details of the field investigation. The details of the laboratory tests and a summary of the test results are shown in Appendix B and on the boring logs in Appendix A. Appendix C presents the recommended grading specifications. The summary of our storm water management investigation is presented in a separate report.

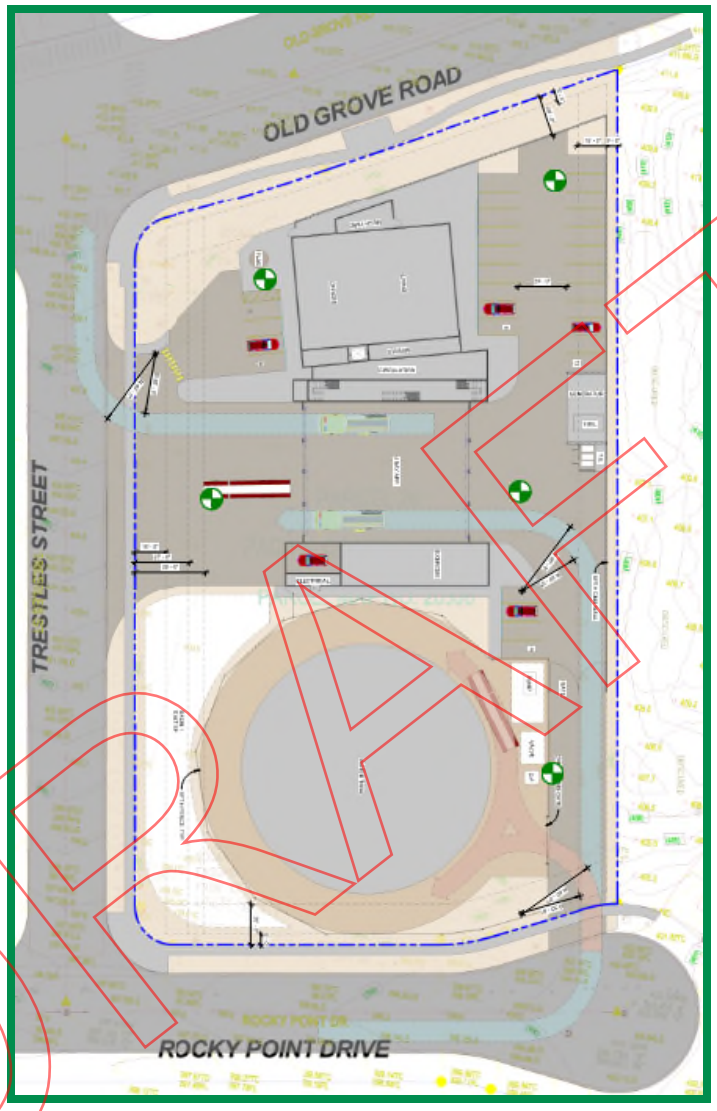
2. SITE AND PROJECT DESCRIPTION

The property currently consists of a vacant pad that was graded in 2007 located on the southeast corner of Old Grove Road and Trestles Street within a commercial development area. A drainage basin exists in the southeast corner of the pad with cut slopes bordering the site to the north, east and south. Existing grades are relatively flat with elevations of approximately 400 to 406 feet Mean Sea Level (MSL) across the site. The Existing Site Plan shows the current site conditions.

Existing Site Plan

We understand the project will consist of constructing a new fire station with accompanied parking, utilities and landscaping. The fire station will include a two-story, 15,000- to 18,000-square foot building that will house a 4-person ladder truck, 3-person engine, and a Battalion Chief vehicle with accommodations for 10 fire personnel. A 2.5-million-gallon reservoir will also be constructed on the

southern portion of the site that is not included as part of this study. Storm water management devices are also planned for the site. The Proposed Site Plan shows the proposed building, reservoir and improvements.



Proposed Site Plan

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The locations, site descriptions, and proposed development are based on our site reconnaissance, review of published geologic literature, field investigations, and discussions with project personnel. If development plans differ from those described herein, Geocon Incorporated should be contacted for review of the plans and possible revisions to this report.

3. GEOLOGIC SETTING

The site is located in the eastern portion of the coastal plain within the southern portion of the Peninsular Ranges Geomorphic Province of southern California. The Peninsular Ranges is a geologic and geomorphic province that extends from the Imperial Valley to the Pacific Ocean and from the Transverse Ranges to the north and into Baja California to the south. The coastal plain of San Diego County is underlain by a thick sequence of relatively undisturbed and non-conformable sedimentary rocks that thicken to the west and range in age from Upper Cretaceous through the Pleistocene with intermittent deposition. The sedimentary units are deposited on bedrock Cretaceous to Jurassic age igneous and metavolcanic rocks. Geomorphically, the coastal plain is characterized by a series of 21, stair-stepped marine terraces (younger to the west) that have been dissected by west flowing rivers. The coastal plain is a relatively stable block that is dissected by relatively few faults consisting of the potentially active La Nacion Fault Zone and the active Rose Canyon Fault Zone. The Peninsular Ranges Province is also dissected by the Elsinore Fault Zone that is associated with and sub-parallel to the San Andreas Fault Zone, which is the plate boundary between the Pacific and North American Plates. Tertiary-age Santiago Formation exists at or near existing grade across the entirety of the site. The Regional Geologic Map shows the geologic units in the area of the site.

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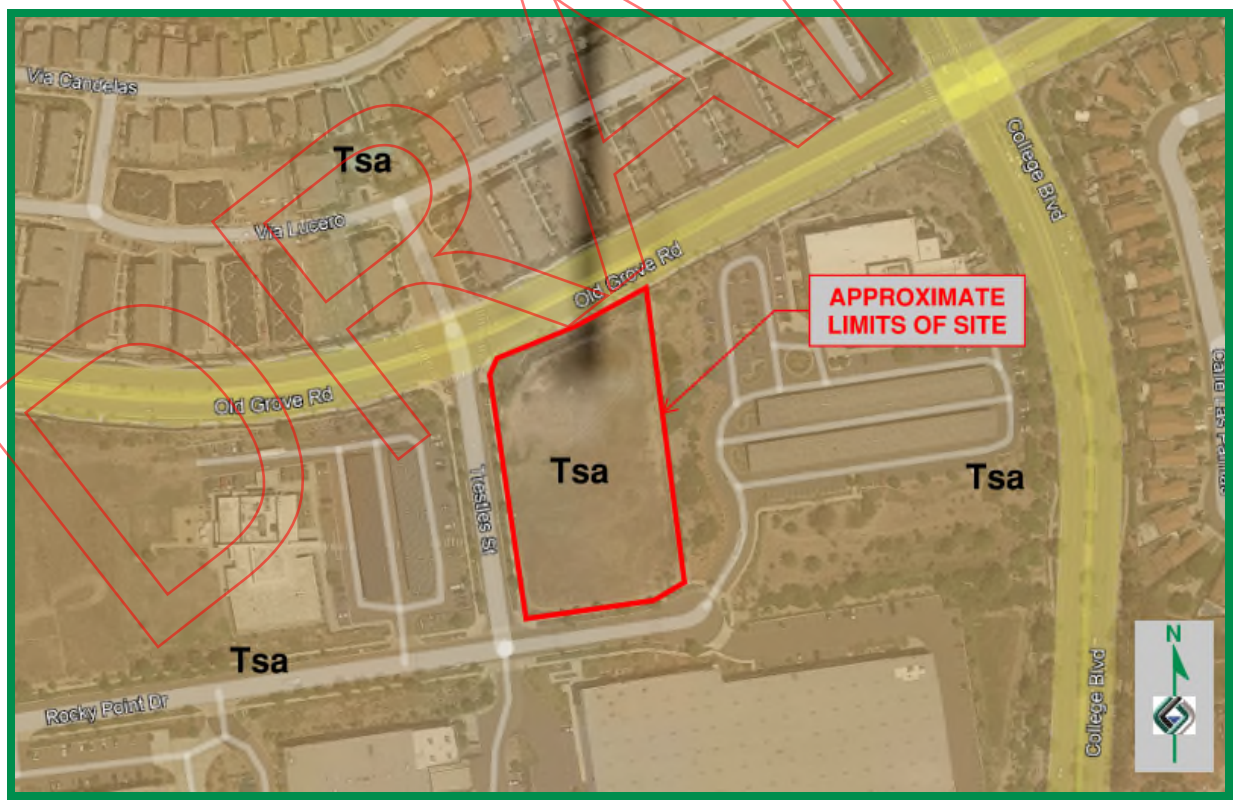

Regional Geologic Map

4. SOIL AND GEOLOGIC CONDITIONS

We encountered one surficial soil unit (consisting of topsoil) and one formational unit (consisting of Santiago Formation). The occurrence, distribution, and description of each unit encountered is shown on the Geologic Map, Figure 1, and on the boring logs in Appendix A. The Geologic Cross-Section, Figure 2, shows the approximate subsurface relationship between the geologic units. We prepared the geologic cross-sections using interpolation between exploratory excavations and observations; therefore, actual geotechnical conditions may vary from those illustrated and should be considered approximate. The surficial soil and geologic units are described herein in order of increasing age.

4.1 Topsoil (Qtop)

We encountered topsoil our borings as a relatively thin veneer overlaying formational material across the site. The topsoil is approximately a foot thick across the site and can be characterized as soft, damp to moist, silty to sandy clay. The topsoil is compressible and not considered suitable in its current condition for the support of foundations or structural fill and remedial grading will required. The undocumented fill can be reused for new compacted fill during grading operations provided it is free of roots and debris.

4.2 Santiago Formation (Tsa)

Tertiary-age Santiago Formation underlies the topsoil across the stie. The Santiago Formation generally consists of interbedded hard, damp to moist, silty to sandy claystone to very dense, clayey sandstone. The Santiago Formation possesses a “high” to “very high” expansion potential (expansion index of 90 or higher). The San Diego Formation is considered suitable for support of structural loads.

5. GROUNDWATER

We did not encounter groundwater or seepage during our site investigation. However, it is not uncommon for shallow seepage conditions to develop where none previously existed when sites are irrigated or infiltration is implemented. Seepage is dependent on seasonal precipitation, irrigation, land use, among other factors, and varies as a result. Proper surface drainage will be important to future performance of the project. We expect groundwater is deeper than about 100 feet below existing grade. We do not expect groundwater to be encountered during construction of the proposed development.

6. GEOLOGIC HAZARDS

6.1 Faulting and Seismicity

A review of the referenced geologic materials and our knowledge of the general area indicate that the site is not underlain by active, potentially active, or inactive faults. An active fault is defined by the

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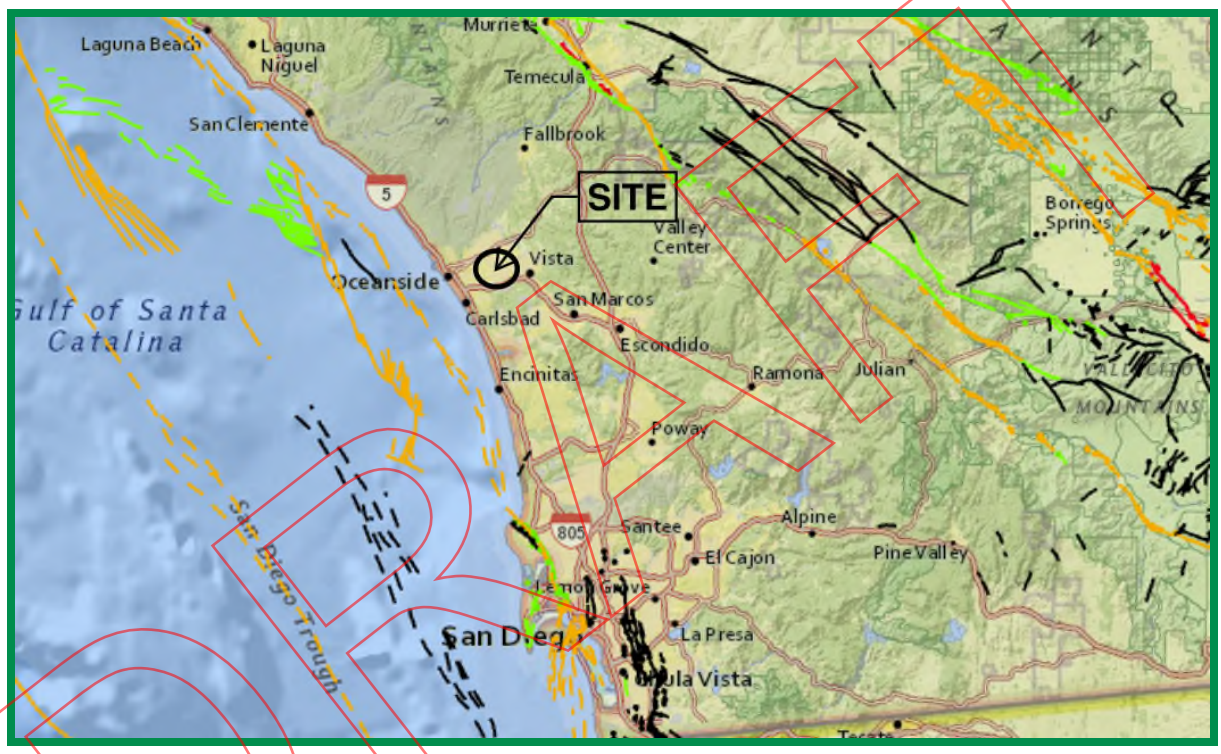
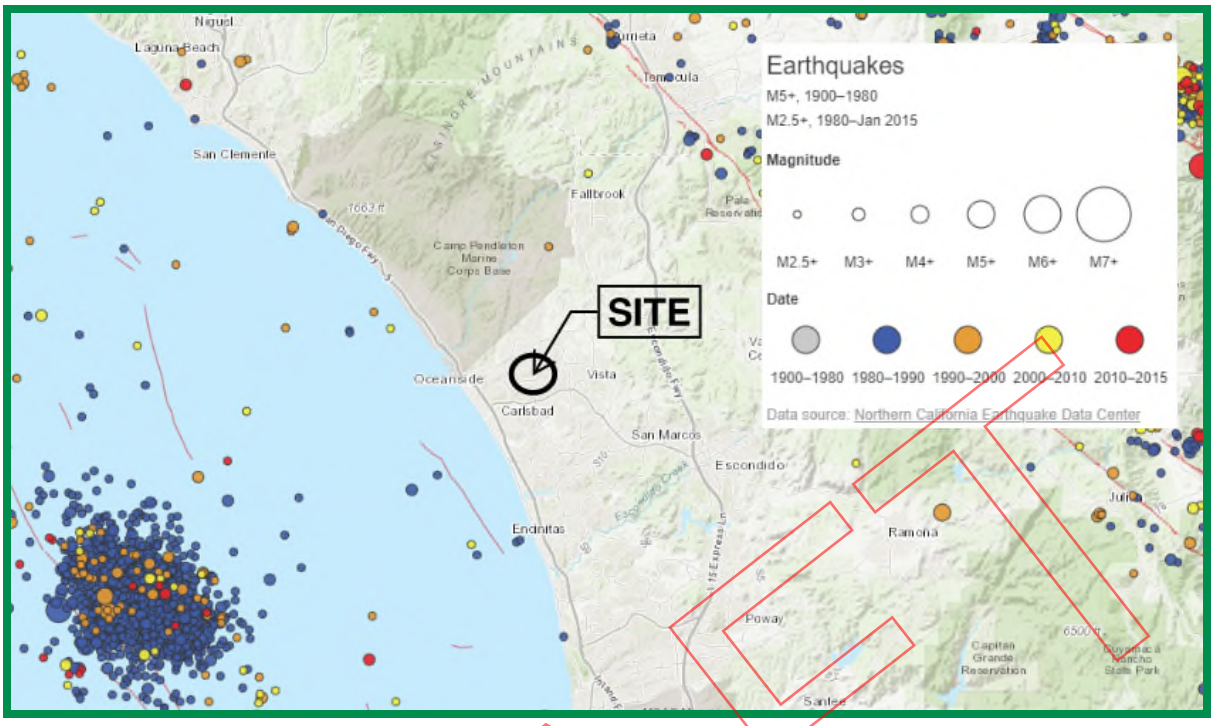
California Geological Survey (CGS) as a fault showing evidence for activity within the last 11,700 years. The site is not located within a State of California Earthquake Fault Zone.

The USGS has developed a program to evaluate the approximate location of faulting in the area of properties. The following figure shows the location of the existing faulting in the San Diego County and Southern California region. The fault traces are shown as solid, dashed and dotted that represent well-constrained, moderately constrained and inferred, respectively. The fault line colors represent fault with ages less than 150 years (red), 15,000 years (orange), 130,000 years (green), 750,000 years (blue) and 1.6 million years (black).



Faults in Southern California

The San Diego County and Southern California region is seismically active. The following figure presents the occurrence of earthquakes with a magnitude greater than 2.5 from the period of 1900 through 2015 according to the Bay Area Earthquake Alliance website.



Earthquakes in Southern California

Considerations important in seismic design include the frequency and duration of motion and the soil conditions underlying the site. Seismic design of structures should be evaluated in accordance with the California Building Code (CBC) guidelines currently adopted by the local agency.

6.2 Ground Rupture

Ground surface rupture occurs when movement along a fault is sufficient to cause a gap or rupture where the upper edge of the fault zone intersects the ground surface. The potential for ground rupture is considered to be negligible due to the absence of active faults at the subject site.

6.3 Liquefaction

Liquefaction typically occurs when a site is located in a zone with seismic activity, onsite soils are cohesionless or silt/clay with low plasticity, groundwater is encountered within 50 feet of the surface and soil densities are less than about 70 percent of the maximum dry densities. If the four previous criteria are met, a seismic event could result in a rapid pore water pressure increase from the earthquake-generated ground accelerations. Due to the lack of a permanent, near-surface groundwater table, the expansive potential and the very dense nature of the Santiago Formation, liquefaction potential for the site is considered to be negligible.

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6.4 Storm Surge, Tsunamis and Seiches

Storm surges are large ocean waves that sweep across coastal areas when storms make landfall. Storm surges can cause inundation, severe erosion and backwater flooding along the water front. The site is located approximately 6 miles from the Pacific Ocean and is at an elevation of about 400 feet or greater above Mean Sea Level (MSL). Therefore, the potential of storm surges affecting the site is considered to be negligible.

A tsunami is a series of long period waves generated in the ocean by a sudden displacement of large volumes of water. Causes of tsunamis include underwater earthquakes, volcanic eruptions, or offshore slope failures. The potential for the site to be affected by a tsunami is negligible due to the distance from the Pacific Ocean and the site elevation.

A seiche is a run-up of water within a lake or embayment triggered by fault- or landslide-induced ground displacement. The site is not located in the vicinity of or downstream from such bodies of water. Therefore, the risk of seiches affecting the site is negligible.

6.5 Landslides

We did not observe evidence of previous or incipient slope instability at the site during our study and the property is relatively flat. Published geologic mapping indicates landslides are not present on or adjacent to the site. Therefore, in our professional opinion, the potential for a landslide is not a significant concern for this project.

6.6 Erosion

The site is relatively flat and is not located adjacent to the Pacific Ocean coast or a free-flowing drainage where active erosion is occurring. Provided the engineering recommendations herein are followed and the project civil engineer prepares the grading plans in accordance with generally-accepted regional standards, we do not expect erosion to be a major impact to site development. In addition, we expect the proposed development would not increase the potential for erosion if properly designed.

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7. CONCLUSIONS AND RECOMMENDATIONS

7.1 General

7.1.1 We did not encounter soil or geologic conditions during our exploration that would preclude the proposed development, provided the recommendations presented herein are followed and implemented during design and construction. We will provide supplemental recommendations if we observe variable or undesirable conditions during construction, or if the proposed construction will differ from that anticipated herein.

7.1.2 With the exception of possible moderate to strong seismic shaking, we did not observe or know of significant geologic hazards to exist on the site that would adversely affect the proposed project.

7.1.3 The topsoil is potentially compressible and unsuitable in its present condition for the support of compacted fill or settlement-sensitive improvements. Remedial grading of this material should be performed as discussed herein. The Santiago Formation considered suitable for the support of proposed fill and structural loads; however, building pad undercuts will be required due to the expansion potential of the existing soil.

7.1.4 We did not encounter groundwater during our subsurface exploration and we do not expect it to be a constraint to project development. However, seepage within the existing materials may be encountered during the grading operations, especially during the rainy seasons.

7.1.5 Excavation of the topsoil and Santiago Formation should generally be possible with moderate to heavy effort using conventional, heavy-duty equipment during grading and trenching operations. We expect very heavy effort in localized areas for excavations into strongly cemented portions of the Santiago Formation.

7.1.6 Proper drainage should be maintained in order to preserve the engineering properties of the fill in both the building pads, improvement and slope areas. Recommendations for site drainage are provided herein.

7.1.7 We will prepare a storm water management investigation under a separate report to help evaluate the potential for infiltration on the property. The project civil engineer should use that report to help design the storm water management devices.

7.1.8 Based on our review of the project plans, we opine the planned development can be constructed in accordance with our recommendations provided herein. We do not expect the

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planned development will destabilize or result in settlement of adjacent properties if properly constructed.

7.1.9 Surface settlement monuments and canyon subdrains will not be required on this project.

7.2 Excavation and Soil Characteristics

7.2.1 Excavation of the in-situ soil should be possible with moderate to heavy effort using conventional heavy-duty equipment. Excavation of the formational materials may require very heavy effort using conventional heavy-duty equipment during the grading operations. Oversized rock (rocks greater than 12 inches in dimension) can be incorporated into landscape use or deep compacted fill areas, if available. The grading and improvement contractors should review this report and evaluate the proper equipment to use for the planned excavations.

7.2.2 The soil encountered in the field investigation is considered to be "expansive" (expansion index [EI] of greater than 20) as defined by 2019 California Building Code (CBC) Section 1803.5.3. We expect a majority of the soil encountered possess a "high" to "very high" expansion potential (EI of 90 or greater) in accordance with ASTM D 4829. Table 7.2 presents soil classifications based on the expansion index.

TABLE 7.2
EXPANSION CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	ASTM D 4829 Expansion Classification	2019 CBC Expansion Classification
0 – 20	Very Low	Non-Expansive
21 – 50	Low	Expansive
51 – 90	Medium	
91 – 130	High	
Greater Than 130	Very High	

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7.2.3 We performed laboratory tests on samples of the site materials to evaluate the percentage of water-soluble sulfate content. Appendix B presents results of the laboratory water-soluble sulfate content tests. The test results indicate the on-site materials at the locations tested possess "S0" sulfate exposure to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-19 Chapter 19. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration.

7.2.4 We tested samples for potential of hydrogen (pH) and resistivity laboratory tests to aid in evaluating the corrosion potential to subsurface metal structures. Appendix B presents the laboratory test results.

7.2.5 Geocon Incorporated does not practice in the field of corrosion engineering. Therefore, further evaluation by a corrosion engineer may be performed if improvements susceptible to corrosion are planned.

7.3 Grading

7.3.1 Grading should be performed in accordance with the recommendations provided in this report, the Recommended Grading Specifications contained in Appendix C and the local grading ordinance. Geocon Incorporated should observe the grading operations on a full-time basis and provide testing during the fill placement.

7.3.2 Prior to commencing grading, a preconstruction conference should be held at the site with the agency inspector, developer, grading and underground contractors, civil engineer, and geotechnical engineer in attendance. Special soil handling and/or the grading plans can be discussed at that time.

7.3.3 Site preparation should begin with the removal of deleterious material, debris, and vegetation. The depth of vegetation removal should be such that material exposed in cut areas or soil to be used as fill is relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site. Asphalt and concrete should not be mixed with the fill soil unless approved by the Geotechnical Engineer.

7.3.4 Abandoned foundations and buried utilities (if encountered) should be removed and the resultant depressions and/or trenches should be backfilled with properly compacted material as part of the remedial grading.

7.3.5 We expect the proposed building and ancillary structures will be supported on shallow foundation systems embedded in properly compacted fill. The upper 5 feet of materials below finish grade and a minimum of 2 feet below the foundations for the building should be excavated and properly compacted fill should be placed. Due to the high expansion potential of the underlying Santiago Formation, the bottoms of excavations should be properly moisture conditioned. The excavations should extend at least 5 feet laterally outside of the proposed foundation zones.

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7.3.6 In areas of proposed improvements outside of the building areas, the topsoil should be excavated and the formational materials should be exposed (the upper 1 to 2 feet) should be processed, properly moisture conditioned and recompacted. Deeper excavations may be required in areas where loose or saturated materials are encountered. The excavations should extend at least 2 feet laterally outside of the improvement area, where possible. Table 7.3.1 provides a summary of the remedial grading recommendations.

TABLE 7.3.1
SUMMARY OF REMEDIAL GRADING RECOMMENDATIONS

Area	Remedial Grading Excavation Requirements
Building & Ancillary Structures	Excavate 5 Below Finish Grade
	Excavate 2 Feet Below Foundations
Site Development	Excavate to Formational Materials
Lateral Grading Limits	5 Feet Outside of Building & Ancillary Structures
	2 Feet Outside of Improvement Areas
Exposed Bottoms of Excavations	Scarify Upper 12 Inches & Moisture Condition

7.3.7 The bottom of the excavations should be sloped 1 percent to the adjacent street or deepest fill. Prior to fill soil being placed, the existing ground surface should be scarified, moisture conditioned as necessary, and compacted to a depth of at least 12 inches. Deeper excavations may be required if saturated or loose fill soil is encountered. A representative of Geocon should be on-site during excavations to evaluate the limits of the remedial grading.

7.3.8 Some areas of overly wet and saturated soil could be encountered due to the existing landscape areas. The saturated soil would require additional effort prior to placement of compacted fill or additional improvements. Stabilization of the soil would include scarifying and air-drying, removing and replacement with drier soil, use of stabilization fabric (e.g. Tensar TX7 or other approved fabric), or chemical treating (i.e. cement or lime treatment).

7.3.9 The site should then be brought to final subgrade elevations with fill compacted in layers. In general, the existing soil is suitable for use from a geotechnical engineering standpoint as fill if relatively free from vegetation, debris and other deleterious material. Layers of fill should be about 6 to 8 inches in loose thickness and no thicker than will allow for adequate bonding and compaction. Fill, including backfill and scarified ground surfaces, should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density at 2 to 5 percent above optimum moisture content in accordance with ASTM Test Procedure D 1557. Fill materials placed below optimum moisture content may require additional moisture conditioning prior to placing additional fill. The upper 12 inches of subgrade soil

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underlying pavement should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content shortly before paving operations.

7.3.10 Import fill (if necessary) should consist of the characteristics presented in Table 7.3.2. Geocon Incorporated should be notified of the import soil source and should perform laboratory testing of import soil prior to its arrival at the site to determine its suitability as fill material.

TABLE 7.3.2
SUMMARY OF IMPORT FILL RECOMMENDATIONS

Soil Characteristic	Values
Expansion Potential	"Very Low" to "Medium" (Expansion Index of 90 or less)
Particle Size	Maximum Dimension Less Than 3 Inches
	Generally Free of Debris

7.4 Subdrains

7.4.1 With the exception of retaining wall drains, we do not expect the installation of other subdrains.

7.5 Temporary Excavations

7.5.1 The recommendations included herein are provided for stable excavations. It is the responsibility of the contractor and their competent person to ensure all excavations, temporary slopes and trenches are properly constructed and maintained in accordance with applicable OSHA guidelines in order to maintain safety and the stability of the excavations and adjacent improvements. These excavations should not be allowed to become saturated or to dry out. Surcharge loads should not be permitted to a distance equal to the height of the excavation from the top of the excavation. The top of the excavation should be a minimum of 15 feet from the edge of existing improvements. Excavations steeper than those recommended or closer than 15 feet from an existing surface improvement should be shored in accordance with applicable OSHA codes and regulations.

7.5.2 The stability of the excavations is dependent on the design and construction of the shoring system and site conditions. Therefore, Geocon Incorporated cannot be responsible for site safety and the stability of the proposed excavations.

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7.6 Seismic Design Criteria – 2019 California Building Code

7.6.1 Table 7.6.1 summarizes site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and ASCE 7-16), Chapter 16 Structural Design, Section 1613 Earthquake Loads. We used the computer program *U.S. Seismic Design Maps*, provided by the Structural Engineers Association (SEA) to calculate the seismic design parameters. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Table 20.3-1 of ASCE 7-16. However, we expect the building possesses a period of less than 0.5 second; therefore, the building improvements can be designed based on the soil conditions (ASCE 7-16, Section 20.3.1). The values presented herein are for the risk-targeted maximum considered earthquake (MCE_R). Sites designated as Site Class D, E and F may require additional analyses if requested by the project structural engineer and client.

TABLE 7.6.1
2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	C	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	0.926g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.342g	Figure 1613.2.1(2)
Site Coefficient, F_A	1.2	Table 1613.2.3(1)
Site Coefficient, F_V	1.5*	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.111g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	0.514g*	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.741g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.342g*	Section 1613.2.4 (Eqn 16-39)

*See following paragraph.

7.6.2 Using the code-based values presented in this Table 7.6.1, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed by the project structural engineer. Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis should be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g.

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Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed.

7.6.3 Table 7.6.2 presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-16.

TABLE 7.6.2
ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.401g	Figure 22-9
Site Coefficient, F_{PGA}	1.2	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.481g	Section 11.8.3 (Eqn 11.8-1)

7.6.4 Conformance to the criteria in Tables 7.6.1 and 7.6.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur in the event of a large earthquake. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.6.5 The project structural engineer and architect should evaluate the appropriate Risk Category and Seismic Design Category for the planned structures. The values presented herein assume a Risk Category of IV and resulting in a Seismic Design Category D. Table 7.6.3 presents a summary of the risk categories in accordance with ASCE 7-16.

TABLE 7.6.3
ASCE 7-16 RISK CATEGORIES

Risk Category	Building Use	Examples
I	Low risk to Human Life at Failure	Barn, Storage Shelter
II	Nominal Risk to Human Life at Failure (Buildings Not Designated as I, III or IV)	Residential, Commercial and Industrial Buildings
III	Substantial Risk to Human Life at Failure	Theaters, Lecture Halls, Dining Halls, Schools, Prisons, Small Healthcare Facilities, Infrastructure Plants, Storage for Explosives/Toxins
IV	Essential Facilities	Hazardous Material Facilities, Hospitals, Fire and Rescue, Emergency Shelters, Police Stations, Power Stations, Aviation Control Facilities, National Defense, Water Storage

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7.7 Shallow Foundation Recommendations

7.7.1 The foundation recommendations herein are for proposed one- to three-story residential structures. The proposed structures can be supported on a shallow foundation system founded in the compacted fill materials. Table 7.7.1 provides a summary of the foundation design recommendations.

TABLE 7.7.1
SUMMARY OF FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Continuous Foundation Width, W_C	12 inches
Minimum Isolated Foundation Width, W_I	24 inches
Minimum Foundation Depth, D	30 Inches Below Lowest Adjacent Grade
Minimum Steel Reinforcement	4 No. 5 Bars, 2 at the Top and 2 at the Bottom
Allowable Bearing Capacity	2,500 psf
Bearing Capacity Increase	300 psf per Foot of Depth
	300 psf per Foot of Width
Maximum Allowable Bearing Capacity	4,000 psf
Estimated Total Settlement	1 Inch
Estimated Differential Settlement	½ Inch in 40 Feet
Footing Size Used for Settlement	8-Foot Square
Design Expansion Index	180 or less

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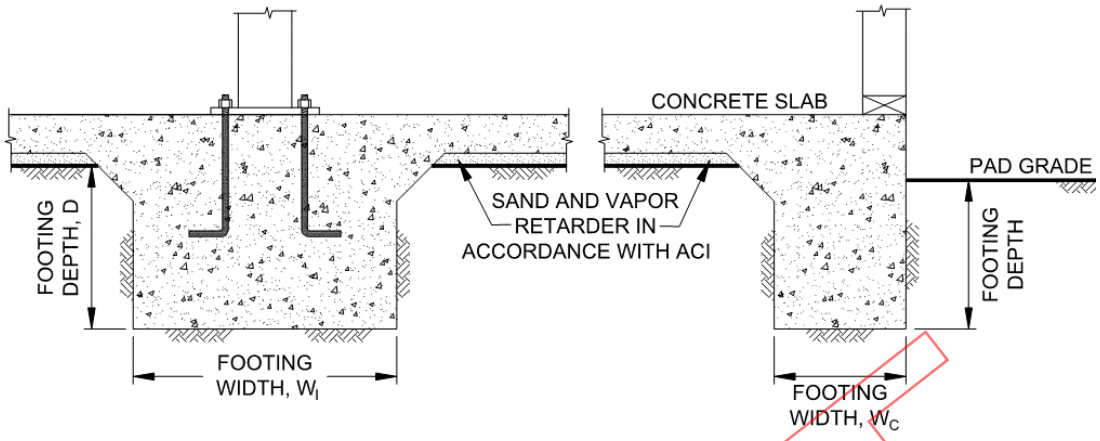
7.7.2 The bearing capacity values presented herein are for dead plus live loads and may be increased by one-third when considering transient loads due to wind or seismic forces.

7.7.3 The foundations should be embedded in accordance with the recommendations herein and the Wall/Column Footing Dimension Detail. The embedment depths should be measured from the lowest adjacent pad grade for both interior and exterior footings. Footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope (unless designed with a post-tensioned foundation system as discussed herein).



Wall/Column Footing Dimension Detail

7.7.4 Special subgrade presaturation is necessary prior to placing concrete.The exposed foundation and slab subgrade soil should be moisture conditioned, as necessary, to maintain a moist condition as would be expected in any such concrete placement.

7.7.5 Where buildings or other improvements are planned near the top of a slope 3:1 (horizontal:vertical) or steeper, special foundation and/or design considerations are recommended due to the tendency for lateral soil movement to occur.

- For fill slopes less than 20 feet high or cut slopes regardless of height, footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.
- When located next to a descending 3:1 (horizontal:vertical) fill slope or steeper, the foundations should be extended to a depth where the minimum horizontal distance is equal to H/3 (where H equals the vertical distance from the top of the fill slope to the base of the fill soil) with a minimum of 7 feet but need not exceed 40 feet. The horizontal distance is measured from the outer, deepest edge of the footing to the face of the slope. A post-tensioned slab and foundation system or mat foundation system can be used to reduce the potential for distress in the structures associated with strain softening and lateral fill extension. Specific design parameters or recommendations for either of these alternatives can be provided once the building location and fill slope geometry have been determined.
- Although other improvements, which are relatively rigid or brittle, such as concrete flatwork or masonry walls, may experience some distress if located near the top of a slope, it is generally not economical to mitigate this potential. It may be possible, however, to incorporate design measures which would permit some lateral soil movement without causing extensive distress. Geocon Incorporated should be consulted for specific recommendations.

7.7.6 The recommendations of this report are intended to reduce the potential for cracking of slabs and foundations due to expansive soil, and differential settlement of fill soil with varying

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thicknesses. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade placed on such conditions may still exhibit some cracking due to soil movement and/or shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.7.7 Concrete slabs should be provided with adequate crack-control joints, construction joints and/or expansion joints to reduce unsightly shrinkage cracking. The design of joints should consider criteria of the American Concrete Institute when establishing crack-control spacing. Additional steel reinforcing, concrete admixtures and/or closer crack control joint spacing should be considered where concrete-exposed finished floors are planned.

7.7.8 Geocon Incorporated should be consulted to provide additional design parameters as required by the structural engineer.

7.7.9 We should observe the foundation excavations prior to the placement of reinforcing steel to check that the exposed soil conditions are similar to those expected and that they have been extended to the appropriate bearing strata. If unexpected soil conditions are encountered, foundation modifications may be required.

7.8 Concrete Slabs-On-Grade

7.8.1 Concrete slabs-on-grade for the structures should be constructed in accordance with Table 7.8.

TABLE 7.8
MINIMUM CONCRETE SLAB-ON-GRADE RECOMMENDATIONS

Parameter	Value
Minimum Concrete Slab Thickness	5 inches
Minimum Steel Reinforcement	No. 4 Bars 12 Inches on Center, Both Directions
Typical Slab Underlayment	3 to 4 Inches of Sand/Gravel/Base
Design Expansion Index	180 or less

7.8.2 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). In

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addition, the membrane should be installed in accordance with manufacturer's recommendations and ASTM requirements and installed in a manner that prevents puncture. The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed and if the structure will possess a humidity controlled environment.

7.8.3 The bedding sand thickness should be determined by the project foundation engineer, architect, and/or developer. It is common to have 3 to 4 inches of sand in the southern California region. However, we should be contacted to provide recommendations if the bedding sand is thicker than 6 inches. The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab by reducing the potential for rapid moisture loss and subsequent cracking and/or slab curl. We suggest that the foundation design engineer present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the recommendations presented on the foundation plans.

7.8.4 Concrete slabs should be provided with adequate crack-control joints, construction joints and/or expansion joints to reduce unsightly shrinkage cracking. The design of joints should consider criteria of the American Concrete Institute (ACI) when establishing crack-control spacing. Crack-control joints should be spaced at intervals no greater than 12 feet. Additional steel reinforcing, concrete admixtures and/or closer crack control joint spacing should be considered where concrete-exposed finished floors are planned.

7.8.5 Special subgrade presaturation is not deemed necessary prior to placing concrete; however, the exposed foundation and slab subgrade soil should be moisturized to maintain a moist condition as would be expected in any such concrete placement.

7.8.6 The concrete slab-on-grade recommendations are based on soil support characteristics only. The project structural engineer should evaluate the structural requirements of the concrete slabs for supporting expected loads.

7.8.7 The recommendations of this report are intended to reduce the potential for cracking of slabs due to expansive soil (if present), differential settlement of existing soil or soil with varying thicknesses. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade placed on such conditions may still exhibit some cracking due to soil movement and/or shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete

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placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.9 Concrete Slabs-On-Grade

7.9.1 If possible, you should consider using a post-tensioned foundation system for the proposed structure due to the "high" to "very high" expansion potential (EI of 90 or greater). The post-tensioned systems (foundation dimensions and embedment depths, slab thickness and steel placement) should be designed by a structural engineer experienced in post-tensioned slab design and design criteria of the Post-Tensioning Institute (PIT) DC 10.5-12 *Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils* or *WRI/CRSI Design of Slab-on-Ground Foundations*, as required by the 2019 California Building Code (CBC Section 1808.6.2). Although this procedure was developed for expansive soil conditions, it can also be used to reduce the potential for foundation distress due to differential fill settlement. The post-tensioned design should incorporate the geotechnical parameters presented in Table 7.7.2 that are based on the guidelines presented in the PTI DC 10.5 design manual.

TABLE 7.7.2
POST-TENSIONED FOUNDATION SYSTEM DESIGN PARAMETERS

Post-Tensioning Institute (PTI) DC10.5 Design Parameters	Foundation Category
Thornthwaite Index	-20
Equilibrium Suction	3.9
Edge Lift Moisture Variation Distance, e_M (Feet)	3.8
Edge Lift, y_M (Inches)	2.19
Center Lift Moisture Variation Distance, e_M (Feet)	7.0
Center Lift, y_M (Inches)	1.07

7.9.2 The foundations for the post-tensioned slabs should be embedded in accordance with the recommendations of the structural engineer. The slab should possess a thickened edge with a minimum width of 12 inches and extend below the clean sand or crushed rock layer.

7.9.3 The post-tensioned foundation system should be designed with a total and differential deflection of 1 inch. Geocon Incorporated should be contacted to review the plans and provide additional information, if necessary. If an alternate design method is contemplated, Geocon Incorporated should be contacted to evaluate if additional expansion index testing should be performed.

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7.9.4 Our experience indicates post-tensioned slabs may be susceptible to excessive edge lift from tensioning, regardless of the underlying soil conditions. Placing reinforcing steel at the bottom of the perimeter footings and the interior stiffener beams may mitigate this potential. The structural engineer should design the foundation system to reduce the potential of edge lift occurring for the proposed structures.

7.9.5 During the construction of the post-tension foundation system, the concrete should be placed monolithically. Under no circumstances should cold joints form between the footings/grade beams and the slab during the construction of the post-tension foundation system unless designed by the structural engineer.

7.9.6 Isolated footings outside of the slab area, if present, should have the minimum embedment depth and width recommended for conventional foundations presented in Table 7.7.1.. However the use of isolated footings, which are located beyond the perimeter of the building and support structural elements connected to the building, are not recommended. Where this condition cannot be avoided, the isolated footings should be connected to the building foundation system with grade beams in both directions. In addition, consideration should be given to connecting slabs, which exceed 5 feet in width, to the building foundation to reduce the potential for future separation to occur.

7.9.7 Interior stiffening beams should be incorporated into the design of the foundation system in accordance with the PTI design procedures.

7.9.8 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). In addition, the membrane should be installed in accordance with manufacturer's recommendations and ASTM requirements and installed in a manner that prevents puncture. The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed and if the structure will possess a humidity controlled environment.

7.9.9 The bedding sand thickness should be determined by the project foundation engineer, architect, and/or developer. It is common to have 3 to 4 inches of sand in the southern California region. However, we should be contacted to provide recommendations if the bedding sand is thicker than 6 inches. The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab by reducing the potential for rapid moisture loss and subsequent cracking and/or slab

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curl. We suggest that the foundation design engineer present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the recommendations presented on the foundation plans.

7.9.10 Concrete slabs should be provided with adequate crack-control joints, construction joints and/or expansion joints to reduce unsightly shrinkage cracking. The design of joints should consider criteria of the American Concrete Institute (ACI) when establishing crack-control spacing. Crack-control joints should be spaced at intervals no greater than 12 feet. Additional steel reinforcing, concrete admixtures and/or closer crack control joint spacing should be considered where concrete-exposed finished floors are planned.

7.9.11 Special subgrade presaturation is not deemed necessary prior to placing concrete; however, the exposed foundation and slab subgrade soil should be moisturized to maintain a moist condition as would be expected in any such concrete placement.

7.9.12 The concrete slab-on-grade recommendations are based on soil support characteristics only. The project structural engineer should evaluate the structural requirements of the concrete slabs for supporting expected loads.

7.9.13 The recommendations of this report are intended to reduce the potential for cracking of slabs due to expansive soil (if present), differential settlement of existing soil or soil with varying thicknesses. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade placed on such conditions may still exhibit some cracking due to soil movement and/or shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.10 Exterior Concrete Flatwork

7.10.1 Exterior concrete flatwork not subject to vehicular traffic should be constructed in accordance with the recommendations presented in Table 7.10. The recommended steel reinforcement would help reduce the potential for cracking.

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TABLE 7.10
MINIMUM CONCRETE FLATWORK RECOMMENDATIONS

Expansion Index, EI	Minimum Steel Reinforcement* Options	Minimum Thickness
EI $\leq$ 180	No. 4 Bars 12 inches on center, Both Directions	4 Inches

*In excess of 8 feet square.

7.10.2 The subgrade soil should be properly moisturized and compacted prior to the placement of steel and concrete. The subgrade soil should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density 2 to 5 percent above optimum moisture content in accordance with ASTM D 1557. In addition, you may want to consider placing at least 12 inches of sand or base materials below the proposed flatwork areas to help reduce the effects of expansion.

7.10.3 Even with the incorporation of the recommendations of this report, the exterior concrete flatwork has a potential to experience some uplift due to expansive soil beneath grade. The steel reinforcement should overlap continuously in flatwork to reduce the potential for vertical offsets within flatwork. Additionally, flatwork should be structurally connected to the curbs, where possible, to reduce the potential for offsets between the curbs and the flatwork.

7.10.4 Concrete flatwork should be provided with crack control joints to reduce and/or control shrinkage cracking. Crack control spacing should be determined by the project structural engineer based upon the slab thickness and intended usage. Criteria of the American Concrete Institute (ACI) should be taken into consideration when establishing crack control spacing. Subgrade soil for exterior slabs not subjected to vehicle loads should be compacted in accordance with criteria presented in the grading section prior to concrete placement. Subgrade soil should be properly compacted and the moisture content of subgrade soil should be verified prior to placing concrete. Base materials will not be required below concrete improvements.

7.10.5 Where exterior flatwork abuts the structure at entrant or exit points, the exterior slab should be dowelled into the structure's foundation stemwall. This recommendation is intended to reduce the potential for differential elevations that could result from differential settlement or minor heave of the flatwork. Dowelling details should be designed by the project structural engineer.

7.10.6 The recommendations presented herein are intended to reduce the potential for cracking of exterior slabs as a result of differential movement. However, even with the incorporation of

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the recommendations presented herein, slabs-on-grade will still crack. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, the use of crack control joints and proper concrete placement and curing. Crack control joints should be spaced at intervals no greater than 12 feet. Literature provided by the Portland Concrete Association (PCA) and American Concrete Institute (ACI) present recommendations for proper concrete mix, construction, and curing practices, and should be incorporated into project construction.

7.11 Retaining Walls

7.11.1 Retaining walls should be designed using the values presented in Table 7.11.1. Soil with an expansion index (EI) of greater than 90 should not be used as backfill material behind retaining walls. Import may be required for the retaining walls due to the "high" to "very high" expansion potential (expansion index greater than 90) of the existing soil.

TABLE 7.11.1
RETAINING WALL DESIGN RECOMMENDATIONS

Parameter	Value
Active Soil Pressure, A (Fluid Density, Level Backfill)	40 pcf
Active Soil Pressure, A (Fluid Density, 2:1 Sloping Backfill)	55 pcf
Seismic Pressure, S	15H psf
At-Rest/Restrained Walls Additional Uniform Pressure (0 to 8 Feet High)	7H psf
At-Rest/Restrained Walls Additional Uniform Pressure (8+ Feet High)	13H psf
Expected Expansion Index for the Subject Property	EI≤90

H equals the height of the retaining portion of the wall

7.11.2 Unrestrained walls are those that are allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall) at the top of the wall. Where walls are restrained from movement at the top (at-rest condition), an additional uniform pressure should be applied to the wall. For retaining walls subject to vehicular loads within a horizontal distance equal to two-thirds the wall height, a surcharge equivalent to 2 feet of fill soil should be added to the upper 10 feet of the retaining wall.

7.11.3 The project retaining walls should be designed as shown in the Retaining Wall Loading Diagram.

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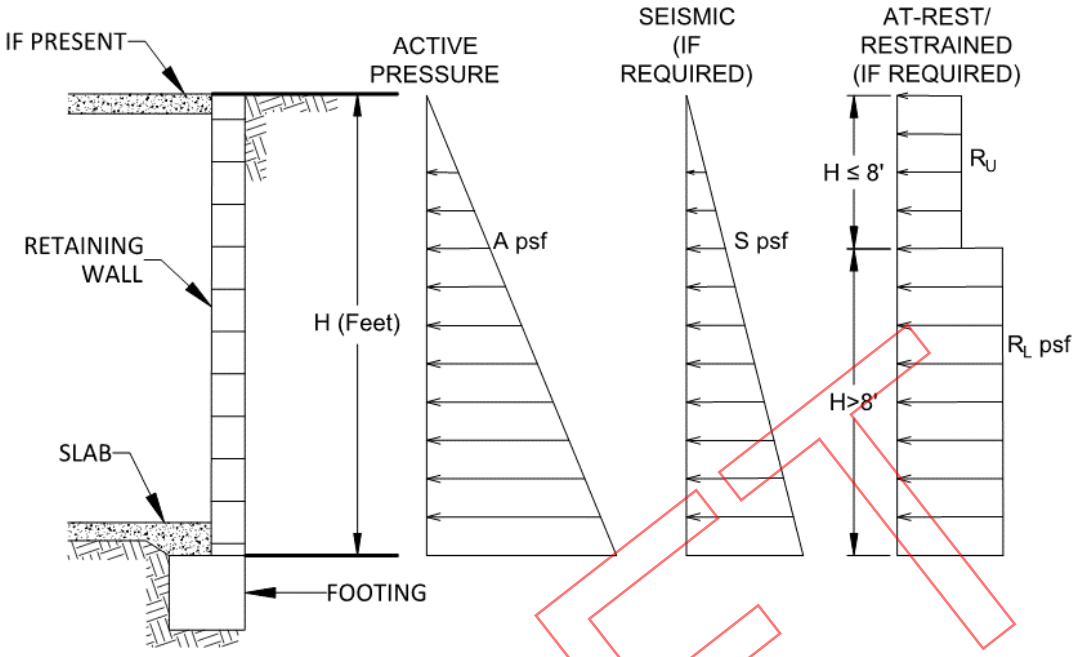

Retaining Wall Loading Diagram

7.11.4 The structural engineer should determine the Seismic Design Category for the project in accordance with Section 1613.3.5 of the 2019 CBC or Section 11.6 of ASCE 7-16. For structures assigned to Seismic Design Category of D, E, or F, retaining walls that support more than 6 feet of backfill should be designed with seismic lateral pressure in accordance with Section 1803.5.12 of the 2019 CBC. The seismic load is dependent on the retained height where H is the height of the wall, in feet, and the calculated loads result in pounds per square foot (psf) exerted at the base of the wall and zero at the top of the wall.

7.11.5 Retaining walls should be designed to ensure stability against overturning sliding, and excessive foundation pressure. Where a keyway is extended below the wall base with the intent to engage passive pressure and enhance sliding stability, it is not necessary to consider active pressure on the keyway.

7.11.6 Drainage openings through the base of the wall (weep holes) should not be used where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted granular (EI of 90 or less) free-draining backfill material with no hydrostatic forces or imposed surcharge load. The retaining wall should be properly drained as shown in the Typical Retaining Wall Drainage Detail. If conditions different than those described are expected, or if specific drainage details are desired, Geocon Incorporated should be contacted for additional recommendations.

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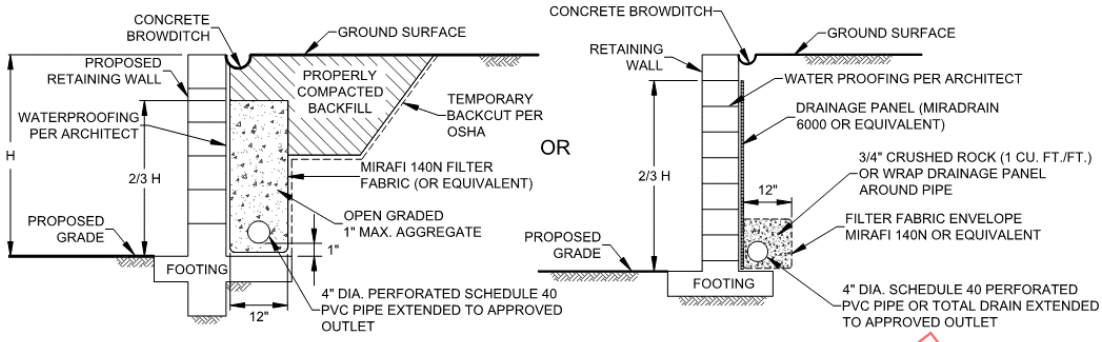

Typical Retaining Wall Drainage Detail

7.11.7 The retaining walls may be designed using either the active and restrained (at-rest) loading condition or the active and seismic loading condition as suggested by the structural engineer. Typically, it appears the design of the restrained condition for retaining wall loading may be adequate for the seismic design of the retaining walls. However, the active earth pressure combined with the seismic design load should be reviewed and also considered in the design of the retaining walls.

7.11.8 In general, wall foundations should be designed in accordance with Table 7.11.2. The proximity of the foundation to the top of a slope steeper than 3:1 could impact the allowable soil bearing pressure. Therefore, retaining wall foundations should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

TABLE 7.11.2
SUMMARY OF RETAINING WALL FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Retaining Wall Foundation Width	12 inches
Minimum Retaining Wall Foundation Depth	18 Inches
Minimum Steel Reinforcement	Per Structural Engineer
Allowable Bearing Capacity	2,000 psf
Estimated Total Settlement	1 Inch
Estimated Differential Settlement	½ Inch in 40 Feet

7.11.9 The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls. In the event that other types of walls (such as mechanically stabilized earth [MSE] walls, soil nail walls, or soldier pile walls) are planned, Geocon Incorporated should be consulted for additional recommendations.

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7.11.10 It is common to see retaining walls constructed in the areas of the elevator pits. The retaining walls should be properly drained and designed in accordance with the recommendations presented herein. If the elevator pit walls are not drained, the walls should be designed with an increased active pressure with an equivalent fluid density of 90 pcf. It is also common to see seepage and water collection within the elevator pit. The pit should be designed and properly waterproofed to prevent seepage and water migration into the elevator pit.

7.11.11 Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependent on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls and improvements above the retaining walls should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

7.11.12 Soil contemplated for use as retaining wall backfill, including import materials, should be identified in the field prior to backfill. At that time, Geocon Incorporated should obtain samples for laboratory testing to evaluate its suitability. Modified lateral earth pressures may be necessary if the backfill soil does not meet the required expansion index or shear strength. City or regional standard wall designs, if used, are based on a specific active lateral earth pressure and/or soil friction angle. In this regard, on-site soil to be used as backfill may or may not meet the values for standard wall designs. Geocon Incorporated should be consulted to assess the suitability of the on-site soil for use as wall backfill if standard wall designs will be used.

7.12 Lateral Loading

7.12.1 Table 7.12 should be used to help design the proposed structures and improvements to resist lateral loads for the design of footings or shear keys. The allowable passive pressure assumes a horizontal surface extending at least 5 feet, or three times the surface generating the passive pressure, whichever is greater. The upper 12 inches of material in areas not protected by floor slabs or pavement should not be included in design for passive resistance.

TABLE 7.12
SUMMARY OF LATERAL LOAD DESIGN RECOMMENDATIONS

Parameter	Value
Passive Pressure Fluid Density	300 pcf
Coefficient of Friction (Concrete and Soil)	0.3
Coefficient of Friction (Along Vapor Barrier)	0.2 to 0.25*

*Per manufacturer's recommendations.

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7.12.2 The passive and frictional resistant loads can be combined for design purposes. The lateral passive pressures may be increased by one-third when considering transient loads due to wind or seismic forces.

7.13 Preliminary Pavement Recommendations

7.13.1 We calculated the flexible pavement sections in general conformance with the *Caltrans Method of Flexible Pavement Design* (Highway Design Manual, Section 608.4) using an estimated Traffic Index (TI) of 5.0, 5.5, 6.0, and 7.0 for parking stalls, driveways, medium truck traffic areas, and heavy truck traffic areas, respectively. The project civil engineer and owner should review the pavement designations to determine appropriate locations for pavement thickness. The final pavement sections for the parking lot should be based on the R-Value of the subgrade soil encountered at final subgrade elevation. Our laboratory test results indicate that the on-site soils possess an R-Value of less than 5. We used an R-Value of 4 and 78 for the subgrade soil and base materials, respectively, for the purposes of this preliminary analysis. Table 7.13.1 presents the preliminary flexible pavement sections.

TABLE 7.13.1
PRELIMINARY FLEXIBLE PAVEMENT SECTION

Location	Assumed Traffic Index	Assumed Subgrade R-Value	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Parking Stalls for Automobiles and Light-Duty Vehicles	5.0	4	3	10
Driveways for Automobiles and Light-Duty Vehicles	5.5	4	3	12
Medium Truck Traffic Areas	6.0	4	3.5	13
Driveways for Heavy Truck Traffic	7.0	4	4	16

7.13.2 Prior to placing base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned as necessary, and recompacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content as determined by ASTM D 1557. Similarly, the base material should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Asphalt concrete should be compacted to a density of at least 95 percent of the laboratory Hveem density in accordance with ASTM D 2726.

7.13.3 Base materials should conform to Section 26-1.02B of the *Standard Specifications for The State of California Department of Transportation (Caltrans)* with a ¾-inch maximum size

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aggregate. Asphalt concrete should conform to Section 203-6 of the *Standard Specifications for Public Works Construction (Greenbook)*.

7.13.4 The base thickness can be reduced if a reinforcement geogrid is used during the installation of the pavement. Geocon should be contact for additional recommendations if alternate design parameters are requested.

7.13.5 A rigid Portland cement concrete (PCC) pavement section should be placed in roadway aprons and cross gutters. We calculated the rigid pavement section in general conformance with the procedure recommended by the American Concrete Institute report ACI 330-21 *Commercial Concrete Parking Lots and Site Paving Design and Construction – Guide.* Table 7.13.2 provides the traffic categories and design parameters used for the calculations for 20-year design life.

TABLE 7.13.2
TRAFFIC CATEGORIES

Traffic Category	Description	Reliability (%)	Slabs Cracked at End of Design Life (%)
A	Car Parking Areas and Access Lanes	60	15
B	Entrance and Truck Service Lanes	60	15
E	Garbage or Fire Truck Lane	75	15

7.13.6 We used the parameters presented in Table 7.13.3 to calculate the pavement design sections. We should be contacted to provide updated design sections, if necessary.

TABLE 7.12.3
RIGID PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of Subgrade Reaction, k	50 pci
Modulus of Rupture for Concrete, M_R	500 psi
Concrete Compressive Strength	3,000 psi
Concrete Modulus of Elasticity, E	3,150,000 psi

7.13.7 Based on the criteria presented herein, the PCC pavement sections should have a minimum thickness as presented in Table 7.13.4.

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TABLE 7.13.4
RIGID VEHICULAR PAVEMENT RECOMMENDATIONS

Traffic Category	Trucks Per Day	Portland Cement Concrete, T (Inches)
A = Car Parking Areas and Access Lanes	10	6
B = Entrance and Truck Service Lanes	10	6½
	50	7
E = Garbage or Fire Truck Lanes	10	7½
	50	8½

7.13.8 The PCC vehicular pavement should be placed over subgrade soil that is compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. The garbage truck pad should be large enough such that all wheels are on the concrete pad during the loading operations.

7.13.9 Adequate joint spacing should be incorporated into the design and construction of the rigid pavement in accordance with Table 7.13.5.

TABLE 7.13.5
MAXIMUM JOINT SPACING

Pavement Thickness, T (Inches)	Maximum Joint Spacing (Feet)
4<T<5	10
5≤T<6	12.5
6≤T	15

7.13.10 The rigid pavement should also be designed and constructed incorporating the parameters presented in Table 7.13.6.

TABLE 7.13.6
ADDITIONAL RIGID PAVEMENT RECOMMENDATIONS

Subject	Value
Thickened Edge	1.2 Times Slab Thickness Adjacent to Structures
	1.5 Times Slab Thickness Adjacent to Soil
	Minimum Increase of 2 Inches
	4 Feet Wide
Crack Control Joint Depth	Early Entry Sawn = T/6 to T/5, 1.25 Inch Minimum
	Conventional (Tooled or Conventional Sawing) = T/4 to T/3
Crack Control Joint Width	¼-Inch for Sealed Joints and Per Sealer Manufacturer's Recommendations
	$^{1}/_{16}$- to $^{1}/_{4}$-Inch is Common for Unsealed Joints

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7.13.11 Reinforcing steel will not be necessary within the concrete for geotechnical purposes with the possible exception of dowels at construction joints as discussed herein.

7.13.12 To control the location and spread of concrete shrinkage cracks, crack-control joints (weakened plane joints) should be included in the design of the concrete pavement slab. Crack-control joints should be sealed with an appropriate sealant to prevent the migration of water through the control joint to the subgrade materials. The depth of the crack-control joints should be in accordance with the referenced ACI guide.

7.13.13 To provide load transfer between adjacent pavement slab sections, a butt-type construction joint should be constructed. The butt-type joint should be thickened by at least 20 percent at the edge and taper back at least 4 feet from the face of the slab.

7.13.14 Concrete curb/gutter should be placed on soil subgrade compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Cross-gutters that receives vehicular should be placed on subgrade soil compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Base materials should not be placed below the curb/gutter, or cross-gutters so water is not able to migrate from the adjacent parkways to the pavement sections. Where flatwork is located directly adjacent to the curb/gutter, the concrete flatwork should be structurally connected to the curbs to help reduce the potential for offsets between the curbs and the flatwork.

7.14 Site Drainage and Moisture Protection

7.14.1 Adequate site drainage is critical to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2019 CBC 1804.4 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

7.14.2 In the case of basement walls or building walls retaining landscaping areas, a water-proofing system should be used on the wall and joints, and a Miradrain drainage panel (or similar) should be placed over the waterproofing. The project architect or civil engineer should provide detailed specifications on the plans for all waterproofing and drainage.

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7.14.3 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

7.14.4 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes can be used. In addition, where landscaping is planned adjacent to the pavement, construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material should be considered.

7.14.5 We should prepare a storm water infiltration feasibility report of storm water management devices are planned.

7.15 Grading and Foundation Plan Review

7.15.1 Geocon Incorporated should review the grading and building foundation plans for the project prior to final design submittal to evaluate if additional analyses and/or recommendations are required.

7.16 Testing and Observation Services During Construction

7.16.1 Geocon Incorporated should provide geotechnical testing and observation services during the grading operations, foundation construction, utility installation, retaining wall backfill and pavement installation. Table 7.16 presents the typical geotechnical observations we would expect for the proposed improvements.

TABLE 7.16
EXPECTED GEOTECHNICAL TESTING AND OBSERVATION SERVICES

Construction Phase	Observations	Expected Time Frame
Grading	Base of Removal	Part Time During Removals
	Geologic Logging	Part Time to Full Time
	Fill Placement and Soil Compaction	Full Time
Foundations	Foundation Excavation Observations	Part Time
Utility Backfill	Fill Placement and Soil Compaction	Part Time to Full Time
Retaining Wall Backfill	Fill Placement and Soil Compaction	Part Time to Full Time
Subgrade for Sidewalks, Curb/Gutter and Pavement	Soil Compaction	Part Time
Pavement Construction	Base Placement and Compaction	Part Time
	Asphalt Concrete Placement and Compaction	Full Time

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LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

2. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

3. This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

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APPENDIX A

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APPENDIX A

FIELD INVESTIGATION

We performed the drilling operations on March 17, 2022 that included 7 exploratory borings that extended to maximum depth of approximately 16 feet. We used a CME 55 drill rig equipped with hollow-stem augers with North County Drilling. The boring logs are presented in this Appendix. We located the borings in the field using a measuring tape and existing reference points; therefore, actual boring locations may deviate slightly.

We obtained samples during our subsurface exploration in the borings using a California sampler. The sampler is composed of steel and is driven to obtain ring samples. The California sampler has an inside diameter of 2.5 inches and an outside diameter of 3 inches. Up to 18 rings are placed inside the sampler that is 2.4 inches in diameter and 1 inch in height. We obtained ring samples at appropriate intervals, placed them in moisture-tight containers, and transported them to the laboratory for testing. The type of sample is noted on the exploratory boring logs.

The sampler was driven 12 inches. The sampler is connected to A rods and driven into the bottom of the excavation using a 140-pound hammer with a 30-inch drop. Blow counts are recorded for every 6 inches the sampler is driven. The penetration resistances shown on the boring logs are shown in terms of blows per foot. The values indicated on the boring logs are the sum of the blow counts for 12 inches. If the sampler was not driven for 12 inches, an approximate value is calculated in term of blows per foot or the final 6-inch interval is reported. These values are not to be taken as N-values as adjustments have not been applied. We estimated elevations shown on the boring logs either from a topographic map or by using a benchmark. Each excavation was backfilled as noted on the boring logs.

We visually examined, classified, and logged the soil encountered in the borings in general accordance with American Society for Testing and Materials (ASTM) practice for Description and Identification of Soils (Visual-Manual Procedure D 2488). The logs depict the soil and geologic conditions observed and the depth at which samples were obtained.

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PROJECT NO. G2912-52-01

BORING B 1

ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022**

EQUIPMENT **CME 55** BY: **J. LANCASTER**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CH	**TOPSOIL (Qtop)** Soft, damp, light yellowish brown, Silty to Sandy CLAY; some organics			
				SC	**SANTIAGO FORMATION (Tsa)** Very dense, damp, whitish gray, Clayey, fine SANDSTONE			
2	B1-1							
4								
	B1-2			CH	Hard, damp, light reddish gray, Silty to Sandy CLAYSTONE	50/5.5"		
6								
8								
10	B1-3					50/5.5"	110.6	13.1
12								
14					-Becomes dark reddish brown			
	B1-4					86/9.5"	107.8	19.1
16					BORING TERMINATED AT 16 FEET No groundwater encountered Backfilled with soil			

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Figure A-1,
Log of Boring B 1, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. G2912-52-01

BORING B 2

ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022**

EQUIPMENT **CME 55** BY: **J. LANCASTER**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CH	**TOPSOIL (Qtop)** Soft, damp, light grayish brown, Silty to Sandy CLAY; some organics			
2				CH	**SANTIAGO FORMATION (Tsa)** Hard, damp, light yellowish gray, Sandy CLAYSTONE			
4								
6	B2-1				-Becomes gray, silty claystone	78/11.5"	109.5	17.4
8								
10	B2-2				Very dense, damp, light yellowish whitish gray, Clayey, fine SANDSTONE	50/4.5"		
12								
14	B2-3					50/5.5"		
					BORING TERMINATED AT 15.5 FEET No groundwater encountered Backfilled with soil			

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Figure A-2,
Log of Boring B 2, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2912-52-01

BORING B 3

ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022**

EQUIPMENT **CME 55** BY: **J. LANCASTER**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SC	**TOPSOIL (Qtop)** Loose, damp, light gray, Clayey, fine to medium SAND; few organics, few gravel			
	B3-1			SC	**SANTIAGO FORMATION (Tsa)** Dense, damp, light gray, Clayey to Silty, fine to medium SANDSTONE			
2								
4								
	B3-2					68		
6								
				CH	Hard, damp, light brownish gray, Silty to Sandy CLAYSTONE			
8								
10	B3-3					50/5.5"	110.8	18.6
12								
14					-Becomes light reddish gray			
	B3-4					50/5.5"		
					BORING TERMINATED AT 15.5 FEET No groundwater encountered Backfilled with soil			

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Figure A-3,
Log of Boring B 3, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2912-52-01

BORING B 4

ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022**

EQUIPMENT **CME 55** BY: **J. LANCASTER**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CH	**TOPSOIL (Qtop)** Soft, damp, grayish brown, Silty to Sandy CLAY; some organics			
2				CH	**SANTIAGO FORMATION (Tsa)** Hard, damp to moist, light brownish gray, Silty CLAYSTONE			
4								
6	B4-1					50/4"	114.0	13.0
8					-Becomes sandy claystone			
10	B4-2					85/11.5"	115.8	15.1
					BORING TERMINATED AT 11 FEET No groundwater encountered Backfilled with soil			

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Figure A-4,
Log of Boring B 4, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2912-52-01

BORING B 5

ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022**

EQUIPMENT **CME 55** BY: **J. LANCASTER**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CH	**TOPSOIL (Qtop)** Soft, damp, grayish brown, Silty to Sandy CLAY; some organics			
	B5-1			CH	**SANTIAGO FORMATION (Tsa)** Hard, damp, light gray, Silty CLAYSTONE		107.0	21.3
2								
4								
	B5-2				-Becomes light brownish gray	90/11.5"		
6					BORING TERMINATED AT 6 FEET No groundwater encountered Backfilled with soil			

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Figure A-5,
Log of Boring B 5, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. G2912-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	BORING P 1 ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022** EQUIPMENT **CME 55** BY: **J. LANCASTER**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				CH	**TOPSOIL (Qtop)** Soft, damp, grayish brown, Silty to Sandy CLAY; some organics			
2				CH	**SANTIAGO FORMATION (Tsa)** Hard, damp, light yellowish gray, Silty CLAYSTONE			
4					PERCOLATION HOLE TERMINATED AT 5 FEET No groundwater encountered Backfilled with soil			

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Figure A-6,
Log of Boring P 1, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2912-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	BORING P 2	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					ELEV. (MSL.) _____ DATE COMPLETED **03-17-2022** EQUIPMENT **CME 55** BY: **J. LANCASTER**			
					MATERIAL DESCRIPTION			
0				CH	**TOPSOIL (Qtop)** Soft, damp, grayish brown, Silty to Sandy CLAY; some organics			
2				CH	**SANTIAGO FORMATION (Tsa)** Hard, damp, light yellowish gray, Silty CLAYSTONE			
4					PERCOLATION HOLE TERMINATED AT 5 FEET No groundwater encountered Backfilled with soil			

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Figure A-7,
Log of Boring P 2, Page 1 of 1

G2912-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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APPENDIX B

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APPENDIX B

LABORATORY TESTING

We performed laboratory tests in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. We tested selected soil samples for in-place dry density/moisture content, maximum density/optimum moisture content, expansion index, water-soluble sulfate, pH, resistivity, water-soluble chloride ion content, plasticity index, R-Value, unconfined compressive strength, consolidation, gradation and direct shear strength. The results of our current laboratory tests are presented herein. The in-place dry density and moisture content of the samples tested are presented on the boring logs in Appendix A.

SUMMARY OF LABORATORY MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS ASTM D 1557

Sample No.	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (% dry wt.)
B1-1	Whitish gray, Clayey, fine SAND	122.8	11.4
B5-1	Light gray, Silty CLAY	106.1	20.0

SUMMARY OF LABORATORY EXPANSION INDEX TEST RESULTS ASTM D 4829

Sample No.	Moisture Content (%)		Dry Density (pcf)	Expansion Index	2019 CBC Expansion Classification	ASTM Soil Expansion Classification
	Before Test	After Test				
B1-1	10.1	23.8	110.2	95	Expansive	High
B5-1	16.6	40.6	90.3	141	Expansive	Very High

SUMMARY OF LABORATORY WATER-SOLUBLE SULFATE TEST RESULTS CALIFORNIA TEST NO. 417

Sample No.	Depth (feet)	Geologic Unit	Water-Soluble Sulfate (%)	ACI 318 Sulfate Exposure
B1-1	2-5	Tsa	0.006	S0
B5-1	1-4	Tsa	0.013	S0

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SUMMARY OF LABORATORY CHLORIDE TEST RESULTS
AASHTO T 291

Sample No.	Depth (Feet)	Geologic Unit	Chloride Ion Content (ppm)	Chloride Ion Content (%)
B1-1	2-5	Tsa	138	0.014

SUMMARY OF LABORATORY POTENTIAL OF HYDROGEN (PH) AND RESISTIVITY TEST RESULTS
CALIFORNIA TEST NO. 643

Sample No.	Depth (Feet)	Geologic Unit	pH	Minimum Resistivity (ohm-centimeters)
B1-1	2-5	Tsa	8.63	900

SUMMARY OF LABORATORY RESISTANCE VALUE (R-VALUE) TEST RESULTS
ASTM D 2844

Sample No.	Depth (Feet)	Description (Geologic Unit)	R-Value
B5-1	1-4	Light gray, Silty CLAY (Tsa)	Less than 5

SUMMARY OF LABORATORY UNCONFINED COMPRESSIVE STRENGTH TEST RESULTS
ASTM D 1558

Sample No.	Depth (feet)	Geologic Unit	Hand Penetrometer Reading/Unconfined Compression Strength (tsf) and Undrained Shear Strength (ksf)
B1-3	10	Tsa	4.5+
B1-4	15	Tsa	4.5+
B3-3	10	Tsa	4.5+
B4-1	5	Tsa	4.5+
B4-2	10	Tsa	4.5+
B5-2	5	Tsa	4.5+

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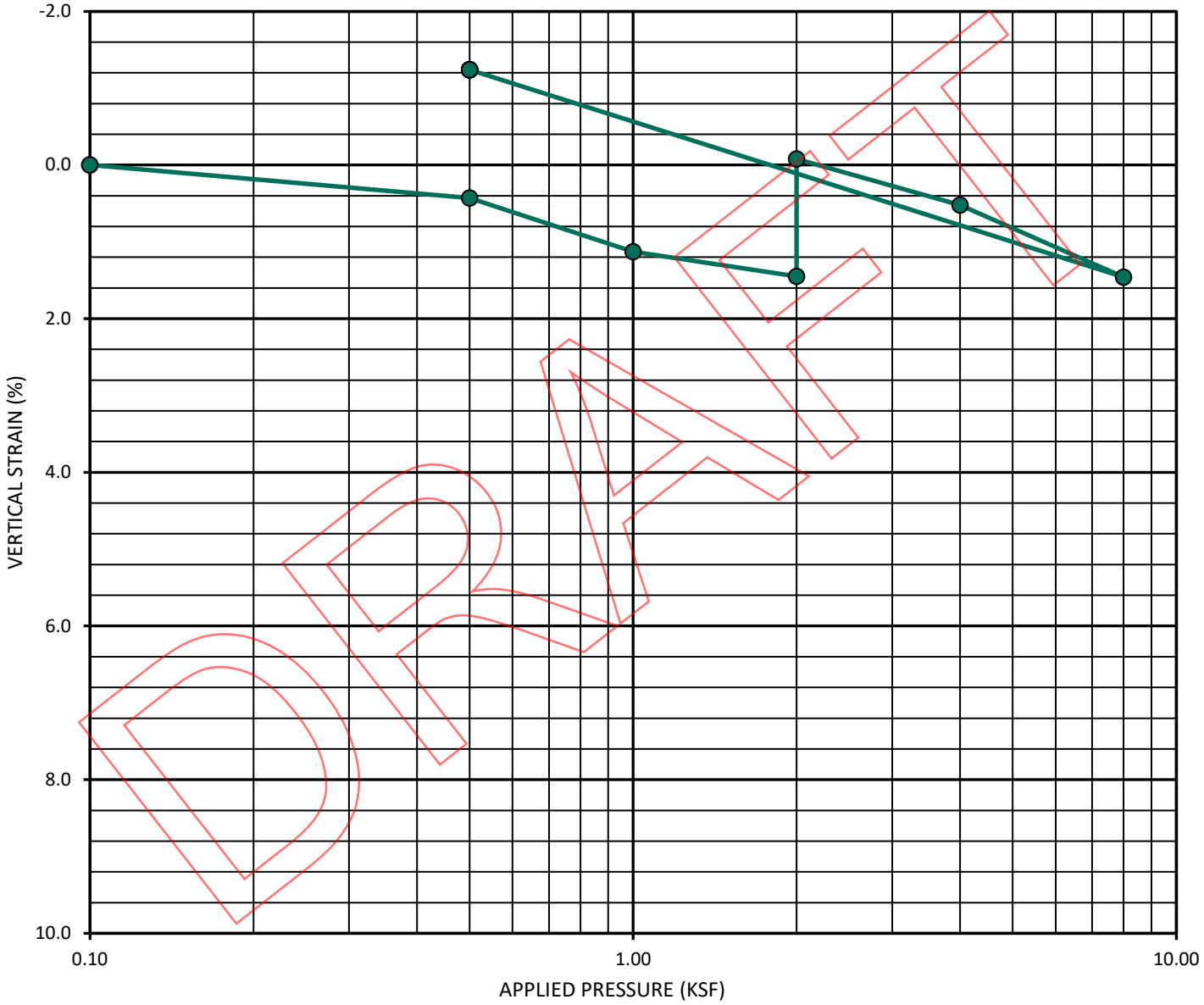
SAMPLE NO.: **B5-2**

SAMPLE DEPTH (FT): **5'**

GEOLOGIC UNIT: **Tsa**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	107.0
INITIAL WATER CONTENT (%):	21.3%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	100+



CONSOLIDATION CURVE - ASTM D 2435

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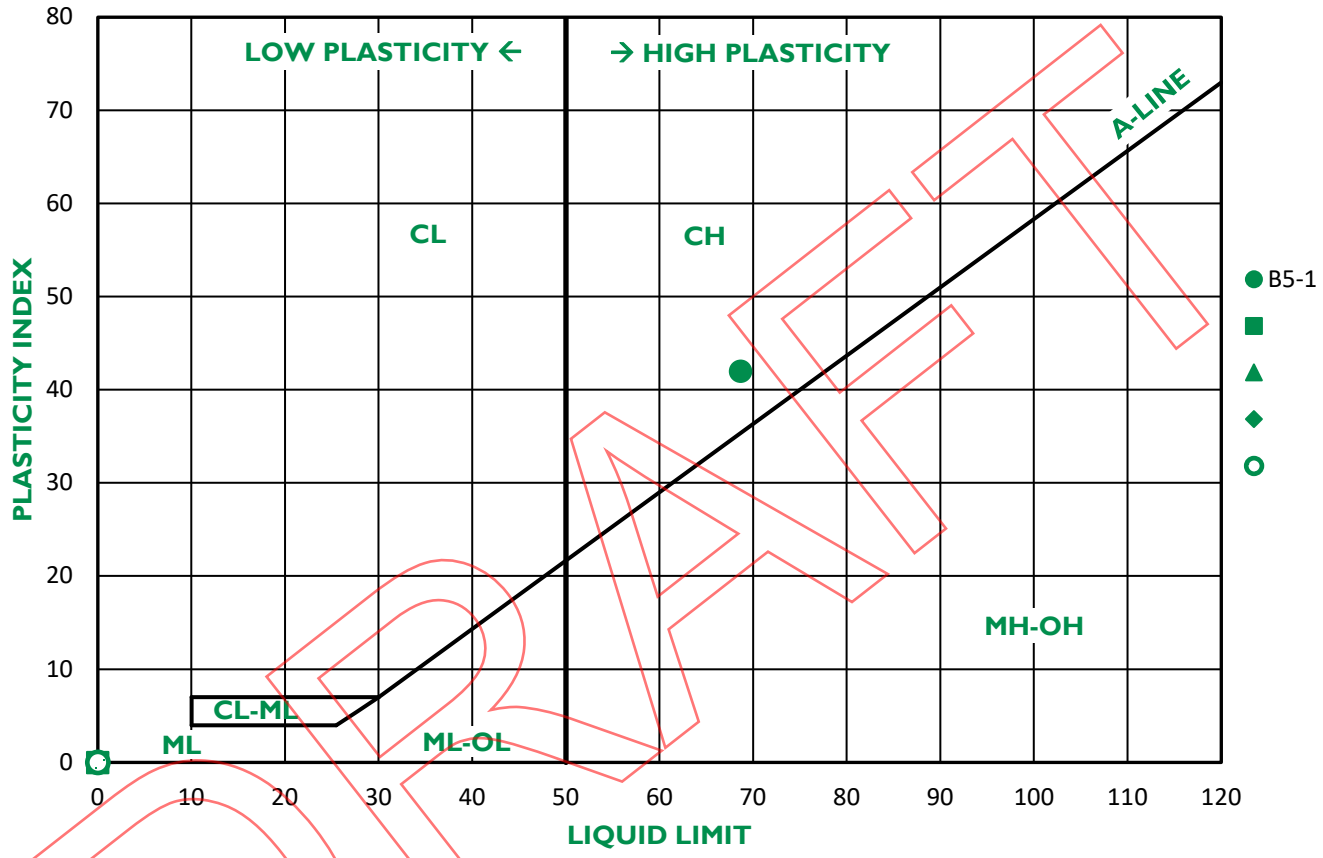
OCEANSIDE FIRE STATION NO. 8

PROJECT NO.: G2912-52-01

TEST RESULTS					
SAMPLE NO.	GEOLOGIC UNIT	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SOIL TYPE
B5-1		69	27	42	CH



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SOIL TYPE DESCRIPTION	
CH	High-Plasticity Clay
CL	Low-Plasticity Clay
ML	Low-Plasticity Silt
CL-ML	Low-Plasticity Clay to Low-Plasticity Silt
MH-OH	High-Plasticity Silt to High-Plasticity, Organic Silt
ML-OL	Low-Plasticity Silt to Low-Plasticity, Organic Silt

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PLASTICITY INDEX - ASTM D 4318

OCEANSIDE FIRE STATION NO. 8

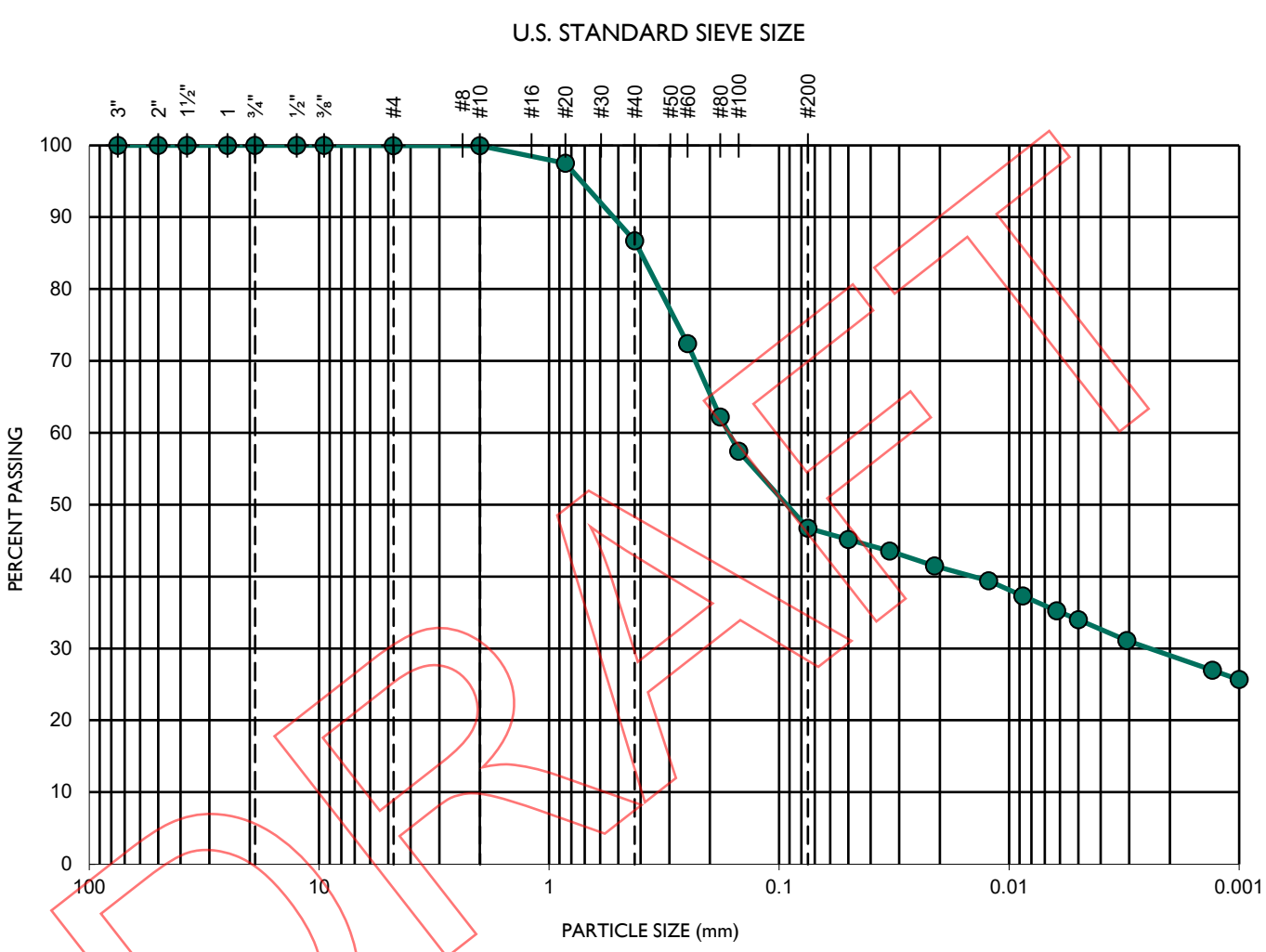
PROJECT NO.: G2912-52-01

SAMPLE NO.: **B1-1**

SAMPLE DEPTH (FT.): **2'-5'**

GEOLOGIC UNIT: **Tsa**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



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TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.00260	0.16608	--	--	Clayey SAND

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SIEVE ANALYSES - ASTM D 6913

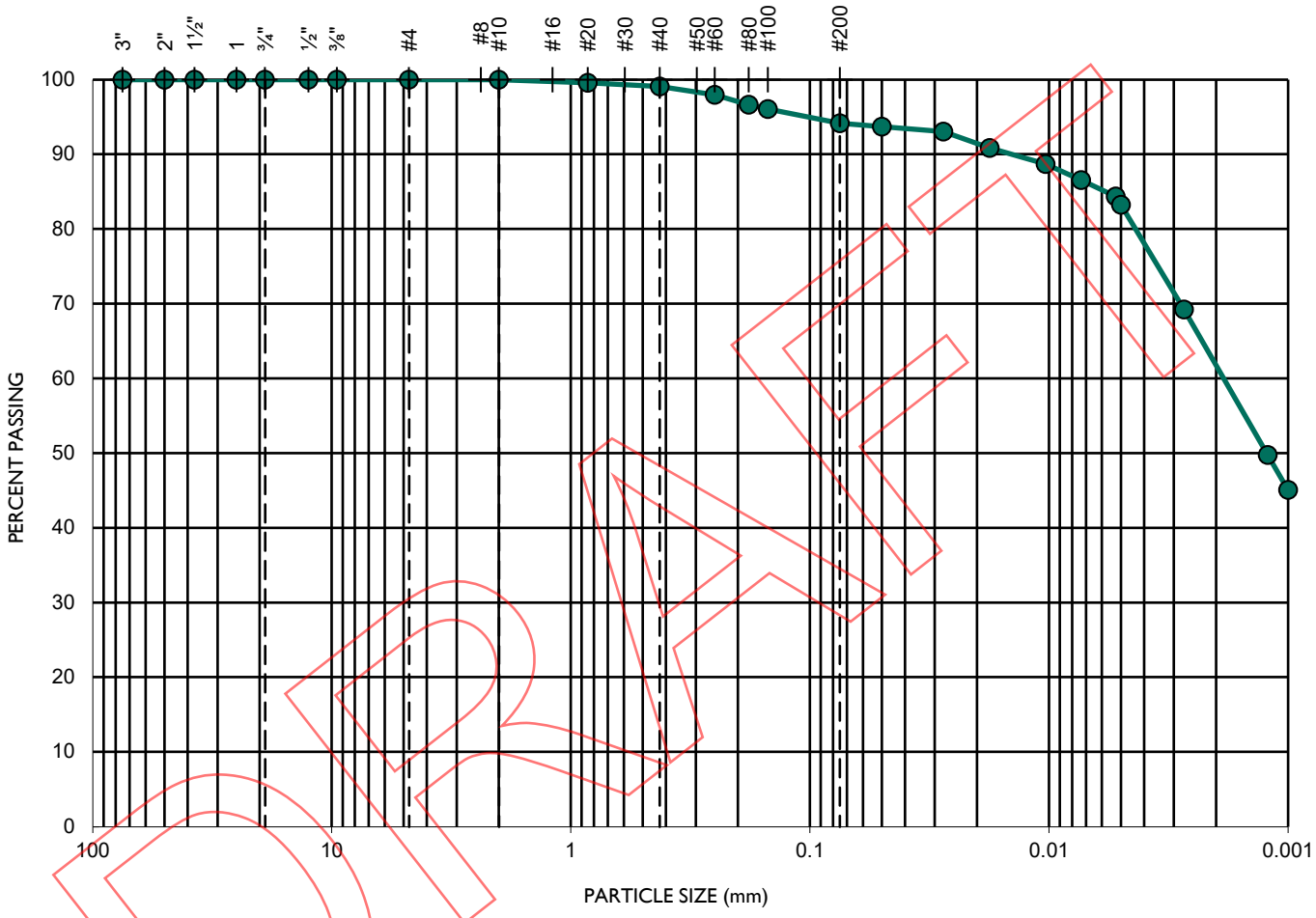
OCEANSIDE FIRE STATION NO. 8

PROJECT NO.: G2912-52-01

SAMPLE NO.: **B5-1** GEOLOGIC UNIT: **Tsa**

SAMPLE DEPTH (FT.): **1'-4'**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



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TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.00031	0.00201	--	--	CLAY

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SIEVE ANALYSES - ASTM D 6913

OCEANSIDE FIRE STATION NO. 8

PROJECT NO.: G2912-52-01

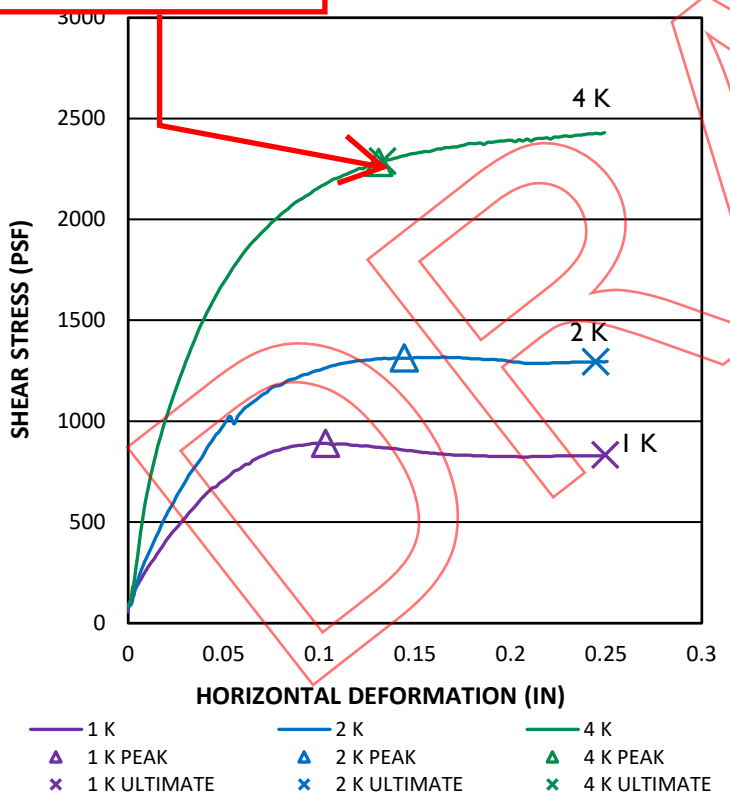
SAMPLE NO.:	**B1-1**	GEOLOGIC UNIT:	**Tsa**
SAMPLE DEPTH (FT):	**2'-5'**	NATURAL/REMOLDED:	**R**

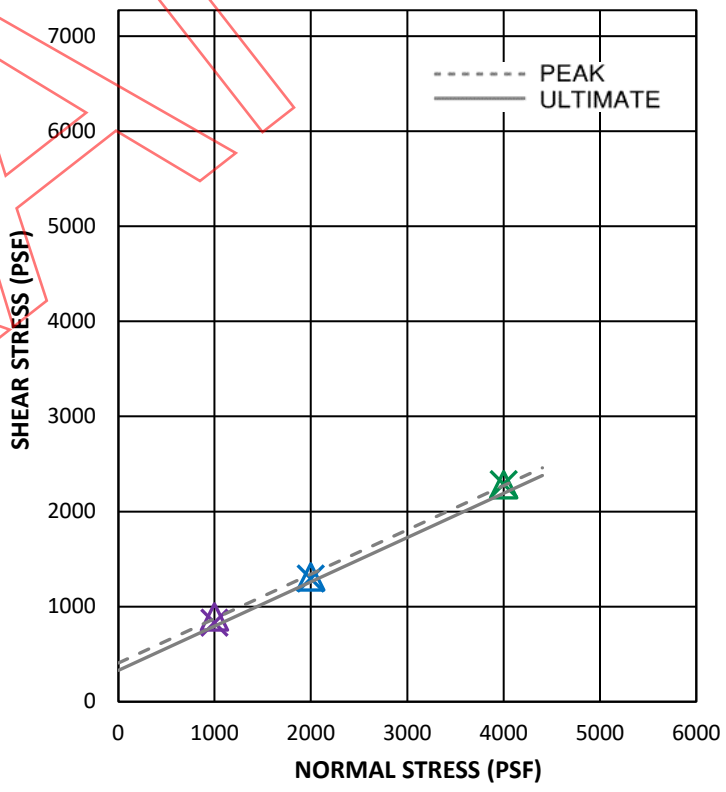
INITIAL CONDITIONS				
NORMAL STRESS TEST LOAD	**1 K**	**2 K**	**4 K**	**AVERAGE**
ACTUAL NORMAL STRESS (PSF):	1000	2000	4000	--
WATER CONTENT (%):	13.9	12.2	10.6	12.2
DRY DENSITY (PCF):	108.9	110.3	111.7	110.3

AFTER TEST CONDITIONS				
NORMAL STRESS TEST LOAD	**1 K**	**2 K**	**4 K**	**AVERAGE**
WATER CONTENT (%):	20.2	20.1	19.1	19.8
PEAK SHEAR STRESS (PSF):	891	1313	2282	--
ULT.-E.O.T. SHEAR STRESS (PSF):	832	1294	2288	--

RESULTS		
PEAK	COHESION, C (PSF)	410
	FRICTION ANGLE (DEGREES)	25
ULTIMATE	COHESION, C (PSF)	330
	FRICTION ANGLE (DEGREES)	25

these do not look like they are at the right spot. why did you choose this?





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DIRECT SHEAR - ASTM D 3080

OCEANSIDE FIRE STATION NO. 8

PROJECT NO.: G2912-52-01

SAMPLE NO.:	**B2-1**	GEOLOGIC UNIT:	**5'**
SAMPLE DEPTH (FT):	**Tsa**	NATURAL/REMOLDED:	**N**

INITIAL CONDITIONS				
NORMAL STRESS TEST LOAD	**1 K**	**2 K**	**4 K**	**AVERAGE**
ACTUAL NORMAL STRESS (PSF):	1000	2000	4000	--
WATER CONTENT (%):	17.9	15.2	19.1	17.4
DRY DENSITY (PCF):	111.0	108.9	108.7	109.5

AFTER TEST CONDITIONS				
NORMAL STRESS TEST LOAD	**1 K**	**2 K**	**4 K**	**AVERAGE**
WATER CONTENT (%):	21.5	20.8	23.4	21.9
PEAK SHEAR STRESS (PSF):	952	1342	2272	--
ULT.-E.O.T. SHEAR STRESS (PSF):	458	1336	2139	--

RESULTS		
PEAK	COHESION, C (PSF)	490
	FRICTION ANGLE (DEGREES)	24
ULTIMATE	COHESION, C (PSF)	490
	FRICTION ANGLE (DEGREES)	22

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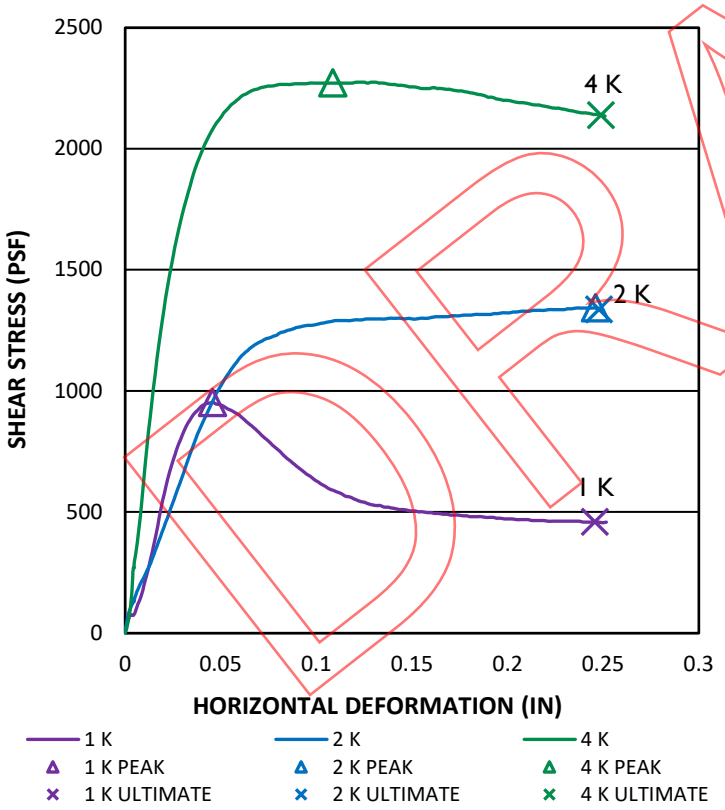

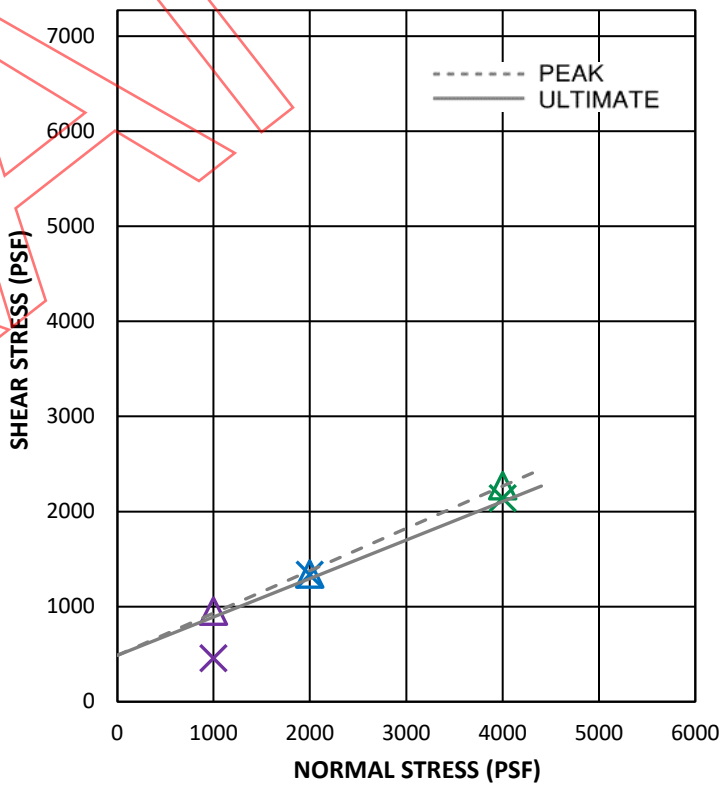

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DIRECT SHEAR - ASTM D 3080

OCEANSIDE FIRE STATION NO. 8

PROJECT NO.: G2912-52-01

APPENDIX C

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APPENDIX C

RECOMMENDED GRADING SPECIFICATIONS

FOR

OCEANSIDE FIRE STATION NO. 8
OCEANSIDE, CALIFORNIA

PROJECT NO. G2912-52-01

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RECOMMENDED GRADING SPECIFICATIONS

1. GENERAL

1.1 These Recommended Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon. The recommendations contained in the text of the Geotechnical Report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict.

1.2 Prior to the commencement of grading, a geotechnical consultant (Consultant) shall be employed for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the recommendations of the Geotechnical Report and these specifications. The Consultant should provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.

1.3 It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, and/or adverse weather result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject the work and recommend to the Owner that grading be stopped until the unacceptable conditions are corrected.

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2. DEFINITIONS

2.1 **Owner** shall refer to the owner of the property or the entity on whose behalf the grading work is being performed and who has contracted with the Contractor to have grading performed.

2.2 **Contractor** shall refer to the Contractor performing the site grading work.

2.3 **Civil Engineer** or **Engineer of Work** shall refer to the California licensed Civil Engineer or consulting firm responsible for preparation of the grading plans, surveying and verifying as-graded topography.

2.4 **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained to provide geotechnical services for the project.

2.5 **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the Owner, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.

2.6 **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the Owner to provide geologic observations and recommendations during the site grading.

2.7 **Geotechnical Report** shall refer to a soil report (including all addenda) which may include a geologic reconnaissance or geologic investigation that was prepared specifically for the development of the project for which these Recommended Grading Specifications are intended to apply.

3. MATERIALS

3.1 Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as *soil* fills, *soil-rock* fills or *rock* fills, as defined below.

3.1.1 **Soil fills** are defined as fills containing no rocks or hard lumps greater than 12 inches in maximum dimension and containing at least 40 percent by weight of material smaller than ¾ inch in size.

3.1.2 **Soil-rock fills** are defined as fills containing no rocks or hard lumps larger than 4 feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragments or hard lumps as specified in Paragraph 6.2. **Oversize rock** is defined as material greater than 12 inches.

3.1.3 **Rock fills** are defined as fills containing no rocks or hard lumps larger than 3 feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than ¾ inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.

3.2 Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.

3.3 Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9

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and 10; 40CFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause Consultant to suspect the presence of hazardous materials, the Consultant may request from the Owner the termination of grading operations within the affected area. Prior to resuming grading operations, the Owner shall provide a written report to the Consultant indicating that the suspected materials are not hazardous as defined by applicable laws and regulations.

3.4 The outer 15 feet of *soil-rock* fill slopes, measured horizontally, should be composed of properly compacted *soil* fill materials approved by the Consultant. *Rock* fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal:vertical) and a soil layer no thicker than 12 inches is track-walked onto the face for landscaping purposes. This procedure may be utilized provided it is acceptable to the governing agency, Owner and Consultant.

3.5 Samples of soil materials to be used for fill should be tested in the laboratory by the Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion, and gradation characteristics of the soil.

3.6 During grading, soil or groundwater conditions other than those identified in the Geotechnical Report may be encountered by the Contractor. The Consultant shall be notified immediately to evaluate the significance of the unanticipated condition.

4. CLEARING AND PREPARING AREAS TO BE FILLED

4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material and shall be performed in areas to be graded. Roots and other projections exceeding 1½ inches in diameter shall be removed to a depth of 3 feet below the surface of the ground. Borrow areas shall be grubbed to the extent necessary to provide suitable fill materials.

4.2 Asphalt pavement material removed during clearing operations should be properly disposed at an approved off-site facility or in an acceptable area of the project evaluated by Geocon and the property owner. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with Section 6.2 or 6.3 of this document.

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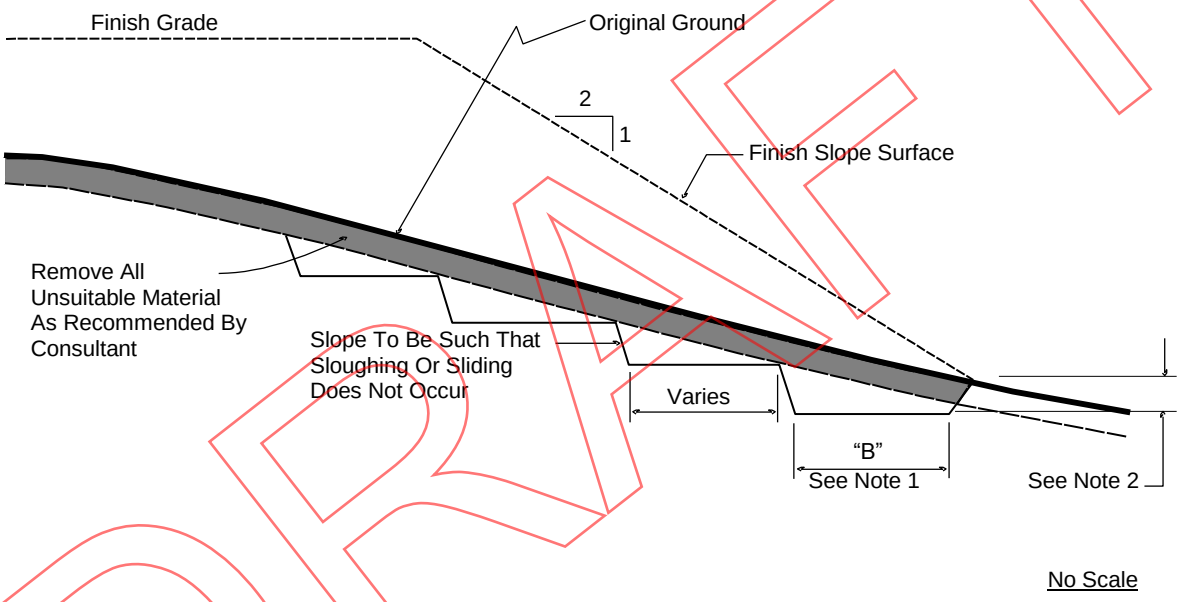
4.3 After clearing and grubbing of organic matter and other unsuitable material, loose or porous soils shall be removed to the depth recommended in the Geotechnical Report. The depth of removal and compaction should be observed and approved by a representative of the Consultant. The exposed surface shall then be plowed or scarified to a minimum depth of 6 inches and until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

4.4 Where the slope ratio of the original ground is steeper than 5:1 (horizontal:vertical), or where recommended by the Consultant, the original ground should be benched in accordance with the following illustration.

TYPICAL BENCHING DETAIL



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DETAIL NOTES: (1) Key width "B" should be a minimum of 10 feet, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be graded horizontal, or inclined slightly into the natural slope.

(2) The outside of the key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Consultant.

4.5 After areas to receive fill have been cleared and scarified, the surface should be moisture conditioned to achieve the proper moisture content, and compacted as recommended in Section 6 of these specifications.

5. COMPACTION EQUIPMENT

5.1 Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.

5.2 Compaction of *rock* fills shall be performed in accordance with Section 6.3.

6. PLACING, SPREADING AND COMPACTION OF FILL MATERIAL

6.1 *Soil* fill, as defined in Paragraph 3.1.1, shall be placed by the Contractor in accordance with the following recommendations:

6.1.1 *Soil* fill shall be placed by the Contractor in layers that, when compacted, should generally not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with Section 6.2 or 6.3 of these specifications.

6.1.2 In general, the *soil* fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.

6.1.3 When the moisture content of *soil* fill is below that specified by the Consultant, water shall be added by the Contractor until the moisture content is in the range specified.

6.1.4 When the moisture content of the *soil* fill is above the range specified by the Consultant or too wet to achieve proper compaction, the *soil* fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.

6.1.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.

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6.1.6 Where practical, soils having an Expansion Index greater than 50 should be placed at least 3 feet below finish pad grade and should be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

6.1.7 Properly compacted *soil* fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.

6.1.8 As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes should then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.

6.2 *Soil-rock* fill, as defined in Paragraph 3.1.2, shall be placed by the Contractor in accordance with the following recommendations:

6.2.1 Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted *soil* fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.

6.2.2 Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.

6.2.3 For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.

6.2.4 For windrow placement, the rocks should be placed in trenches excavated in properly compacted *soil* fill. Trenches should be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks should be filled with approved granular soil having a Sand Equivalent of 30 or greater and should be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method should first be approved by the Consultant.

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6.2.5 Windrows should generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.

6.2.6 Rock placement, fill placement and flooding of approved granular soil in the windrows should be continuously observed by the Consultant.

6.3 *Rock* fills, as defined in Section 3.1.3, shall be placed by the Contractor in accordance with the following recommendations:

6.3.1 The base of the *rock* fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The *rock* fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.

6.3.2 *Rock* fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the *rock* fill shall be by dozer to facilitate *seating* of the rock. The *rock* fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection as recommended in Paragraph 6.3.3 shall be utilized. The number of passes to be made should be determined as described in Paragraph 6.3.3. Once a *rock* fill lift has been covered with *soil* fill, no additional *rock* fill lifts will be permitted over the *soil* fill.

6.3.3 Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted *soil* fill and in the *rock* fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests should be performed in the properly compacted *soil* fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of *rock* fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the *rock* fill shall be determined by comparing the results of the plate bearing tests for the *soil* fill and the *rock* fill and by evaluating the deflection

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variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted *soil* fill. In no case will the required number of passes be less than two.

6.3.4 A representative of the Consultant should be present during *rock* fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.

6.3.5 Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the *rock* fills.

6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the *rock* fill is being excavated. Materials typical of the *rock* fill should be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of *rock* fill placement.

6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

7. SUBDRAINS

7.1 The geologic units on the site may have permeability characteristics and/or fracture systems that could be susceptible under certain conditions to seepage. The use of canyon subdrains may be necessary to mitigate the potential for adverse impacts associated with seepage conditions. Canyon subdrains with lengths in excess of 500 feet or extensions of existing offsite subdrains should use 8-inch-diameter pipes. Canyon subdrains less than 500 feet in length should use 6-inch-diameter pipes.

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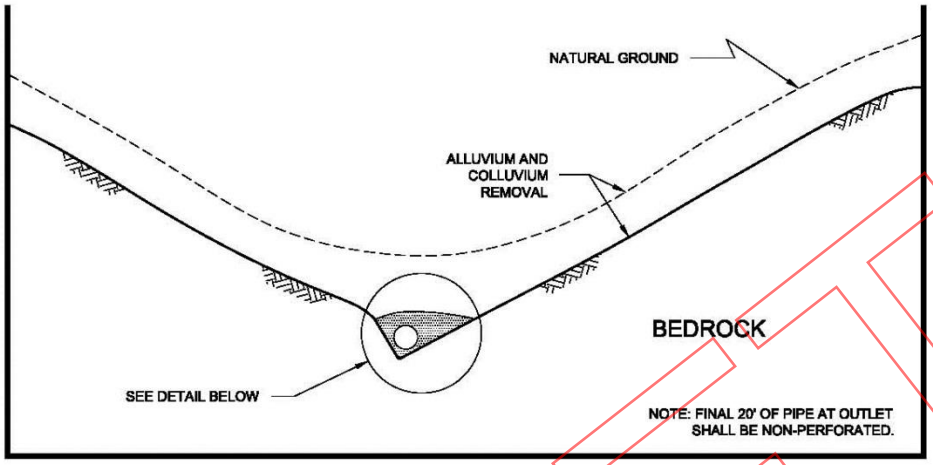
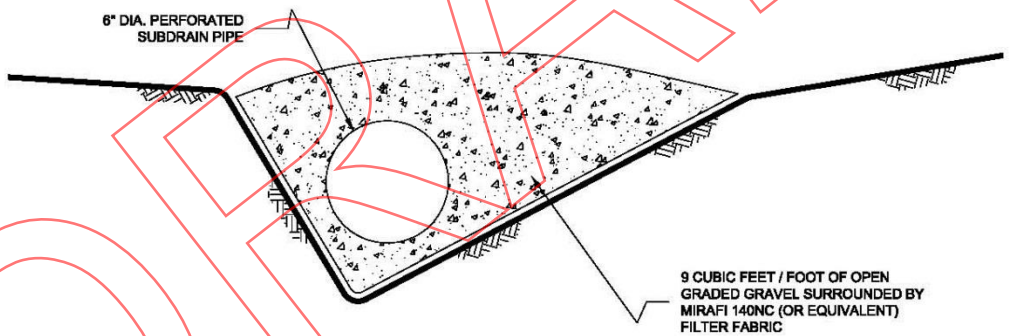
TYPICAL CANYON DRAIN DETAIL





NOTES:

1.....6-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS
IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

2.....6-INCH DIAMETER, SCHEDULE 40 PVC PERFORATED PIPE FOR FILLS
LESS THAN 100-FEET IN DEPTH OR A PIPE LENGTH SHORTER THAN 500 FEET.

NO SCALE

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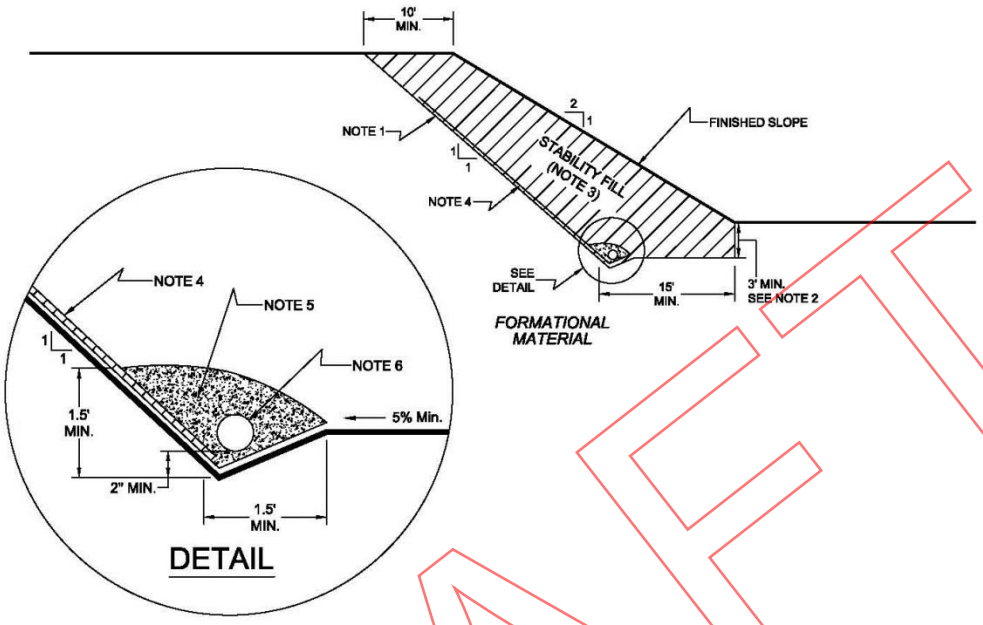
7.2 Slope drains within stability fill keyways should use 4-inch-diameter (or lager) pipes.

TYPICAL STABILITY FILL DETAIL



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF STABILITY FILL TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....STABILITY FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 20 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

NO SCALE

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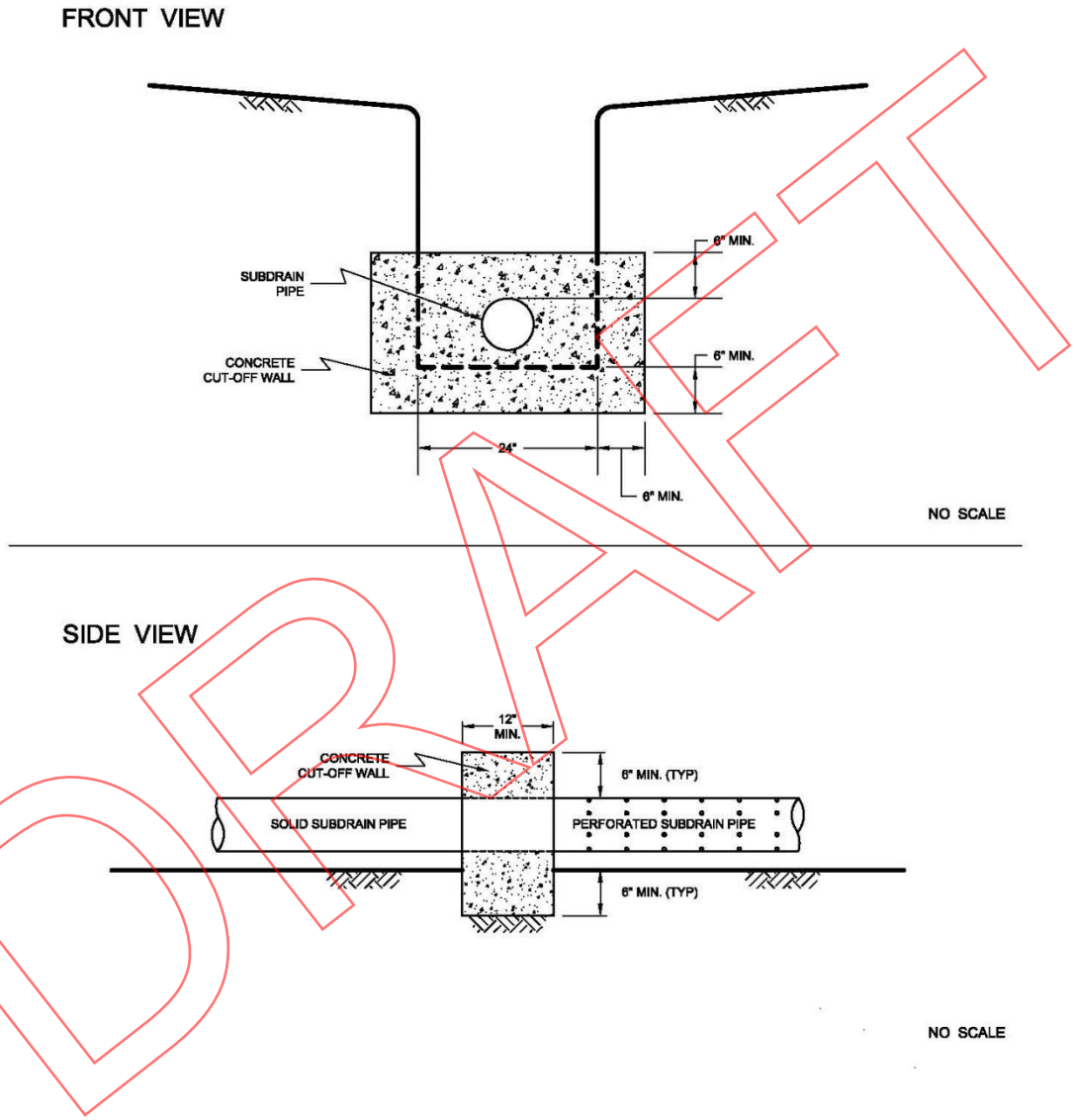
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 40-scale grading plans.

7.4 *Rock* fill or *soil-rock* fill areas may require subdrains along their down-slope perimeters to mitigate the potential for buildup of water from construction or landscape irrigation. The subdrains should be at least 6-inch-diameter pipes encapsulated in gravel and filter fabric. *Rock* fill drains should be constructed using the same requirements as canyon subdrains.

7.5 Prior to outletting, the final 20-foot segment of a subdrain that will not be extended during future development should consist of non-perforated drainpipe. At the non-perforated/ perforated interface, a seepage cutoff wall should be constructed on the downslope side of the pipe.

TYPICAL CUT OFF WALL DETAIL



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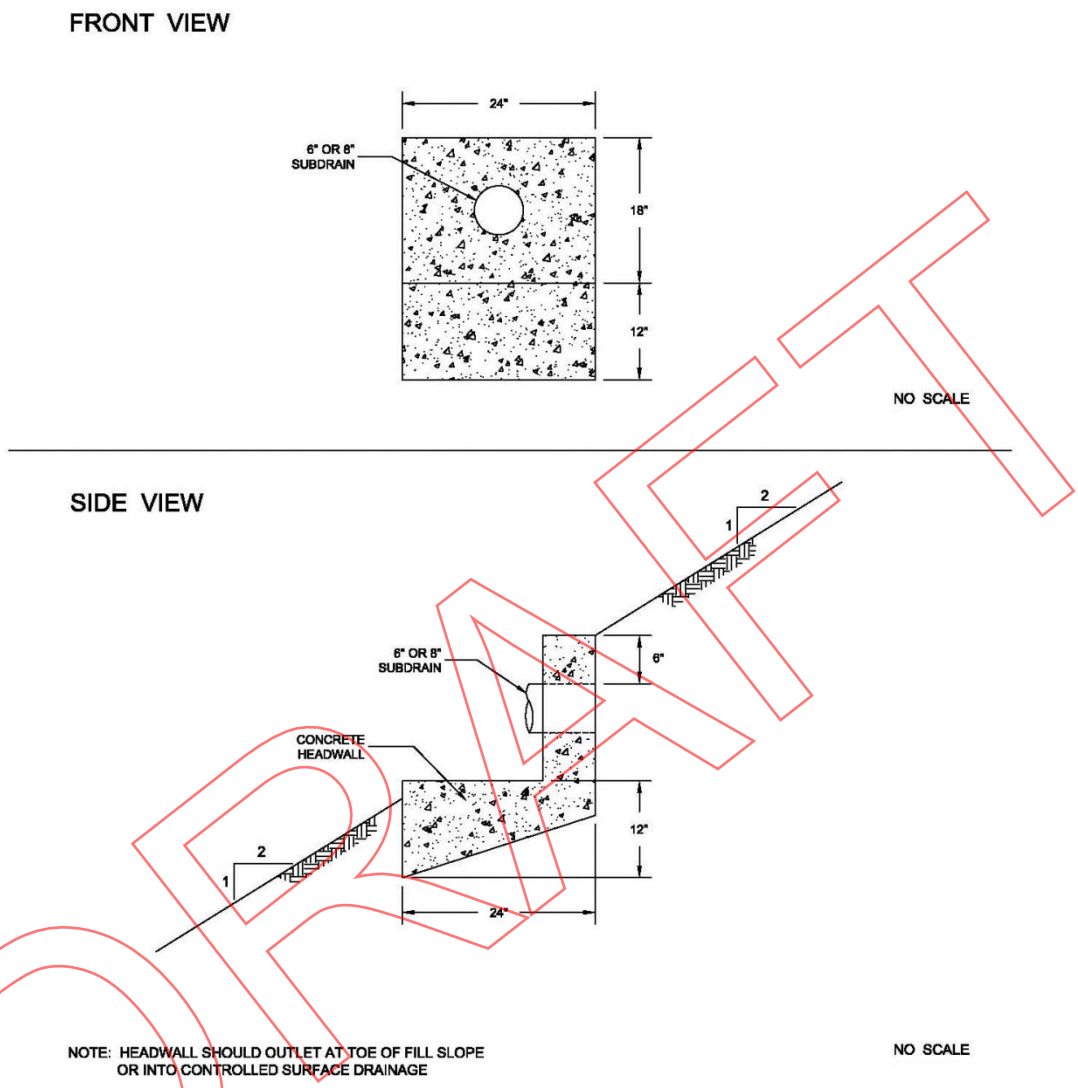
7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

TYPICAL HEADWALL DETAIL



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7.7 The final grading plans should show the location of the proposed subdrains. After completion of remedial excavations and subdrain installation, the project civil engineer should survey the drain locations and prepare an "as-built" map showing the drain locations. The final outlet and connection locations should be determined during grading operations. Subdrains that will be extended on adjacent projects after grading can be placed on formational material and a vertical riser should be placed at the end of the subdrain. The grading contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The contractor is responsible for the performance of the drains.

8. OBSERVATION AND TESTING

8.1 The Consultant shall be the Owner's representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill should be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test should be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.

8.2 The Consultant should perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.

8.3 During placement of *rock* fill, the Consultant should observe that the minimum number of passes have been obtained per the criteria discussed in Section 6.3.3. The Consultant should request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.

8.4 A settlement monitoring program designed by the Consultant may be conducted in areas of *rock* fill placement. The specific design of the monitoring program shall be as recommended in the Conclusions and Recommendations section of the project Geotechnical Report or in the final report of testing and observation services performed during grading.

8.5 We should observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.

8.6 Testing procedures shall conform to the following Standards as appropriate:

8.6.1 Soil and Soil-Rock Fills:

8.6.1.1 Field Density Test, ASTM D 1556, *Density of Soil In-Place By the Sand-Cone Method.*

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8.6.1.2 Field Density Test, Nuclear Method, ASTM D 6938, *Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).*

8.6.1.3 Laboratory Compaction Test, ASTM D 1557, *Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop*.

8.6.1.4. Expansion Index Test, ASTM D 4829, *Expansion Index Test*.

9. PROTECTION OF WORK

9.1 During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.

9.2 After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

10. CERTIFICATIONS AND FINAL REPORTS

10.1 Upon completion of the work, Contractor shall furnish Owner a certification by the Civil Engineer stating that the lots and/or building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. After installation of a section of subdrain, the project Civil Engineer should survey its location and prepare an *as-built* plan of the subdrain location. The project Civil Engineer should verify the proper outlet for the subdrains and the Contractor should ensure that the drain system is free of obstructions.

10.2 The Owner is responsible for furnishing a final as-graded soil and geologic report satisfactory to the appropriate governing or accepting agencies. The as-graded report should be prepared and signed by a California licensed Civil Engineer experienced in geotechnical engineering and by a California Certified Engineering Geologist, indicating that the geotechnical aspects of the grading were performed in substantial conformance with the Specifications or approved changes to the Specifications.

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LIST OF REFERENCES

1. *2019 California Building Code, California Code of Regulations, Title 24, Part 2, based on the 2018 International Building Code*, prepared by California Building Standards Commission, dated July 2019.

2. American Concrete Institute, *ACI 318-19, Building Code Requirements for Structural Concrete and Commentary*, dated June 2019.

3. American Concrete Institute, *ACI 330-21, Guide for the Design and Construction of Concrete Parking Lots*, dated May 2021.

4. American Society of Civil Engineers (ASCE), *ASCE 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, 2017.

5. California Department of Conservation, Division of Mines and Geology, *Probabilistic Seismic Hazard Assessment for the State of California*, Open File Report 96-08, 1996.

6. California Geological Survey, *Seismic Shaking Hazards in California*, Based on the USGS/CGS Probabilistic Seismic Hazards Assessment (PSHA) Model, 2002 (revised April 2003). 10% probability of being exceeded in 50 years. *http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamain.html*

7. County of San Diego, *San Diego County Multi Jurisdiction Hazard Mitigation Plan, San Diego, California – Final Draft*, dated 2017.

8. Historical Aerial Photos. *http://www.historicaerials.com*

9. Jennings, C. W., 1994, California Division of Mines and Geology, *Fault Activity Map of California and Adjacent Areas*, California Geologic Data Map Series Map No. 6.

10. Kennedy, M. P., and S. S. Tan, 2008, *Geologic Map of the San Diego 30'x60' Quadrangle, California*, USGS Regional Map Series Map No. 3, Scale 1:100,000.

11. SEAOC (2018), *Seismic Design Maps*, website interface that queries the U.S. Geologic Survey (USGS) web servers and retrieves the seismic design variables using ASCE 7-16, ASCE 7-10, ASCE 41-13, ASCE 41-17, IBC 2015, IBC 2012, NEHRP-2015, and NEHRP-2009 seismic design map data. *http://seismicmaps.org*

12. Special Publication 117A, *Guidelines For Evaluating and Mitigating Seismic Hazards in California 2008*, California Geological Survey, Revised and Re-adopted September 11, 2008.

13. Unpublished reports, aerial photographs, and maps on file with Geocon Incorporated.

14. USGS computer program, Seismic Hazard Curves and Uniform Hazard Response Spectra, *http://geohazards.usgs.gov/designmaps/us/application.php.*

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Appendix E
Noise Assessment Data

FORMS FIELD DATA REPORT

Field Noise Measurement Data

Record: 1495	
Project Name	*Oceanside fire*
Observer(s)	*Connor Burke*
Date	*2022-10-18*

Meteorological Conditions	
Temp (F)	*84*
Humidity % (R.H.)	*40*
Wind	*Light*
Wind Speed (MPH)	*5*
Wind Direction	*East*
Sky	*Sunny*

Instrument and Calibrator Information	
Instrument Name List	*(ENC) Rion NL-52*
Instrument Name	*(ENC) Rion NL-52*
Instrument Name Lookup Key	*(ENC) Rion NL-52*
Manufacturer	*Rion*
Model	*NL-52*
Serial Number	*553896*
Calibrator Name	*(ENC) LD CAL150*
Calibrator Name	*(ENC) LD CAL150*
Calibrator Name Lookup Key	*(ENC) LD CAL150*
Calibrator Manufacturer	*Larson Davis*
Calibrator Model	*LD CAL150*
Calibrator Serial #	*5152*
GPS Assistance Used	*Yes*
Pre-Test (dBA SPL)	*94*
Post-Test (dBA SPL)	*94*
Windscreen	*Yes*
Weighting?	*A-WTD*
Slow/Fast?	*Slow*
ANSI?	*Yes*

Monitoring	
Record #	*1*
Site ID	*ST2*
Site Location Lat/Long	*33.215396, -117.288813*
Begin (Time)	*13:10:00*
End (Time)	*13:25:00*
Leq	*49.8*
Lmax	*57.7*
Lmin	*44.9*
Other Lx?	*L90, L50, L10*
L90	*45.8*
L50	*48.6*
L10	*52.3*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Distant traffic*
Other Noise Sources (Background)	*Birds, Distant Conversations / Yelling, Distant Gardener / Landscape Noise, Distant Traffic, Rustling Leaves*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Description / Photos

Site Photos

Photo	

Monitoring

Record #	*2*
Site ID	*ST3*
Site Location Lat/Long	*33.215742, -117.288863*
Begin (Time)	*13:40:00*
End (Time)	*13:55:00*
Leq	*54.4*
Lmax	*62.2*
Lmin	*46*
Other Lx?	*L90, L50, L10*
L90	*46.7*
L50	*52.7*
L10	*58.5*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Conversations / Yelling, Distant Gardener / Landscape Noise, Distant Traffic, Rustling Leaves*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Description / Photos

Site Photos

Photo	

Monitoring

Record #	*3*
Site ID	*ST1*
Site Location Lat/Long	*33.216507, -117.289571*
Begin (Time)	*14:00:00*
End (Time)	*14:15:00*
Leq	*55*
Lmax	*63.6*
Lmin	*45.2*
Other Lx?	*L90, L50, L10*
L90	*46.30*
L50	*52.2*
L10	*59.3*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Distant Gardener / Landscape Noise*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

FORMS DUDEK FIELD DATA REPORT

Description / Photos

Site Photos

Photo	

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase per FTA guidance at residential property = 80
allowable hours over which Leq is to be averaged = 8

= temporary barrier (TB) of input height inserted between source and receptor

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
Demolition	dump truck	1	40	76		125	0.1		65.0	4	240	58	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Demolition Phase:			**58.1**																
Site Preparation	grader	1	40	85		125	0.1		74.0	8	480	70	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	scraper	1	40	84		125	0.1		73.0	8	480	69	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		125	0.1		67.0	7	420	62	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Site Preparation Phase:			**73.0**																
Grading	grader	1	40	85		125	0.1		74.0	8	480	70	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	dozer	1	40	82		125	0.1		71.0	8	480	67	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		125	0.1		67.0	7	420	62	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Grading Phase:			**72.3**																
Building Erection	crane	1	16	81		125	0.1		70.0	8	480	62	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	man lift	1	20	75		125	0.1		64.0	7	420	56	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	generator	1	50	72		125	0.1		61.0	8	480	58	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		125	0.1		67.0	6	360	62	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	welder / torch	1	40	73		125	0.1		62.0	8	480	58	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Building Erection Phase:			**66.9**																
Architectural Coating	compressor (air)	1	40	78		125	0.1		67.0	6	360	62	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Architectural Coating Phase:			**61.8**																
Paving	concrete mixer truck	1	40	79		125	0.1		68.0	8	480	64	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	paver	1	50	77		125	0.1		66.0	8	480	63	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	roller	1	20	80		125	0.1		69.0	8	480	62	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	All Other Equipment > 5 HP	1	50	85		125	0.1		74.0	8	480	71	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		125	0.1		67.0	8	480	63	5	5	0	5	120	125	7.1	120.1	125.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Paving Phase:			**73.2**																

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase per FTA guidance at residential property = 80
allowable hours over which Leq is to be averaged = 8

= temporary barrier (TB) of input height inserted between source and receptor

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Barr. ("A") Horiz. (ft)	Rcvr. to Barr. ("B") Horiz. (ft)	Source to Rcvr. ("C") Horiz. (ft)	"A" (ft)	"B" (ft)	"C" (ft)	Path Length Diff. "P" (ft)	Abarr (dB)	Heff (with barrier)	Heff (wout barrier)	G (with barrier)	G (without barrier)	ILbarr (dB)
Demolition	dump truck	1	40	76		245	0.1		57.9	4	240	51	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Demolition Phase:			**51.0**																
Site Preparation	grader	1	40	85		245	0.1		66.9	8	480	63	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	scraper	1	40	84		245	0.1		65.9	8	480	62	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		245	0.1		59.9	7	420	55	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Site Preparation Phase:			**65.9**																
Grading	grader	1	40	85		245	0.1		66.9	8	480	63	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	dozer	1	40	82		245	0.1		63.9	8	480	60	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	2	40	78		245	0.1		59.9	7	420	58	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Grading Phase:			**65.6**																
Building Erection	crane	1	16	81		245	0.1		62.9	8	480	55	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	man lift	2	20	75		245	0.1		56.9	7	420	52	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	generator	1	50	72		245	0.1		53.9	8	480	51	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		245	0.1		59.9	6	360	55	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	welder / torch	3	40	73		245	0.1		54.9	8	480	56	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Building Erection Phase:			**61.1**																
Architectural Coating	compressor (air)	1	40	78		245	0.1		59.9	6	360	55	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Architectural Coating Phase:			**54.7**																
Paving	concrete mixer truck	1	40	79		245	0.1		60.9	8	480	57	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	paver	2	50	77		245	0.1		58.9	8	480	59	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	roller	1	20	80		245	0.1		61.9	8	480	55	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	All Other Equipment > 5 HP	1	50	85		245	0.1		66.9	8	480	64	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
	backhoe	1	40	78		245	0.1		59.9	8	480	56	5	5	0	125	120	245	125.1	120.1	245.0	0.00	0.1	5.0	5.0	0.7	0.7	0.1
									Total for Paving Phase:			**66.5**																

Dudek 31 October 2022
CB TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Trestles	35.0	point25	25	6,243,653.5	2,023,853.1	6.00				Average	
		point26	26	6,243,671.5	2,023,735.4	3.00				Average	
		point27	27	6,243,688.0	2,023,594.1	0.00				Average	
		point28	28	6,243,706.5	2,023,475.1	-2.00					
Rocky Point Drive	40.0	point29	29	6,244,000.5	2,023,493.8	-5.00				Average	
		point30	30	6,243,945.0	2,023,486.9	-5.00				Average	
		point31	31	6,243,773.0	2,023,461.6	-5.00				Average	
		point32	32	6,243,574.5	2,023,436.9	-5.00				Average	
		point33	33	6,243,339.5	2,023,403.5	-5.00					
Old Grove West-Old Grove West-2	35.0	point1	1	6,244,307.5	2,024,228.0	8.00				Average	
		point2	2	6,244,184.5	2,024,165.5	8.00				Average	
		point3	3	6,244,085.0	2,024,116.2	8.00				Average	
		point4	4	6,243,999.0	2,024,075.0	8.00				Average	
		point5	5	6,243,898.5	2,024,025.8	8.00				Average	
		point6	6	6,243,800.5	2,023,969.5	8.00				Average	
		point7	7	6,243,714.5	2,023,935.4	8.00				Average	
		point34	34	6,243,608.5	2,023,888.5	8.00				Average	
		point9	9	6,243,518.0	2,023,861.4	8.00				Average	
		point10	10	6,243,407.5	2,023,843.8	8.00				Average	
		point11	11	6,243,311.0	2,023,834.1	8.00				Average	
		point12	12	6,243,237.0	2,023,837.2	8.00				Average	
		point13	13	6,243,142.0	2,023,844.0	8.00					
Old Grove East-2-Old Grove East	35.0	point14	14	6,244,330.5	2,024,199.1	8.00				Average	
		point15	15	6,244,268.0	2,024,175.2	8.00				Average	
		point16	16	6,244,149.0	2,024,116.9	8.00				Average	

		point17	17	6,244,046.5	2,024,065.2	8.00				Average	
		point18	18	6,243,929.5	2,024,008.0	8.00				Average	
		point19	19	6,243,788.0	2,023,935.8	8.00				Average	
		point35	35	6,243,633.5	2,023,867.2	8.00				Average	
		point21	21	6,243,484.0	2,023,829.0	8.00				Average	
		point22	22	6,243,400.5	2,023,814.6	8.00				Average	
		point23	23	6,243,258.0	2,023,809.0	8.00				Average	
		point24	24	6,243,130.5	2,023,818.5	8.00					

Dudek **31 October 2022**
CB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Oceanside Fiire**
RUN: **Cal**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Trestles	point25	25	155	25	3	25	1	25	0	0	0	0
	point26	26	155	25	3	25	1	25	0	0	0	0
	point27	27	155	25	3	25	1	25	0	0	0	0
	point28	28										
Rocky Point Drive	point29	29	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	point33	33										
Old Grove West-Old Grove West-2	point1	1	732	35	15	35	7	35	0	0	0	0
	point2	2	732	35	15	35	7	35	0	0	0	0
	point3	3	732	35	15	35	7	35	0	0	0	0
	point4	4	732	35	15	35	7	35	0	0	0	0
	point5	5	732	35	15	35	7	35	0	0	0	0
	point6	6	732	35	15	35	7	35	0	0	0	0
	point7	7	732	35	15	35	7	35	0	0	0	0
	point34	34	732	35	15	35	7	35	0	0	0	0
	point9	9	732	35	15	35	7	35	0	0	0	0
	point10	10	732	35	15	35	7	35	0	0	0	0
	point11	11	732	35	15	35	7	35	0	0	0	0
	point12	12	732	35	15	35	7	35	0	0	0	0
	point13	13										
Old Grove East-2-Old Grove East	point14	14	732	35	15	35	7	35	0	0	0	0

	point15	15	732	35	15	35	7	35	0	0	0	0
	point16	16	732	35	15	35	7	35	0	0	0	0
	point17	17	732	35	15	35	7	35	0	0	0	0
	point18	18	732	35	15	35	7	35	0	0	0	0
	point19	19	732	35	15	35	7	35	0	0	0	0
	point35	35	732	35	15	35	7	35	0	0	0	0
	point21	21	732	35	15	35	7	35	0	0	0	0
	point22	22	732	35	15	35	7	35	0	0	0	0
	point23	23	732	35	15	35	7	35	0	0	0	0
	point24	24										

Dudek 31 October 2022
CB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	6,243,736.0	2,023,993.9	9.00	4.92	55.00	66	10.0	8.0	Y
ST2	2	1	6,243,859.0	2,023,503.0	-2.00	4.92	49.80	66	10.0	8.0	Y
ST3	3	1	6,243,721.5	2,023,837.8	2.00	4.92	54.40	66	10.0	8.0	Y

Dudek 31 October 2022
CB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point24	24	6,243,647.0	2,023,939.5	8.00	8.00	0.00	0	0		
									point25	25	6,243,879.0	2,024,048.0	8.00	8.00					

Dudek			**31 October 2022**	
CB			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**Oceanside Fiire**			
RUN:	**Cal**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Terrain Line1	1	6,243,955.0	2,023,981.9	8.00
	2	6,243,923.0	2,023,964.9	8.00
	3	6,243,904.5	2,023,957.9	8.00
	4	6,243,877.0	2,023,946.8	8.00
	5	6,243,829.0	2,023,920.0	8.00
	6	6,243,789.5	2,023,900.8	8.00
	7	6,243,752.5	2,023,887.0	8.00
	8	6,243,709.0	2,023,868.2	8.00
	9	6,243,690.0	2,023,844.9	8.00
	10	6,243,699.0	2,023,789.5	8.00
Terrain Line2	11	6,243,963.0	2,023,929.8	0.00
	12	6,243,903.0	2,023,924.2	0.00
	13	6,243,880.0	2,023,916.1	0.00
	14	6,243,843.5	2,023,895.2	0.00
	15	6,243,797.5	2,023,875.1	0.00
	16	6,243,754.0	2,023,858.8	0.00
	17	6,243,713.0	2,023,806.4	0.00
	18	6,243,713.0	2,023,781.8	0.00

Dudek
CB
31 October 2022
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	55.0	56.9	66	1.9	10	----	56.9	0.0	8	-8.0
ST2	2	1	49.8	48.7	66	-1.1	10	----	48.7	0.0	8	-8.0
ST3	3	1	54.4	59.9	66	5.5	10	----	59.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 31 October 2022
CB TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Existing + Project

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Trestles	35.0	point25	25	6,243,653.5	2,023,853.1	6.00				Average	
		point26	26	6,243,671.5	2,023,735.4	3.00				Average	
		point27	27	6,243,688.0	2,023,594.1	0.00				Average	
		point28	28	6,243,706.5	2,023,475.1	-2.00					
Rocky Point Drive	40.0	point29	29	6,244,000.5	2,023,493.8	-5.00				Average	
		point30	30	6,243,945.0	2,023,486.9	-5.00				Average	
		point31	31	6,243,773.0	2,023,461.6	-5.00				Average	
		point32	32	6,243,574.5	2,023,436.9	-5.00				Average	
		point33	33	6,243,339.5	2,023,403.5	-5.00					
Old Grove West-Old Grove West-2	35.0	point1	1	6,244,307.5	2,024,228.0	8.00				Average	
		point2	2	6,244,184.5	2,024,165.5	8.00				Average	
		point3	3	6,244,085.0	2,024,116.2	8.00				Average	
		point4	4	6,243,999.0	2,024,075.0	8.00				Average	
		point5	5	6,243,898.5	2,024,025.8	8.00				Average	
		point6	6	6,243,800.5	2,023,969.5	8.00				Average	
		point7	7	6,243,714.5	2,023,935.4	8.00				Average	
		point34	34	6,243,608.5	2,023,888.5	8.00				Average	
		point9	9	6,243,518.0	2,023,861.4	8.00				Average	
		point10	10	6,243,407.5	2,023,843.8	8.00				Average	
		point11	11	6,243,311.0	2,023,834.1	8.00				Average	
		point12	12	6,243,237.0	2,023,837.2	8.00				Average	
		point13	13	6,243,142.0	2,023,844.0	8.00					
Old Grove East-2-Old Grove East	35.0	point14	14	6,244,330.5	2,024,199.1	8.00				Average	
		point15	15	6,244,268.0	2,024,175.2	8.00				Average	
		point16	16	6,244,149.0	2,024,116.9	8.00				Average	

		point17	17	6,244,046.5	2,024,065.2	8.00				Average	
		point18	18	6,243,929.5	2,024,008.0	8.00				Average	
		point19	19	6,243,788.0	2,023,935.8	8.00				Average	
		point35	35	6,243,633.5	2,023,867.2	8.00				Average	
		point21	21	6,243,484.0	2,023,829.0	8.00				Average	
		point22	22	6,243,400.5	2,023,814.6	8.00				Average	
		point23	23	6,243,258.0	2,023,809.0	8.00				Average	
		point24	24	6,243,130.5	2,023,818.5	8.00					

Dudek **31 October 2022**
CB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Oceanside Fiire**
RUN: **Existing + Project**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Trestles	point25	25	172	25	3	25	1	25	0	0	0	0
	point26	26	172	25	3	25	1	25	0	0	0	0
	point27	27	172	25	3	25	1	25	0	0	0	0
	point28	28										
Rocky Point Drive	point29	29	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	point33	33										
Old Grove West-Old Grove West-2	point1	1	749	35	15	35	7	35	0	0	0	0
	point2	2	749	35	15	35	7	35	0	0	0	0
	point3	3	749	35	15	35	7	35	0	0	0	0
	point4	4	749	35	15	35	7	35	0	0	0	0
	point5	5	749	35	15	35	7	35	0	0	0	0
	point6	6	749	35	15	35	7	35	0	0	0	0
	point7	7	749	35	15	35	7	35	0	0	0	0
	point34	34	749	35	15	35	7	35	0	0	0	0
	point9	9	749	35	15	35	7	35	0	0	0	0
	point10	10	749	35	15	35	7	35	0	0	0	0
	point11	11	749	35	15	35	7	35	0	0	0	0
	point12	12	749	35	15	35	7	35	0	0	0	0
	point13	13										
Old Grove East-2-Old Grove East	point14	14	749	35	15	35	7	35	0	0	0	0

	point15	15	749	35	15	35	7	35	0	0	0	0
	point16	16	749	35	15	35	7	35	0	0	0	0
	point17	17	749	35	15	35	7	35	0	0	0	0
	point18	18	749	35	15	35	7	35	0	0	0	0
	point19	19	749	35	15	35	7	35	0	0	0	0
	point35	35	749	35	15	35	7	35	0	0	0	0
	point21	21	749	35	15	35	7	35	0	0	0	0
	point22	22	749	35	15	35	7	35	0	0	0	0
	point23	23	749	35	15	35	7	35	0	0	0	0
	point24	24										

Dudek 31 October 2022
CB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Existing + Project

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	6,243,736.0	2,023,993.9	9.00	4.92	55.00	66	10.0	8.0	Y
ST2	2	1	6,243,859.0	2,023,503.0	-2.00	4.92	49.80	66	10.0	8.0	Y
ST3	3	1	6,243,721.5	2,023,837.8	2.00	4.92	54.40	66	10.0	8.0	Y
M1-1	5	1	6,243,769.5	2,023,841.4	0.00	4.92	0.00	66	10.0	8.0	Y
M1-2	6	1	6,243,769.5	2,023,841.4	0.00	14.92	0.00	66	10.0	8.0	Y
M2-1	7	1	6,243,824.0	2,023,853.0	0.00	4.92	0.00	66	10.0	8.0	Y
M2-2	8	1	6,243,824.0	2,023,853.0	0.00	14.92	0.00	66	10.0	8.0	Y
M3-1	9	1	6,243,845.0	2,023,833.4	0.00	4.92	0.00	66	10.0	8.0	Y
M3-2	10	1	6,243,845.0	2,023,833.4	0.00	14.92	0.00	66	10.0	8.0	Y
M4-1	11	1	6,243,760.0	2,023,815.0	0.00	4.92	0.00	66	10.0	8.0	Y
M4-2	12	1	6,243,760.0	2,023,815.0	0.00	14.92	0.00	66	10.0	8.0	Y

Dudek 31 October 2022
CB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Existing + Project

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	6,243,770.5	2,023,783.5	0.00	29.00	0.00	0	0		
									point23	23	6,243,754.0	2,023,780.5	0.00	29.00	0.00	0	0		
									point2	2	6,243,758.0	2,023,759.5	0.00	29.00	0.00	0	0		
									point3	3	6,243,773.5	2,023,762.6	0.00	29.00	0.00	0	0		
									point4	4	6,243,784.0	2,023,693.9	0.00	29.00	0.00	0	0		
									point5	5	6,243,773.5	2,023,692.6	0.00	29.00	0.00	0	0		
									point6	6	6,243,776.0	2,023,675.8	0.00	29.00	0.00	0	0		
									point7	7	6,243,874.0	2,023,688.1	0.00	29.00	0.00	0	0		
									point8	8	6,243,871.5	2,023,705.9	0.00	29.00	0.00	0	0		
									point9	9	6,243,859.5	2,023,704.5	0.00	29.00	0.00	0	0		
									point10	10	6,243,846.5	2,023,783.6	0.00	29.00	0.00	0	0		
									point11	11	6,243,866.0	2,023,785.6	0.00	29.00	0.00	0	0		
									point12	12	6,243,863.0	2,023,797.1	0.00	29.00	0.00	0	0		
									point13	13	6,243,844.5	2,023,793.4	0.00	29.00	0.00	0	0		
									point14	14	6,243,843.5	2,023,801.6	0.00	29.00	0.00	0	0		
									point15	15	6,243,848.5	2,023,802.5	0.00	29.00	0.00	0	0		
									point16	16	6,243,837.5	2,023,855.4	0.00	29.00	0.00	0	0		
									point17	17	6,243,804.5	2,023,847.8	0.00	29.00	0.00	0	0		
									point18	18	6,243,800.0	2,023,847.0	0.00	29.00	0.00	0	0		
									point19	19	6,243,784.0	2,023,844.1	0.00	29.00	0.00	0	0		
									point20	20	6,243,781.0	2,023,843.4	0.00	29.00	0.00	0	0		
									point21	21	6,243,757.0	2,023,837.2	0.00	29.00	0.00	0	0		
									point22	22	6,243,770.5	2,023,783.5	0.00	29.00					
Barrier2	W	0.00	99.99	0.00				0.00	point24	24	6,243,647.0	2,023,939.5	8.00	8.00	0.00	0	0		
									point25	25	6,243,879.0	2,024,048.0	8.00	8.00					

Dudek			**31 October 2022**	
CB			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**Oceanside Fiire**			
RUN:	**Existing + Project**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Terrain Line1	1	6,243,955.0	2,023,981.9	8.00
	2	6,243,923.0	2,023,964.9	8.00
	3	6,243,904.5	2,023,957.9	8.00
	4	6,243,877.0	2,023,946.8	8.00
	5	6,243,829.0	2,023,920.0	8.00
	6	6,243,789.5	2,023,900.8	8.00
	7	6,243,752.5	2,023,887.0	8.00
	8	6,243,709.0	2,023,868.2	8.00
	9	6,243,690.0	2,023,844.9	8.00
	10	6,243,699.0	2,023,789.5	8.00
Terrain Line2	11	6,243,963.0	2,023,929.8	0.00
	12	6,243,903.0	2,023,924.2	0.00
	13	6,243,880.0	2,023,916.1	0.00
	14	6,243,843.5	2,023,895.2	0.00
	15	6,243,797.5	2,023,875.1	0.00
	16	6,243,754.0	2,023,858.8	0.00
	17	6,243,713.0	2,023,806.4	0.00
	18	6,243,713.0	2,023,781.8	0.00

Dudek 31 October 2022
CB TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Existing + Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	55.0	57.0	66	2.0	10	----	57.0	0.0	8	-8.0
ST2	2	1	49.8	48.0	66	-1.8	10	----	48.0	0.0	8	-8.0
ST3	3	1	54.4	60.0	66	5.6	10	----	60.0	0.0	8	-8.0
M1-1	5	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
M1-2	6	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
M2-1	7	1	0.0	57.5	66	57.5	10	----	57.5	0.0	8	-8.0
M2-2	8	1	0.0	62.3	66	62.3	10	----	62.3	0.0	8	-8.0
M3-1	9	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
M3-2	10	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0
M4-1	11	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
M4-2	12	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	11	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 31 October 2022
CB TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Trestles	35.0	point25	25	6,243,653.5	2,023,853.1	6.00				Average	
		point26	26	6,243,671.5	2,023,735.4	3.00				Average	
		point27	27	6,243,688.0	2,023,594.1	0.00				Average	
		point28	28	6,243,706.5	2,023,475.1	-2.00					
Rocky Point Drive	40.0	point29	29	6,244,000.5	2,023,493.8	-5.00				Average	
		point30	30	6,243,945.0	2,023,486.9	-5.00				Average	
		point31	31	6,243,773.0	2,023,461.6	-5.00				Average	
		point32	32	6,243,574.5	2,023,436.9	-5.00				Average	
		point33	33	6,243,339.5	2,023,403.5	-5.00					
Old Grove West-Old Grove West-2	35.0	point1	1	6,244,307.5	2,024,228.0	8.00				Average	
		point2	2	6,244,184.5	2,024,165.5	8.00				Average	
		point3	3	6,244,085.0	2,024,116.2	8.00				Average	
		point4	4	6,243,999.0	2,024,075.0	8.00				Average	
		point5	5	6,243,898.5	2,024,025.8	8.00				Average	
		point6	6	6,243,800.5	2,023,969.5	8.00				Average	
		point7	7	6,243,714.5	2,023,935.4	8.00				Average	
		point34	34	6,243,608.5	2,023,888.5	8.00				Average	
		point9	9	6,243,518.0	2,023,861.4	8.00				Average	
		point10	10	6,243,407.5	2,023,843.8	8.00				Average	
		point11	11	6,243,311.0	2,023,834.1	8.00				Average	
		point12	12	6,243,237.0	2,023,837.2	8.00				Average	
		point13	13	6,243,142.0	2,023,844.0	8.00					
Old Grove East-2-Old Grove East	35.0	point14	14	6,244,330.5	2,024,199.1	8.00				Average	
		point15	15	6,244,268.0	2,024,175.2	8.00				Average	
		point16	16	6,244,149.0	2,024,116.9	8.00				Average	

		point17	17	6,244,046.5	2,024,065.2	8.00				Average	
		point18	18	6,243,929.5	2,024,008.0	8.00				Average	
		point19	19	6,243,788.0	2,023,935.8	8.00				Average	
		point35	35	6,243,633.5	2,023,867.2	8.00				Average	
		point21	21	6,243,484.0	2,023,829.0	8.00				Average	
		point22	22	6,243,400.5	2,023,814.6	8.00				Average	
		point23	23	6,243,258.0	2,023,809.0	8.00				Average	
		point24	24	6,243,130.5	2,023,818.5	8.00					

Dudek **31 October 2022**
CB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Oceanside Fiire**
RUN: **Cal**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Trestles	point25	25	255	25	5	25	2	25	0	0	0	0
	point26	26	255	25	5	25	2	25	0	0	0	0
	point27	27	255	25	5	25	2	25	0	0	0	0
	point28	28										
Rocky Point Drive	point29	29	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	point33	33										
Old Grove West-Old Grove West-2	point1	1	1207	35	24	35	12	35	0	0	0	0
	point2	2	1207	35	24	35	12	35	0	0	0	0
	point3	3	1207	35	24	35	12	35	0	0	0	0
	point4	4	1207	35	24	35	12	35	0	0	0	0
	point5	5	1207	35	24	35	12	35	0	0	0	0
	point6	6	1207	35	24	35	12	35	0	0	0	0
	point7	7	1207	35	24	35	12	35	0	0	0	0
	point34	34	1207	35	24	35	12	35	0	0	0	0
	point9	9	1207	35	24	35	12	35	0	0	0	0
	point10	10	1207	35	24	35	12	35	0	0	0	0
	point11	11	1207	35	24	35	12	35	0	0	0	0
	point12	12	1207	35	24	35	12	35	0	0	0	0
	point13	13										
Old Grove East-2-Old Grove East	point14	14	1207	35	24	35	12	35	0	0	0	0

	point15	15	1207	35	24	35	12	35	0	0	0	0
	point16	16	1207	35	24	35	12	35	0	0	0	0
	point17	17	1207	35	24	35	12	35	0	0	0	0
	point18	18	1207	35	24	35	12	35	0	0	0	0
	point19	19	1207	35	24	35	12	35	0	0	0	0
	point35	35	1207	35	24	35	12	35	0	0	0	0
	point21	21	1207	35	24	35	12	35	0	0	0	0
	point22	22	1207	35	24	35	12	35	0	0	0	0
	point23	23	1207	35	24	35	12	35	0	0	0	0
	point24	24										

Dudek 31 October 2022
CB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	6,243,736.0	2,023,993.9	9.00	4.92	55.00	66	10.0	8.0	Y
ST2	2	1	6,243,859.0	2,023,503.0	-2.00	4.92	49.80	66	10.0	8.0	Y
ST3	3	1	6,243,721.5	2,023,837.8	2.00	4.92	54.40	66	10.0	8.0	Y

Dudek 31 October 2022
CB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier2	W	0.00	99.99	0.00				0.00	point24	24	6,243,647.0	2,023,939.5	8.00	8.00	0.00	0	0		
									point25	25	6,243,879.0	2,024,048.0	8.00	8.00					

Dudek			**31 October 2022**	
CB			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**Oceanside Fiire**			
RUN:	**Cal**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Terrain Line1	1	6,243,955.0	2,023,981.9	8.00
	2	6,243,923.0	2,023,964.9	8.00
	3	6,243,904.5	2,023,957.9	8.00
	4	6,243,877.0	2,023,946.8	8.00
	5	6,243,829.0	2,023,920.0	8.00
	6	6,243,789.5	2,023,900.8	8.00
	7	6,243,752.5	2,023,887.0	8.00
	8	6,243,709.0	2,023,868.2	8.00
	9	6,243,690.0	2,023,844.9	8.00
	10	6,243,699.0	2,023,789.5	8.00
Terrain Line2	11	6,243,963.0	2,023,929.8	0.00
	12	6,243,903.0	2,023,924.2	0.00
	13	6,243,880.0	2,023,916.1	0.00
	14	6,243,843.5	2,023,895.2	0.00
	15	6,243,797.5	2,023,875.1	0.00
	16	6,243,754.0	2,023,858.8	0.00
	17	6,243,713.0	2,023,806.4	0.00
	18	6,243,713.0	2,023,781.8	0.00

Dudek
CB
31 October 2022
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	55.0	59.1	66	4.1	10	----	59.1	0.0	8	-8.0
ST2	2	1	49.8	50.9	66	1.1	10	----	50.9	0.0	8	-8.0
ST3	3	1	54.4	62.1	66	7.7	10	----	62.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	3	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek	31 October 2022
CB	TNM 2.5
INPUT: ROADWAYS	Average pavement type shall be used unless
PROJECT/CONTRACT:	Oceanside Fiire a State highway agency substantiates the use
RUN:	Cal of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Trestles	35.0	point25	25	6,243,653.5	2,023,853.1	6.00				Average	
		point26	26	6,243,671.5	2,023,735.4	3.00				Average	
		point27	27	6,243,688.0	2,023,594.1	0.00				Average	
		point28	28	6,243,706.5	2,023,475.1	-2.00					
Rocky Point Drive	40.0	point29	29	6,244,000.5	2,023,493.8	-5.00				Average	
		point30	30	6,243,945.0	2,023,486.9	-5.00				Average	
		point31	31	6,243,773.0	2,023,461.6	-5.00				Average	
		point32	32	6,243,574.5	2,023,436.9	-5.00				Average	
		point33	33	6,243,339.5	2,023,403.5	-5.00					
Old Grove West-Old Grove West-2	35.0	point1	1	6,244,307.5	2,024,228.0	8.00				Average	
		point2	2	6,244,184.5	2,024,165.5	8.00				Average	
		point3	3	6,244,085.0	2,024,116.2	8.00				Average	
		point4	4	6,243,999.0	2,024,075.0	8.00				Average	
		point5	5	6,243,898.5	2,024,025.8	8.00				Average	
		point6	6	6,243,800.5	2,023,969.5	8.00				Average	
		point7	7	6,243,714.5	2,023,935.4	8.00				Average	
		point34	34	6,243,608.5	2,023,888.5	8.00				Average	
		point9	9	6,243,518.0	2,023,861.4	8.00				Average	
		point10	10	6,243,407.5	2,023,843.8	8.00				Average	
		point11	11	6,243,311.0	2,023,834.1	8.00				Average	
		point12	12	6,243,237.0	2,023,837.2	8.00				Average	
		point13	13	6,243,142.0	2,023,844.0	8.00					
Old Grove East-2-Old Grove East	35.0	point14	14	6,244,330.5	2,024,199.1	8.00				Average	
		point15	15	6,244,268.0	2,024,175.2	8.00				Average	
		point16	16	6,244,149.0	2,024,116.9	8.00				Average	

		point17	17	6,244,046.5	2,024,065.2	8.00				Average	
		point18	18	6,243,929.5	2,024,008.0	8.00				Average	
		point19	19	6,243,788.0	2,023,935.8	8.00				Average	
		point35	35	6,243,633.5	2,023,867.2	8.00				Average	
		point21	21	6,243,484.0	2,023,829.0	8.00				Average	
		point22	22	6,243,400.5	2,023,814.6	8.00				Average	
		point23	23	6,243,258.0	2,023,809.0	8.00				Average	
		point24	24	6,243,130.5	2,023,818.5	8.00					

Dudek **31 October 2022**
CB **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **Oceanside Fiire**
RUN: **Cal**

Roadway	Points		Segment									
Name	Name	No.	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Trestles	point25	25	272	25	5	25	2	25	0	0	0	0
	point26	26	272	25	5	25	2	25	0	0	0	0
	point27	27	272	25	5	25	2	25	0	0	0	0
	point28	28										
Rocky Point Drive	point29	29	0	0	0	0	0	0	0	0	0	0
	point30	30	0	0	0	0	0	0	0	0	0	0
	point31	31	0	0	0	0	0	0	0	0	0	0
	point32	32	0	0	0	0	0	0	0	0	0	0
	point33	33										
Old Grove West-Old Grove West-2	point1	1	1225	35	25	35	12	35	0	0	0	0
	point2	2	1225	35	25	35	12	35	0	0	0	0
	point3	3	1225	35	25	35	12	35	0	0	0	0
	point4	4	1225	35	25	35	12	35	0	0	0	0
	point5	5	1225	35	25	35	12	35	0	0	0	0
	point6	6	1225	35	25	35	12	35	0	0	0	0
	point7	7	1225	35	25	35	12	35	0	0	0	0
	point34	34	1225	35	25	35	12	35	0	0	0	0
	point9	9	1225	35	25	35	12	35	0	0	0	0
	point10	10	1225	35	25	35	12	35	0	0	0	0
	point11	11	1225	35	25	35	12	35	0	0	0	0
	point12	12	1225	35	25	35	12	35	0	0	0	0
	point13	13										
Old Grove East-2-Old Grove East	point14	14	1225	35	25	35	12	35	0	0	0	0

	point15	15	1225	35	25	35	12	35	0	0	0	0
	point16	16	1225	35	25	35	12	35	0	0	0	0
	point17	17	1225	35	25	35	12	35	0	0	0	0
	point18	18	1225	35	25	35	12	35	0	0	0	0
	point19	19	1225	35	25	35	12	35	0	0	0	0
	point35	35	1225	35	25	35	12	35	0	0	0	0
	point21	21	1225	35	25	35	12	35	0	0	0	0
	point22	22	1225	35	25	35	12	35	0	0	0	0
	point23	23	1225	35	25	35	12	35	0	0	0	0
	point24	24										

Dudek 31 October 2022
CB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	6,243,736.0	2,023,993.9	9.00	4.92	55.00	66	10.0	8.0	Y
ST2	2	1	6,243,859.0	2,023,503.0	-2.00	4.92	49.80	66	10.0	8.0	Y
ST3	3	1	6,243,721.5	2,023,837.8	2.00	4.92	54.40	66	10.0	8.0	Y
M1-1	5	1	6,243,769.5	2,023,841.4	0.00	4.92	0.00	66	10.0	8.0	Y
M1-2	6	1	6,243,769.5	2,023,841.4	0.00	14.92	0.00	66	10.0	8.0	Y
M2-1	7	1	6,243,824.0	2,023,853.0	0.00	4.92	0.00	66	10.0	8.0	Y
M2-2	8	1	6,243,824.0	2,023,853.0	0.00	14.92	0.00	66	10.0	8.0	Y
M3-1	9	1	6,243,845.0	2,023,833.4	0.00	4.92	0.00	66	10.0	8.0	Y
M3-2	10	1	6,243,845.0	2,023,833.4	0.00	14.92	0.00	66	10.0	8.0	Y
M4-1	11	1	6,243,760.0	2,023,815.0	0.00	4.92	0.00	66	10.0	8.0	Y
M4-2	12	1	6,243,760.0	2,023,815.0	0.00	14.92	0.00	66	10.0	8.0	Y

Dudek 31 October 2022
CB TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per	$ per	Top	Run:Rise	$ per			X	Y	Z	at	Seg Ht Perturbs			On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	6,243,770.5	2,023,783.5	0.00	29.00	0.00	0	0		
									point23	23	6,243,754.0	2,023,780.5	0.00	29.00	0.00	0	0		
									point2	2	6,243,758.0	2,023,759.5	0.00	29.00	0.00	0	0		
									point3	3	6,243,773.5	2,023,762.6	0.00	29.00	0.00	0	0		
									point4	4	6,243,784.0	2,023,693.9	0.00	29.00	0.00	0	0		
									point5	5	6,243,773.5	2,023,692.6	0.00	29.00	0.00	0	0		
									point6	6	6,243,776.0	2,023,675.8	0.00	29.00	0.00	0	0		
									point7	7	6,243,874.0	2,023,688.1	0.00	29.00	0.00	0	0		
									point8	8	6,243,871.5	2,023,705.9	0.00	29.00	0.00	0	0		
									point9	9	6,243,859.5	2,023,704.5	0.00	29.00	0.00	0	0		
									point10	10	6,243,846.5	2,023,783.6	0.00	29.00	0.00	0	0		
									point11	11	6,243,866.0	2,023,785.6	0.00	29.00	0.00	0	0		
									point12	12	6,243,863.0	2,023,797.1	0.00	29.00	0.00	0	0		
									point13	13	6,243,844.5	2,023,793.4	0.00	29.00	0.00	0	0		
									point14	14	6,243,843.5	2,023,801.6	0.00	29.00	0.00	0	0		
									point15	15	6,243,848.5	2,023,802.5	0.00	29.00	0.00	0	0		
									point16	16	6,243,837.5	2,023,855.4	0.00	29.00	0.00	0	0		
									point17	17	6,243,804.5	2,023,847.8	0.00	29.00	0.00	0	0		
									point18	18	6,243,800.0	2,023,847.0	0.00	29.00	0.00	0	0		
									point19	19	6,243,784.0	2,023,844.1	0.00	29.00	0.00	0	0		
									point20	20	6,243,781.0	2,023,843.4	0.00	29.00	0.00	0	0		
									point21	21	6,243,757.0	2,023,837.2	0.00	29.00	0.00	0	0		
									point22	22	6,243,770.5	2,023,783.5	0.00	29.00					
Barrier2	W	0.00	99.99	0.00				0.00	point24	24	6,243,647.0	2,023,939.5	8.00	8.00	0.00	0	0		
									point25	25	6,243,879.0	2,024,048.0	8.00	8.00					

Dudek			**31 October 2022**	
CB			**TNM 2.5**	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	**Oceanside Fiire**			
RUN:	**Cal**			
Terrain Line	**Points**			
Name	**No.**	**Coordinates (ground)**		
		X	**Y**	**Z**
		ft	ft	ft
Terrain Line1	1	6,243,955.0	2,023,981.9	8.00
	2	6,243,923.0	2,023,964.9	8.00
	3	6,243,904.5	2,023,957.9	8.00
	4	6,243,877.0	2,023,946.8	8.00
	5	6,243,829.0	2,023,920.0	8.00
	6	6,243,789.5	2,023,900.8	8.00
	7	6,243,752.5	2,023,887.0	8.00
	8	6,243,709.0	2,023,868.2	8.00
	9	6,243,690.0	2,023,844.9	8.00
	10	6,243,699.0	2,023,789.5	8.00
Terrain Line2	11	6,243,963.0	2,023,929.8	0.00
	12	6,243,903.0	2,023,924.2	0.00
	13	6,243,880.0	2,023,916.1	0.00
	14	6,243,843.5	2,023,895.2	0.00
	15	6,243,797.5	2,023,875.1	0.00
	16	6,243,754.0	2,023,858.8	0.00
	17	6,243,713.0	2,023,806.4	0.00
	18	6,243,713.0	2,023,781.8	0.00

Dudek 31 October 2022
CB TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Oceanside Fiire
RUN: Cal
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	55.0	59.2	66	4.2	10	----	59.2	0.0	8	-8.0
ST2	2	1	49.8	50.2	66	0.4	10	----	50.2	0.0	8	-8.0
ST3	3	1	54.4	62.2	66	7.8	10	----	62.2	0.0	8	-8.0
M1-1	5	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
M1-2	6	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
M2-1	7	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
M2-2	8	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0
M3-1	9	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
M3-2	10	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
M4-1	11	1	0.0	57.3	66	57.3	10	----	57.3	0.0	8	-8.0
M4-2	12	1	0.0	62.2	66	62.2	10	----	62.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	11	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix F

Project Information Form (Transportation)

PROJECT INFORMATION FORM (PIF)

THE FOLLOWING IS TO BE COMPLETED BY THE PROJECT APPLICANT:

PROJECT INFORMATION FORM			
1.	**PROJECT DESCRIPTION:** Oceanside Fire Station No. 8		
2.	**PROJECT LOCATION:** Southwest corner of Old Grove & Trestle Street, City of Oceanside		
3.	**LAND USE:** Industrial/Professional District or PD-1 (IL) **SIZE/DENSITY:** 13,240 square feet of building overall total on a 2.15 acre site.		
4.	**ZONING AND LAND USE CONSISTENT WITH ADOPTED GENERAL PLAN?**	☑ Yes	☐ No
5.	**PROJECT LOCATED IN TRANSIT PRIORITY AREA[1], SMART GROWTH AREA[2], OR LOW VMT AREA[3]?**	☐ Yes	☑ No
6.	**PROJECT TRIP GENERATION:** 182 **ADT**	☑ < 200 ADT ☐ ≥ 200 ADT ☐ ≥ 1,000 ADT ☐ ≥ 2,400 ADT	
	ATTACHMENTS		
A.	**PROJECT LOCATION MAP**	☑ Attached	
B.	**PROJECT TRIP DISTRIBUTION**	☐ Attached	
C.	**PROJECT TRIP ASSIGNMENT**	☐ Attached	

1) Projects located in a TPA must be able to access the transit station within a ½ mile walking distance or 6 minute walk continuously without discontinuity of sidewalk or obstructions to the route. Qualifying transit stops means a site containing an existing rail transit station served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (OPR, 2017). A high-quality transit corridor may also be considered if a corridor with fixed route bus service has service intervals no longer than 15 minutes during peak commute hours (OPR, 2017).
(2) See Appendix B.
(3) Based on the most recent SANDAG SB 743 Screening Map. Example shown in Appendix C.

TO BE COMPLETED BY CITY STAFF AND RETURNED TO PROJECT APPLICANT

	PROJECT STUDY REQUIREMENTS			
1)	**Does the project require a CEQA VMT analysis?** **A. If yes, does the project require a SANDAG Model Run?**	☐ Yes ☐ Yes	☑ No ☑ No	☐ Incomplete[(1)]
2a)	**Does the project require a Local Transportation Study?**	☐ Yes	☑ No	☐ Incomplete[(1)]
	OR			
2b)	**Does the project require a Local Transportation Assessment?**	☐ Yes	☑ No	☐ Incomplete[(1)]

[(1)] Incomplete application or additional information is needed to determine study requirements.

Planning Division Date

Transportation Engineering Section Date

Fire Station No. 8 Trip Generation

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
TRIP GENERATION								
Crew Member[1]	10 members	60	10	0	10	0	10	10
Emergency Responses [2]	10 incidents	80	0	4	4	4	0	4
Emergency Responses - Non Fire[2]	9 incidents	36	0	2	2	2	0	2
Non-Emergency[3]	2 members	4	1	0	1	0	1	1
Deliveries[3]	1 trucks	2	1	0	1	0	1	1
	Total Trip Generation	**182**	**12**	**6**	**18**	**6**	**12**	**18**

Notes:

[1] Per project description, there would be a maximum of 10 crew members including fire fighters and rescue staff at the Fire Station. It is assumed that there would be three 8-hour shifts per day. Each crew member is assumed to drive separately, hence each member would generate two daily trips (one inbound and one outbound). One crew of 10 members was assumed to commute in the AM and PM peak hour.

[2] It is projected that the Fire Station would respond to a maximum of 16-19 emergency responses per day of which 10 have been conservatively assumed to be fire-related responses. A fire-related emergency response would require four vehicles i.e. an engine, a ladder truck, an ambulance, and a battalion chief vehicle. Therefore, four vehicles and two trips per vehicle (one inbound and one outbound) are assumed to estimate daily trips per fire related emergency response. Other incidents or non-fire emergencies would require two vehicles. Therefore, two vehicles and two trips per vehicle (one inbound and one outbound) are assumed to estimate daily trips per non-fire emergency or incident. It is not possible to estimate how many emergencies would occur during the peak hours, therefore, the daily trips for emergency responses are distributed evenly over the duration of 24-hour to estimate the AM and PM peak hour trips.

[3] A small number of non-emergency and delivery trips would occur on a daily or weekly basis.

SOURCE: USGS National Map 2022

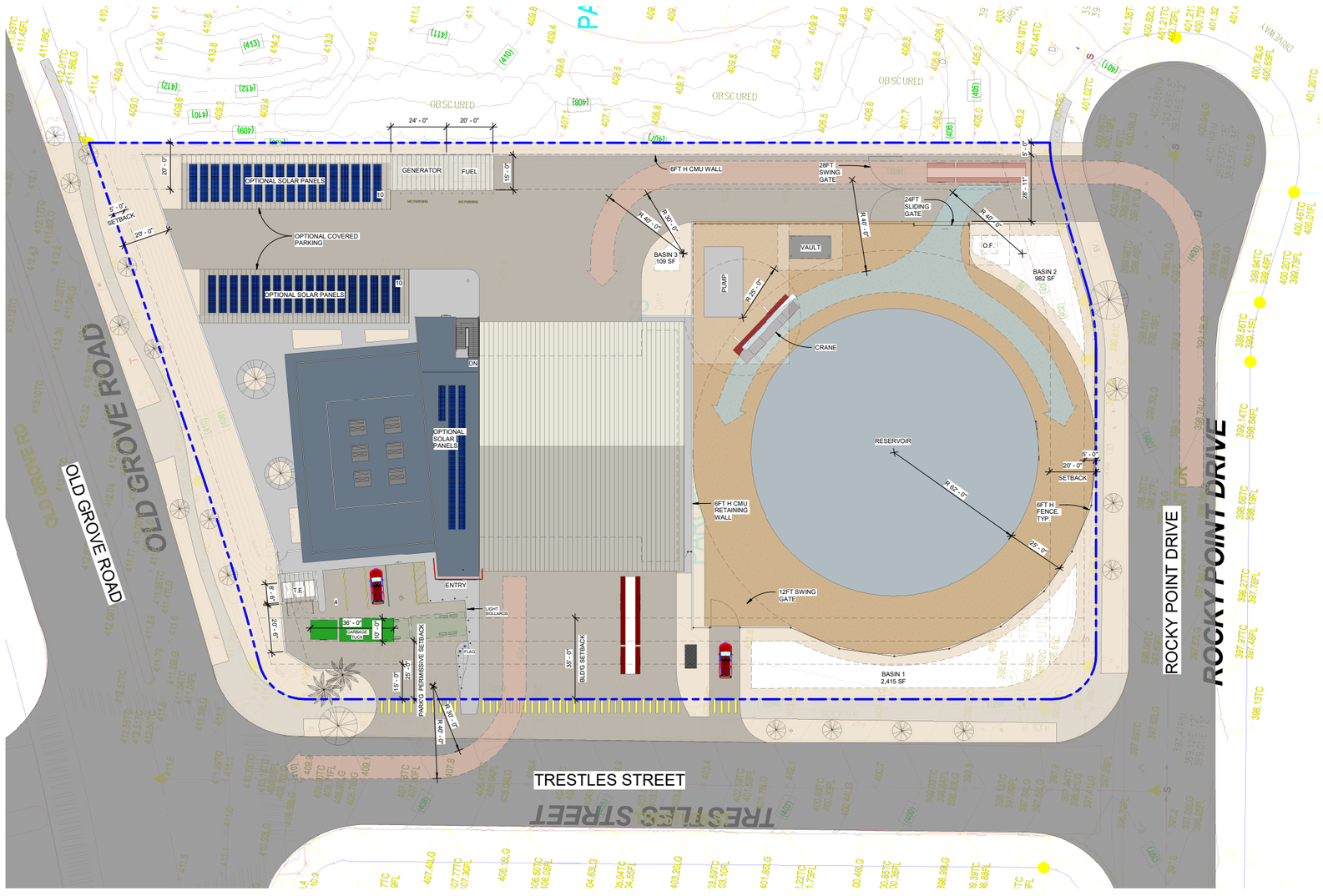
DUDEK

0 500 1,000 Feet

FIGURE 1

Project Location

Oceanside Fire Station 8



KEY NOTE

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CONSULTANTS
:

PROJECT FOR:
CITY OF OCEANSIDE

ADDRESS:
602 CIVIC CENTER DRIVE
OCEANSIDE, CA, 92054

PROJECT NAME:

FIRE STATION 8

TRESTLES ST.
OCEANSIDE, CA

ISSUE INFORMATION:

DATE:	INFORMATION:

SHEET INFORMATION:

PROJECT NO.: 466-01-19
SCALE: 1" = 20'-0"

SEAL:

SHEET TITLE:

SITE PLAN

SHEET NO.:

A1.1

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