HELIX Environmental Planning

River Path Del Mar Phase III Extension Project

Initial Study/Mitigated Negative Declaration

March 2022 | 01197.00002.003

Prepared for:

City of Del Mar
Planning Department
1050 Camino del Mar
Del Mar, CA 92104

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effects
BMPs	Best Management Practices
BTR	Biological Technical Report
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CDP	coastal development permit
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
cfs	cubic feet per second
CH_4	methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	conditional use permit
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DG	decomposed granite
DMFD	City of Del Mar Fire Department
DOC	California Department of Conservation
DPM	diesel particulate matter
DRB	Design Review Board
DTSC	Department of Toxic Substances Control
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FW	Floodway

GHG	greenhouse gas
HELIX	HELIX Environmental Planning, Inc.
HFC	hydrofluorocarbons
HMMP	Habitat Mitigation and Monitoring Plan
HRA	Health Risk Assessments
I-	Interstate
IBC	International Building Code
ITP	Incidental Take Permit
JPA	Joint Powers Authority
LCP	Local Coastal Program
L_{EQ}	Noise Equivalent Level
LF	linear feet
L-OZ	Lagoon Overlay Zone
LUP	Land Use Plan
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MSCP	Multiple Species Conservation Program
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSLU	noise-sensitive land use
OHP	Office of Historic Preservation
Pb	lead
PFC	perfluorocarbons
PM	particulate matter
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SCIC	South Coastal Information Center
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDRVC	San Dieguito River Valley Conservancy
SF_6	sulfur hexafluoride
SIP	State Implementation Plan

SO_2	sulfur dioxide
SR	State Route
SWMP	Storm Water Management Plan
TACs	toxic air contaminants
T-BACT	Toxics-Best Available Control Technology
TCR	Tribal Cultural Resources
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1.0 Introduction

1.1 Initial Study Information Sheet

1.	Project title:	River Path Del Mar Phase III Extension
2.	Lead agency name and address:	City of Del Mar 1050 Camino Del Mar Del Mar, CA 92014
3.	Contact person and phone number:	Adriana Jaramishian, Associate Planner (858)755-9313 ext. 1111
4.	Project location:	Within the City of Del Mar along San Dieguito Drive between the Grand Avenue Lookout and Racetrack View Drive (see Figures 1 and 2)
5.	Project sponsor's name and address:	Same as the lead agency
6.	Community plan designation:	Floodway/Lagoon Habitat
7.	Zoning:	Floodway (FW) Lagoon Overlay Zone (L-OZ)

8. Description of project:

Overview

The proposed project involves the Phase III extension of the River Path Del Mar (River Path) pedestrian trail in the City of Del Mar (City) along the southern edge of the San Dieguito Lagoon (lagoon). Phases I and II are completed, with Phase I extending northwest of Jimmy Durante Boulevard and Phase II extending southeast of Jimmy Durante Boulevard. Combined, the River Path is generally oriented in a northwest to southeast direction along the lagoon between the railroad tracks near Camino Del Mar and the Lagoon Viewpoint at the Old Grand Avenue Bridge (Grand Avenue Lookout). The River Path provides views of the water and includes informational signage regarding the importance of wetlands and natural resources. The proposed project would complete the River Path by extending the trail southeast of the Grand Avenue Lookout for approximately one-half mile until termination at the City limits near the Crest Canyon Trail.

Completion of a formal trail segment that would link the Coast to Crest Trail to the Crest Canyon Trail has been a long-time goal of the City, the City's Lagoon Committee, the San Dieguito River Valley Conservancy (SDRVC or Conservancy), and the San Dieguito River Valley Regional Open Space Park Joint Powers Authority (San Dieguito River Park JPA). In May 2016, the Phase II River Path section between Jimmy Durante Boulevard and Grand Avenue Lookout opened to the public and a future Phase III extension continuing the River Path to the Crest Canyon Trail was immediately envisioned. In partnership with the Conservancy and the San Dieguito River Park JPA, the City would manage this project from initial design through construction. Construction is anticipated to begin in 2023 for a

duration of approximately four months. Following construction of the project, the City would oversee perpetual management of the Phase III extension of the River Path in conjunction with Phases I and II.

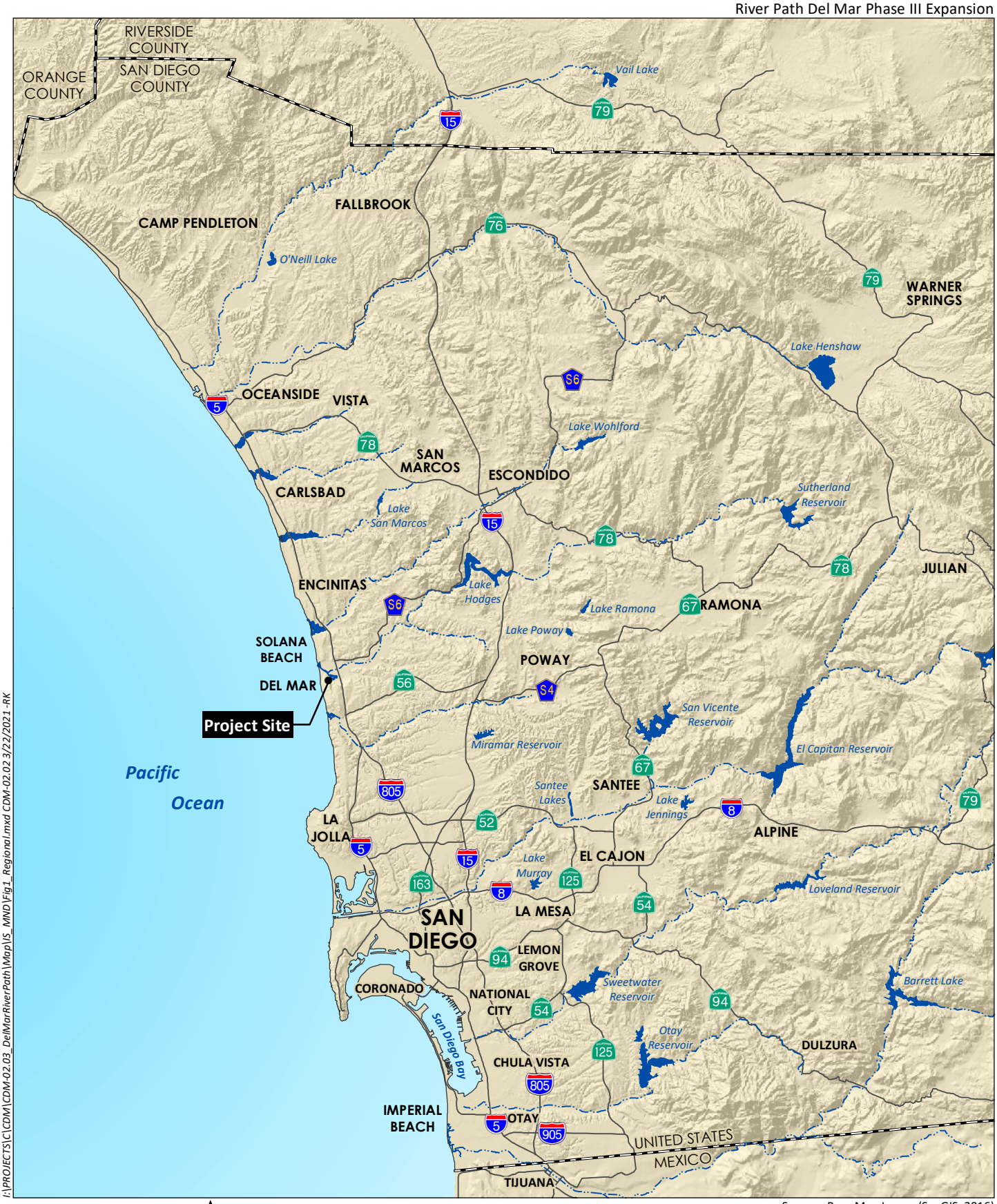
Project Location

Figure 1, *Regional Location*, depicts the general location of the project in coastal north-central San Diego County in the northern part of the City, south of the Del Mar Fairgrounds and west of Interstate 5 (I-5). Figure 2, *Project Vicinity Map*, shows the project's proximity to the lagoon, River Path (completed Phases I and II), Crest Canyon Trail, Coast to Crest Trail, and Grand Avenue Lookout, as well as its relationship to the political boundaries of the City, the City of San Diego, the City of Solana Beach, and the State-owned Fairgrounds (Del Mar Fairgrounds) which is operated by the 22nd District Agricultural Association (22nd DAA). The specific location of the proposed project is shown on a topographic map using the United States Geological Survey (USGS) 7.5-minute quadrangle on Figure 3, *Site Topography (USGS)*. The trail would extend southeast from the Grand Avenue Lookout to about 165 feet west of the northern terminus of the Crest Canyon Trail. Site elevations range between 5 and 32 feet above mean sea level (amsl).

Existing Conditions

The project site is directly southwest of the San Dieguito Lagoon along San Dieguito Drive, southeast of the Grand Avenue Lookout, and northwest of the Crest Canyon Trail. San Dieguito Drive is a narrow two-lane, winding road about 20 feet wide that provides access to pockets of residential homes south and west of the project site along Oribia Road in the City and along Racetrack View Drive in the City of San Diego. Several speed humps exist along San Dieguito Drive to control vehicle speeds. Due to changes in topography immediately adjacent to the road on both sides, there are no sidewalks, space for shoulders or pull-off areas, and several of the road curves are protected with metal guard rails. As such, these existing conditions render the future installation of sidewalks, shoulders, and pull-offs infeasible. Wood power poles supporting existing overhead power lines are oriented adjacent to San Dieguito Drive along the San Dieguito Lagoon. Both sides of San Dieguito Drive include areas with and without curbs. Most of the southern edge of San Dieguito Drive adjacent to the project abuts a combination of hillsides, fences and walls, and driveways associated with private residential properties. Several fire hydrants are also located along the southern edge of San Dieguito Drive and are protected with yellow concrete bollards. Much of the northern edge of San Dieguito Drive consists of topography that slopes north and downward to the San Dieguito Lagoon. Along the project alignment there are expansive western, northern, and eastern views of the San Dieguito Lagoon in the foreground. Views to the south are mostly limited due to the proximity to steep hillsides developed with single-family residences, driveways, fences and walls, natural vegetation, and ornamental landscaping. Structures and trees within the project alignment are limited to guard rails along San Dieguito Drive, utility poles, a storm drain outfall, and portions of willow tree limbs. Existing site conditions are depicted in photographs on Figures 4a and 4b, *Existing Site Conditions*.

The San Dieguito Lagoon is a biologically sensitive area that generally consists of a wide and flat outlet for the San Dieguito River and is subject to periodic inundation. There are several sensitive plant and animal species known to occur in habitats associated with the San Dieguito Lagoon and some have been observed near the project site. Sensitive plant and animal species known occur or considered to have a moderate to high potential to occur at the project are presented in Section IV, *Biological Resources*, of this Initial Study/Mitigated Negative Declaration (IS/MND).



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

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Regional Location

Figure 1

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Source: Base Map (Esri Open Street Map)

HELIX Environmental Planning

Project Vicinity Map

Figure 2

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0 2,000 Feet

Source: Del Mar 7.5' Quad (USGS)

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Site Topography (USGS)

Figure 3

Existing view facing southeast near Grand Avenue Lookout

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Existing Site Conditions (1 of 2)

Figure 4a

Existing view facing northwest near project midpoint

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Existing Site Conditions (2 of 2)

Figure 4b

The City's Community Plan identifies the project area as "Floodway/Lagoon Habitat" and the City's Local Coastal Program (LCP) identifies the project area as "wetland" in its Land Use Plan and within the "Lagoon Overlay Zone (L-OZ)" in its LCP Implementing Ordinances. The LCP Implementing Ordinances state that permitted uses in wetlands can include "scientific research, passive recreation and/or educational uses provided that they do not involve adverse impacts to the natural ecosystem."

Project Components

The project consists of an approximately one-half mile pedestrian path extension of the River Path along the southern periphery of the San Dieguito Lagoon. The proposed extension would connect to existing trail segments and improve a portion of the San Dieguito segment of the City's Loop Trail–a 7-mile hiking trail envisioned in the City's Community Plan that creates a loop around the City's perimeter. In addition, the proposed project would implement a portion of a designated future pedestrian accessway along the San Dieguito River/Lagoon as delineated in Figure IV-A of the City's LCP Land Use Plan (LUP).

The project includes a single, five-foot-wide decomposed granite (DG) path and six-foot wide boardwalk (both at-grade and elevated) path alignment along the San Dieguito Lagoon to extend the River Path from the Grand Avenue Lookout to near the Crest Canyon Trail. Due to topographical constraints adjacent to San Dieguito Drive, the path would meander south of the San Dieguito Lagoon and would transition between three types of pathway construction to avoid and minimize impacts to biological resources to the extent feasible including: a DG trail; an at-grade boardwalk; and an elevated boardwalk (Figure 5, *Proposed River Path Extension Alignment*). The trail extension would extend a total of 2,070 linear feet (LF) and would primarily be comprised of an elevated boardwalk (1,195 LF, or about 58 percent of the proposed trail). About 286 LF (or about 14 percent of the proposed trail) would include boardwalk decking at grade and about 589 LF (or about 28 percent of the proposed trail) would include a DG trail. Typical cross-sections for each of the three pathway types are shown on Figure 6, *Proposed River Path Extension Sections*. Each of these trail types is identified on Figure 5 and described in detail below:

- **DG Trail**. The five DG trail sections of the River Path would include a five-foot-wide pathway, constructed of three inches of compacted and stabilized DG material. Each side of the pathway would include plastic trail edging (1 inch wide) as well as wood stakes (2 inches wide) drilled down approximately 18 inches beneath the ground, with a gopher screen between the ground level and DG trail. The surface of the DG trail would be edged with recycled plastic lumber on both sides. Construction would be similar to the Phase II DG trail.

- **At-Grade Boardwalk**. The six at-grade boardwalk path sections are proposed to transition to and from the DG trail to the elevated boardwalk with a six-foot-wide pathway constructed of composite decking material with pre-made footings/pins associated with the foundations spaced about 46 inches apart. The boardwalk would include repurposed material from a removed segment from the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (1/2 -inch maximum) to allow for adequate drainage and indirect sunlight to penetrate to areas below the boardwalk portions of the project. Foundation footing pins would extend between 3.5 and 10.5 feet beneath the ground surface.

- **Elevated Boardwalk**. Most of the proposed trail would comprise an elevated boardwalk over a mix of upland and wetland habitat areas near the San Dieguito Lagoon. The elevated boardwalk was incorporated to avoid and minimize impacts to such habitats and would be located in two

sections along the proposed River Path extension. The elevated boardwalk would include a 6-foot wide elevated pathway and would be constructed with similar composite decking material and pre-made footings/pins as the at-grade boardwalk. The elevated boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (1/2-inch maximum) to allow for adequate drainage and indirect sunlight to penetrate to areas below the elevated boardwalk portions of the project. Elevated boardwalk sections would also include a cable/post fence railing along the San Dieguito Lagoon constructed of 10-inch wide and 60-inch tall redwood cable post fencing with horizontal cable wires for safety and to keep users from meandering off of the boardwalk and encroaching into biologically sensitive areas. The fence posts would be drilled approximately 28 inches into the ground with concrete foundations or securely fastened to the elevated boardwalk (where appropriate).

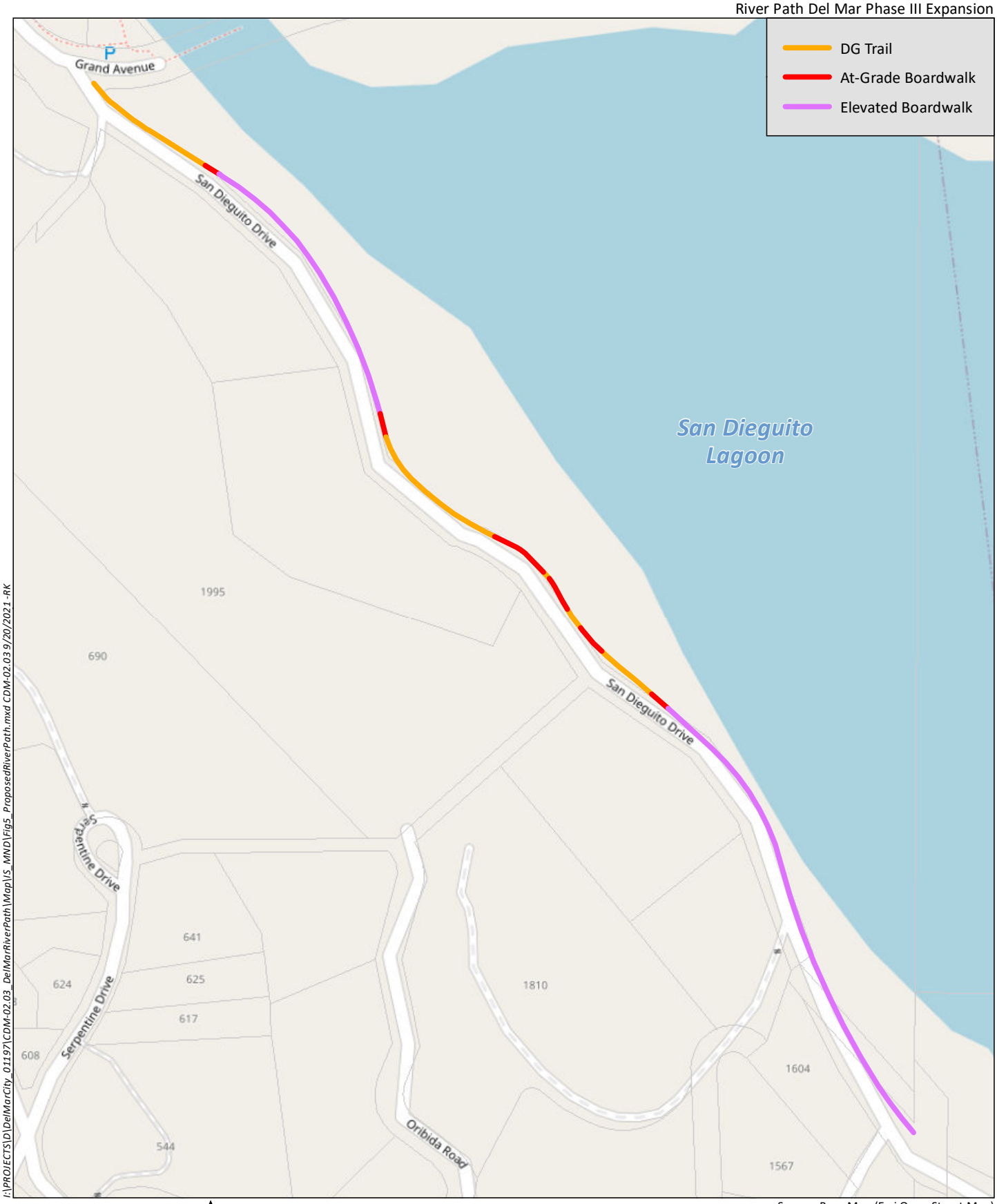
The proposed project would involve minor grading, vegetation removal, and debris removal along the path alignment within the upland habitat areas. No excavation, grading, or filling would occur in wetland habitat areas; the installation of the trail in such areas would include pre-made footings/pins with a concrete head to support the elevated boardwalk deck structure, which would substantially avoid and reduce impacts. No utilities in the project area would be affected by the proposed project and existing above-ground electric utility lines and power poles would remain as they are under existing conditions.

Other project components would involve interpretive and wayfinding signage as well as trash cans along the trail alignment. No benches or picnic tables are proposed as part of the project.

Construction Activities

Construction activities would occur over an approximately four-month period and are anticipated to begin as early as September 2023 and end in January 2024. This construction timing is arranged specifically to avoid the bird nesting season, particularly sensitive bird species potentially nesting adjacent to the project. Construction activities would involve site preparation, minor grading and debris removal, and pathway construction that would occur consecutively. As noted above, pathway construction would involve a DG trail, at-grade boardwalk, and elevated boardwalk. For the DG trail segments (about 589 LF), construction equipment would consist of motorized construction machinery including a rubber-tired dozer, tractor, compactor, and backhoe. At-grade and elevated boardwalk sections would be constructed using foundations, which would include pre-made footings/pins with a concrete head to support the elevated structure without the need for excavation. These foundations would be placed by construction workers either by hand or using a small portable hoister crane and installed using a breaker/demolition hammer powered by a truck-mounted generator. Foundations would be spaced every five feet on center and up to about 600 individual foundations are anticipated to support the project. Trucks are anticipated to be used to deliver construction materials such as decking and DG to the project site and construction workers would also arrive to the project site in a truck or personal vehicle. Construction staging and laydown areas, as well as construction parking, would utilize the City Public Works Yard, located about one-third mile west of the proposed River Path extension, just west of the intersection of Jimmy Durante Boulevard and San Dieguito Drive (see Figure 2). Existing parking at the Grand Avenue Overlook would remain open and available for public users throughout the project construction period, and construction workers would not be allowed to park in this area.

Construction grading would not be conducted during the LCP-designated rainy season (November 15 to March 31) and would conform to the requirements of the Migratory Bird Treaty Act (MBTA) for the



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Source: Base Map (Esri Open Street Map)

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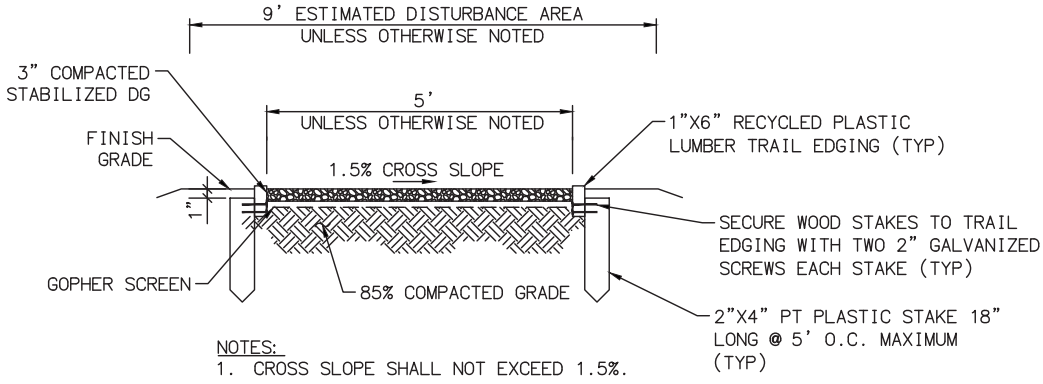
Proposed River Path Extension Alignment

Figure 5



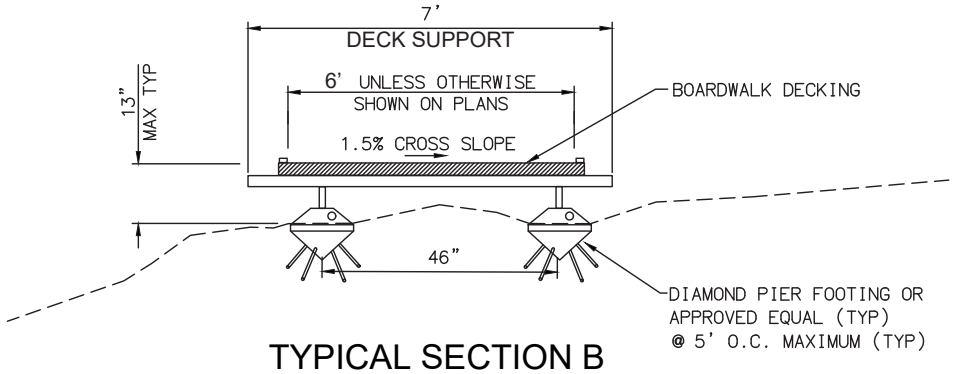
NOTES:
1. CROSS SLOPE SHALL NOT EXCEED 1.5%.
2. LONGITUDINAL SLOPE SHALL NOT EXCEED 8.33%.

TYPICAL SECTION A

(DG TRAIL)

STA 0+16 TO STA 2+28 AND STA 7+25 TO STA 13+00 — 787 LF

NOT TO SCALE

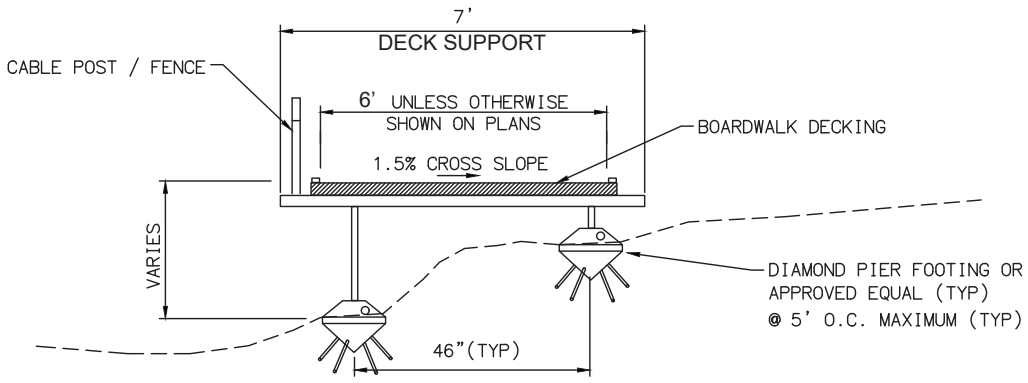


TYPICAL SECTION B

(BOARDWALK DECK AT GRADE)

STA 2+28 TO 2+53 & STA 6+89 TO STA 7+25 & STA 13+00 TO 13+33 — 94 LF

NOT TO SCALE



TYPICAL SECTION C

(ELEVATED BOARDWALK)

(BOARDWALK DECK W/ OVERHANG & RAILING)

STA 2+53 TO STA 6+89 & STA 13+33 TO STA 21+80 — 1283 LF

NOT TO SCALE

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Source: Michael Baker International 2020

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Proposed River Path Extension Sections

Figure 6

protection of songbirds and raptors during the breeding season (January 1 to August 31). Due to the proximity of the proposed project to San Dieguito Drive, it is anticipated that temporary lane closures and traffic control measures would be necessary during active work periods to lay down equipment and materials and that traffic lanes would be restored to pre-construction conditions outside of active construction activities. Temporary erosion control measures, such as sandbag barriers, fiber rolls, wood mulching, soil binders, geotextiles, plastic covers, erosion control blankets/mats, silt fencing, native habitat revegetation, and construction personnel training are among the best management practices (BMPs) that would be implemented during and immediately following construction to minimize impacts to biological resources and water quality. Further, a biologist would be on site periodically throughout project construction to monitor construction.

Operational Activities

Once construction is completed, the project site would complete the final phase of the City's River Path vision and would provide a formal connection between the Coast to Crest Trail and the Crest Canyon Trail in the City of San Diego. Constructed conditions of the proposed project are illustrated in Figures 7a and 7b, *Proposed Site Conditions*. The proposed project impacts are illustrated in Figures 8a through 8f, *Proposed Project Impacts*. Under existing conditions, pedestrians using the City's River Path to connect to the Crest Canyon Trail via San Dieguito Drive, adjacent to the proposed trail. As a result, the project is anticipated to accommodate trail users of the existing Crest Canyon Trail and the River Path within the proposed trail extension. As the project does not include a trail head or parking amenities and there is an existing connection between the City's River Path and Crest Canyon Trail via San Dieguito Drive, no additional trail users are anticipated as a result of the proposed project.

Approvals Required

This IS/MND has been prepared by the City to disclose environmental impacts associated with the project. The IS/MND provides members of the public, public agencies, and other interested parties an opportunity to review and comment on the environmental analysis contained within this document. The City, as the CEQA Lead Agency with the primary responsibility for project approval, must adopt this IS/MND prior to other necessary project-related approvals by the City and other agencies. Below is a list of the approvals and permits anticipated by the City to approve and construct the proposed project:

- IS/MND adoption (Project No. EA19-001, adopted by the City Council);
- Conditional Use Permit (CUP; issued by the City Council upon recommendation by the Planning Commission);
- Habitat Mitigation and Monitoring Plan (HMMP) (approved and signed by the City Engineer);
- Storm Water Management Plan (SWMP) and Water Pollution Control Plan (WPCP) (approved and signed by the City Engineer);
- Design Review Board Permit (issued by the City Council); and
- Traffic Control Plan (issued by the City Engineer).

9. Surrounding land uses and setting:

Areas north of the project site include undeveloped areas within the San Dieguito Lagoon with the same Floodway (FW) and Lagoon Overlay Zone (L-OZ) land use designations that apply to the project site,

followed by the Del Mar Fairgrounds further north. Areas to the northwest include commercial development and existing portions of the River Path. Areas to the south and southwest include hillsides associated with single-family residences. Areas east of the project site include several single-family residences and the I-5 corridor, which occurs about one-half mile east of the proposed River Path extension.

Several other regional trails occur within the vicinity of the project and are depicted on Figure 2. The project site is within the San Dieguito River Park, which includes more than 65 miles of trails that are open year-round to the public. About 1,000 feet north of the project, a portion of the Coast to Crest Trail (maintained by the San Dieguito River Park JPA) is developed south of Jimmy Durante Boulevard along the northern edge of the San Dieguito Lagoon and extends along the San Dieguito River, beneath I-5, and continues east until El Camino Real. The Crest Canyon Trail includes a 2.5-mile north-south loop trail in the City of San Diego between Del Mar Heights Road at Durango Drive and Racetrack View Drive near the eastern terminus of the proposed project. Crest Canyon Park is located at the southern end of the Crest Canyon Trail.

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

    - Consolidated Coastal Development Permit (issued by the California Coastal Commission [CCC)]);
    - Section 404 Permit (issued by the United States Army Corps of Engineers [USACE]) and Section 7 Endangered Species Act [ESA] Consultation (issued by the United States Fish and Wildlife Service [USFWS];
    - Section 1602 Streambed Alteration Agreement (issued by the California Department of Fish and Wildlife [CDFW]);
    - Section 401 Water Quality Certification (issued by the Regional Water Quality Control Board [RWQCB]); and
    - Habitat Mitigation and Monitoring Plan (acceptable to the USACE, USFWS, RWQCB, CDFW, and CCC).

As noted above, the USACE, CDFW, RWQCB, and CCC are anticipated to have some permitting authority over the project and would issue the above-listed permits for the project to be constructed. These agencies have a responsibility to regulate discharges of dredged or fill material, including impacts to riparian/wetland vegetation. The USACE, CDFW, RWQCB, and CCC would have permitting authority over the project because the installation of the foundations and associated decking would occur in areas associated with the San Dieguito Lagoon, which are considered potential federal wetlands, waters of the United States, waters of the State, state of California streambed or riparian habitat, and coastal wetlands.

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.?

Proposed view facing southeast near Grand Avenue Lookout

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Proposed Site Conditions (1 of 2)

Figure 7a

Proposed view facing northwest near project midpoint

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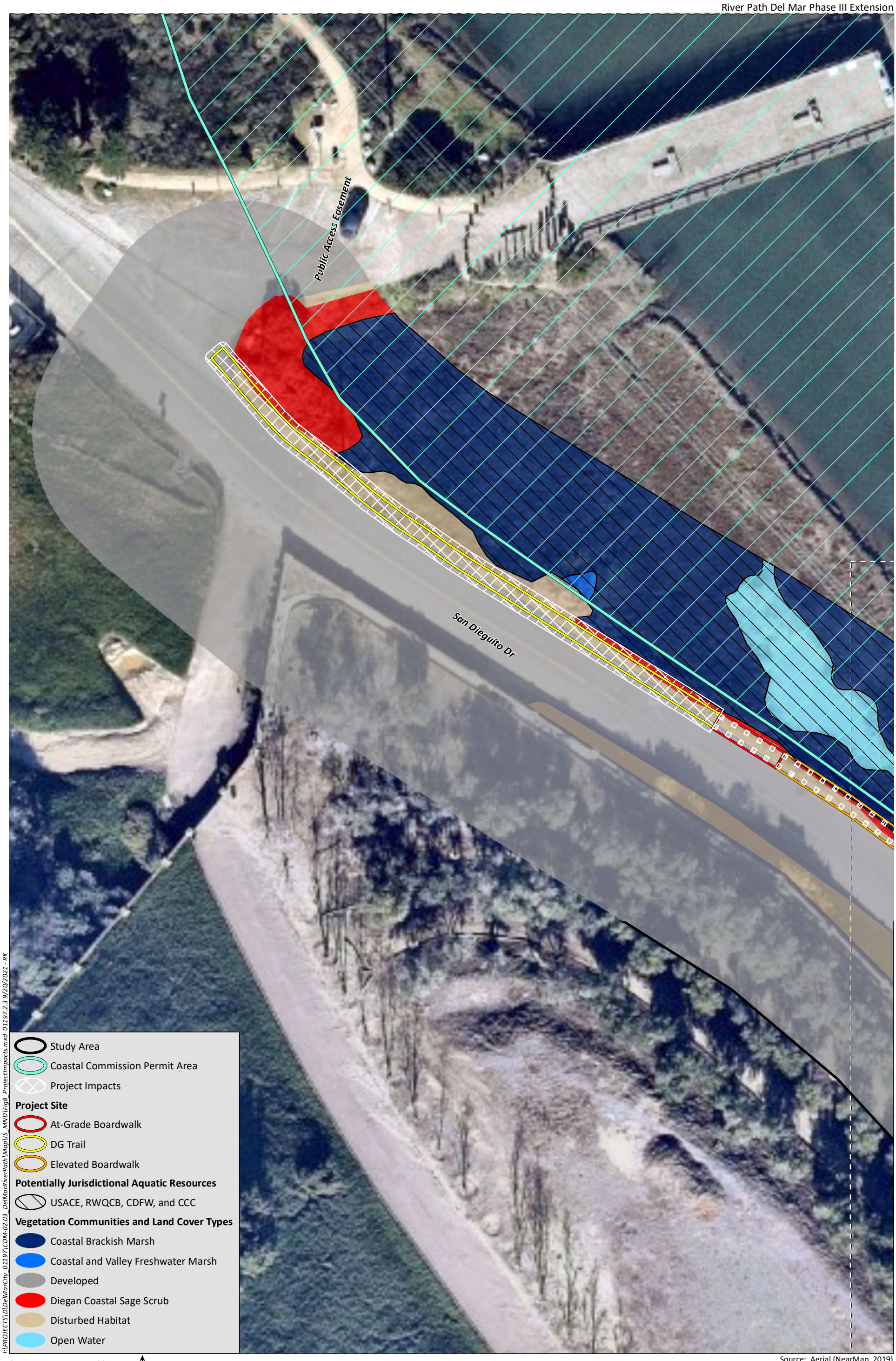
Proposed Site Conditions (2 of 2)

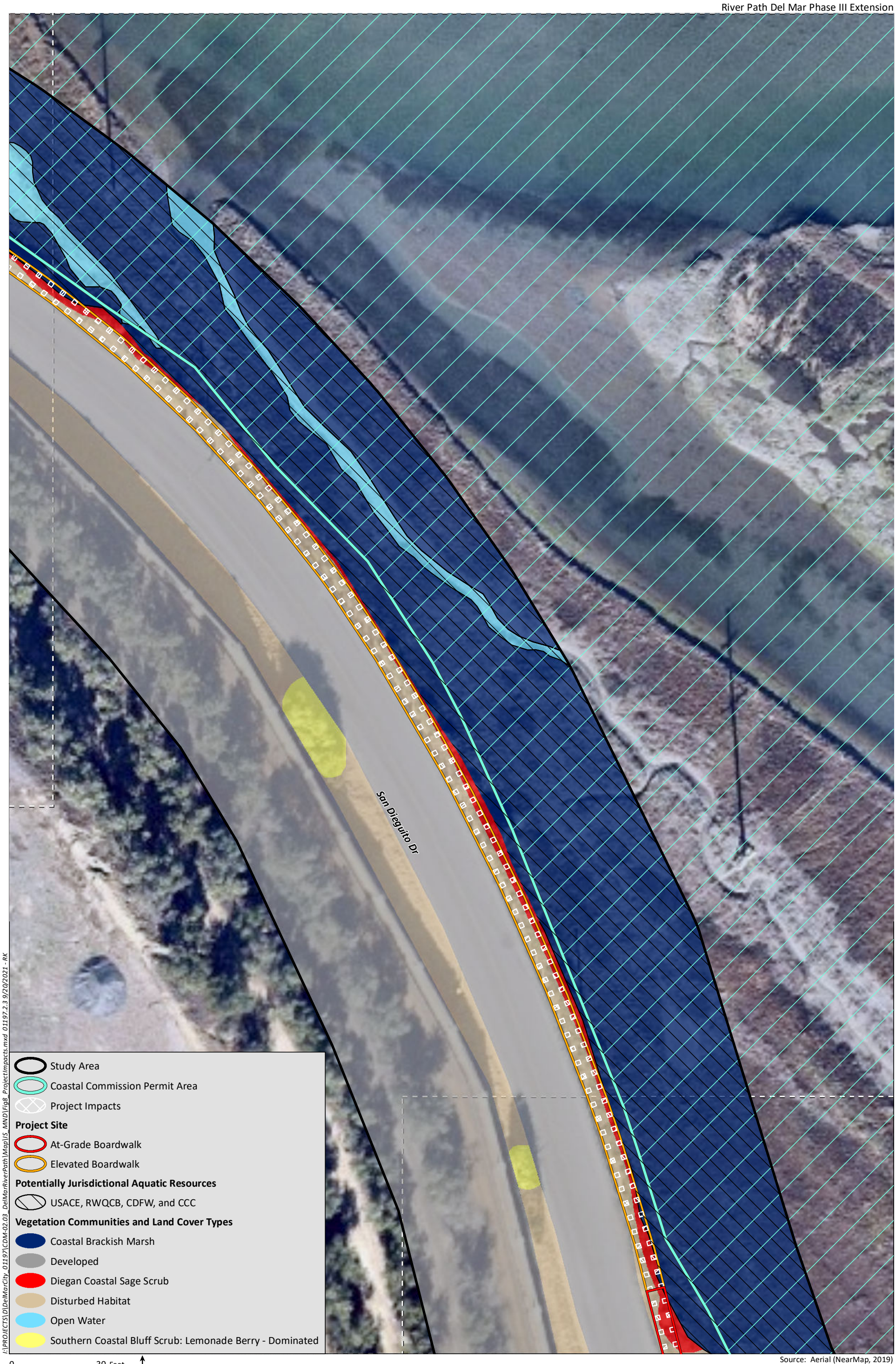
Figure 7b



Source: Aerial (NearMap, 2019)

Proposed Project Impacts

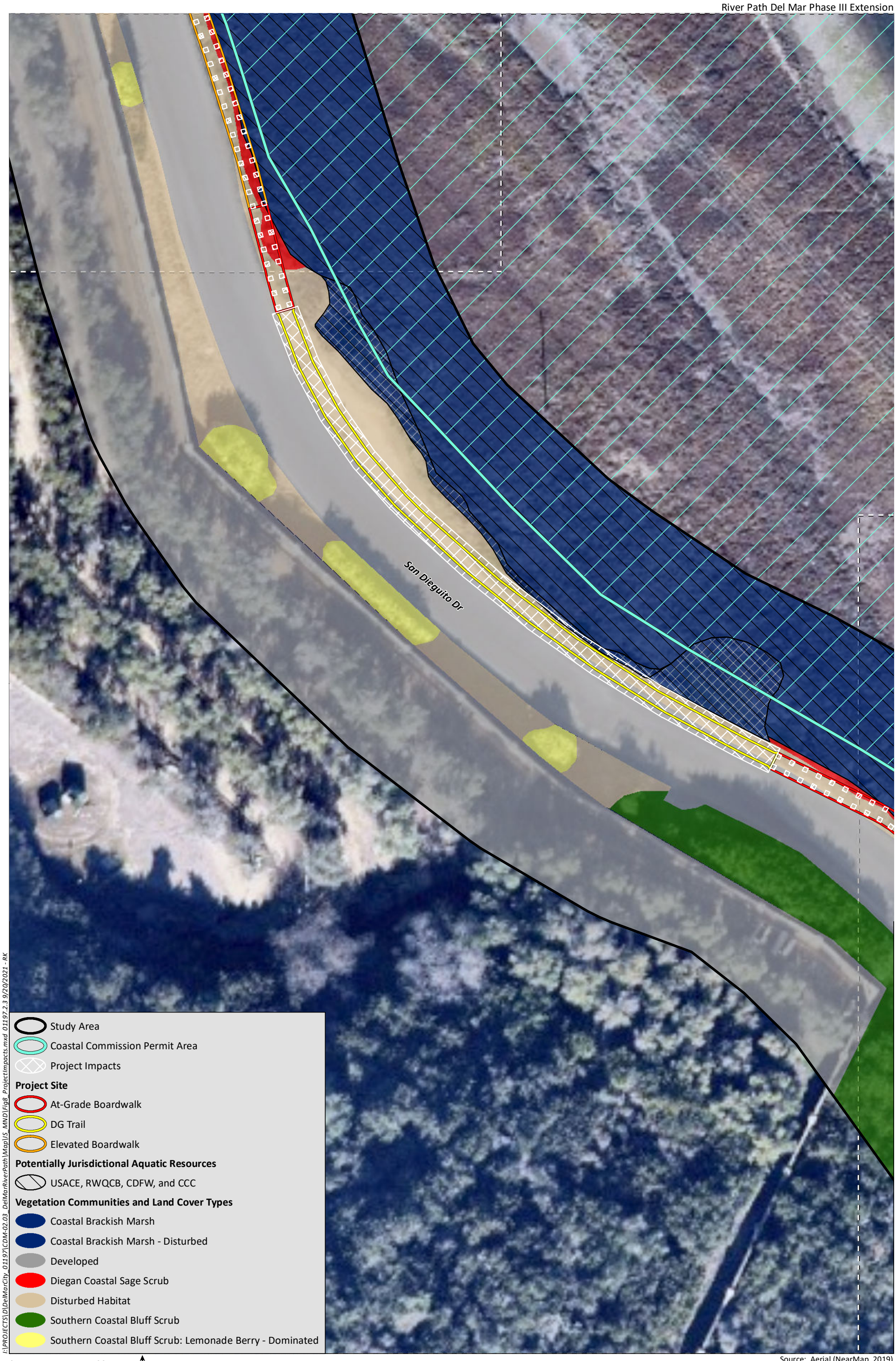
Figure 8a



Source: Aerial (NearMap, 2019)

Proposed Project Impacts

Figure 8b



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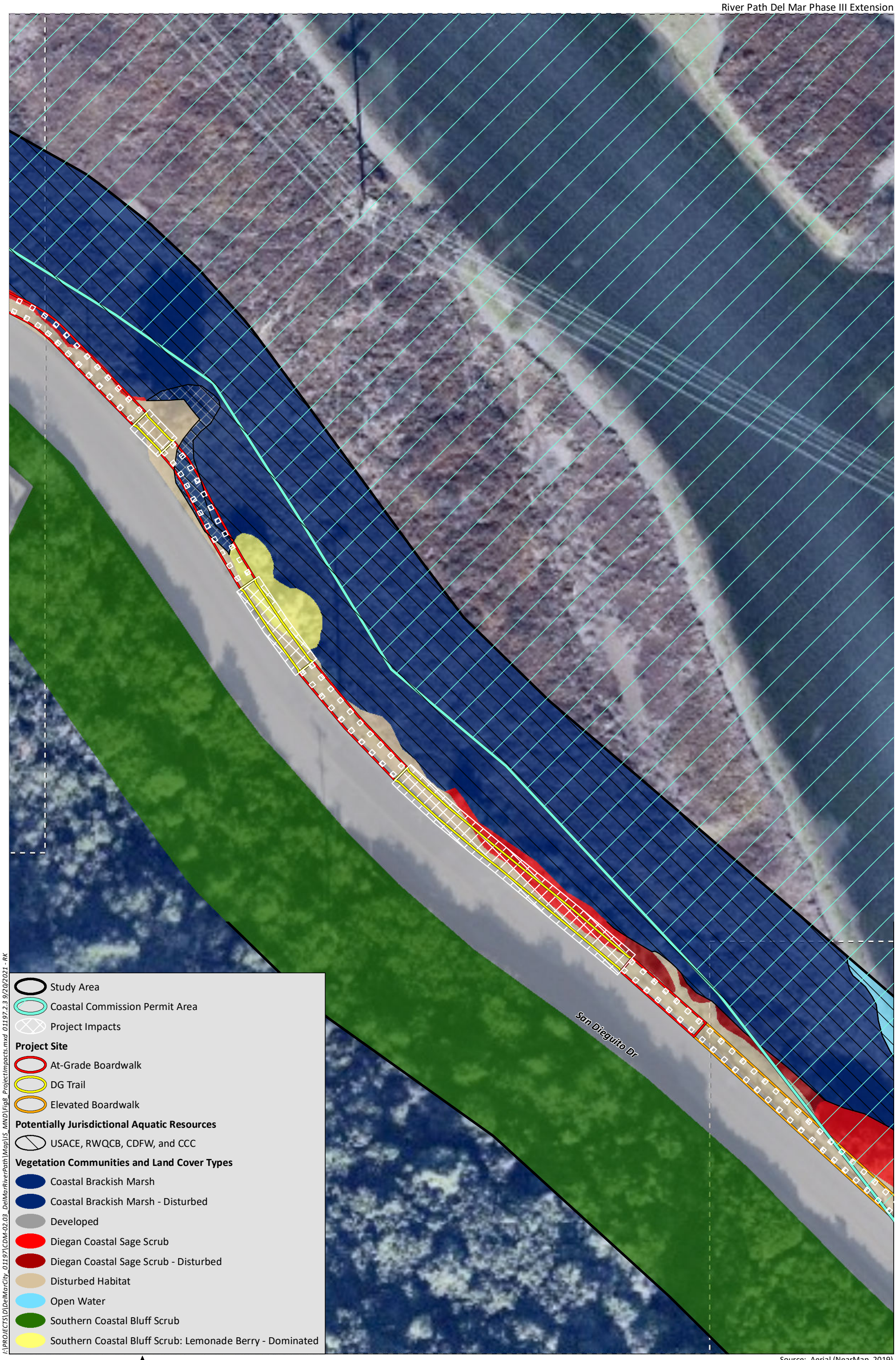
Proposed Project Impacts

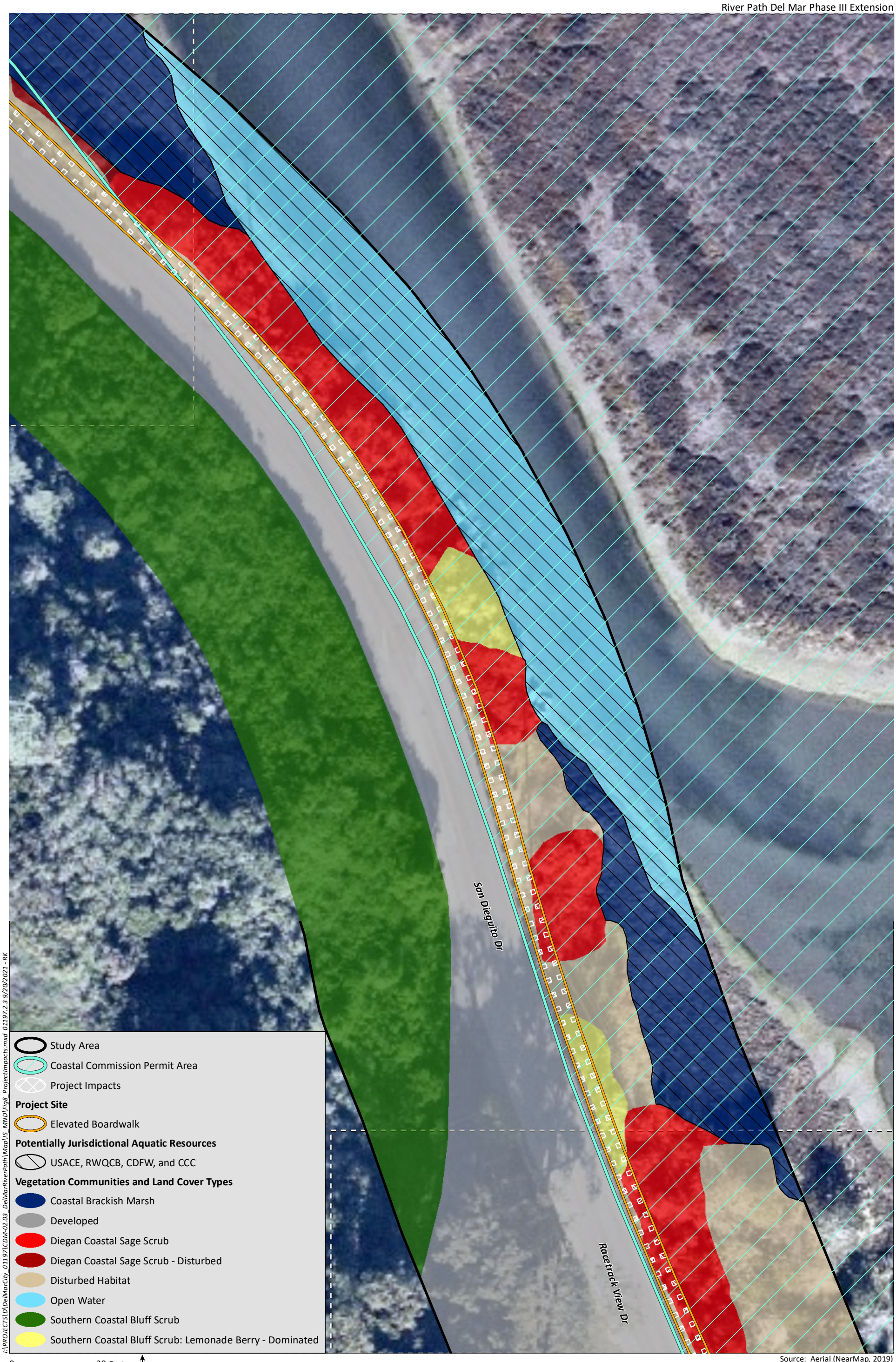
Figure 8c



Source: Aerial (NearMap, 2019)

Proposed Project Impacts

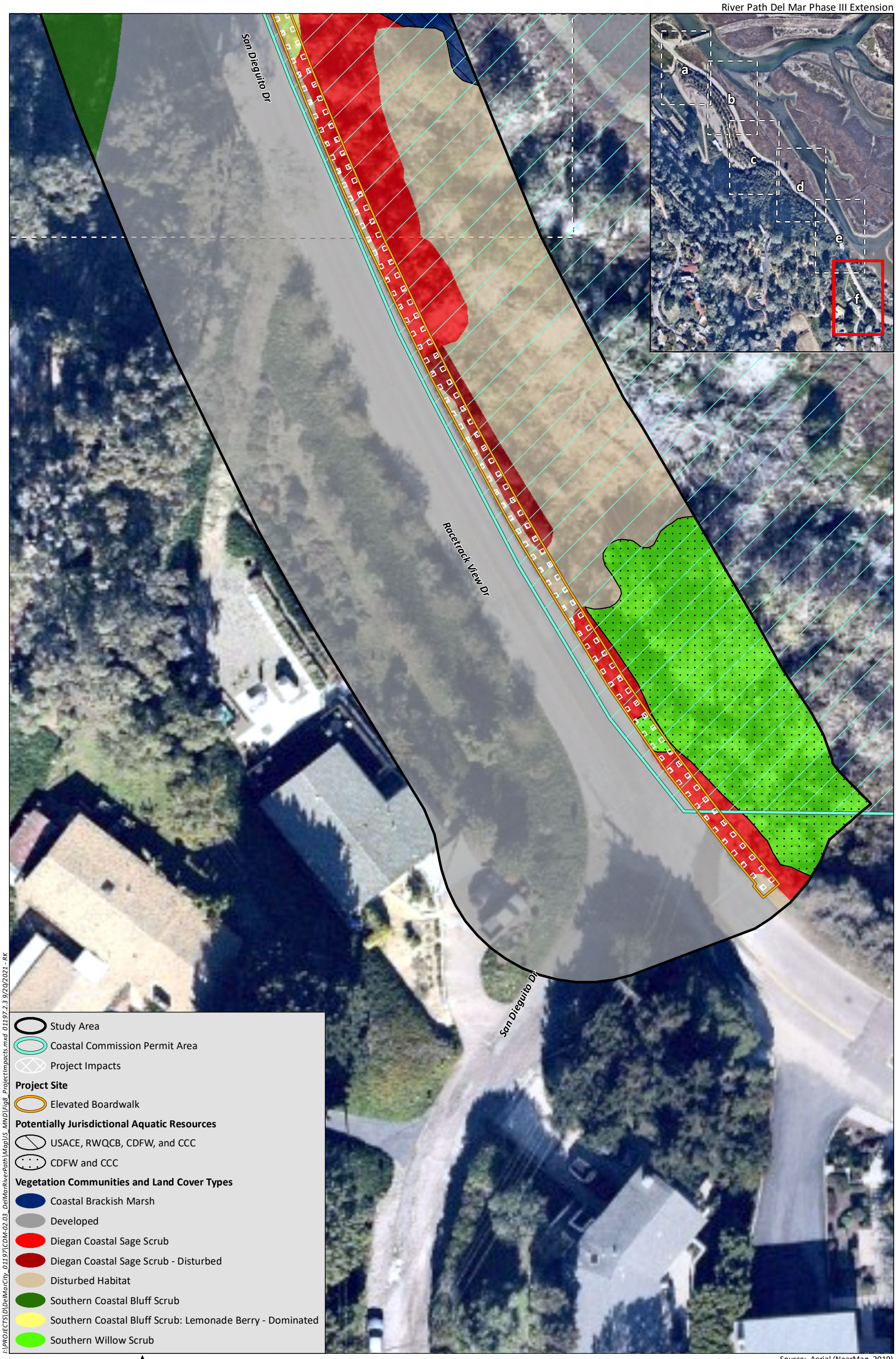
Figure 8d



Source: Aerial (NearMap, 2019)

Proposed Project Impacts

Figure 8e



Source: Aerial (NearMap, 2019)

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Proposed Project Impacts

Figure 8f

AB 52 notices went out via certified mail on July 27, 2021 to 14 nearby tribes, giving 30 days for the tribes to reply. The 30-day period ended on August 26, 2021. After the 30-day period ended, one request to initiate consultation was received from the Jamul Indian Village. The City responded to the consultation request but no response by the tribe has been received and no formal consultation has occurred to-date.

1.2 Environmental Factors Potentially Affected

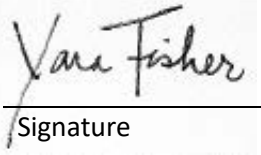
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ 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

1.3 Determination

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
■	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature	Date
Yara Fisher	Adriana Jaramishian
Printed Name	For

March 2, 2022

2.0 Environmental Initial Study Checklist

The lead agency has defined the column headings in the environmental checklist as follows:

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

B. "Less Than Significant with Mitigation Incorporated" applies where the inclusion of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." All mitigation measures are described, including a brief explanation of how the measures reduce the effect to a less than significant level. Mitigation measures from earlier analyses may be cross-referenced.

C. "Less Than Significant Impact" applies where the project does not create an impact that exceeds a stated significance threshold.

D. "No Impact" applies where a project does not create an impact in that category. "No Impact" answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project specific screening analysis).

The explanation of each issue identifies the significance criteria or threshold used to evaluate each question; and the mitigation measure identified, if any, to reduce the impact to less than significance. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [CEQA Guidelines Section 15063(c)(3)(D)]. Where appropriate, the discussion identifies the following:

a) Earlier Analyses Used. Identifies where earlier analyses are available for review.

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

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

I. Aesthetics

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. The proposed project consists of an approximately one-half mile pedestrian path extension of the River Path along the San Dieguito Lagoon. The project site consists of areas along the northern shoulder of San Dieguito Drive that include disturbed and vegetated areas as shown on Figures 4a and 4b. Expansive western, northern, and eastern views are available along the project alignment of the San Dieguito Lagoon in the foreground. Views beyond the San Dieguito Lagoon include the Del Mar Fairgrounds to the north and the I-5 freeway to the east. Views to the south include foreground views of hillsides that abut the southern edge of San Dieguito Drive. Due to topography and intervening development and landscaping, background views to the south and west are mostly unavailable. Hillside development south of the proposed trail consists of single-family residences, driveways, fences and walls, natural vegetation, and ornamental landscaping.

The City's Community Plan identifies several scenic areas and important community views near the project site. The introductory chapters of the City's Community Plan identify scenic views from the bluffs south and west of the project site and refer to a diversity of views from the community's hills and winding streets as positive community assets. The bluff areas south and west of the project include residential areas along Avenida Primavera, Crest Road, Gatun Street, Luzon Avenue, Serpentine Drive, Zapo Street, and 15th Street. From these bluff areas along public roadways, most of the prominent views are western facing toward the Pacific Ocean as most of the views towards the project site are precluded by existing development (single-family residences), topography, or mature vegetation and trees. As a result, views towards the project site from the bluff areas south and west of the project would be limited and mostly unavailable from public roadways. Furthermore, there are no public viewing areas such as a park or a designated scenic roadway in the bluff areas where people would have prolonged and focused views of the project site.

The City's Transportation Element identifies several scenic protection areas throughout the City, one of which includes the project site. Specifically, the Transportation Element identifies the entire lagoonal plain and the bluffs immediately parallel and southwest of the project site as part of a scenic protection area. This area is generally west of I-5, south and east of Jimmy Durante Boulevard, and north of Racetrack View Drive. The pedestrian path extension would extend the existing River Path eastward towards the existing Crest Canyon Trail along the San Dieguito Lagoon. Most of the proposed trail would comprise an elevated boardwalk, which would overlook the lagoon and include north- and northeast-facing views. The visual setting of the project area would be modified as a result of the proposed project with the introduction of DG trail, at-grade boardwalk, and elevated boardwalk; however, the project elements would be low-lying either at or near ground level to provide a connection between two existing trails and would not involve large or prominent visual elements, as shown on Figures 7a and 7b. As the project would involve the extension of an existing trail segment with mostly ground level improvements along an existing roadway, the project is not anticipated to have a substantial adverse effect on scenic vistas, including those identified in the City's Community Plan. Further, the extension of the City's River Path would provide additional opportunities for residents and visitors to experience and enjoy scenic views of the lagoon and surrounding areas. Therefore, impacts would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The nearest designated scenic highway is State Route (SR) 163, located 11 miles southeast of the project site, and views would not be available due to distance. A portion of Interstate 5 from the U.S./Mexico Border to south of San Diego Bay is also identified as eligible for scenic highway designation; however, this segment is located 27 miles south of the project site and view would not be available due to distance. Additionally, the City's Transportation Element designates scenic roadways within the City that serve as scenic corridors. The nearest designated scenic roadway to the project site is Camino Del Mar, located 0.4 mile west of the project site. However, due to the elevated topography between Camino Del Mar and the project site, eastern-facing views of the project site from a locally designated scenic roadway are not available. Because views of the project site are not available from a designated scenic highway or roadway, impacts would not occur with implementation of the proposed project.

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?

Less Than Significant Impact. The existing visual character of the project area can be characterized as coastal and is dominated by the San Dieguito River and surrounding lagoonal plain and large coastal bluffs. Views of the project site from nearby surrounding areas are dominated by views of the open water within the San Dieguito Lagoon. The majority of the project site and immediately adjacent areas include roadway and residential areas as well as undeveloped areas with wetland and upland vegetation (including disturbed).

Project implementation would extend the existing River Path approximately one-half mile along the San Dieguito Lagoon and would result in some changes to existing views along San Dieguito Drive. While portions of the proposed trail extension would be visible from San Dieguito Drive, the project would

involve the implementation of low-lying elements consisting of DG trail, elevated boardwalk, and at-grade boardwalk and while some vertical elements such as railings would be visible, they are not anticipated to substantially degrade the existing visual character or quality of the site and its surroundings. Further, approval of the proposed project would require the approval of a Design Review Permit to ensure that the proposed design of the project is compatible with the surrounding area and community character. As a result, the proposed extension of the existing path would not substantially degrade the existing visual character or quality of the site and impacts would be less than significant.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

No Impact. Implementation of the proposed project would not involve lighting improvements or reflective surfaces. As a result, no new source of substantial light or glare that would adversely affect daytime or nighttime views in the area would be created and impacts would not occur.

II. Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) 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?

No Impact. The project site does not contain any prime farmland, unique farmland, or farmland of statewide importance as shown on the maps prepared pursuant to the Farmland Mapping and

Monitoring Program of the California Resources Agency (California Department of Conservation [DOC] 2018). As such, there is no potential for the project to result in the conversion of farmland resources to a non-agricultural use. No impact would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The proposed project site is not zoned for agricultural use, nor is there a Williamson Act contract on the site. Therefore, the proposed project would not conflict with existing zoning for agricultural use or conflict with a Williamson Act contract. No impact would occur.

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))?

No Impact. No land zoned as forest land or timberland exists within the proposed project boundaries. The proposed project would not conflict with existing zoning for forest land or timberland. No impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed in II.c, no land zoned as forest land or timberland exists within the proposed project boundaries. As such, the proposed project would not result in the loss of forest land or conversion of forest land to other uses. No impact would occur.

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?

No Impact. No agricultural land uses, forest land, or timberland exist in the vicinity of the proposed project. The proposed project would not 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 forest land to non-forest use. No impact would occur.

III. Air Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

The following discussion is based on the Air Quality/Greenhouse Gas Emissions Letter Report prepared by HELIX Environmental Planning, Inc. (HELIX 2021a), attached to this IS/MND as Appendix A.

Discussion

The project site is in the San Diego Air Basin (SDAB). The San Diego Air Pollution Control District (SDAPCD or District) is responsible for implementing emissions standards and other requirements of federal and state laws in the SDAB. As required by the California Clean Air Act, SDAPCD has published various air quality planning documents to address requirements to bring the District into compliance with the federal and state ambient air quality standards. The SDAPCD has prepared an Attainment Plan for San Diego County (Attainment Plan), demonstrating how the region will further reduce air pollutant emissions to attain the current National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).

Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM_{10} and $PM_{2.5}$) are commonly used as indicators of ambient air quality conditions. These pollutants are known as criteria pollutants and are regulated by the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) through the NAAQS and CAAQS, respectively. The NAAQS and CAAQS limit criteria pollutant concentrations to protect human health and prevent environmental and property damage. Other pollutants of concern in the proposed project area are nitrogen oxides (NO_X) and reactive organic gases (ROG), which are precursors to ozone, and diesel particulate matter (DPM), which can cause cancer and other human health ailments. These toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. It is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2018).

CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for the ambient air quality standards. An “attainment” designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once. The SDAB is currently in nonattainment for federal and/or state ozone, PM_{10}, and $PM_{2.5}$ standards. Concentrations of all other pollutants meet state and federal standards.

The project's construction emissions were calculated using the California Air Pollution Control Officers Association (CAPCOA) California Emissions Estimator Model (CalEEMod) emissions inventory model. Project-specific input was based on general project information, assumptions provided by the project engineers, and default model settings to estimate reasonably conservative conditions. Construction of the proposed project would result in temporary increases in air pollutant and dust emissions generated primarily from construction equipment exhaust, earth disturbance/grading, and construction worker vehicle trips. The project would not result in operational emissions. To determine whether the project would conflict with or obstruct any air quality plan, project emissions were evaluated based on the quantitative emission thresholds established by the SDAPCD. The screening thresholds are included in Table 1, *Screening-level Thresholds for Air Quality Impact Analyses*.

Table 1
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSES

Pollutant	Total Emissions		
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Reactive Organic Gases (ROGs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Reactive Organic Gases (ROGs)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: SDAPCD Rule 20.2 and Rule 1210
T-BACT = Toxics-Best Available Control Technology

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The SDAPCD is required, pursuant to the federal Clean Air Act, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the Attainment Plan and State Implementation Plan (SIP), prepared by the SDAPCD for the region. Both the Attainment Plan and SIP are based on regional San Diego Association of Governments (SANDAG) population projections, as well as land use designations and population projections included in general plans for those communities located throughout the County. Population growth is typically associated with the construction of residential units or large employment centers.

A project would be inconsistent with the Attainment Plan/SIP if it results in population and/or employment growth that exceed growth estimates for the area. The purpose of the proposed project is to extend the existing River Path along the San Dieguito Lagoon and to provide additional recreational opportunities for existing trail users of the River Path and Crest Canyon Trail. Achieving these goals would not result in population growth. In addition, construction and maintenance jobs for construction and operation of the project would recruit from the local pool of labor and would not create conditions for employment growth that exceeds growth estimates for the area.

Because the project would not generate population and employment growth beyond the levels assumed for the region, the project would be consistent with the Attainment Plan/SIP. In addition, the project would comply with all existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction activities. Therefore, the project would not conflict with the applicable air quality attainment plan and no impacts to regional air quality would occur.

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?

Less Than Significant Impact. Construction of the project would result in temporary increases in air pollutant emissions generated primarily from construction equipment exhaust, earth disturbance, construction worker vehicle trips, and truck trips. Once construction activity is complete, there would be negligible long-term emissions associated with periodic maintenance of the trail alignment. Table 2, *Construction Equipment Assumptions*, presents the type and amount of construction equipment and vehicles that would be used during each type of project construction phase. A complete listing of the assumptions used in the analysis and the model outputs are provided in the Air Quality/Greenhouse Gas Letter Report (HELIX 2021a). The results of the calculations for project construction are shown in Table 3, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SDAPCD thresholds. As shown in Table 3, emissions of all criteria pollutants related to project construction would be below the SDAPCD's significance thresholds. Therefore, direct impacts from criteria pollutants generated during project construction and operation would be less than significant.

Table 2
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Phase	Equipment	Number	Horsepower
Site Preparation	Grader	1	187
	Tractor/Loader/Backhoe	1	97
Grading/Debris Removal	Rubber-tired Dozer	1	247
	Plate Compactor	1	8
	Tractors/Loaders/Backhoes	2	97
Construction	Rubber-tired Dozer	1	247
	Plate Compactor	1	8
	Generator	1	84
	Tractors/Loaders/Backhoes	2	97

Source: CalEEMod

Table 3
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Activity	ROG*	NO_X*	CO*	SO_X*	PM_{10}*	$PM_{2.5}$*
Maximum Daily Emissions	1.32	13.08	11.44	0.02	0.64	0.56
SDAPCD Threshold	**75**	**250**	**550**	**250**	**100**	**55**
Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

Source: HELIX 2021a
* Pollutant Emissions (pounds per day)
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Construction activities would result in short-term, project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment. CARB identified DPM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, Health Risk Assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project.

There would be relatively few pieces of off-road, heavy-duty diesel equipment used during construction, and the four-month construction period would be relatively short, especially when compared to 30 years. Combined with the highly dispersive properties of DPM and additional reductions in exhaust emissions from improved equipment, construction-related emissions would not expose sensitive receptors to substantial emissions of DPM. In summary, impacts from construction emissions of TACs would be less than significant.

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

Less Than Significant Impact. As discussed above, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. An unreasonable odor discernible at the property line of the project site would be considered a significant odor impact.

The project could produce odors during proposed construction activities resulting from construction equipment exhaust; however, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, any odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

IV. Biological Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Wildlife 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 Wildlife or US 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?	☐	☐	■	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	■	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Biological Technical Report (BTR) was prepared by HELIX to document the existing biological resources within the project study area and evaluate the potential for project impacts (HELIX 2022a). The conclusions of the survey and report are summarized below, and the report is included as Appendix B to this IS/MND.

Discussion

The BTR prepared for the proposed project includes the results of background research of available information (including several database queries of special status plant and animal species), previous vegetation mapping at the project site, and a biological survey of the project site by HELIX biologists. The general biological survey included the path alignment plus a 75-foot buffer on each side. Biological surveys of the project site occurred in December 2019, January 2021, and June 2021. A total of 56 plant species and 49 animal species were observed or detected within or adjacent to the project site. Six vegetation communities were observed in the 0.29-acre study area. Observed vegetation communities included coastal brackish salt marsh (including disturbed); southern coastal bluff scrub (including lemonade berry dominated); southern willow scrub; Diegan coastal sage scrub (including disturbed); disturbed habitat; and developed lands (see Table 4, *Existing Vegetation Communities and Land Cover Types On-site*).

In addition to the project site, a property proposed as a target mitigation site, located approximately 225 feet northwest of the project site, was also surveyed by HELIX biologist Laura Moreton on December 21, 2021. This mitigation property is approximately 0.33 acre and primarily supports non-native vegetation. Small patches of coastal brackish marsh and disturbed coastal brackish marsh are also present on the property.

Table 4
EXISTING VEGETATION COMMUNITIES AND LAND COVER TYPES ON-SITE

Vegetation Community or Land Cover Type[1]	Acres[2]
Sensitive	
Tier I	
Coastal Brackish Marsh (Including disturbed; 52200)	0.009
Southern Coastal Bluff Scrub (Including lemonadeberry dominated; 31200)	0.01
Southern Willow Scrub (63320)	0.002
Tier II	
Diegan coastal sage scrub (Including disturbed; 32500)	0.060
Subtotal Sensitive Communities	*0.080*
Non-Sensitive	
Tier IV	
Disturbed Habitat (11300)	0.210
N/A	
Developed Land (12000)	<0.100
Subtotal Non-Sensitive Communities	*0.210*
TOTAL	**0.290**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008) and are listed by Habitats and Tiers within the Multiple Species Conservation Program (MSCP).
[2] Non-sensitive upland habitats are rounded to the nearest 0.1 acre, while sensitive uplands and wetland habitats are rounded to the nearest 0.01 acre; thus, total reflects rounding. Acreages do not include the off-site target mitigation property.

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. The following discussion includes an evaluation of potential project-related impacts on plant and animal species.

Plant Species

Special-status plant species are those listed as federally threatened or endangered by the USFWS; State listed as threatened or endangered or considered sensitive by CDFW; and/or are California Native Plant Society (CNPS) List 1A, 1B, or 2 species, as recognized in the CNPS Inventory of Rare and Endangered Vascular Plants of California and consistent with the CEQA Guidelines. A search of the USFWS, California Natural Diversity Database (CNDDB), and CNPS species records reported in the project vicinity did not result in any point records for sensitive plant species on or immediately adjacent to the project alignment. No special status plant species were determined to have a high potential to occur due to the lack of suitable habitat within the project site (i.e., road edge). Furthermore, no sensitive plant species have been recorded on site and none of the 56 plant species observed within the site during the 2018, 2019, and 2021 biological surveys for the project included special-status plant species. The project would have no impact on federal or State listed plans species.

Three non-listed sensitive plant species have moderate potential to occur on-site: Nuttall's lotus, Southern tarplant, and Orcutt's pincushion. All three species are designated as California Rare Plant Rank (CRPR) List 1B.1 plant species. As CRPR 1B.1 plant species, they have been assigned to a watch list

for plants reported as rare and with a high degree and immediacy of threat by the CNPS. Because there is a moderate potential for these plant species to occur on site, there is the potential for impacts to Nuttall's lotus, Southern tarplant, and Orcutt's pincushion during construction, and impacts would be significant (Impact BIO-1).

Mitigation measures BIO-1, BIO-2, and BIO-3 would require the installation of temporary construction fencing, biological monitoring where work limits occur adjacent to known sensitive resources, and implementation of a mitigation and monitoring plan include planting of these three species to result in no net loss. Implementation of mitigation measures BIO-1, BIO-2, and BIO-3, as described below, would reduce potential impacts on sensitive plant species to less than significant.

Animal Species

Special-status animal species are those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and considered sensitive animals by the CDFW. Of the 49 animal species observed or detected within the project site during the 2019 and 2021 biological surveys, none was identified as a special-status species. However, a total of four special-status animal species have at least a moderate potential to occur on the project site, including the following: Belding's savannah sparrow; coastal California gnatcatcher; light-footed Ridgway's rail; and least Bell's vireo. Direct and indirect impacts to suitable habitat for the federally endangered light-footed Ridgway's rail and least Bell's vireo, federally threatened coastal California gnatcatcher, state endangered Belding's savannah sparrow would occur as a result of project implementation (Impact BIO-2). Mitigation measures BIO-1 and BIO-2 require the installation of temporary construction fencing and biological monitoring where work limits occur adjacent to suitable habitat. Impacts to listed species would occur and would require authorization and consultation with USFWS through the ESA Section 7 process as well as CDFW in accordance with the California Endangered Species Act (CESA) Section 2081 (see mitigation measure BIO-4).

Although the project alignment has been designed to occur within disturbed areas as much as possible, some project impacts would occur in suitable habitats for these species and additional suitable habitats are immediately off-site within the San Dieguito Lagoon. Light-footed Ridgway's rail, least Bell's vireo, coastal California gnatcatcher, and Belding's savannah sparrow have the potential to breed in on- and off-site habitat areas. If construction is scheduled to occur during the breeding season for these species, inadvertent and adverse indirect impacts on these species would occur if they were breeding in the area. As a result, mitigation measure BIO-5 would require pre-construction surveys in accordance with the applicable USFWS protocols to ensure that the appropriate avoidance measures are implemented prior to and during construction to avoid impacts on these species. With the implementation of mitigation measures BIO-4 and BIO-5, no significant impacts on special-status animal species would occur. Therefore, with the implementation of required mitigation measures, impacts on these special-status animal species would be reduced to less than significant.

Project construction would involve the removal of vegetation and other potential nesting habitat for common birds and raptors protected under the MBTA and California Fish and Game (CFG) Code. Impacts on active nests belonging to bird species protected under the MBTA and CFG Code would be significant (Impact BIO-3). Mitigation measure BIO-6 would require that a pre-construction survey is conducted and that avoidance measures are implemented prior to and during construction to avoid impacts on nesting birds and raptors. Implementation of mitigation measure BIO-6 would reduce potential impacts to less than significant.

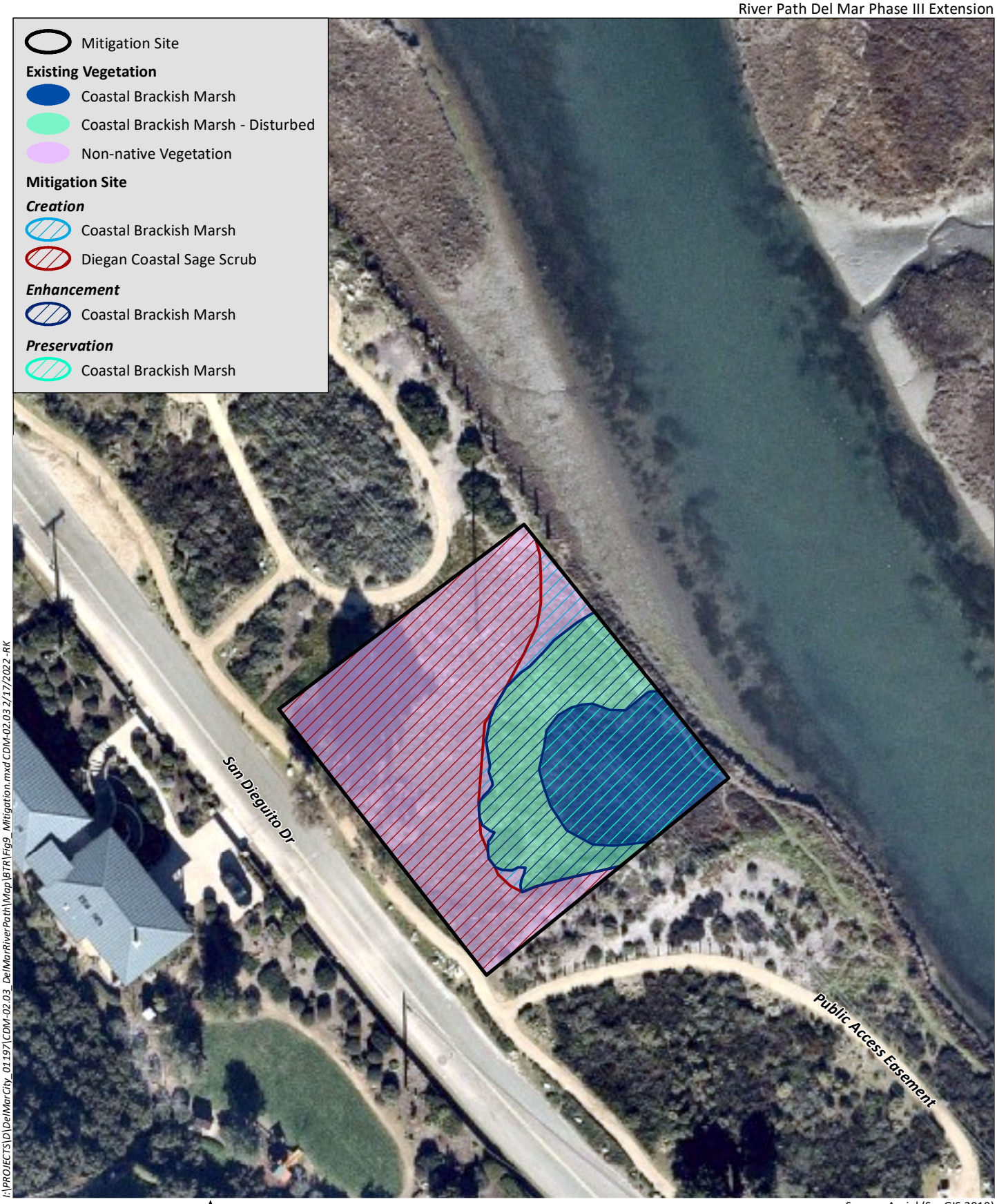
In conclusion, project implementation would potentially result in significant impacts to special status plant and animal species, including general nesting birds and raptors, within or adjacent to the project site. However, implementation of mitigation measures BIO-1 through BIO-6 would avoid or reduce project impacts to less than significant.

Mitigation Measures

BIO-1 **Temporary Construction Fencing.** Prior to construction, to help ensure inadvertent/ unauthorized impacts to environmentally sensitive areas outside of the approved impact footprint are avoided, temporary construction fencing, including silt fencing as appropriate, shall be installed at the edges of the approved impact limits of grading for the project. Temporary fencing shall be installed at all locations where the project grading for the DG trail occurs adjacent to resources depicted on Figures 8a through 8f of the BTR. A qualified biologist shall be retained to monitor the installation of the temporary construction fencing wherever it would abut environmentally sensitive areas. Construction activities shall be restricted to areas within the approved impact limits at all times during construction.

BIO-2 **Biological Monitoring.** A qualified biologist will conduct a pre-construction environmental training session for construction personnel to inform them of the sensitive biological resources in the local area and the avoidance measures in place to remain in compliance. The biologist will regularly monitor construction activities throughout construction, including fencing installed in accordance with mitigation measure BIO-1. If items of non-compliance are identified, the biologist shall notify the on-site construction superintendent immediately to discuss and implement corrective actions. Issues of non-compliance that result in additional impacts to sensitive biological resources shall be documented and provided to the City within 72 hours of identification.

BIO-3 **Habitat-Based Compensatory Mitigation.** To mitigate potential impacts on non-listed rare plant individuals (Nuttall's lotus, Southern tarplant, and Orcutt's pincushion) and sensitive habitat types (coastal brackish marsh, Diegan coastal sage scrub, southern coastal bluff scrub, southern willow scrub), the City shall prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) that will prescribe actions for on- and/or off-site mitigation of the impacted resources at a minimum 1:1 ratio (no net loss) through establishment/re-establishment, substantial rehabilitation, and/or preservation. Off-site mitigation shall be implemented within the subject target site/property located approximately 225 feet northwest of the project (Figure 9). A portion of the off-site target mitigation property shall be assigned to mitigate for the project (approximately 0.01 acre) and the remaining portion of the property shall be available for other mitigation efforts/projects. The HMMP shall include requirements for site preparation, soil amendments, temporary irrigation, native plant palettes, installation methods, maintenance, and performance monitoring, as appropriate. HMMP shall require that the habitat establishment/creation, re-establishment, rehabilitation, and restoration mitigation efforts be subject to a minimum five-year performance monitoring period with specific success criteria to ensure that the impacted functions and services are restored. A protective instrument, such as a conservation easement or restrictive covenant, shall be recorded over the mitigation areas where such protective instrument does not already exist, unless otherwise not required. The mitigation areas shall be subject to long-term management by a qualified entity approved by the City with experience in managing preserve lands (i.e., CDFW list of qualified entities). Funding for long-term management shall be provided through a non-wasting endowment or other



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0 50 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

Proposed Mitigation

Figure 9

financial mechanism approved by the City. Where project impacts and mitigation involve resources regulated by the USFWS, USACE, RWQCB, CDFW and/or other responsible agencies, the City shall coordinate HMMP preparation and implementation with these agencies and obtain all necessary permits and approvals from these agencies prior to HMMP implementation, as appropriate.

BIO-4 Listed Wildlife Species Avoidance and Conservation Measures: Impacts to listed wildlife species determined to have potential to occur, including Belding's savannah sparrow, coastal California gnatcatcher, light-footed Ridgway's rail, and least Bell's vireo shall be compensated by the implementation of habitat-based mitigation via a Habitat Mitigation and Monitoring Plan (see mitigation measure BIO-3 above).

If project impacts to vegetation or grading is necessary within and/or adjacent to native habitat between February 15 and September 15, then pre-construction surveys shall be conducted for federally listed bird species identified with potential to occur; including coastal California gnatcatcher, light-footed Ridgway's rail, least Bell's vireo, and Belding's savannah sparrow (see BIO-5 below). Grubbing, grading, or clearing during the breeding season for these species could occur if it is determined based on the results of the pre-construction protocol surveys that the species is/are not present. If surveys conclude presence of the target species in the survey area, the City and/or federal action agency for the project shall consult with the USFWS (Section 7 or Section 10) regarding project-level related significant adverse effects to coastal California gnatcatcher, light-footed Ridgway's rail, and/or least Bell's vireo, as appropriate. If Belding's savannah sparrow is detected during pre-construction protocol surveys, the City shall notify CDFW, and if required by CDFW, shall prepare/submit an application for a Section 2081(b) Incidental Take Permit for impacts to Belding's savannah sparrow.

BIO-5 Pre-Construction Protocol Surveys: If construction activities are scheduled to occur during the nesting season for coastal California gnatcatcher (March 1 through August 30), light-footed Ridgway's rail (April 1 through August 31), least Bell's vireo (April 15 to September 15), and Belding's savannah sparrow (February 15 through June 30), a qualified biologist shall conduct pre-construction surveys to determine the presence or absence of these species. The final survey shall not be completed more than three days prior to the beginning of impacts or grading activities. If the results are negative construction shall be allowed to proceed. The Wildlife Agencies (USFWS and CDFW) shall be notified if any special status species are observed nesting within 500 feet of proposed construction activities and additional measures imposed by the Agencies shall be implemented.

No activities which would result in noise levels exceeding 60 hourly average A-weighted decibels (dBA L_{EQ}) within this 500-foot buffer shall be allowed. Ambient background noise shall be excluded from the 60 dBA calculation. If noise-generating construction activities are not completed prior to the breeding season, sensitive bird species are present nesting, and noise levels exceed this threshold, appropriate measures shall be implemented to reduce construction noise levels at occupied habitat to below 60 dBA L_{EQ} (one hour) including, but not be limited to, the following:

- Construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.

- Diesel equipment shall be operated with closed engine doors and equipped with factory-recommended mufflers.

- Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.

- Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible.

- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) shall be prohibited.

- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

- No project-related public address or music system shall be audible at any adjacent sensitive receptor.

- Temporary sound barriers or sound blankets shall be installed between construction operations and adjacent noise-sensitive habitat. The project Contractor shall construct a temporary noise barrier at least 6 feet in height meeting the specifications listed below (or of a Sound Transmission Class [STC] 19 rating or better) to attenuate noise.

- All barriers shall be solid and constructed of wood, plastic, fiberglass, steel, masonry, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove or close butted seams and must be at least 3⁄4-inch thick or have a surface density of at least 3.5 pounds per square-foot. Sheet metal of 18-gauge (minimum) may be used if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Noise blankets, hoods, or covers also may be used, provided they are appropriately implemented to provide the required sound attenuation.

BIO-6 **Nesting Bird and Raptor Avoidance**: Trimming, grubbing, and clearing of vegetation shall be avoided during the general avian breeding season (generally February 1 to August 31, including raptors) to the extent feasible. If trimming, grubbing, or clearing of vegetation is proposed to occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to vegetation clearing to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, trimming, grubbing, and clearing of vegetation shall be allowed to proceed. If active bird nests are confirmed to be present during the pre-construction survey, a buffer zone will be established by the biologist. Construction activities shall avoid any active nests until a qualified biologist has verified that the young have fledged, or the nest has otherwise become inactive.

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

Less Than Significant with Mitigation Incorporated. The proposed project is located adjacent to the San Dieguito Lagoon along the shoulder of San Dieguito Drive and primarily includes non-sensitive vegetation communities consisting of disturbed habitat and developed land; however, the project site does include sensitive natural communities including coastal brackish marsh (including disturbed), southern coastal bluff scrub (including lemonade berry dominated), southern willow scrub, and Diegan coastal sage scrub (including disturbed). Project impacts are summarized below within Table 5, *Impacts to Vegetation Communities*, and shown on Figures 8a through 8f.

Table 5
IMPACTS TO VEGETATION COMMUNITIES

Vegetation Community or Land Cover Type[1]	Project Impacts Permanent (Acres)[1]	Project Impacts Temporary (Acres)[1, 3]
Sensitive		
Tier I		
Coastal Brackish Marsh (Including disturbed; 52200)	0.0004	0.0002
Southern Coastal Bluff Scrub (Including lemonadeberry dominated; 31200)	<0.01	<0.01
Southern Willow Scrub (63320)	0.0003	-
Tier II		
Diegan coastal sage scrub (Including disturbed; 32500)	0.01	0.01
Subtotal Sensitive Communities	*0.01*	*0.01*
Non-Sensitive		
Tier IV		
Disturbed Habitat (11300)	0.06	0.02
N/A		
Developed Land (12000)	0.01	0.03
Subtotal Non-Sensitive Communities	*0.07*	*0.05*
TOTAL	**0.08**	**0.06**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008) and are listed by Habitats and Tiers within the MSCP.
[2] Non-sensitive upland habitats are rounded to the nearest 0.01 acre. Because impact areas are small in size, wetland/riparian habitats are rounded to the nearest 0.0001.
[3] Reflects off-site impacts associated with grading for the DG trail. Acreages do not include the off-site target mitigation property.

As shown in Table 5, the project would result in permanent impacts to 0.01 acre as well as 0.01 acre temporary impacts to sensitive natural communities (i.e., comprised of coastal brackish marsh, southern coastal bluff scrub, southern willow scrub, and Diegan coastal sage scrub) that occur within utility easements and alongside the road edge of San Dieguito Drive (Impact BIO-4). Native habitat restoration/re-establishment/preservation of impacted habitats pursuant to an HMMP would compensate the permanent loss of habitat and reduce project impacts to below a level of significance. With the implementation of mitigation measure BIO-3, as described above, the project impacts on sensitive natural communities would be reduced to less than significant.

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

Less Than Significant with Mitigation Incorporated. Although the project was designed and sited to avoid and minimize impacts to jurisdictional resources to the extent practicable, the project would impact potentially protected wetlands and waters under Section 404 of the Clean Water Act (CWA) subject to the jurisdiction of the USACE. The project would also result in impacts to potentially jurisdictional waters of the State subject to jurisdiction by the RWQCB under Section 401 of the CWA and protected streambed and associated riparian habitat under the jurisdiction of the CDFW per Section 1602 of the CFG Code. Lastly, project construction would result in impacts to wetlands subject to the permit authority of the CCC.

As presented in Table 6, *Impacts to Jurisdictional Resources*, the project would result in impacts (permanent and temporary) to a total of less than 0.01 acre of habitat considered to be jurisdictional wetlands and riparian habitat (i.e., coastal brackish marsh, and southern willow scrub, respectively). Project impacts to less than 0.001 acre coastal brackish marsh wetlands (including disturbed) would be significant and mitigation would be required (Impact BIO-3). Impacts to less than 0.01 acre of riparian habitat via trimming of overhanging southern willow scrub branches are considered less than significant and would not warrant mitigation. Impacts to jurisdictional resources (i.e., wetland waters of the U.S./State, including streamed and CCC wetlands), would be mitigated as described in BIO-7 below. Mitigation measures BIO-1 and BIO-2 would also avoid additional impacts to adjacent resources.

Table 6
IMPACTS TO JURISDICTIONAL RESOURCES (acres)[1]

Habitat	Project Impacts Permanent	Project Impacts Temporary[2]	Total
Wetland - USACE/RWQCB/CDFW/CCC Jurisdiction			
Coastal Brackish Marsh (Including disturbed; 52200)	0.0004	0.0002	0.0006
Riparian - CDFW/CCC Jurisdiction			
Southern Willow Scrub (63320)	0.0003	-	0.0003
TOTAL	**0.0007**	**0.00002**	**0.0009[3]**

[1] Areas are presented in acre(s) rounded to the nearest 0.0001.
[2] Includes off-site impacts associated with grading for the DG trail. Acreages do not include the off-site target mitigation property.
[3] Represents approximately 39 square feet.
USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife; CCC = California Coastal Commission

Mitigation is proposed at ratios consistent with those typically required by the Resource Agencies and is expected to compensate the loss and reduce impacts to below a level of significance. With the implementation of mitigation measure BIO-7, impacts on potentially jurisdictional wetlands, waters, streambed, and associated habitat, would be less than significant. Notification for securing necessary regulatory permits prior to impacts would be required for the project per BIO-7. If the potential wetlands or waters of the U.S. are ruled jurisdictional by the Resource Agencies, the anticipated permits would be a 404 permit from the USACE, 401 Certification from the RWQCB, and a 1602 agreement from CDFW. Additionally, the CCC would issue a CDP for the project. Final permit requirements would be determined through consultation with Resource Agencies. Implementation of required construction BMPs in combination with mitigation measures BIO-1 and BIO-2 would require that construction

activities are contained within the proposed work limits and that additional inadvertent impacts on jurisdictional resources are avoided.

BIO-7 Prior to any project impacts to potentially jurisdictional resources, demonstration that regulatory permits from USACE, RWQCB, CDFW, and CCC, have been issued or that no such permits are required shall be provided to the City. Unless otherwise required by USACE, RWQCB, CDFW, or CCC temporary impacts to less than 0.01 acre (i.e., approximately 0.0002 acre or 9 square feet) of wetland waters of the U.S. shall be replaced immediately following project construction. Permanent impacts to less than 0.01 acre (i.e., approximately 0.0004 acre or 18 square feet) of wetland waters of the U.S. shall be mitigated at a 3:1 ratio consisting of a minimum 1:1 establishment/re-establishment provided through on/off-site habitat revegetation or through purchase of conservation Mitigation Bank credits deemed acceptable by the agencies; totaling a minimum of 0.0012 acre (i.e., minimum of approximately 53 square feet). Off-site mitigation (approximately 0.0012 acre) shall occur at the subject target property located approximately 225 feet northwest of the project; the remaining portions of the property shall be available for other mitigation efforts/projects (Figure 9). Final mitigation requirements shall be determined by the Resource Agencies (i.e., USACE, RWQCB, CDFW, and CCC).

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?

Less Than Significant Impact. The project occurs within the boundaries of the San Diego Multiple Species Conservation Program (County MSCP) finalized and adopted by the County of San Diego in 1998. Within the MSCP, the project is located in the City of Del Mar Subarea. The Del Mar Draft Subarea Plan has not been finalized or adopted. In the context of the MSCP, the project is located within the San Dieguito Lagoon Core Area. The project site is not located within U.S. Fish and Wildlife Service (USFWS) designated or proposed critical habitat.

While the project site generally occurs within the San Dieguito Lagoon Core Area, it occurs within and alongside a City road right-of-way which is frequently used by humans (including use of vehicles and for pedestrians) and outside of areas where wildlife movement opportunities occur (along beaches and areas of open water in the San Dieguito Lagoon). Within the project site, habitat is limited to roadside narrow strips of disturbed vegetation that are less than 10 feet in width. Project areas may be used by smaller urban-adapted mammal species and bird species but are not considered refuge as a wildlife corridor or habitat linkage. While the Lagoon to the north does provide suitable habitat, the proposed project site itself (i.e., existing road right-of-way) does not support area considered to be a wildlife linkage or corridor. Although native habitat occurs on site and is contiguous with habitat adjacent to the north of the site, the project would not impede wildlife access to, within, or through off-site areas in the Lagoon that may be used for wildlife movements, foraging, or breeding. The project site is bounded to the south by existing development. Additionally, as evidenced by biological surveys discussed in the BTR, the project areas (i.e., road edge right-of-way) do not support critical populations of animal species. Therefore, project impacts to wildlife movement and nursery sites would be less than significant. No mitigation would be required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact with Mitigation. The project is located within the City's Lagoon Overlay Zone, which guides development within areas identified as "wetlands" and "wetland buffer areas." To the extent practicable, the project alignment has been sited and designed to occur within and immediately adjacent to the existing roadway/edge, outside of areas in which plant or animal life and their habitats are rare or especially valuable because of their special nature or role in an ecosystem, and in areas currently subject to disturbance or degradation by human activities and developments. The biological resources within the project site are in narrow strips directly adjacent to San Dieguito Road and Racetrack View Road and are currently subject to substantial disturbance from vehicle traffic, noise, and pedestrian/bicycle activities. Project consistency with the City's Municipal Code and Lagoon Overlay Zone was considered as a guide for the proposed design and project design was modified to avoid wetland areas as possible. Due to existing topography, roadways, and utilities and that occur along the project site, portions of the project as proposed would occur within wetlands and such impacts could not be further avoided. As shown above in Table 5, permanent impacts to sensitive vegetation communities would include 0.01 coastal brackish marsh (including disturbed), southern coastal bluff scrub (including lemonadeberry dominating), and southern willow scrub, which would conflict with the permitted activities within the City's Lagoon Overlay Zone as development in wetland habitat is prohibited (Impact BIO-6). Permanent impacts to wetlands would be mitigated with the implementation of mitigation measure BIO-3, which requires that habitat-based compensatory mitigation is identified and implemented to mitigate impacts on wetlands in the San Dieguito Lagoon. With implementation of mitigation measure BIO-3, conflicts with the City's Lagoon Overlay Zone that protects biological resources in the Lagoon would occur; however, physical impacts on biological resources, including wetlands, would be less than significant.

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?

No Impact. The project would occur within the boundaries of the County MSCP, particularly within the Del Mar Subarea. However, the Draft Del Mar Subarea Plan is not approved or adopted and remains in draft form. Therefore, the draft policies and guidelines of these plans are not applicable to the proposed project. The project, however, considered the context of such draft plans and implementation of the proposed project would not preclude or prevent finalizing and adopting the plan. The project could result in potential significant impacts to sensitive biological resources addressed under the MSCP; however, compliance with existing regulations and implementation of measures BIO-1 through BIO-7 would reduce impacts to less than significant.

V. Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 dedicated cemeteries?	☐	☐	■	☐

The following discussion is based on the Cultural Resources Technical Report prepared by HELIX (HELIX 2022b), attached to this IS/MND as Appendix C.

Discussion

The Cultural Resources Technical Report prepared for the proposed project includes the results of a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and pedestrian survey of the area of potential effects (APE). HELIX obtained the results of a record search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC) on May 4, 2020. The records search covered a one-mile radius around the project alignment and included the identification of 92 previous cultural resources studies and 52 recorded cultural resources, including 30 prehistoric resources, 20 historic-period resources, one multi-component site, and one resource of indeterminate age. Of the 52 recorded cultural resources, one was identified within the 25-foot buffer from the project alignment (CA-SDI-22048). A review of the California Historical Resources and the state Office of Historic Preservation (OHP) historic properties directories was also conducted, and no properties were identified within 25 feet of the APE.

A pedestrian survey of the APE was conducted by HELIX and a Native American monitor on May 8, 2020 and February 14, 2022. Due to the thick vegetation, the available ground visibility during the pedestrian survey was generally no more than five percent. One historical archaeological site (CA-SDI-22048) was observed during the survey consisting of concrete blocks and pillars that are likely pieces of possibly historic-period lamp posts. This resource is located downslope from the project site toward the Lagoon. No other cultural resources were identified within the area of potential effects (APE) based on the results of the records search and pedestrian survey.

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

No Impact. Historical resources are those resources which have been found eligible at the state or federal level and are listed on the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP). Section 106 of the National Historic Preservation Act requires Federal agencies to consider the effects of their actions on “historic properties,” that is, properties (either historic or archaeological) that are eligible for the NRHP. To be eligible for the NRHP, a historic property must be significant at the local, state, or national level under one or more of the following four criteria: (1) the property is associated with events that have made a significant contribution to the broad patterns of our history; (2) the property is associated with the lives of persons significant in our past; (3) the property embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and (4) the property has yielded or may be likely to yield, information important in prehistory or history.

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria: (1) it is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; (2) it is associated with the lives of persons important to local, California, or national history; (3) it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or (4) it has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

All resources that are eligible for listing in the NRHP or CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

During the cultural survey conducted by HELIX, one historical archaeological site (CA-SDI-22048) was observed. This site consists of a pile of concrete blocks and pillars that are likely pieces of possibly historic-period lamp posts imported from elsewhere outside the project area. This resource is located downslope from the project site and no direct impacts would be anticipated as a result of project implementation. The site is situated at the base of a very steep, embankment slope north of San Dieguito Drive and is partially submerged in the Lagoon. As these resources were imported from elsewhere, the resource does not represent a historic property eligible under CRHR and the NRHP. Therefore, no impact on historical resources would occur as a result of project implementation.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant Impact with Mitigation Incorporated. As discussed above, the project's Cultural Resources Technical Report included a records search encompassing a one-mile radius around the project alignment. The resources recorded within the search radius included 30 prehistoric resources. The prehistoric resources consist of village-level habitation sites, seasonal habitation campsites, artifact scatters, marine shell scatters, and isolated artifacts. While no significant cultural resources have been identified within the APE, there are numerous and important cultural resources in the project vicinity. Additionally, due to the thick vegetation, the ground visibility during the field survey was generally no more than five percent, and the project is located within alluvial soils, where there is a potential for buried cultural resources. HELIX contacted the NAHC on May 5, 2020 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated May 13, 2020 that no known sacred lands or Native American cultural resources are within the project area, but the San Pasqual Band of Mission Indians have indicated that the project lies within the boundaries of the territory that the tribe considers its Traditional Use Area and recommended archaeological monitoring pending the results of surveys and records searches associated with the project.

Due to the sensitivity of the project vicinity and the potential for buried cultural resources, project construction would have the potential to result in a significant impact to an archaeological resource (Impact CUL-1). An archaeological and Native American monitoring program would be implemented as mitigation measure CUL-1.

CUL-1 A qualified archaeologist meeting the United States Secretary of the Interior's Professional Qualifications for prehistoric and historic archaeology and a Kumeyaay Native American monitor shall be retained to conduct a cultural resources monitoring program. The monitoring program shall include attendance by the archaeologist and Native American monitor at a pre-construction meeting with the construction contractor and the presence of an archaeological and Native American monitor during initial ground disturbance for the project. If it is determined by the archaeologist and Native American monitor that past grading and other disturbances have removed soils with a reasonable potential for containing cultural material, monitoring can be reduced and recommence when the ground-disturbing activities continue in native soil. If cultural material is encountered, the archaeologist and the Native American monitor shall have the authority to temporarily halt or redirect trenching and other ground-disturbing activity while the cultural material is documented and assessed. If a cultural resource is determined to be significant, the archaeologist and Native American monitor shall coordinate with the City staff to develop and implement appropriate treatment measures. Artifacts collected (if any) shall be cataloged, analyzed, and curated with accompanying catalog to current professional repository standards and transferred to an appropriate curating facility within San Diego County. Alternatively, artifacts may be returned to the consulting tribe for reburial or for curation at a tribal facility. A report shall be completed by the qualified archaeologist describing the methods and results of the monitoring program.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. There are no known grave sites within the project limits, and the potential for encountering human remains during construction activities is considered low. In the unlikely event that human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of any human remains find immediately. If the remains are determined to be prehistoric, the Coroner would notify the NAHC, which would determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery, and shall complete the inspection within 24 hours of notification by the NAHC. The MLD would have the opportunity to make recommendations to the NAHC on the disposition of the remains. Accordingly, impacts would be less than significant.

VI. Energy

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. Energy used for construction would primarily consist of fuels in the form of diesel and gasoline for the operation of construction equipment and construction worker vehicles over an approximately four-month period. While construction activities would consume petroleum-based fuels, consumption of such resources would be temporary and would cease upon the completion of construction. The petroleum consumed during project construction would be typical of similar construction projects and would not require the use of new petroleum resources beyond what are typically consumed in California. Project operations would not require the use of energy. Based on these considerations, construction of the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. A less than significant impact would occur.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. There are numerous state plans for renewable energy and energy efficiency; however, the most comprehensive plans include the CARB's 2017 Climate Change Scoping Plan, the 2019 California Energy Efficiency Action Plan, and the California Renewables Portfolio Standard Program. However, these state plans do not include applicable regulations that would apply to the construction of a public trail, and the project would not conflict with or obstruct a state plan for renewable energy or energy efficiency.

Local plans addressing energy reduction and efficiency include the City's Municipal Code Chapter 23.70, which requires solid waste diversion for construction and demolition debris (City 2019). On August 5, 2019, the City adopted the Construction and Demolition Waste Recycling Ordinance, which created a local process to demonstrate compliance with California Green Building Standards requirements. Projects are currently required to divert 65 percent of waste generated during construction from landfills. Construction activities associated with the project would be required to comply with applicable regulations, including mandatory requirements for construction and demolition debris in the City's Municipal Code that address energy efficiency. A less than significant impact would occur.

VII. Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
	iii. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
	iv. Landslides?	☐	☐	■	☐
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?	☐	☐	■	☐

The following discussion is based on the Geotechnical Investigation report prepared by Geocon (Geocon 2021), attached to this IS/MND as Appendix D. Geocon conducted four exploratory borings to a maximum depth of about five feet, sampled the existing soil, and performed laboratory testing. During the field investigation, two surficial soil units (consisting of artificial fill and Paralic Estuarine Deposits) were encountered at the project site. The site is underlain by Old Paralic Deposits, and formational materials of the Torrey Sandstone and Delmar Formation. The encountered geologic units and boring results are described in detail in Appendix D.

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?

Less Than Significant Impact. The City, like the rest of southern California, is located within a seismically active region as a result of being located near the active margin between the North American and Pacific tectonic plates. The most important known active fault zones that are capable of seismic ground shaking and can impact the City are the La Nacion Fault Zone and the Rose Canyon Fault Zone.

The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to identify earthquake fault zones along traces of both recently and potentially active major faults. Cities and counties that contain such zones must inform the public regarding the location of these zones, which are usually one-quarter mile or less in width. According to the California Geologic Survey, there are no Alquist-Priolo Earthquake

Fault Zones in the City and nearest zone is in the La Jolla Quadrangle approximately eight miles south of the project site. Due to the absence of active faults at or near the project site, the potential for ground rupture is considered to be very low and impacts would be less than significant.

ii. Strong seismic ground shaking?

Less Than Significant Impact. As described under response VII.a.i, there are faults in the region and they could create seismic ground shaking at the project site. Ground-shaking could affect the integrity of the project's components (e.g., elevated boardwalks); however, recommendations in the project's Geotechnical Report would be implemented during project construction to provide suitable subsurface conditions to support the proposed trail. Specifically, the Geotechnical Report recommends that the upper one to two feet of existing artificial fill be processed, moisture conditioned as necessary, and compacted prior to placing fill. Prior to placing fill soils, the ground surface should be scarified, moisture conditioned as necessary, and compacted to a depth of at least 12 inches. Also, construction of the proposed project would not involve the introduction of any buildings or habitable structures that may be susceptible to seismic ground shaking. Potential impacts related to strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is the phenomenon where saturated granular soils develop high-pore water pressures during seismic shaking and behave like a heavy fluid. This phenomenon generally occurs in areas of high seismicity where groundwater is shallow and loose granular soils or hydraulic fill soils subject to liquefaction are present. For liquefaction to occur, loose granular sediments below the groundwater table must be present and shaking of sufficient magnitude and duration must occur.

The project site is in an area that has the potential for seismically induced liquefaction occurrences (County of San Diego 2007). The proposed project, however, would not involve the introduction of any buildings or habitable structures that may be susceptible to seismic-related ground failure, including liquefaction. Potential impacts associated with liquefaction would be less than significant.

iv. Landslides?

Less Than Significant Impact. Landslide activity generally occurs in areas where slopes are steep (typically 30 percent or more) and lack vegetation. The proposed project site consists of mostly upland and with some wetland areas that are generally flat and covered in vegetation. Also, as referenced in the Geotechnical Report prepared for the project, steep slopes at the southern and eastern edges of the site are identified by the California Division of Mines and Geology within an area that is generally susceptible to landslides. While there are hillsides along the southern edge of San Dieguito Drive near the project, the project site does not contain areas of steep slopes and is not at risk of seismically induced landslides based on observations on site by Geocon in 2021. Therefore, impacts related to landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The proposed project would not result in long-term, operational impacts associated with soil erosion or loss of topsoil as the proposed project would mostly comprise at-grade and elevated boardwalk that would not contribute to soil erosion or the loss of topsoil. While 589 LF (or

about 28 percent of the proposed trail) would include a DG trail, existing drainage patterns would be maintained and no long-term operational soil erosion or the loss of topsoil is anticipated.

During construction, potential short-term erosion and sedimentation impacts would be addressed through compliance with applicable regulations as specified by the RWQCB, including compliance with the National Pollutant Discharge Elimination System (NPDES) and the adoption and implementation of a Water Pollution Control Plan (WPCP). The WPCP would incorporate BMPs in accordance with the California Stormwater Best Management Practices Handbook to control erosion and protect the quality of surface water runoff during project construction. Due to the proximity to nearby wetlands and the lagoon, the use of sediment controls to prevent off-site sediment transport would be employed, potentially including silt fencing, fiber rolls, and gravel bags and remedial measures to prevent erosion would be required in accordance with the Recommended Grading Specifications provided as Appendix C of the Geotechnical Report (Appendix D). Based upon compliance with the NPDES permit and implementation of a WPCP, construction impacts related to soil erosion would be less than significant.

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?

Less Than Significant Impact. The proposed project consists of an approximately one-half mile pedestrian path extension along the San Dieguito Lagoon. It would not result in the construction of habitable structures and as such, potentially significant impacts related to an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse are not anticipated as a result of the project. As such, impacts would be less than significant.

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?

Less Than Significant Impact. Expansive soils are fine-grained soils (generally high-plasticity clays) that can undergo a significant increase in volume with an increase in water content and a significant decrease in volume with a decrease in water content. Changes in the water content of an expansive soil can result in severe distress to structures constructed upon the soil. The Geotechnical Report concluded that a majority of the soil encountered is expected to possess a “very low” or “low” expansion potential and includes recommendations for soil preparation contained in the project-specific Geotechnical Report. Project impacts would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. No septic tanks or alternative wastewater disposal systems are proposed; therefore, no impacts would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. As summarized in the Geotechnical Report for the project, soils observed beneath the project alignment included artificial fill and Paralic Estuarine deposits. While not observed, Old Paralic deposits may be present near the ground surface in the southeastern part of the project alignment. Artificial fill was observed at the four hand auger borings completed along the project alignment at depths between four and five feet below the ground surface and Paralic Estuarine deposits

were encountered at two of the borings at a depth of four feet. While not observed, Old Paralic deposits and Torrey Sandstone are expected to occur beneath the Paralic Estuarine deposits. Fossils are not expected in artificial fill and are not typically found in Paralic Estuarine deposits, which are composed mostly of fine-grained sand and clay and are assumed to have a low paleontological sensitivity. Old Paralic deposits and Torrey Sandstone have the potential to contain fossils and are assigned high and moderate sensitivity ratings, respectively, by the County of San Diego's paleontological guidelines.

Construction of the DG trail portions of the project would involve some ground disturbance, but no extensive grading or excavation is anticipated. DG trail construction is expected to occur within artificial fill and may extend to Paralic Estuarine deposits; however, because fill soils are not paleontologically sensitive and Paralic Estuarine deposits have a low sensitivity for paleontological resources, DG trail construction is not expected to directly or indirectly destroy a unique paleontological resource. Construction of the at-grade and elevated boardwalk sections of the pathway would not involve grading or excavation of soils and would instead be constructed by installing foundations consisting of pre-made footings/pins. Each foundation would include a concrete head containing four pre-made footings/pins approximately 2.375 inches in diameter each. Foundation installation would be accomplished by extending the pre-made footings/pins contained within the concrete head either by hand or using a breaker/demolition hammer powered by a truck-mounted generator that would extend between 3.5 and 10.5 feet deep and may penetrate deeper Old Paralic deposits in the southeastern part of the project alignment. There is the potential for paleontological resources to occur where foundations are proposed; however, the pre-made footings/pins are relatively small and their installation is not anticipated to completely destroy a unique paleontological resource. Potential impacts on paleontological resources would be less than significant.

VIII. Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

The following discussion is based on the Air Quality/Greenhouse Gas Emissions Letter Report prepared by HELIX Environmental Planning, Inc. (HELIX 2021a), attached to this Initial Study as Appendix A.

Discussion

Climate change is a complex phenomenon that has the potential to alter local climatic patterns and meteorology. Increases in anthropogenic greenhouse gas (GHG) emissions have been unequivocally linked to recent warming and climate shifts (Intergovernmental Panel on Climate Change 2007). Although modeling indicates that climate change would result globally and regionally, there remains uncertainty with regard to characterizing the precise local climate characteristics and predicting

precisely how various ecological and social systems would react to any changes in the existing climate at the local level. Regardless of this uncertainty in precise predictions, it is widely understood that some degree of climate change is expected as a result of past and future GHG emissions. Greenhouse gases, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6).

There are no established federal, state, or local quantitative thresholds applicable to the project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, the SDAPCD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures. ln 2008, CAPCOA prepared a white paper (the CAPCOA white paper) that provided guidance on when a project would generate GHG emissions that may have a significant impact on the environment. ln that document, CAPCOA proposed a quantitative threshold of 900 metric tons of CO_2 equivalent (MT CO_2e) emissions as a threshold below which no significant impacts on the environment would be anticipated. For the proposed project, this is the most appropriate screening threshold for determining GHG emissions.

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

Less Than Significant Impact. Construction would result in GHG emissions generated by vehicle engine exhaust from construction equipment, haul trucks, and worker commuting trips. As described above under Section III, construction GHG emissions were calculated in the Air Quality/Greenhouse Gas Technical Report using CalEEMod (HELIX 2021a). The estimated construction GHG emissions for the project are shown in Table 7, *Construction Greenhouse Gas Emissions*. For construction emissions, SDAPCD recommends that the emissions be amortized (i.e., averaged) over the anticipated lifespan of the project (30 years) and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 3.21 MT CO_2e emissions per year.

Table 7
CONSTRUCTION GREENHOUSE GAS EMISSIONS

Source	Emissions (MT CO_2e)
Total Construction Emissions[1]	96.30
Amortized Construction Emissions	**3.21**

Source: CalEEMod
[1] Total may not sum due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

The project involves the extension of an existing trail alignment and would only generate emissions during construction in the near term. Therefore, no operational emissions would result from project implementation and no impact would occur. Overall, GHG impacts would be less than significant.

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

No Impact. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 would require further reductions of 40 percent below 1990 levels by 2030.

Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the low carbon fuel standard, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed.

As described above, the project would not result in significant GHG emissions. The project would not result in emissions that would adversely affect state-wide attainment of GHG emission reduction goals as described in AB 32 and SB 32. Emissions would therefore have a less than cumulatively considerable contribution to global climate change impacts, and the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No impact would occur.

IX. Hazards and Hazardous Materials

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 which 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) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. During the temporary, short-term construction period, there is the possibility of accidental release of hazardous substances such as spilling of hydraulic fluid or diesel fuel associated with construction equipment maintenance. The level of risk associated with the accidental release of these hazardous substances is not considered significant due to the small volume and low concentration of these hazardous materials. The construction contractor would be required to use standard construction controls and safety procedures to avoid or minimize the potential for accidental release of such substances into the environment. Once constructed, operations would consist of trail users walking along the project alignment and no routine transport, use, or disposal of hazardous materials would occur. Impacts would be less than significant.

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?

Less than Significant Impact. As discussed above in Item IX.a, the proposed project would not result in the introduction of new hazardous materials at the project site as project construction would involve typical construction equipment and operations would entail pedestrian trail users recreating along the proposed trail. No hazardous materials would be used during project operations and the release of hazardous materials is not anticipated to occur during construction activities. Impacts would be less than significant.

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

No Impact. There are no schools within one-quarter mile of the proposed project, and the closest school is about one mile south of the project site. Impacts related to the handling of acutely hazardous materials are not anticipated, and no impact would occur.

d) Be located on a site which 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?

No Impact. Pursuant to Government Code Section 65962.5 (Cortese List) requirements, the State Water Resource Control Board (SWRCB) GeoTracker database (SWRCB 2021) and the California Department of Toxic Substances Control (DTSC) EnviroStor database (DTSC 2021) were searched for hazardous materials sites within the project area. Based on a review of these databases, there were no open sites identified within or adjacent to the project site. As a result, the project site is not a listed hazardous materials site and would not create a significant hazard to the public or environment. No impact would occur.

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?

No Impact. The project site is not located within an airport land use plan or within two miles of a public or public use airport. The closest public airport is McClellan-Palomar Airport, approximately 11 miles north of the project site. Therefore, the project would not increase aircraft safety hazards and no safety

hazards associated with flight activity have been identified. Accordingly, the proposed project would not result in a safety hazard for people residing or working in the project area. No impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. Emergency response and evacuation is the responsibility of the police and fire service providers detailed in Section XV, Public Services. The proposed project would not impair or physically interfere with emergency response or evacuation. No changes to local roadways, such as San Dieguito Drive, would occur, and emergency access to the project site and surrounding residences would not be affected. Due to the proximity of the proposed project to San Dieguito Drive, it is anticipated that temporary lane closures and a Traffic Control Plan would be necessary during active work periods to lay down equipment and materials; however, vehicular access, including for emergency vehicles, would be maintained throughout construction. Impacts related to impairment of an emergency response or evacuation plan would be less than significant.

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

No Impact. The proposed project is in the northern part of the City along San Dieguito Drive and beside the San Dieguito Lagoon. Areas to the south and east of the project site are identified as within a "Very High Fire Hazard Severity Zone" as designed by the California Department of Forestry and Fire Protection (Cal Fire). The proposed project is anticipated to accommodate trail users of the existing Crest Canyon Trail and the River Path and would not involve the placement of structures. As such, extension of the trail would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impact would occur.

X. Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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?	☐	☐	■	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
	ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?	☐	☐	■	☐
	iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?	☐	☐	■	☐
	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?	☐	☐	■	☐

The following discussion is based on the Drainage Study prepared by Nasland Engineering (Nasland 2021), attached to this Initial Study as Appendix E.

Discussion

The Drainage Study describes existing hydrologic conditions at the project site and evaluates the proposed hydrologic condition with the project during a 100-year six-hour storm. Topography in the project vicinity slopes north and downward towards the Lagoon. Local drainage conditions are summarized in the Drainage Study as consisting of seven basins (mapped as Basins 1 through 7 in Appendix E) comprising 41.52 acres. Basins 1 and 2 include the project site as the other basins drain into existing storm drains that occur on the south side of San Dieguito Drive, outside the project limits. As such, local drainage across the project site is limited to an approximately 15.90-acre area of undeveloped land and roadway surface that drains to the Lagoon via two existing drainage outfalls (see Appendix E).

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact. The project site is located within the RWQCB San Diego Region Basin Plan (Basin Plan). Under Section 402 of the Clean Water Act, the RWQCB issues NPDES permits to regulate discharges to "waters of the nation," which include rivers, lakes, and their tributary waters. Waste discharges include discharges of stormwater and construction-related discharges. Potential impacts related to water quality could occur during construction when the potential for erosion, siltation, sedimentation, and accidental release of hazardous materials would be the greatest. Construction of the project would require limited vegetation clearing and minor grading and debris removal activities that could result in a temporary increase in erosion affecting the quality of storm water runoff. Implementation of a WPCP would be required under the NPDES Construction General Permit (NPDES No. CAS000002, Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100), administered by the RWQCB. The WPCP would include specific BMPs to avoid or reduce potential impacts related to the use and potential discharge of construction-related hazardous materials. The

construction contractor would be required to comply with the NPDES and WPCP requirements regarding the implementation of BMPs during construction. Compliance with these requirements would result in less than significant project impacts on water quality standards and waste discharge requirements. Furthermore, groundwater was not encountered during the hand auger borings conducted as part of the Geotechnical Report for the project but is assumed to be present at depths exceeding five feet. Construction of the proposed project would not involve degrading groundwater quality, which is expected to be brackish due to the proximity to the San Dieguito Lagoon. Therefore, impacts would be less than significant.

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

Less than Significant Impact. Implementation of the proposed project would not result in the use of groundwater. The project site is pervious and would continue to be so after project implementation, including the at-grade and elevated boardwalk surfaces which would allow for infiltration and are not considered to be impervious surfaces. As a result, the project would not result in a reduced capacity for groundwater recharge or generate significant runoff. No dewatering activities or groundwater would be required, and the proposed project would not result in the substantial depletion of groundwater supplies or substantially interfere with groundwater recharge. Impacts would be less than significant.

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?

Less than Significant Impact. The project would involve permeable elements including DG trail and boardwalk material on foundations and no increase in the amount of impervious surfaces would occur. Drainage patterns may change temporarily during construction; however, required BMPs prescribed in the WPCP would minimize on- and off-site erosion through temporary sediment control measures. Conformance with required BMPs would reduce potential impacts related to erosion and siltation during construction to less than significant. Since the project would not introduce impervious surfaces or change the existing drainage pattern of the site, changes related to runoff at and near the project site are not anticipated to result in substantial erosion or siltation. No operational BMPs would be required and drainage within the project site would continue to be provided by the two existing drainage outfalls. Impacts would be less than significant.

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

Less than Significant Impact. The proposed project would involve the construction of a DG trail and boardwalk (elevated and at-grade) that would not result in an increase in impermeable surfaces that could contribute to increased surface runoff. Drainage patterns would potentially be affected temporarily by construction activities; however, the WPCP would require implementation of specific BMPs to reduce drainage alteration impacts to less than significant. As shown below in Table 8, *Existing and Proposed Runoff Rates (100-year Storm)*, runoff would increase from 38.12 cfs under existing conditions to 38.87 cfs with the project. As a result, there would be a slight increase in runoff 0.25 cfs during a 100-year storm event once the project is constructed, or about 0.7 percent more than under existing conditions. An increase in runoff of 0.25 cfs, or 0.7 percent compared to existing conditions, is

considered negligible and would not result in a substantial increase in the rate or amount of surface runoff in a manner that would result in substantial flooding on- or off-site. Once construction is completed, no operational BMPs would be required and runoff would continue to be collected and discharged into the Lagoon at the two existing drainage outfalls.

Table 8
EXISTING AND PROPOSED RUNOFF RATES (100-YEAR STORM)

Basin	Tributary Area (acres)	Runoff Rate (cfs) Existing	Runoff Rate (cfs) Proposed	Change
1	0.54	1.29	1.36	0.07
2	15.36	36.83	37.01	0.18
TOTAL	**15.90**	**38.12**	**38.87**	**0.25**

Source: Nasland 2021

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

Less than Significant Impact. The proposed project would not 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. Additionally, the contractor would comply with NPDES and WPCP requirements and implement erosion and sedimentation control measures to minimize erosion. The Drainage Study calculated the proposed project would slightly increase the peak runoff coefficient of 0.25 cfs during a 100-year storm event. However, this overall increase of 0.7 percent is considered negligible and would not result in a substantial increase in runoff water. Impacts would be less than significant.

iv. Impede or redirect flood flows?

Less than Impact. The proposed project is located within Federal Emergency Management Agency (FEMA) 100-year Flood Zones AE and A, which means that the project site has an annual one percent chance of flooding on any given year (FEMA 2020). While flooding could occur on site, the proposed project would consist of a recreational trail comprised of open and permeable ground (DG trail) and boardwalk (both at-grade and elevated); however, the boardwalk material would be spaced to allow drainage and water would be able to pass through the proposed trail extension, either through the ground or boardwalk. Although the proposed project would include the extension of a trail into an area that experiences flooding, the proposed materials would not obstruct flood flows into the San Dieguito Lagoon. Therefore, impacts would be less than significant.

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

Less Than Significant Impact. The proposed project is within mapped tsunami and seiche inundation areas; however, as described in section IX(a), pollutants associated with construction equipment would not pose a substantial threat to the environment. Also, the project would be comprised of DG trail and boardwalk (at-grade and elevated) would not involve the introduction of pollutants or contribute to the release of pollutants. Therefore, while the project site is subject to inundation, construction and operation of the project would not result in the release of pollutants due to project inundation. Impacts would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The RWQCB is responsible for the adoption and implementation of water quality control plans, issuance of discharge permits, and performance of other functions in relation to regulating the region's water quality. The Water Quality Control Plan for the San Diego Basin (RWQCB 2016) identifies the project site as within the Rancho Santa Fe hydrologic subarea (HSA) of the Solana Beach hydrologic area of the San Dieguito hydrologic unit (905.11). Downstream receiving waters listed as impaired on the Section 303(d) List include the lower basin of the San Dieguito Lagoon (for toxicity) and the San Dieguito Lagoon Mouth at the Pacific Beach (for fecal indicator bacteria). Conformance with the Basin Plan water quality objectives would be demonstrated through compliance with applicable regulations and implementation of construction BMPs. Thus, the project would be consistent with the Basin Plan. In addition, the project would not adversely impact a groundwater management plan because the project would not impede groundwater replenishment and there are no sustainable groundwater management plans within the project vicinity (the nearest is located in San Pasqual Valley, approximately 17 miles east of the project). Therefore, as noted above, project implementation would not have the potential to result in significant adverse impacts to surface water and groundwater quality or otherwise conflict with the Basin Plan. Impacts would be less than significant.

XI. Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	■
b) Cause 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) Physically divide an established community?

No Impact. The proposed project is located along San Dieguito Drive beside the Lagoon. Access to and within the project area is currently restricted. With implementation of the project, residents and visitors would be able to walk through the project site and connect with the existing trail segment. As designated in the City's Community Pan, pedestrian access along the San Dieguito Lagoon is envisioned as a component part of the City's Scenic Loop Trail—a seven-mile hiking trail around the City's perimeter that is divided into seven key trail segments. The proposed extension would improve a portion of the San Dieguito segment of the Loop Trail. In addition, the proposed extension formally implements a portion of a designated future pedestrian accessway along the San Dieguito River/Lagoon as delineated in Figure IV-A of the City's LCP LUP. As such, the proposed project would enhance the connectivity of the area and would not physically divide an established community. No impact would occur.

b) Cause 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?

Less than Significant Impact. Land use plans, policies, and regulations in the City include the City's Community Plan and Municipal Code, as well as the City's LCP. The project site is designated Floodway and Lagoon in the City's Community Plan, is zoned FW and within the City's Lagoon Overlay Zone (L-OZ) in their Municipal Code and is also located within the coastal zone. Project approval would require consistency with the City's Community Plan, Municipal Code, and LCP. Permits to be issued by the City would also include a Conditional Use Permit (CUP) and Design Review Board Permit.

Del Mar Community Plan

The City's Community Plan designates the project site land use as Floodway/Lagoon Habitat. This designation is intended for areas subject to relatively deep and high velocity floodwater by prohibiting uses which would constitute an unreasonably, unnecessarily or undesirably dangerous impediment to the flow of floodwaters. No permanent or occupied structures shall be constructed. Open recreational uses, such as public parks, are permitted in accordance with the San Dieguito Lagoon Enhancement Plan. Furthermore, pedestrian access along the San Dieguito River and Lagoon is envisioned as a component part of the City's Scenic Loop Trail. The proposed project would extend a portion of the San Dieguito segment of the planned Loop Trail. The proposed project would be consistent with the City's Community Plan.

Del Mar Municipal Code

The City's Municipal Code Chapter 30.53 contains restrictions on development for areas within the Lagoon Overlay Zone with the purpose of protecting wetland resources of the San Dieguito and Los Peñasquitos Lagoons and their sensitive upland habitats. Specifically, all development activities are required to be designated and implemented in a manner that is consistent with wetland habitat protection and enhancement. Municipal Code Section 30.52.070 further requires that both a CUP and CDP be processed prior to improvement, excavation, grading, or vegetation clearing within the Lagoon Overlay Zone (L-OZ) and must include findings that demonstrate project consistency with the Lagoon Overlay Zone (L-OZ). Municipal Code Section 30.53.080 details permitted uses in City wetlands, which are restricted to aquaculture, scientific research, and wetland restoration. Further, these uses are allowed only when they would not involve "grading, filling, construction, or placement of structures within the boundaries of wetlands…" The proposed project would involve construction within City wetlands, which is not a permitted activity. While the project would not be consistent with the findings for the CUP, impacts on wetlands would be mitigated to a less than significant level through the implementation of an HMMP that would guide habitat restoration and reduce impacts to biological resources to less than significant.

Del Mar Local Coastal Program

The City has a certified LCP, which identifies sensitive coastal resources within its jurisdiction and is the primary planning document when considering coastal development in the City. A coastal development permit (CDP) would be required for project approval and both the City and the CCC have permitting authority over the project because the site is located within both permitting jurisdictions of the City and CCC. The City will consolidate the CDP application and the CCC would be responsible for approving a single consolidated CDP for the project.

The City's Local Coastal Program (LCP) identifies the project area as "wetland" in its Land Use Plan and within the "Lagoon Overlay Zone (L-OZ)" in its LCP Implementing Ordinances. The LCP Implementing Ordinances state that permitted uses in wetlands can include "scientific research, passive recreation and/or educational uses provided that they do not involve adverse impacts to the natural ecosystem." The project would not be consistent with the findings required for a CUP in the Lagoon Overlay Zone (L-OZ) as development of any kind is restricted within wetlands. However, a significant environmental impact on the Lagoon as a result of the inconsistency would not occur with the implementation of mitigation measures BIO-1 through BIO-7, which mitigate for impacts in the Lagoon. Therefore, the proposed project is a passive recreation use that will not result in unmitigated adverse impacts to the natural ecosystem.

Additionally, the proposed extension formally implements a portion of a designated future pedestrian accessway along the San Dieguito River/Lagoon as delineated in Figure IV-A of the City's LCP LUP. The proposed project improves pedestrian access opportunities by providing a trail alignment along the San Dieguito Lagoon to extend the River Path from the Grand Avenue Lookout to the Crest Canyon Trail. The proposed project includes uses allowed within the 100-foot lagoon buffer area pursuant to LCP Implementing Ordinances Section 30.53.090-Lagoon Overlay Zone and LCP LUP Chapter VI-Sensitive Lands, Section D-Wetland Preservation, including passive recreational access paths and viewpoints, the formalization of existing accessways/viewpoints, and improvements that enhance adjacent wetland areas. The proposed project is also consistent with several policies of LUP Chapter IV-Coastal Access, including:

- Policy IV-4 requiring cooperation with public ownership entities in the San Dieguito Lagoon to restrict uses to those consistent with public rights.

- Policy IV-5 requiring improvements along the San Dieguito River/Lagoon to ensure that natural systems are disturbed to the least extent possible; that such uses do not diminish resource values; that access is controlled and sited to minimize impact on wildlife and sensitive habitat areas; and that fencing and vegetated berming is provided between areas of human activity and sensitive habitat areas where applicable.

- Policy IV-6 requiring new accessways to minimize alteration of natural landforms, conform to existing contours, minimize erosion, and prevent misuse of environmentally sensitive areas.

- Policy IV-8 requiring access improvements to be no wider than necessary to accommodate the number and types of users that can reasonably be expected.

Conclusion

The proposed project would be consistent with the City's Community Plan as the path is identified as part of the City's Loop Trail. Project implementation would also satisfy several City policies related to access and protection of environmentally sensitive areas by incorporating boardwalk foundations consisting of pre-made footings/pins with a concrete head to minimize disturbances and also include the preparation of an HMMP to mitigate for impacts on wetland habitats. The project would also be consistent with the City's LCP as coastal access would be provided with the project. While the project would not be consistent with the findings for CUP in the Lagoon Overlay Zone (L-OZ) as development of any kind is restricted within wetlands, a significant environmental impact on the Lagoon as a result of the inconsistency would not occur with the implementation of mitigation measures BIO-1 through BIO-7, which mitigate for impacts on the Lagoon. With implementation of required mitigation related to

biological resources, impacts resulting from inconsistencies with the City's Lagoon Overlay Zone (L-OZ) would not result in significant impacts on the environment and land use impacts would be less than significant.

XII. Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) 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?

No Impact. The project site is not located within any known mineral resource zones as indicated the San Diego County Mineral Resource Zones map (County of San Diego 2009). As a result, implementation of the project would not result in the loss of availability of a known mineral resource. No impact would occur.

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?

No Impact. There are no known mineral resources on site as designated by a local general plan, specific plan, or other land use plan. As a result, implementation of the project would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

XIII. Noise

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 discussion below is based on the Acoustical Analysis Report prepared by HELIX Environmental Planning, Inc. (HELIX 2021b), attached to this Initial Study as Appendix F.

Discussion

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration.

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, such as sensitive habitat, residential dwellings, schools, transient lodging (hotels), hospitals, educational facilities, exterior recreational facilities, and libraries. Noise receptors are individual locations that may be affected by noise. The nearest NSLUs to the project site are the existing single-family residences located along San Dieguito Drive and Racetrack View Drive. These residences are located approximately 150 feet south of the project terminus. Land uses in the vicinity of the project site consist of residential uses to the west and south, and open space to the north and east.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (California Department of Transportation [Caltrans] 2013) are considered “vibration-sensitive.” The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses or schools. The nearest land uses in the project area that are subject to annoyance from vibration include the single-family residences along San Dieguito Drive and Racetrack View Drive. The nearest vibration-sensitive land uses are the residences located approximately 150 feet south of the project terminus.

The Acoustical Analysis Report prepared for the proposed project includes the results of a site visit and ambient noise survey conducted in the late morning and early afternoon of December 18, 2020 by HELIX. The primary ambient noise source in the project vicinity was documented to include traffic along nearby roadways, including I-5, San Dieguito Drive, and Racetrack View Drive. Three measurements were taken at the project site. The first measurement was taken at the northwestern terminus of the alignment near the Grand Avenue Overlook along the San Dieguito Lagoon. The second measurement was taken at the alignment midpoint along San Dieguito Drive, approximately 25 feet from the roadway centerline. The final measurement was taken at the southeastern terminus of the alignment near the existing residences. Noise levels observed ranged between 51.2 to 54.8 dBA L_{EQ}.

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?

Less Than Significant with Mitigation Incorporated. The project site is in an area near single-family residences and undeveloped areas of the San Dieguito Lagoon. The City's Municipal Code Section 9.20.050 prohibits construction activity before 7:00 a.m. or after 7:00 p.m. Monday through Friday, before 9:00 a.m. or after 7:00 p.m. on Saturday, and all day Sunday. Construction noise is also restricted from exceeding an hourly average sound level greater than 75 dBA L_{EQ} at residential properties. Further, if construction activities are scheduled to occur between February 15 and September 15, and results of the pre-construction protocol surveys identifies active bird nesting, noise from project construction activities would be reduced to less than significant with implementation of mitigation measure BIO-5.

Construction of the project would result in temporary increases in noise levels from operation of the construction equipment. Construction activities could temporarily produce elevated short-term noise levels that would potentially impact NSLUs. The construction phase would require one rubber-tire dozer, plate compactor and generator, and two tractors, loaders, or backhoes. All construction equipment would not be expected to be operating at the same time and would be along the project alignment and would therefore not remain at one distance from a NSLU during the day. The Acoustical Analysis Report conservatively assumed that the construction equipment would be in operation simultaneously and that the equipment would be in operation for 40 percent of an hour (or 24 minutes of an hour), with construction activities occurring as close as 150 feet to residences. At this distance, noise levels during the construction phase would not exceed 72.8 dBA L_{EQ}. Since general construction noise levels would not exceed 75 dBA L_{EQ} on property zoned or used for residential purposes, construction noise impacts to nearby residences would be less than significant. If construction activities are scheduled to occur between February 15 and September 15, and the results of the pre-construction protocol surveys identify active bird nesting, noise levels from construction could exceed 60 dBA L_{EQ} (one hour) and implementation of BIO-5 would be required to reduce noise levels to below significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. Construction activities known to generate excessive ground-borne vibration, such as pile driving or blasting, would not be conducted during project construction. At-grade and elevated boardwalk sections would be installed by construction workers either by hand or using a small portable hoister crane and would require the use of a breaker/demolition hammer powered by a truck-mounted generator which would not cause substantial groundborne vibration. Furthermore, the nearest vibration-sensitive land use, the single-family residences, are approximately 150 feet from the project. Therefore, given the intervening distance and lack of vibratory equipment, impacts associated with vibration at the nearest vibration sensitive land uses would be less than significant.

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?

No Impact. The project is not located within two miles of a public airport or a public use airport as the nearest public airport is the McClellan-Palomar Airport is located 11 miles north of the project site. The nearest private, or non-public airport is the Marine Corps Air Station Miramar, located approximately

nine miles to the southeast. At this distance, no effects related to airport noise would occur at the project site, and impacts would not occur.

XIV. Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) 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)?

No Impact. The proposed project would not result in the construction of any homes or businesses or extend roads; therefore, the proposed project would not directly or indirectly induce population growth. No impact would occur.

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

No Impact. The proposed project would not displace any housing or people and would not require the construction of replacement housing elsewhere. No impact would occur.

XV. Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
a) Fire protection?	☐	☐	■	☐
b) Police protection?	☐	☐	■	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Schools?	☐	☐	☐	■
d) Parks?	☐	☐	■	☐
e) Other public facilities?	☐	☐	☐	■

a) Fire protection?

Less Than Significant Impact. The project site is served by the Del Mar Fire Department (DMFD), which consists of one fire station located 0.60 mile north of the project site on the San Diego County Del Mar Fairgrounds at 2200 Jimmy Durante Boulevard. This fire station would continue to serve the project site as the primary responder and could respond in the event of an emergency. The responsibilities of the department include fire suppression and protection, emergency medical services, vehicle accidents, rescue, and hazardous material incident response. Personnel are comprised of nine full-time staff (three captains, three fire engineers, and three firefighters/paramedics). The Fire Department operates one front-line fire engine, one rescue unit, and a reserve fire engine (Del Mar 2020a). Existing emergency services provided by DMFD would continue to adequately serve the project site. Impacts would be less than significant.

b) Police protection?

Less Than Significant Impact. The San Diego County Sheriff's Department is the primary responder for police protection services to the project site. The City contracts with the Sheriff's Department for law enforcement services. Through contract with the Sheriff's Department, the City receives routine patrol of their streets by patrol and traffic deputies, crime prevention services, and a wide array of other law enforcement services. The proposed project is in the service area of the Sheriff's Department's North Coastal Station, located 5.8 miles north of the project site. The station serves nearly 60 square miles which includes the cities of Del Mar, Encinitas and Solana Beach, and the unincorporated communities of Rancho Santa Fe, Del Dios, Camp Pendleton and San Onofre (Del Mar 2020b).

The proposed project would result in the extension of an existing trail that would not increase the amount of visitors at the project site. It is expected that police protection would remain similar to current police services in the project area. Therefore, the proposed project would not result in an increased demand requiring the need for new or physically altered police protection facilities. Impacts would be less than significant.

c) Schools?

No Impact. The project site is within the boundary of the Del Mar Union School District (DMUSD). DMUSD schools within the project vicinity include the Del Mar Hills Elementary School located one mile south of the project site and Del Mar Heights Elementary School located approximately 1.2 miles south. There are no other public schools within two miles of the project site. Physical impacts on school facilities and services are usually associated with population in-migration and growth, which increase the demand for schools. The proposed project would have no effect on population growth or school

demand. Therefore, the proposed project would not result in an increased demand requiring the need for new or physically altered school facilities. As such, no impact would occur.

d) Parks?

Less Than Significant Impact. The project site does not contain any park lands. The closest park is Crest Canyon Park, an open space park located immediately south of the project site with a northern entrance from Racetrack View Drive. There are no facilities within Crest Canyon Park. The next closest park is Powerhouse Park, located 0.6 mile south and west of the project site at 1658 Coast Boulevard. Powerhouse Park offers beach access, chair and kitchen rental, a locker room, meeting rooms, restrooms, shower, and a tot lot (Del Mar 2015c).

The proposed project would not result in significant impacts on parks. Instead, the project would provide additional recreational space for the existing population. Physical impacts on parks are usually associated with population growth, which increases the demand for and use of parks. The proposed project would have no effect on population growth or trail users at the project site. While additional employees during construction are anticipated, they are not expected to use existing neighborhood or regional parks or other park facilities to a degree that would constitute the need for new or altered park facilities. Therefore, the proposed project would not result in an increased demand requiring the need for new or physically altered park facilities and related impacts would be less than significant.

e) Other public facilities?

No Impact. The proposed project would not result in adverse impacts on other public facilities. As discussed above, physical impacts on public services are usually associated with population growth, which increases the demand for public services and facilities. The proposed project would not increase the local population. While additional employees during construction are anticipated, they are not expected to increase the use of existing public facilities. Instead, the project would provide additional recreational space for the existing population. Therefore, the proposed project would not result in an increased demand requiring the need for new or physically altered public facilities. No impact would occur.

XVI. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) 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) 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?

Less Than Significant Impact. An increase in the use of existing parks and recreational facilities typically results from an increase in housing or population in an area. The project would not result in an increase in housing or residents in the project vicinity. Instead, the project would provide additional recreational space for the existing population. Therefore, impacts would be less than significant.

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?

Less Than Significant Impact. The project would provide additional recreational amenities. No construction of structures or facilities other than the proposed trail would be required. In addition, and as described in XVI.a, the project would not result in impacts or otherwise require expansion of existing recreational facilities. Therefore, the proposed project would not require the construction or expansion of other recreational facilities that might have an adverse physical effect on the environment. As a result, impacts on recreation would be less than significant.

XVII. Transportation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	■	☐
b) Would the project 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?	☐	☐	■	☐

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

Less Than Significant Impact. The proposed project is located along San Dieguito Drive, a narrow and curving two-lane roadway situated at the base of slopes extending further south. San Dieguito Drive along the project site is primarily used for access to residential properties and there are no outlets for motorists headed southeast. Because of the local serving nature of the roadway, there are no transit or bicycle facilities along San Dieguito Drive or in the project vicinity. Pedestrian amenities include the existing portions of the River Path, northwest of the Grand Avenue Lookout until Camino del Mar, and the Crest Canyon Trail in the City of San Diego, about 165 feet southeast of the southeastern terminus of the proposed project.

Public bus service in the City is operated by the North County Transit District (NCTD) and is referred to locally as "The Breeze." NCTD provides bus routes connecting the City to other cities, including Vista, Oceanside, Fallbrook, Carlsbad, Encinitas, and Escondido. NCTD currently operates two fixed bus services routes that provide access to and from the City, including routes 101 and 308. Route 101 provides a link from the University Town Center shopping mall in University City to the transit center in Oceanside and the nearest stop to the project site is at Camino del Mar and 15th Street, west of the project, and about a 1.1 mile walk from the project site. Route 308 provides a connection between the Solana Beach Town Centre and the transit center in Escondido. The nearest stop along Route 308 is along Via de la Valle at the Flower Hill Mall, northeast of the project, and is about a 1.7-mile walk from the project site.

Project construction would occur along San Dieguito Drive and temporary lane closures may be necessary during active work periods for worker safety and/or to accommodate equipment materials as they are loaded from crew trucks and onto the project site for installation. Traffic control measures would be included within a Traffic Control Plan to be required and approved by the City to maintain continuous access along San Dieguito Drive during construction for motorists, pedestrians, and bicyclists. The existing portions of the River Path would not be affected by project construction and would remain available to trail users. Furthermore, due to distance and the localized nature of the construction activities, no impacts to the local transit system along Camino del Mar or Via de la Valle are anticipated.

Once the project is constructed, the project would include a new section of trail connecting the River Path to the Crest Canyon Trail. While completion of the project would result in expanded trail access, it is anticipated that the trail would accommodate existing trail users and would not generate additional user trips beyond existing conditions. Therefore, the project would not conflict with existing plans, ordinances, or policies addressing the circulation system. Impacts would be less than significant.

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

Less Than Significant Impact. The proposed project would involve the extension of the City's River Path to accommodate existing trail users of the River Path in the City and the Crest to Canyon Trail in the City of San Diego. No additional trail users and no additional traffic trips are anticipated to result upon project implementation. CEQA Guidelines section 15064.3, subdivision (b) provides criteria to evaluate a project's potential impact on transportation and traffic depending on the type of project. For transportation projects that reduce or have no impact on vehicle miles (meaning there is no increase in demand for additional trips to be generated), CEQA Guidelines section 15064.3 suggests that these impacts be concluded to cause a less than significant impact. As a result, impacts related to conflicts or inconsistencies with CEQA Guidelines section 15064.3, subdivision (b) would be less than significant.

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

Less than Significant Impact. San Dieguito Drive currently contains sharp curves and is a narrow roadway along the San Dieguito Lagoon. The proposed project would occur adjacent to the roadway and existing guard rails would be protected in place between the roadway and the project site. During construction, when construction workers and related equipment need to temporarily occupy part of the roadway to construct the trail, a Traffic Control Plan would be required and the City would oversee its implementation so that roadway safety is maintained during construction. Once constructed,

pedestrians would have a formal trail to use instead of walking within the right-of-way of San Dieguito Drive, which would increase pedestrian safety and provide for a compatibility between pedestrians/recreationalists and motorists. Impacts would be less than significant.

The proposed project would involve the development of a trail along the San Dieguito Lagoon and would not increase hazards related to transportation and traffic. No changes to the local circulation network, including a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), are proposed. Therefore, no impact would occur.

d) Result in inadequate emergency access?

Less than Significant Impact. Emergency access to the site would be provided during construction via San Dieguito Drive through implementation of the Traffic Control Plan. Implementation of the proposed project would not involve changes to existing circulation facilities and no impacts are anticipated.

XVIII. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) 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:				
i. 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	☐	■	☐	☐
ii. 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.	☐	■	☐	☐

a) 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:

i. 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)?

ii. 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?

Less Than Significant Impact with Mitigation Incorporated.

AB 52 notices went out via certified mail on July 27, 2021 to 14 nearby tribes, giving 30 days for the tribes to reply. The 30-day period ended on August 26, 2021. After the 30-day period ended, one request to initiate consultation was received from the Jamul Indian Village. The City responded to the consultation request but no response by the tribe has been received and no formal consultation has occurred to-date.

HELIX contacted the NAHC on May 5, 2020 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated May 13, 2020 that no known sacred lands or Native American cultural resources are within the project area, but the San Pasqual Band of Mission Indians have indicated that the project lies within the boundaries of the territory that the tribe considers its Traditional Use Area and recommended archaeological monitoring pending the results of surveys and records searches associated with the project.

Due to the sensitivity of the project vicinity and the potential for buried cultural resources, project construction would have the potential to result in a significant impact to a tribal cultural resource (Impact CUL-1). An archaeological and Native American monitoring program would be implemented as mitigation measure CUL-1. Implementation CUL-1 will reduce this impact to less than significant.

CUL-1 A qualified archaeologist meeting the United States Secretary of the Interior's Professional Qualifications for prehistoric and historic archaeology and a Kumeyaay Native American monitor shall be retained to conduct a cultural resources monitoring program. The monitoring program shall include attendance by the archaeologist and Native American monitor at a pre-construction meeting with the construction contractor and the presence of an archaeological and Native American monitor during initial ground disturbance for the project. If it is determined by the archaeologist and Native American monitor that past grading and other disturbances have removed soils with a reasonable potential for containing cultural material, monitoring can be reduced and recommence when the ground-disturbing activities continue in native soil. If cultural material is encountered, the archaeologist and the Native American monitor shall have the authority to temporarily halt or redirect trenching and other ground-disturbing activity while the cultural material is documented and assessed. If a cultural resource is determined to be significant, the archaeologist and Native American monitor shall coordinate with the City staff to develop and implement appropriate treatment measures. Artifacts collected (if any) shall be cataloged, analyzed, and curated with accompanying catalog to current professional repository standards and transferred to an appropriate curating facility within San Diego County. Alternatively, artifacts may be returned to the consulting tribe for

reburial or for curation at a tribal facility. A report shall be completed by the qualified archaeologist describing the methods and results of the monitoring program.

XIX. Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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) 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?

No Impact. The proposed project would involve minor grading and debris removal along the path alignment in upland areas and the installation of pre-made footings/pins with a concrete head to support the elevated trail deck structure. No utilities in the project area would be affected by the proposed project and existing aboveground electric utility lines and power poles would remain as they are under existing conditions. In addition, the proposed project would not generate wastewater. During site preparation activities, a portable toilet may be provided for use during the construction period. The toilet would be hauled away and the waste disposed of at an approved facility in accordance with solid waste laws. As such, the project would not require or result in relocation or construction of additional utilities. No impact would occur.

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

No Impact. The proposed project consists of a quarter-mile long trail extension and would not involve or require water supplies. Therefore, no impact would occur.

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?

No Impact. The proposed trail extension would not generate additional wastewater and no associated facilities are included. Therefore, the proposed project would not result in inadequate capacity for the existing wastewater treatment provider. As such, no impact would occur.

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?

Less Than Significant Impact. Solid waste generated by the proposed project would include the generation of minimal construction materials waste and some vegetation to prepare the site for construction and during periodic maintenance of the trail. The vegetation trimmings would be composted on site (as feasible) or hauled off site to an appropriate facility among one of nine greenwaste facilities in San Diego County. Therefore, the proposed project would have a less-than-significant impact related to solid waste.

XX. Wildfire

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐
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?	☐	☐	■	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. The County of San Diego Emergency Operations Plan, Annex Q: Evacuation, was last updated in September 2018 and identifies I-5 as the primary regional evacuation route for San Diego county and identifies Jimmy Durante Boulevard as a primary evacuation route for the City. Jimmy Durante Boulevard connects the City to I-5 by way of Via de la Valle, north of the project site. The proposed project would occur along San Dieguito Drive, southeast of Jimmy Durante Boulevard involving a four-month period to construct the proposed trail extension. No construction activities would occur near or within Jimmy Durante Boulevard or I-5 due to distance, and impacts related to the substantial impairment to the adopted County of San Diego Operations Plan, Annex Q: Evacuation would be less than significant.

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?

Less than Significant Impact. The City is subject to both wildland and urban fires due to its climate, topography, and native vegetation. The extended droughts characteristic of the region's Mediterranean climate and increasingly severe dry periods associated with global warming result in large areas of dry native vegetation that provide fuel for wildland fires. State law requires that all local jurisdictions identify Very High Fire Hazard Severity Zones (VHFHSZs) within their areas of responsibility (California Government Code Sections 51175–51189). Inclusion within these zones is based on vegetation density, slope severity, and other relevant factors that contribute to fire severity.

The project site is not located within a state responsibility area; however, San Dieguito Drive and areas south along the Crest Canyon Trail are identified as within a Very High Fire Hazard Severity Zone (VHFHSZ) according to the maps prepared under the Fire and Resource Assessment Program (FRAP; CAL FIRE 2020). The proposed project would not contribute the exacerbation of fire risk as the project would not result in additional trail users and would not include habitable structures or other development that would result in exacerbating wildfire risk or exposure. As a result, project implementation would not exacerbate wildlife risk, and impacts would be less than significant.

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?

Less than Significant Impact. The proposed project consists of an extension of the existing River Path and would complete the City's Loop Trail. There are no other associated future phases with the

proposed project the project would not require the installation of associated infrastructure that would exacerbate fire risk. Impacts would be less than significant.

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?

Less than Significant Impact. The proposed project would not result in the addition of people or structures and while the project is located adjacent to a VHFHSZ, project implementation would not increase exposure to risks associated with post-fire slope instability or drainage changes. As such, impacts would be less than significant.

XXI. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	■	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present, and 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?

Less than Significant with Mitigation Incorporated. As described under IS/MND Section IV, *Biological Resources*, and Section V, *Cultural Resources*, the proposed project has the potential to impact wildlife and California prehistory; however, impacts would be reduced to less than significant with the incorporation of mitigation measures. Specifically, the proposed project has the potential to result in significant impacts on special status plant species (i.e., Nuttall's lotus, Southern tarplant, and Orcutt's pincushion), special-status animal species (i.e., Belding's savannah sparrow, coastal California

gnatcatcher, light-footed Ridgway's rail; and least Bell's vireo), migratory birds, vegetation communities (i.e., coastal brackish marsh, Diegan coastal sage scrub, southern coastal bluff scrub, southern willow scrub), and potential wetland waters of the U.S./State. Potential impacts on major periods of California prehistory were identified due to the sensitivity of the project site for buried cultural resources. These impacts to biological and cultural resources were determined to be less than significant with incorporation of mitigation measures BIO-1 through BIO-7 and mitigation measure CUL-1, respectively. Similarly, impacts related to the potential for the project to substantially degrade the quality of the environment would be reduced through the implementation of mitigation measures. Impacts would be reduced to less than significant.

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

Less Than Significant Impact. The proposed project would not result in increases in trail users or other operational increases and would accommodate existing trail users from the River Path and Crest Canyon Trail. As a result, potential cumulatively considerable impacts would include construction-related effects during the four-month construction period that are in close proximity to the project (about 0.25 mile), as well as permanent impacts to biological and cultural resources. The project is in an area that is essentially built out and located along a narrow roadway between the San Dieguito Lagoon to the north and hillsides to the south. Areas east and west of the project site are similarly constrained or built out. A multi-family residential project at the southeastern corner of the intersection of San Dieguito Drive and Jimmy Durante Boulevard (about 0.20 mile northwest of the Grand Avenue Bridge) has been proposed since September 2017 and construction details are unavailable at the time this document was prepared. There are no other projects or construction activities occurring within 0.25 mile of the project. Because construction timing for the proposed multi-family development project at San Dieguito Drive and Jimmy Durante Boulevard is unknown, the project's impacts would be limited to during construction and would not be cumulatively considerable when the effects of past, present, and probably future projects are considered. Impacts would remain less than significant.

Permanent impacts on biological and cultural resources are discussed in Section IV, *Biological Resources*, and Section V, *Cultural Resources*, respectively, and direct project impacts were concluded to be reduced to less than significant with mitigation incorporated. Past projects in the vicinity of the project have had less than cumulatively considerable impacts on biological and cultural resources, such as the construction of San Dieguito Drive adjacent to the project site and commercial development near the lagoon, and present and future projects are and would continue to be subject to the City's and the Resource Agencies' requirements for the protection of biological and cultural resources. As a result, the contribution of the project's less than significant impacts with mitigation on biological and cultural resources would not be cumulatively considerable.

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

Less than Significant Impact. The proposed project would cause an increase in ambient noise levels during construction; however, impacts would be temporary and less than significant. The temporarily increased noise levels would not cause substantial adverse impacts on human beings due to distance from sensitive human receptors (i.e., residences). As a result, the project is not anticipated to have a substantial adverse effect on human beings, either indirectly or directly and impacts would remain less than significant.

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4.0 Preparers

Yara Fisher, Principal Planner
Brendan Sullivan, Environmental Planner
Rebecca Kress, Graphics
Ana Topete, Document Processing

IS/MND Appendix A

Air Quality and Greenhouse Gas Emissions Letter Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

March 26, 2021 CDM-02.03

Mr. Joe Bride
City of Del Mar
Public Works Department
2240 Jimmy Durante Boulevard
Del Mar, CA 92014

Subject: **Air Quality and Greenhouse Gas Emissions Letter Report for the River Path Del Mar Phase III Extension Project**

Dear Mr. Bride:

HELIX Environmental Planning, Inc. (HELIX) has assessed air quality and greenhouse gas (GHG) emission impacts associated with the construction of the proposed River Path Del Mar Phase III Extension Project (project). This letter report summarizes the findings of the air quality and GHG emissions assessment.

PROJECT LOCATION

The proposed project is located in the City of Del Mar (City) in southwestern San Diego County (County). The project is located within the southeast quarter of Section 11 of Township 14 South, Range 4 West, on the U.S. Geological Survey (USGS) 7.5' Del Mar quadrangle. The project is situated in the northern part of the City, south of the Del Mar Fairgrounds and west of Interstate 5 (I-5). The project site is in close proximity to San Dieguito Lagoon, River Path Del Mar (completed Phases I and II), Crest Canyon Trail, Coast to Crest Trail, and Grand Avenue Lookout.

The proposed project involves the Phase III extension of the River Path Del Mar (River Path) pedestrian trail in the City along the southern edge of San Dieguito Lagoon. Phases I and II are completed, with Phase I extending northwest of Jimmy Durante Boulevard and Phase II extending southeast of Jimmy Durante Boulevard. Combined, the River Path is generally oriented in a northwest to southeast direction along the San Dieguito Lagoon between the railroad tracks near Camino Del Mar and the Lagoon Viewpoint at the Old Grand Avenue Bridge (Grand Avenue Lookout). The River Path provides views of the water and includes informational signage regarding the importance of wetlands and natural resources. The proposed project would complete the River Path by extending the trail southeast of the Grand Avenue Lookout for approximately one-half mile until termination at the City limits near the Crest Canyon Trail.

PROJECT DESCRIPTION

The project consists of an approximately one-half mile pedestrian extension of the River Path along the San Dieguito Lagoon. The proposed extension would connect to existing trail segments and improve a portion of the San Dieguito segment of the City's Loop Trail. The project includes a single, five-foot wide decomposed granite (DG) trail and six-foot wide boardwalk (both at-grade and elevated) path alignment along the San Dieguito Lagoon to extend the River Path from the Grand Avenue Lookout to near the Crest Canyon Trail. The trail extension would extend a total of 2,164 linear feet (LF) and would primarily be comprised of an elevated boardwalk (1,283 LF), or about 60 percent of the proposed trail. About 94 LF (or about 4 percent of the proposed trail) would include boardwalk decking at grade and about 787 LF (or about 36 percent of the proposed trail) would include a DG trail. The three types are described in detail below:

- **DG Trail**. The two DG trail sections of the River Path would include a five-foot wide pathway constructed with three inches of compacted and stabilized DG material. Each side of the trail would include plastic and wood stakes drilled down approximately 18 inches beneath the ground with a gopher screen between the ground level and DG trail. The surface of the DG trail would be edged with recycled plastic lumber on both sides. Construction would be similar to the Phase II DG trail.

- **At-Grade Boardwalk**. Three at-grade boardwalks are proposed to transition to and from the DG trail to the elevated boardwalk and would involve a 6-foot wide pathway constructed of composite decking material with pre-made footings/pins associated with the foundations spaced about 46 inches apart. The boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (1/2-inch maximum) to allow for adequate drainage and indirect sunlight to penetrate to areas below the boardwalk portions of the project. Foundation footings would extend between 3.5 and 10.5 feet beneath the ground surface.

- **Elevated Boardwalk**. Most of the proposed trail would comprise an elevated boardwalk near the edge of the San Dieguito Lagoon. The elevated boardwalk would include a 6-foot wide pathway and would be constructed with the same composite decking material and pre-made footings/pins as the at-grade boardwalk. The elevated boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking would be spaced to allow for drainage and sunlight to penetrate the elevated boardwalk portions of the project. Elevated boardwalk sections would also include a cable/post fence railing along the San Dieguito Lagoon constructed of 10-inch wide and 60-inch tall redwood cable post fencing with horizontal cable wires for safety. The fence posts would be drilled approximately 28 inches into the ground with concrete foundations.

The proposed project would involve minor grading and debris removal along the path alignment in upland areas and the installation of pre-made footings/pins with a concrete head to support the deck structure without the need for excavation within, and adjacent to, wetland areas in the San Dieguito Lagoon. No utilities in the project area would be affected by the proposed project, and existing aboveground electric utility lines and power poles would remain as they are under existing conditions. Construction is anticipated to begin in 2023 for a duration of approximately four months. Following

construction of the project, the City would oversee perpetual management of the Phase III extension of the River Path in conjunction with Phases I and II.

AIR QUALITY

Regulatory Framework

The project site is located in the San Diego Air Basin (SDAB). The San Diego Air Pollution Control District (SDAPCD) is responsible for implementing emissions standards and other requirements of federal and state laws in the SDAB. As required by the California Clean Air Act, SDAPCD has published various air quality planning documents to address requirements to bring the District into compliance with the federal and state ambient air quality standards. The SDAPCD has prepared an Attainment Plan for San Diego County (Attainment Plan), demonstrating how the region will further reduce air pollutant emissions in order to attain the current National Ambient Air Quality Standards for ozone in the future. Approved by the SDAPCD Board on October 14, 2020, this Attainment Plan was then approved by the California Air Resources Board (CARB) on November 19, 2020. The plan has been submitted to the U.S. Environmental Protection Agency (USEPA) as a revision to the California State Implementation Plan (SIP) for attaining the ozone standards.

Ambient air quality is described in terms of compliance with state and national standards and the levels of air pollutant concentrations considered safe to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. The USEPA, the federal agency that administrates the Federal Clean Air Act of 1970, as amended in 1990, has established national ambient air quality standards (NAAQS) for several air pollution constituents known as criteria pollutants, including: ozone (O_3); carbon monoxide (CO); coarse particulate matter (PM_{10}; particles 10 microns or less) and fine particulate matter ($PM_{2.5}$; particle 2.5 microns or less); sulfur dioxide (SO_2); and lead (Pb). As permitted by the Clean Air Act, California has adopted the more stringent California Ambient Air Quality Standards (CAAQS) and expanded the number of regulated air constituents. Ground-level ozone is not emitted directly into the environment but is generated from complex chemical and photochemical reactions between precursor pollutants, primarily reactive organic gases (ROGs; also known as volatile organic compounds [VOCs]),[1] and oxides of nitrogen (NO_X). PM_{10} and $PM_{2.5}$ are generated from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. In addition, PM_{10} and $PM_{2.5}$ can also be formed through chemical and photochemical reactions of precursor pollutants in the atmosphere.

CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for the ambient air quality standards. An “attainment” designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once. The air quality attainment status of the SDAB is shown in Table 1, *San Diego Air Basin – Attainment Status*.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Table 1
SAN DIEGO AIR BASIN – ATTAINMENT STATUS

Pollutant	Federal Designation	State Designation
Ozone (1-hour)	No Federal Standard	Nonattainment
Ozone (8-hour)	Moderate Nonattainment	Nonattainment
Suspended Particulate Matter (PM_{10})	Unclassified	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: SDAPCD 2020 and USEPA 2020

The SDAB is currently in nonattainment for federal and/or state ozone, PM_{10}, and $PM_{2.5}$ standards. Concentrations of all other pollutants meet state and federal standards.

The SDAPCD attains and maintains air quality conditions in San Diego County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SDAPCD includes the preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources.

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2018). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a significant impact on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2018).

Sensitive Receptors

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005, OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The project site is located within an undeveloped area in the San Dieguito Lagoon Floodway (FW) and Lagoon Overlay Zone (L-OZ). Areas to the northwest include commercial development and existing portions of the River Path. Areas to the south and southwest include hillsides associated with single-family residences. Areas east of the project site include several single-family residences and the I-5 corridor, which occurs about one-half mile east of the proposed River Path extension. The closest existing sensitive receptors to the project site are single-family residences approximately 150 feet to the south. The closest school (with students under 14 years of age) to the project site is the Del Mar Montessori School, located approximately one mile to the south.

PROJECT CONSTRUCTION METHODOLOGY AND ASSUMPTIONS

Construction activities would occur over an approximately four-month period and are anticipated to begin as early as September 2023 and end in January 2024. Construction activities would involve site preparation, minor grading and debris removal, and pathway construction that would occur consecutively. It was assumed that the project could generate up to 100 cubic yards (CY) of total export material during both the site preparation and grading phases. As noted above, pathway construction would involve a DG trail, at-grade boardwalk, and elevated boardwalk. For the DG trail segments (about 787 LF), construction equipment would consist of motorized construction machinery including a rubber-tired dozer, tractor, compactor, and backhoe. At-grade and elevated boardwalk sections would be constructed using foundations, which would include pre-made footings with a concrete head to support the elevated structure without the need for excavation. These foundations would be placed by construction workers either by hand or using a small portable hoister crane and installed using a breaker/demolition hammer powered by a truck-mounted generator. Foundations would be spaced every 5 feet on center and would total up to about 600 individual foundations. Trucks are anticipated to be used to deliver construction materials, such as decking and DG, to the project site and construction workers would arrive to the project site in a truck or personal vehicle. Construction staging and laydown areas would utilize the City Public Works Yard, located about one-third mile west of the proposed River Path extension, just west of the intersection of Jimmy Durante Boulevard and San Dieguito Drive. Existing parking at the Grand Avenue Overlook would remain open and available for public users throughout the project construction period.

The project's construction emissions were calculated using the California Air Pollution Control Officers Association's (CAPCOA) California Emissions Estimator Model (CalEEMod) emissions inventory model. Detailed construction assumptions and CalEEMod inputs and outputs are provided in Appendix A. Project-specific input was based on general project information, assumptions provided by the project engineers, and default model settings to estimate reasonably conservative conditions. Construction of the proposed project would result in temporary increases in air pollutant and dust emissions generated

primarily from construction equipment exhaust, earth disturbance/grading, and construction worker vehicle trips. The project would not result in operational emissions. Table 2, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 2
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Phase	Equipment	Number	Horsepower
Site Preparation	Grader	1	187
	Tractor/Loader/Backhoe	1	97
Grading/Debris Removal	Rubber-tired Dozer	1	247
	Plate Compactor	1	8
	Tractors/Loaders/Backhoes	2	97
Construction	Rubber-tired Dozer	1	247
	Plate Compactor	1	8
	Generator	1	84
	Tractors/Loaders/Backhoes	2	97

Source: CalEEMod

SIGNIFICANCE CRITERIA

The following significance thresholds are based on Appendix G of the state CEQA Guidelines. A significant impact is identified if the project would result in any of the following:

1. Conflict with or obstruct implementation of the applicable air quality plan;

2. 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;

3. Expose sensitive receptors to substantial pollutant concentrations;

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and ROG), project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIAs). In the absence of a SDAPCD adopted threshold for $PM_{2.5}$, the South Coast Air Quality Management District's (SCAQMD's) screening threshold of 55 pounds per day or 10 tons per year is used.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 3, *Screening-level Thresholds for Air Quality Impact Analyses*.

Table 3
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSES

Pollutant	Total Emissions		
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Reactive Organic Gases (ROGs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Reactive Organic Gases (ROGs)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: SDAPCD Rule 20.2 and Rule 1210
T-BACT = Toxics-Best Available Control Technology

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

Project Air Quality Analysis

(1) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the Attainment Plan and SIP, prepared by the SDAPCD for the region. Both the Attainment Plan and SIP are based on San Diego Association of Governments (SANDAG) population projections, as well as land use designations and population projections included in general plans for those communities located within the County. Population growth is typically associated with the construction of residential units or large employment centers.

A project would be inconsistent with the Attainment Plan/SIP if it results in population and/or employment growth that exceed growth estimates for the area. The purpose of the project is to complete an existing trail by extending the alignment along San Dieguito Lagoon and to provide additional recreational opportunities for existing residents. Achieving these goals would not result in population growth beyond estimates for the area. In addition, construction and maintenance jobs for construction and operation of the project would likely recruit from the local pool of labor and would not create conditions for employment growth that exceeds growth estimates for the area.

Because the project would not generate population and employment growth beyond the levels assumed for the region, the project would not conflict with population projections for the region and would, therefore, be consistent with the Attainment Plan/SIP. In addition, the project would comply with all existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction. Therefore, the project would not conflict with the applicable air quality attainment plan, and no impacts to regional air quality would occur.

(2) 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?

Construction Emissions

Less than Significant Impact. Construction of the project would result in temporary increases in air pollutant emissions generated primarily from construction equipment exhaust, earth disturbance, construction worker vehicle trips, and truck trips. Once construction activity is complete, there would be negligible long-term emissions associated with maintenance of the trail alignment. Therefore, operational emissions were not modeled.

The analysis assumes that total construction duration would be approximately four months. For purposes of calculating emissions, construction is divided into the following types of activities: site preparation, grading/debris removal, and construction. Sources of construction emissions include off-road diesel equipment exhaust, construction worker commuting and hauling vehicle exhaust, and fugitive dust from land clearing. Table 2, *Construction Equipment Assumptions*, listed above, presents the type and amount of construction equipment and vehicles that would be used during each type of construction activity for the project. A complete listing of the assumptions used in the analysis and the model outputs are provided in Attachment A. The results of the calculations for project construction are shown in Table 4, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SDAPCD thresholds.

Table 4
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Activity	ROG*	NO_X*	CO*	SO_X*	PM_{10}*	$PM_{2.5}$*
Maximum Daily Emissions	1.32	13.08	11.44	0.02	0.64	0.56
SDAPCD Threshold	**75**	**250**	**550**	**250**	**100**	**55**
Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

Source: Attachment A
*Pollutant Emissions (pounds per day)
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 4, emissions of all criteria pollutants related to project construction would be below the SDAPCD's significance thresholds. Therefore, direct impacts from criteria pollutants generated during construction would be less than significant.

Operational Emissions

Less than Significant Impact. Once construction activity is complete, there would be negligible long-term emissions associated with maintenance of the trail alignment. The project would not involve operational components that would result in criteria air pollutant emissions. Therefore, operation emissions would be negligible and less than significant.

(3) Expose sensitive receptors to substantial pollutant concentrations?

Construction

Less than Significant Impact. Construction activities would result in short-term, project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, Health Risk Assessments (HRAs), which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project.

There would be relatively few pieces of off-road, heavy-duty diesel equipment used during construction, and the construction period would be relatively short, especially when compared to 30 years. Combined with the highly dispersive properties of diesel PM and additional reductions in exhaust emissions from improved equipment, construction-related emissions would not expose sensitive receptors to substantial emissions of diesel PM. In summary, impacts from construction emissions of TACs would be less than significant.

Operation

No Impact. As the proposed project would involve the development of trail, project operation would not introduce new sources of TACs. Therefore, no impacts from operational emissions of TACs would occur.

(4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact. As discussed above, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. An unreasonable odor discernible at the property line of the project site would be considered a significant odor impact.

The project could produce odors during proposed construction activities resulting from construction equipment exhaust; however, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, any odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

No odor-producing sources would be present during operation, and no impacts would occur.

GREENHOUSE GAS EMISSIONS

Regulatory Framework

Greenhouse gases, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). AB 32, the California Global Warming Solutions Act of 2006, recognizes that California is a source of substantial amounts of GHG emissions. The statute states that:

> *Global warming poses a serious threat to the economic wellbeing, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

In order to help avert these potential consequences, AB 32 established a State goal of reducing GHG emissions to 1990 levels by the year 2020, which is a reduction of approximately 16 percent from forecasted emission levels, with further reductions to follow. In addition, AB 32 required CARB to develop a Scoping Plan to help the State achieve the targeted GHG emission reductions. In 2015, Executive Order (EO) B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. As a follow-up to AB 32 and in response to EO-B-30-15, Senate Bill (SB) 32 was passed by the California legislature in 2016 to codify the EO's California GHG emission reduction target of 40 percent below 1990 levels by 2030. The most recent update to the Scoping Plan was adopted in December 2017 and establishes a proposed framework for California to meet the EO-B-30-15 reduction target (CARB 2017).

Significance Criteria

Given the relatively small levels of emissions generated by a typical development project, in relation to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions

from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG emissions impact is limited to cumulative impacts.

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact if it would:

(1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

There are no established federal, state, or local quantitative thresholds applicable to the project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, the SDAPCD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures. ln 2008, CAPCOA prepared a white paper (the CAPCOA white paper) that provided guidance on when a project would generate GHG emissions that may have a significant impact on the environment. ln that document, CAPCOA proposed a quantitative threshold of 900 metric tons of CO_2 equivalent (MT CO_2e) emissions as a threshold below which no significant impacts on the environment would be anticipated. For the proposed project, this is the most appropriate screening threshold for determining GHG emissions.

Project Greenhouse Gas Emissions Analysis

(1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. Construction would result in GHG emissions generated by vehicle engine exhaust from construction equipment, haul trucks, and worker commuting trips. Construction GHG emissions were calculated using CalEEMod, as described above. Input details and output are provided in Attachment A. The estimated construction GHG emissions for the project are shown in Table 5, *Construction GHG Emissions*. For construction emissions, SDAPCD recommends that the emissions be amortized (i.e., averaged) over the anticipated lifespan of the project (30 years) and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 3.21 MT CO_2e emissions per year.

Table 5
CONSTRUCTION GHG EMISSIONS

Source	Emissions (MT CO_2e)
Total Construction Emissions[1]	96.30
Amortized Construction Emissions	**3.21**

Source: CalEEMod
[1] Total may not sum due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

The project proposes connecting an existing trail alignment and would only generate emissions during construction in the near term. Therefore, no operational emissions would result from project implementation and no impact would occur.

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the low carbon fuel standard, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed.

As described above, the project would not result in significant GHG emissions. The project would not result in emissions that would adversely affect state-wide attainment of GHG emission reduction goals as described in AB 32 and SB 32. Emissions would therefore have a less than cumulatively considerable contribution to global climate change impacts, and the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No impact would occur.

SUMMARY

As described above, emissions of criteria pollutants would be below SDAPCD thresholds and the project would be consistent with the Attainment Plan. Sensitive receptors would not be exposed to substantial concentrations of TACs or odors. Thus, impacts to air quality would be less than significant and no mitigation measures would be required. Construction GHG emissions would also be below CAPCOA thresholds. The project would not conflict with applicable State GHG reduction plans or policies. Therefore, GHG impacts would be less than significant no mitigation measures would be required.

Sincerely,

Victor Ortiz
Senior Air Quality Specialist

Attachments:

Attachment A: CalEEMod Output

REFERENCES

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Attachment A

CalEEMod Output

CDM 02.03 Del Mar River Path

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	0.25	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 2,164 LF of 5-foot wide trail = 10,820 sf

Construction Phase -

Off-road Equipment - Equipment based on PD

Off-road Equipment - Equipment based on PD

Grading -

Construction Off-road Equipment Mitigation -

CDM 02.03 Del Mar River Path - San Diego County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	2/6/2024	1/23/2024
tblConstructionPhase	PhaseEndDate	9/19/2023	9/5/2023
tblConstructionPhase	PhaseEndDate	9/15/2023	9/1/2023
tblConstructionPhase	PhaseStartDate	9/20/2023	9/6/2023
tblConstructionPhase	PhaseStartDate	9/16/2023	9/4/2023
tblConstructionPhase	PhaseStartDate	9/15/2023	9/1/2023
tblGrading	MaterialExported	0.00	50.00
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LotAcreage	0.00	0.25
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.3253	13.0816	11.4123	0.0217	0.8908	0.6068	1.0559	0.4505	0.5693	0.6032	0.0000	2,077.9504	2,077.9504	0.4904	0.0000	2,090.2100
2024	1.2999	12.7363	11.4398	0.0217	0.0000	0.5708	0.5708	0.0000	0.5348	0.5348	0.0000	2,078.3114	2,078.3114	0.4883	0.0000	2,090.5192
Maximum	**1.3253**	**13.0816**	**11.4398**	**0.0217**	**0.8908**	**0.6068**	**1.0559**	**0.4505**	**0.5693**	**0.6032**	**0.0000**	**2,078.3114**	**2,078.3114**	**0.4904**	**0.0000**	**2,090.5192**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.3253	13.0816	11.4123	0.0217	0.4749	0.6068	0.6400	0.2226	0.5693	0.5693	0.0000	2,077.9504	2,077.9504	0.4904	0.0000	2,090.2100
2024	1.2999	12.7363	11.4398	0.0217	0.0000	0.5708	0.5708	0.0000	0.5348	0.5348	0.0000	2,078.3114	2,078.3114	0.4883	0.0000	2,090.5191
Maximum	**1.3253**	**13.0816**	**11.4398**	**0.0217**	**0.4749**	**0.6068**	**0.6400**	**0.2226**	**0.5693**	**0.5693**	**0.0000**	**2,078.3114**	**2,078.3114**	**0.4904**	**0.0000**	**2,090.5191**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**46.69**	**0.00**	**25.57**	**50.58**	**0.00**	**2.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2023	9/1/2023	5	1	
2	Grading	Grading	9/4/2023	9/5/2023	5	2	
3	Building Construction	Building Construction	9/6/2023	1/23/2024	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Plate Compactors	1	8.00	8	0.43
Building Construction	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Plate Compactors	1	8.00	8	0.43
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5373	0.0000	0.5373	0.0583	0.0000	0.0583			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084		942.4317	942.4317	0.3048		950.0517
Total	**0.5348**	**6.1887**	**3.9239**	**9.7300e-003**	**0.5373**	**0.2266**	**0.7639**	**0.0583**	**0.2084**	**0.2668**		**942.4317**	**942.4317**	**0.3048**		**950.0517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0307	0.9740	0.3685	4.3100e-003	0.1048	1.8500e-003	0.1067	0.0287	1.7700e-003	0.0305		475.3730	475.3730	0.0436		476.4630
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0177	0.0105	0.1072	3.6000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112		35.4198	35.4198	9.2000e-004		35.4428
Total	**0.0484**	**0.9845**	**0.4757**	**4.6700e-003**	**0.1459**	**2.1200e-003**	**0.1481**	**0.0396**	**2.0200e-003**	**0.0417**		**510.7928**	**510.7928**	**0.0445**		**511.9058**

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2418	0.0000	0.2418	0.0262	0.0000	0.0262			0.0000			0.0000
Off-Road	0.5348	6.1887	3.9239	9.7300e-003		0.2266	0.2266		0.2084	0.2084	0.0000	942.4317	942.4317	0.3048		950.0517
Total	**0.5348**	**6.1887**	**3.9239**	**9.7300e-003**	**0.2418**	**0.2266**	**0.4683**	**0.0262**	**0.2084**	**0.2347**	**0.0000**	**942.4317**	**942.4317**	**0.3048**		**950.0517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0307	0.9740	0.3685	4.3100e-003	0.1048	1.8500e-003	0.1067	0.0287	1.7700e-003	0.0305		475.3730	475.3730	0.0436		476.4630
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0177	0.0105	0.1072	3.6000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112		35.4198	35.4198	9.2000e-004		35.4428
Total	**0.0484**	**0.9845**	**0.4757**	**4.6700e-003**	**0.1459**	**2.1200e-003**	**0.1481**	**0.0396**	**2.0200e-003**	**0.0417**		**510.7928**	**510.7928**	**0.0445**		**511.9058**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7563	0.0000	0.7563	0.4143	0.0000	0.4143			0.0000			0.0000
Off-Road	0.3527	3.4457	3.9457	6.2200e-003		0.1636	0.1636		0.1513	0.1513		590.2192	590.2192	0.1833		594.8022
Total	**0.3527**	**3.4457**	**3.9457**	**6.2200e-003**	**0.7563**	**0.1636**	**0.9199**	**0.4143**	**0.1513**	**0.5656**		**590.2192**	**590.2192**	**0.1833**		**594.8022**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0154	0.4870	0.1843	2.1500e-003	0.0524	9.3000e-004	0.0534	0.0144	8.9000e-004	0.0153		237.6865	237.6865	0.0218		238.2315
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0353	0.0210	0.2144	7.1000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		70.8396	70.8396	1.8400e-003		70.8856
Total	**0.0507**	**0.5080**	**0.3987**	**2.8600e-003**	**0.1346**	**1.4700e-003**	**0.1360**	**0.0362**	**1.3900e-003**	**0.0375**		**308.5261**	**308.5261**	**0.0236**		**309.1171**

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3403	0.0000	0.3403	0.1864	0.0000	0.1864			0.0000			0.0000
Off-Road	0.3527	3.4457	3.9457	6.2200e-003		0.1636	0.1636		0.1513	0.1513	0.0000	590.2192	590.2192	0.1833		594.8022
Total	**0.3527**	**3.4457**	**3.9457**	**6.2200e-003**	**0.3403**	**0.1636**	**0.5039**	**0.1864**	**0.1513**	**0.3377**	**0.0000**	**590.2192**	**590.2192**	**0.1833**		**594.8022**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0154	0.4870	0.1843	2.1500e-003	0.0524	9.3000e-004	0.0534	0.0144	8.9000e-004	0.0153		237.6865	237.6865	0.0218		238.2315
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0353	0.0210	0.2144	7.1000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		70.8396	70.8396	1.8400e-003		70.8856
Total	**0.0507**	**0.5080**	**0.3987**	**2.8600e-003**	**0.1346**	**1.4700e-003**	**0.1360**	**0.0362**	**1.3900e-003**	**0.0375**		**308.5261**	**308.5261**	**0.0236**		**309.1171**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3253	13.0816	11.4123	0.0217		0.6068	0.6068		0.5693	0.5693		2,077.9504	2,077.9504	0.4904		2,090.2100
Total	**1.3253**	**13.0816**	**11.4123**	**0.0217**		**0.6068**	**0.6068**		**0.5693**	**0.5693**		**2,077.9504**	**2,077.9504**	**0.4904**		**2,090.2100**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3253	13.0816	11.4123	0.0217		0.6068	0.6068		0.5693	0.5693	0.0000	2,077.9504	2,077.9504	0.4904		2,090.2100
Total	**1.3253**	**13.0816**	**11.4123**	**0.0217**		**0.6068**	**0.6068**		**0.5693**	**0.5693**	**0.0000**	**2,077.9504**	**2,077.9504**	**0.4904**		**2,090.2100**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2999	12.7363	11.4398	0.0217		0.5708	0.5708		0.5348	0.5348		2,078.3114	2,078.3114	0.4883		2,090.5192
Total	**1.2999**	**12.7363**	**11.4398**	**0.0217**		**0.5708**	**0.5708**		**0.5348**	**0.5348**		**2,078.3114**	**2,078.3114**	**0.4883**		**2,090.5192**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2999	12.7363	11.4398	0.0217		0.5708	0.5708		0.5348	0.5348	0.0000	2,078.3114	2,078.3114	0.4883		2,090.5191
Total	**1.2999**	**12.7363**	**11.4398**	**0.0217**		**0.5708**	**0.5708**		**0.5348**	**0.5348**	**0.0000**	**2,078.3114**	**2,078.3114**	**0.4883**		**2,090.5191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CDM 02.03 Del Mar River Path

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	0.25	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 2,164 LF of 5-foot wide trail = 10,820 sf

Construction Phase -

Off-road Equipment - Equipment based on PD

Off-road Equipment - Equipment based on PD

Grading -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	2/6/2024	1/23/2024
tblConstructionPhase	PhaseEndDate	9/19/2023	9/5/2023
tblConstructionPhase	PhaseEndDate	9/15/2023	9/1/2023
tblConstructionPhase	PhaseStartDate	9/20/2023	9/6/2023
tblConstructionPhase	PhaseStartDate	9/16/2023	9/4/2023
tblConstructionPhase	PhaseStartDate	9/15/2023	9/1/2023
tblGrading	MaterialExported	0.00	50.00
tblGrading	MaterialExported	0.00	50.00
tblLandUse	LotAcreage	0.00	0.25
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0557	0.5504	0.4802	9.2000e-004	1.2300e-003	0.0255	0.0267	5.0000e-004	0.0239	0.0244	0.0000	79.7108	79.7108	0.0188	0.0000	80.1810
2024	0.0111	0.1083	0.0972	1.8000e-004	0.0000	4.8500e-003	4.8500e-003	0.0000	4.5500e-003	4.5500e-003	0.0000	16.0260	16.0260	3.7700e-003	0.0000	16.1201
Maximum	**0.0557**	**0.5504**	**0.4802**	**9.2000e-004**	**1.2300e-003**	**0.0255**	**0.0267**	**5.0000e-004**	**0.0239**	**0.0244**	**0.0000**	**79.7108**	**79.7108**	**0.0188**	**0.0000**	**80.1810**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0557	0.5504	0.4802	9.2000e-004	6.6000e-004	0.0255	0.0261	2.5000e-004	0.0239	0.0241	0.0000	79.7107	79.7107	0.0188	0.0000	80.1809
2024	0.0111	0.1083	0.0972	1.8000e-004	0.0000	4.8500e-003	4.8500e-003	0.0000	4.5500e-003	4.5500e-003	0.0000	16.0260	16.0260	3.7700e-003	0.0000	16.1201
Maximum	**0.0557**	**0.5504**	**0.4802**	**9.2000e-004**	**6.6000e-004**	**0.0255**	**0.0261**	**2.5000e-004**	**0.0239**	**0.0241**	**0.0000**	**79.7107**	**79.7107**	**0.0188**	**0.0000**	**80.1809**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**46.34**	**0.00**	**1.78**	**50.00**	**0.00**	**0.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2023	11-30-2023	0.4484	0.4484
2	12-1-2023	2-29-2024	0.2748	0.2748
		Highest	0.4484	0.4484

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2023	9/1/2023	5	1	
2	Grading	Grading	9/4/2023	9/5/2023	5	2	
3	Building Construction	Building Construction	9/6/2023	1/23/2024	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Plate Compactors	1	8.00	8	0.43
Building Construction	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Plate Compactors	1	8.00	8	0.43
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0900e-003	1.9600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	**2.7000e-004**	**3.0900e-003**	**1.9600e-003**	**0.0000**	**2.7000e-004**	**1.1000e-004**	**3.8000e-004**	**3.0000e-005**	**1.0000e-004**	**1.3000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4309**

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	4.9000e-004	1.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.2178	0.2178	2.0000e-005	0.0000	0.2183
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0162	0.0162	0.0000	0.0000	0.0162
Total	**3.0000e-005**	**5.0000e-004**	**2.3000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.2341**	**0.2341**	**2.0000e-005**	**0.0000**	**0.2346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	3.0900e-003	1.9600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4309
Total	**2.7000e-004**	**3.0900e-003**	**1.9600e-003**	**0.0000**	**1.2000e-004**	**1.1000e-004**	**2.3000e-004**	**1.0000e-005**	**1.0000e-004**	**1.1000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4309**

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	4.9000e-004	1.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.2178	0.2178	2.0000e-005	0.0000	0.2183
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0162	0.0162	0.0000	0.0000	0.0162
Total	**3.0000e-005**	**5.0000e-004**	**2.3000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.2341**	**0.2341**	**2.0000e-005**	**0.0000**	**0.2346**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.6000e-004	0.0000	7.6000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5000e-004	3.4500e-003	3.9500e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.5000e-004	1.5000e-004	0.0000	0.5354	0.5354	1.7000e-004	0.0000	0.5396
Total	**3.5000e-004**	**3.4500e-003**	**3.9500e-003**	**1.0000e-005**	**7.6000e-004**	**1.6000e-004**	**9.2000e-004**	**4.1000e-004**	**1.5000e-004**	**5.6000e-004**	**0.0000**	**0.5354**	**0.5354**	**1.7000e-004**	**0.0000**	**0.5396**

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	4.9000e-004	1.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.2178	0.2178	2.0000e-005	0.0000	0.2183
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0649	0.0649	0.0000	0.0000	0.0650
Total	**5.0000e-005**	**5.1000e-004**	**4.0000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.2828**	**0.2828**	**2.0000e-005**	**0.0000**	**0.2833**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4000e-004	0.0000	3.4000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5000e-004	3.4500e-003	3.9500e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.5000e-004	1.5000e-004	0.0000	0.5354	0.5354	1.7000e-004	0.0000	0.5396
Total	**3.5000e-004**	**3.4500e-003**	**3.9500e-003**	**1.0000e-005**	**3.4000e-004**	**1.6000e-004**	**5.0000e-004**	**1.9000e-004**	**1.5000e-004**	**3.4000e-004**	**0.0000**	**0.5354**	**0.5354**	**1.7000e-004**	**0.0000**	**0.5396**

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	4.9000e-004	1.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.2178	0.2178	2.0000e-005	0.0000	0.2183
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0649	0.0649	0.0000	0.0000	0.0650
Total	**5.0000e-005**	**5.1000e-004**	**4.0000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.2828**	**0.2828**	**2.0000e-005**	**0.0000**	**0.2833**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0550	0.5429	0.4736	9.0000e-004		0.0252	0.0252		0.0236	0.0236	0.0000	78.2310	78.2310	0.0185	0.0000	78.6926
Total	**0.0550**	**0.5429**	**0.4736**	**9.0000e-004**		**0.0252**	**0.0252**		**0.0236**	**0.0236**	**0.0000**	**78.2310**	**78.2310**	**0.0185**	**0.0000**	**78.6926**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0550	0.5429	0.4736	9.0000e-004		0.0252	0.0252		0.0236	0.0236	0.0000	78.2309	78.2309	0.0185	0.0000	78.6925
Total	**0.0550**	**0.5429**	**0.4736**	**9.0000e-004**		**0.0252**	**0.0252**		**0.0236**	**0.0236**	**0.0000**	**78.2309**	**78.2309**	**0.0185**	**0.0000**	**78.6925**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1083	0.0972	1.8000e-004		4.8500e-003	4.8500e-003		4.5500e-003	4.5500e-003	0.0000	16.0260	16.0260	3.7700e-003	0.0000	16.1201
Total	**0.0111**	**0.1083**	**0.0972**	**1.8000e-004**		**4.8500e-003**	**4.8500e-003**		**4.5500e-003**	**4.5500e-003**	**0.0000**	**16.0260**	**16.0260**	**3.7700e-003**	**0.0000**	**16.1201**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1083	0.0972	1.8000e-004		4.8500e-003	4.8500e-003		4.5500e-003	4.5500e-003	0.0000	16.0260	16.0260	3.7700e-003	0.0000	16.1201
Total	**0.0111**	**0.1083**	**0.0972**	**1.8000e-004**		**4.8500e-003**	**4.8500e-003**		**4.5500e-003**	**4.5500e-003**	**0.0000**	**16.0260**	**16.0260**	**3.7700e-003**	**0.0000**	**16.1201**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

IS/MND Appendix B

Biological Technical Report

HELIX Environmental Planning

River Path Del Mar Phase III Extension Project

Biological Technical Report

March 2022 | 01197.00002.003 (CDM-02.03)

Prepared for:

City of Del Mar
1050 Camino Del Mar
Del Mar, CA 92014

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practices
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
City	City of Del Mar
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Plan
DG	decomposed granite
FESA	Federal Endangered Species Act
G	Global
GPS	Global Positioning System
HELIX	HELIX Environmental Planning, Inc.
HMMP	Habitat Mitigation and Monitoring Plan
LCP	Local Coastal Plan
LF	linear feet
m	meter
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
MHPA	Multi-Habitat Planning Area
MSCP	Multiple Species Conservation Program
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
project	Del Mar River Path Phase 3 project

ACRONYMS AND ABBREVIATIONS (cont.)

RWQCB	Regional Water Quality Control Board
S	State
SAA	Streambed Alteration Agreement
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

This biological technical report was prepared to evaluate the proposed Del Mar River Path Extension Project Phase 3. The project site is located within the City of Del Mar (City), in San Diego County (County), California. The purpose of this report is to document the existing biological conditions within the project site and to analyze potential project impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act (CEQA) by the City.

The project consists of an approximately one-half-mile pedestrian path extension of the River Path along the north edge of San Dieguito Road and Racetrack View Road, southwest of the San Dieguito Lagoon/River. The proposed extension would improve the San Dieguito segment of the City's Loop Trail – a seven-mile hiking trail envisioned in the City's Community Plan that creates a loop around the City's perimeter. The proposed trail would also provide a connection between the existing Coast to Crest Trail and the existing Crest Canyon Trail in the City of San Diego.

HELIX conducted biological surveys for the project site and immediate surrounding areas in December 2019 to confirm the biological resources recorded on-site by others in 2018 (Dudek), to map extents of current vegetation communities, assess habitat for species to occur, and preliminarily delineate the extents of potential jurisdictional aquatic resources. Follow-up surveys were conducted by HELIX in January and June of 2021 to verify extents and to conduct a focal assessment of coastal wetlands, respectively. A total of six vegetation communities and land cover types occur within the project site: coastal brackish marsh (including disturbed), southern coastal bluff scrub (including lemonade berry dominated), southern willow scrub, Diegan coastal sage scrub (including disturbed), disturbed habitat, and developed lands.

No special status plant or animal species were observed within the project site during biological surveys. The project site does support marginal suitable habitat and there is moderate potential for three sensitive plant and four animal species to be present on-site; including Nuttall's lotus (*Acmispon prostratus*), Southern tarplant (*Centromadia parryi* ssp. *australis*), Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), coastal California gnatcatcher (*Polioptila californica californica*), light-footed Ridgway's rail (*Rallus obsoletus levipes*), and least Bell's vireo (*Vireo bellii pusillus*), respectively. The project site also supports nesting habitat for bird species protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Wildlife (CDFW) Game Code.

The northern portion of the project site supports habitat associated with the San Dieguito Lagoon/River, which includes potential wetland waters of the U.S./State under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the CWA, potential wetland waters of the State under the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to CWA Section 401, potential streambed and riparian habitat under the regulatory jurisdiction of California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600-1603 of the California Fish and Game Code (CFG Code), and coastal wetlands, subject to the California Coastal Commission (CCC) jurisdiction pursuant to the California Coastal Act of 1976.

The project occurs within the boundaries of the San Diego Multiple Species Conservation Program (MSCP) finalized and adopted by the County of San Diego in 1998. Within the MSCP, the project is located in the City of Del Mar Subarea. The Del Mar Draft Subarea Plan has not been finalized or

adopted. In the context of the MSCP, the project is located within the San Dieguito Lagoon Core Area and is outside of the Multi-Habitat Planning Area (MHPA) or other conserved lands. The project site is not located within U.S. Fish and Wildlife Service (USFWS) designated or proposed critical habitat.

The proposed project design has undergone substantial iterative review and revisions to avoid, and minimize, potential impacts on sensitive biological resources, to the maximum extent practicable. As a result, the proposed project permanent impacts are minimal and amount to approximately 0.01 acre of sensitive vegetation. These impacts are unavoidable and are required to provide a safe trail connection at a location that is severely constrained by existing roadway right-of-way.

Potential significant impacts were identified for special status species, sensitive natural communities/habitats, and potentially jurisdictional resources. The mitigation measures proposed would mitigate potential significant impacts on special status species, sensitive natural communities/habitats, and potential jurisdictional resources. Implementation of these mitigation measures would mitigate the potential impacts to below a level of significance.

As currently planned, the project would require the submittal of regulatory permit applications to the USACE, RWQCB, and CDFW for potential impacts to jurisdictional aquatic resources. Additionally, the project would require consultation with the USFWS in accordance with Section 7 of the Federal Endangered Species Act (FESA) for potential impacts to the federally listed species coastal California gnatcatcher, light-footed Ridgway's rail, and least Bell's vireo. The project could also be required to submit an Incidental Take Permit application to CDFW for potential impacts to the state listed Belding's savannah sparrow, in accordance with Section 2081(b) of the CFG Code. Potential impacts to sensitive communities/habitats and non-listed sensitive plant species with the potential to be present within the planned impact area would be mitigated at a minimum 1:1 ratio (i.e., no net loss obligation) through habitat creation and habitat restoration at a target off-site property located approximately 225 feet northwest of the project site. The habitat creation and restoration efforts shall be described and implemented in accordance with the project's Habitat Mitigation and Monitoring Plan (HMMP). Project impacts to jurisdictional wetland waters of the U.S. shall be mitigated at a 3:1 ratio consisting of a minimum 1:1 establishment/re-establishment and provided at the target off-site mitigation property mentioned above.

1.0 INTRODUCTION

This report describes the results of a biological resources study conducted by HELIX Environmental Planning, Inc. (HELIX) for the proposed Del Mar River Path Phase 3 Project (project), which includes the construction of an approximately one-half-mile pedestrian path extension of the Del Mar River Path (River Path) along the southern periphery of the San Dieguito Lagoon. Phases I and II are complete, with Phase I extending northwest of Jimmy Durante Boulevard and Phase II extending southeast of Jimmy Durante Boulevard. Combined, the River Path is generally oriented in a northwest to a southeast direction along the San Dieguito Lagoon between the railroad tracks near Camino Del Mar and the Lagoon Viewpoint at the Old Grand Avenue Bridge (Grand Avenue Lookout). The River Path provides views of the water and includes informational signage regarding the importance of wetlands and natural resources. The proposed project would complete the River Path by extending the trail southeast of the Grand Avenue Lookout for approximately one-half-mile until termination at the City limits near the Crest Canyon Trail.

The purpose of this report is to document the existing biological conditions within the proposed project site and provide an analysis of potential impacts on sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act (CEQA) by the City of Del Mar Planning and Community Development Services Department.

The study area for this biological technical report includes the project site and surrounding areas within 150 feet. An off-site target mitigation site/property, located approximately 225 northwest of the project, was also evaluated for mitigation purposes. The information and discussions in this report primarily describe the project site, which is defined by the proposed project development areas; additional areas within the 150-foot surrounding buffer (i.e., study area) as well as the target off-site mitigation property were reviewed for adjacency and mitigation context only and are not discussed in detail herein.

1.1 PROJECT LOCATION

The proposed project would occur within the City of Del Mar (City), San Diego County (County), California (Figure 1, *Regional Location*). The project site occurs within Section 11, Township 14 South, Range 4 West, on the U.S. Geological Survey (USGS) 7.5-minute Del Mar OE W quadrangle (Figure 2, *USGS Topography*). The project is located immediately adjacent to the San Dieguito Lagoon, southeast of Jimmy Durante Boulevard, along the north edge of San Dieguito Drive and the western end of Racetrack View Drive (Figure 3, *Aerial Photograph*). The project is located within the City's Floodway Zone and is within the Coastal Zone. The project is also located within the Lagoon Overlay Zone of the City's Local Coastal Program Implementing Ordinances (LCP; City 2001).

The project site is located within the planning boundaries of the San Diego Multiple Species Conservation Program (MSCP) in the City of Del Mar Subarea (Figure 4, *Regional Context MSCP*). The project is within portions of an area identified as the San Dieguito Lagoon MSCP Core Area. The City's draft Subarea Plan has not been completed or adopted. In the context of these plans, the project is outside of the Multi-Habitat Planning Area (MHPA) and not within an area targeted for conservation. The project site is not located within U.S. Fish and Wildlife Service (USFWS)-designated or proposed critical habitat.

1.2 PROJECT DESCRIPTION

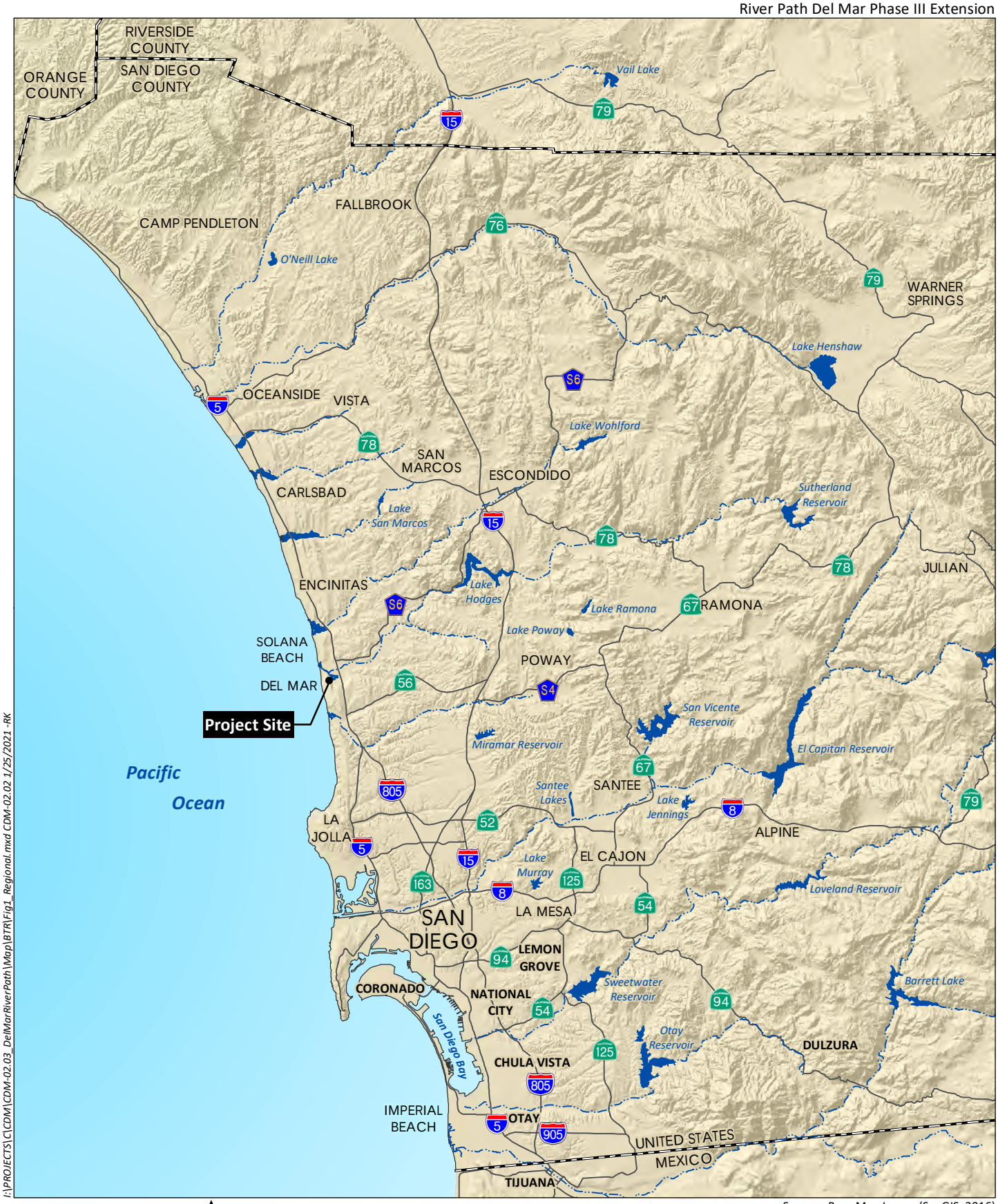
1.2.1 Project Components

The project consists of an approximately one-half-mile pedestrian path extension of the River Path along the southern periphery of the San Dieguito Lagoon. The proposed extension would connect to existing trail segments and improve a critical portion of the San Dieguito segment of the City's Loop Trail. The project includes a single five-foot-wide decomposed granite (DG) segment and six-foot-wide boardwalk (both at-grade and elevated) path alignment along the San Dieguito Lagoon to extend the River Path from the Grand Avenue Lookout to near the Crest Canyon Trail. Due to topographical constraints directly adjacent to San Dieguito Drive and the Lagoon/River, the proposed path would meander along the northern edge of San Dieguito Drive and would transition between three types of pathway listed above to avoid and minimize impacts to biological resources to the extent feasible. Overall, the proposed trail path would extend a total of approximately 2,070 linear feet (LF) and would primarily be comprised of an elevated boardwalk (1,195 LF, or about 58 percent of the proposed trail). About 286 LF (or about 14 percent of the proposed trail) would include boardwalk decking at grade, and about 589 LF (or about 28 percent of the proposed trail) would include a DG trail. Each of these trail types is described in detail below:

- **DG Trail**. The five DG trail sections of the River Path would include a five-foot-wide pathway, constructed with three inches of compacted and stabilized DG material. Each side of the pathway would include plastic trail edging (one inch wide) as well as wood stakes (two inches wide) drilled down approximately 18 inches beneath the ground, with a gopher screen between the ground level and DG trail. The surface of the DG trail would be edged with recycled plastic lumber on both sides. Construction would be similar to the existing Phase II DG trail.

- **At-Grade Boardwalk**. The at-grade boardwalk path sections, six are proposed to transition between the DG trail and the elevated boardwalk and would include a six-foot-wide pathway constructed of composite decking material with pre-made footings/pins associated with the footing foundations spaced about 46 inches apart. The boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (0.5-inch max.) to allow for adequate drainage and indirect sunlight to penetrate to areas below the boardwalk portions of the project. Foundation footing pins would extend between 3.5 and 10.5 feet beneath the ground surface.

- **Elevated Boardwalk**. Most of the proposed trail would be comprised of an elevated boardwalk over a mix of upland and wetland habitat areas near the edge of the San Dieguito Lagoon. The elevated boardwalk was purposely incorporated to avoid and minimize impacts to such habitats and would be located in two sections along the proposed River Path extension. The elevated boardwalk would include a six-foot-wide elevated pathway and would be constructed with the same composite decking material and pre-made footings/pins as the at-grade boardwalk. The elevated boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (½-inch max.) to allow for adequate drainage and indirect sunlight to penetrate to areas below the elevated boardwalk portions of the project. Elevated boardwalk sections would also include a cable/post fence railing along the San Dieguito Lagoon, constructed of 10-inch wide and 60-inch tall redwood cable post fencing with horizontal cable wires for safety and to keep users from meandering off of the boardwalk, encroaching into biologically sensitive areas. The fence



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1

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Source: Del Mar 7.5' Quad (USGS)

HELIX Environmental Planning

Site Topography (USGS)

Figure 2

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0 200 Feet

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Aerial Photograph

Figure 3

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Regional Context MSCP

Figure 4

posts would be drilled approximately 28 inches into the ground with concrete foundations or securely fastened to the elevated boardwalk (where appropriate).

The proposed project would involve minor grading, vegetation removal, and debris removal along the path alignment within the upland habitat areas. No excavation, grading, or filling would occur in wetland habitat areas; the installation of the trail in such areas would include placement of pre-made footings/pins with a concrete head to support the boardwalk deck structure, which would substantially avoid and reduce ground disturbance impacts. No utilities in the project area would be affected by the proposed project, and the existing above-ground electric utility lines and power poles would remain as they are under the existing conditions.

1.2.2 Construction Activities

Construction activities would occur over an approximately four-month period and are anticipated to begin as early as September 2023 and end in January 2024. This construction timing is arranged specifically to avoid the bird nesting season, particularly sensitive bird species potentially nesting adjacent to the project. Construction activities would involve site preparation, minor grading and debris removal, and pathway construction that would occur consecutively. As noted above, pathway construction would involve the DG trail, an at-grade boardwalk, and the elevated boardwalk. For the DG trail segments, construction equipment would consist of motorized construction machinery, including a rubber-tired dozer, tractor, compactor, and backhoe. At-grade and elevated boardwalk sections would be constructed using foundations, which would include pre-made footings with a concrete head to support the elevated structure without the need for excavation. These foundations would be placed by construction workers either by hand or using a small portable hoister crane and installed using a breaker/demolition hammer powered by a truck-mounted generator. Foundations would be spaced every five feet in the center (approximately 46 inches apart) and would total up to about 600 individual foundations. Trucks are anticipated to be used to deliver construction materials, such as decking and DG, to the project site, and construction workers would also arrive at the project site in a truck or personal vehicle. Construction staging and laydown areas would utilize the City Public Works Yard, located about one-third mile west of the proposed River Path extension, just west of the intersection of Jimmy Durante Boulevard and San Dieguito Drive.

Construction grading would not be conducted during the Local Coastal Plan (LCP)-designated rainy season (November 15 to March 31) and would conform to the City requirements for the protection of songbirds and raptors during the breeding season (January 1 to August 31). Due to the proximity of the proposed project to San Dieguito Drive, it is anticipated that temporary lane closures and traffic control measures would be necessary during active work periods to lay down equipment and materials. Traffic lanes would be restored to pre-construction conditions outside of construction activities. Temporary erosion control measures, such as sandbag barriers, fiber rolls, wood mulching, soil binders, geotextiles, plastic covers, erosion control blankets/mats, silt fencing, native habitat revegetation, and construction personnel training, are among the best management practices (BMPs) that would be implemented during, and immediately following, construction to minimize impacts to biological resources and water quality. Further, a biologist would be present on-site throughout the project to monitor construction for environmental compliance.

1.2.3 Operational Activities

Once construction is completed, the project site would complete the final phase of the City's River Path vision and would provide a connection between the existing Coast to Crest Trail and the existing Crest Canyon Trail in the City of San Diego. Under existing conditions, visitors using the City's River Path connect to the Crest Canyon Trail via San Dieguito Drive, adjacent to the proposed trail. As a result, the project is anticipated to accommodate trail users of the Crest Canyon Trail and the River Path. It is anticipated that no additional trail users would be generated by the project.

2.0 METHODS

2.1 LITERATURE REVIEW

Prior to conducting biological field surveys, HELIX conducted a thorough review of relevant maps, databases, and literature pertaining to biological resources known to occur within the project site. HELIX also reviewed a previous biological constraints assessment completed for the project area by others in 2018 (Dudek). Recent and historical aerial imagery, USGS topographic maps, soils maps (Natural Resource Conservation Service [NRCS] 2020), and other maps of the project site and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting.

In addition, a query of special status species and habitats databases was conducted, including the USFWS species records (USFWS 2020a), California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB; CDFW 2020a), Calflora database (Calflora 2020), SanBIOS and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2020). The USFWS' National Wetlands Inventory was also reviewed (USFWS 2020b). Any recorded locations of species, habitat types, wetlands, and other resources were mapped and overlain onto aerial imagery using Geographic Information Systems. Data pertaining to the MSCP was also reviewed.

2.2 BIOLOGICAL SURVEYS

2.2.1 General Biological Survey

HELIX biologists Thomas Liddicoat and Laura Moreton conducted a general biological survey of the project study area (i.e., project site and surrounding areas within 150 feet) on December 12, 2019, to verify the 2018 biological resources mapping recorded by others (Dudek), and to update and refine the mapping of the project study area as appropriate. Vegetation communities were classified and mapped in accordance with Holland (1986) and Oberbauer (1996). Vegetation was mapped on a 150-foot (1 inch = 150 feet) aerial photograph of the site, with an overlay of the study area boundary. A Global Positioning System (GPS) was used during the survey to record the limits of vegetation and other resources on-site. Additionally, a survey of the project site was conducted on January 21, 2021, by HELIX biologist, Mandy Mathews, to review the existing site conditions and to verify the accuracy of the biological resources mapped in 2019. An off-site target mitigation property is located approximately 225 feet northwest of the project and was also surveyed by HELIX biologist Laura Moreton on December 21, 2021.

Vegetation communities were micro-mapped by HELIX to one-hundredth of an acre (0.01 acre) for uplands and one ten-thousandth of an acre (0.0001 acre) for wetlands. A list of all plant and animal species observed or detected within the project site was prepared. Plant species were identified in the field or later in the laboratory with the aid of voucher specimens. Animals were identified in the field by direct visual observation with the aid of binoculars or indirectly by detection of calls, tracks, burrows, or scat. Table 1, *Biological Survey for the Del Mar River Path Phase 3 Project*, provides a summary of biological surveys conducted for the project.

Table 1
BIOLOGICAL SURVEYS FOR THE DEL MAR RIVER PATH PHASE 3 PROJECT

Survey Date	Personnel	Conditions
December 12, 2019	Thomas Liddicoat Laura Moreton	60-61°F; wind 0-1 mph; <10% cloud cover
January 21, 2021	Mandy Mathews	63-64°F; wind 3-4 mph; <1% cloud cover
June 10, 2021	Amy Mattson	Not recorded.
December 21, 2021	Laura Moreton	Not recorded.

2.2.2 Jurisdictional Delineation

During the general biological survey in December 2019, HELIX biologists Thomas Liddicoat and Laura Moreton preliminarily identified and mapped jurisdictional aquatic resources potentially subject to U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the Clean Water Act and State Porter-Cologne Water Quality Control Act, and streambed and riparian habitat potentially subject to CDFW jurisdiction pursuant to Sections 1600 et seq. of the California Fish and Game (CFG) Code. Jurisdictional aquatic resources were identified and mapped based on vegetation communities and hydrologic characteristics, in accordance with current guidelines. The extents of potentially jurisdictional resources were recorded on-site using a GPS. The preliminary delineation was conducted during a typical high-tide event for the site. Prior to the delineation, recent aerial photographs (1"=100'), topographic maps (1"=100'), soil mapping, National Wetlands Inventory mapping, and USGS topographical maps were reviewed to determine the location of potential jurisdictional areas. The delineation was conducted on foot with the aid of 1”=300’ scale aerials and topographic maps. Potential aquatic resources evaluated within the project site included drainage features, depressions, and/or wetland vegetation that crossed or were adjacent to the proposed project.

To verify and confirm the extents of jurisdictional resources on-site, HELIX biologist Amy Mattson conducted a survey of the project in June 2021, with a focus on coastal wetlands potentially under regulation by the California Coastal Commission (CCC). On December 21, 2021, HELIX biologist Laura Moreton verified the extents of jurisdictional resources mapped at the project site as well as evaluated and mapped potential jurisdictional resources on the off-site target mitigation property.

Waters of the U.S.

Potential USACE-jurisdictional waters of the U.S. were generally determined based on the presence of ponded water, a discernible ordinary high-water mark (OHWM), and/or wetland conditions expressed by three parameters (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West

Regional Supplement (USACE 2008). The OHWM was identified according to "A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States" (Lichvar and McColley 2010). Mapping of drainage features was performed in the field based on the OHWM and surface indications of hydrology. No soil pits were dug, as hydrology and aquatic vegetation extents were evident. Areas were determined to be potential wetland waters of the U.S. if there was a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology indicators. Areas were determined to be non-wetland waters of the U.S. if there was evidence of regular surface flow within an OHWM, but the vegetation criterion was not met. Hydric soils were presumed present aquatic vegetation was mapped.

Waters of the State

Potential RWQCB-jurisdictional areas were delineated in the same manner as potential waters of the U.S. All waters of the U.S. were considered waters of the State subject to RWQCB jurisdiction pursuant to CWA Section 401. Ephemeral features, while not considered waters of the U.S., were determined to be waters of the State under the regulatory jurisdiction of the RWQCB pursuant to the State Porter-Cologne Water Quality Control Act.

Streambed and Riparian Habitat

Potential CDFW-jurisdictional streambed and riparian habitat were determined based on the presence of riparian vegetation or regular surface flow within a measurable bed and bank. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that support riparian vegetation" (Title 14, Section 1.72). Potential CDFW-jurisdictional unvegetated streambed encompasses the top-of-bank to top-of-bank width for the features within the project site. Riparian habitat is not defined in Title 14, but the section refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream. Definitions of CDFW jurisdictional areas are presented in Appendix G of this report.

California Coastal Commission Wetlands

Potential CCC jurisdictional boundaries were determined based on the "one-parameter" definition, which only requires evidence of a single parameter to establish wetland conditions: "Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate" (CCR Title 14, Section 13577). The evaluation of coastal wetlands incorporated a detailed survey with account and inventory of the vegetation present, analysis of percent coverage by native and non-native plant species, calculation of by plant species with a wetland indicator status, and micro-mapping vegetation (HELIX 2021).

2.3 SURVEY LIMITATIONS

Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the lists of species identified are not necessarily comprehensive

accounts of all species that use the project site, as species that are nocturnal, secretive, or seasonally restricted may not have been observed. Those species that are of special status and have the potential to occur in the project site, however, are still addressed in this report.

2.4 NOMENCLATURE

Nomenclature for this report is taken from Holland (1986) and Oberbauer (2008) for vegetation communities; Jepson eFlora (2020) and Baldwin et al. (2012) for plants; North American Butterfly Association (2019) for butterflies; Society for the Study of Amphibians and Reptiles (2020) for reptiles and amphibians; American Ornithological Society (2020) for birds; and Bradley et al. (2014) for mammals. Plant species status is from the CNPS Rare Plant Inventory (2020) and CDFW (2020a). Animal species status is from CDFW (2020b).

3.0 EXISTING CONDITIONS

3.1 GENERAL LAND USES

The project site is located within the City of Del Mar, San Diego County, California. The San Dieguito Lagoon is located immediately to the north and east of the project site, and the Pacific Ocean is observed to the west of the project site. Land uses south of the project site include existing City roads and urban development. Generally surrounding the project site includes state park lands associated with the San Dieguito Lagoon, Crest Canyon State Park, commercial and residential developments, roadways, as well as pedestrian/bicycle paths along the San Dieguito Lagoon.

3.2 TOPOGRAPHY AND SOILS

Elevations within the project site range between approximately five and 32 feet above mean sea level. Six soil types are mapped on the project site, belonging to one soil series: Tujunga sand (85%), 0 to 5 percent slopes, somewhat excessively drained; Grangeville (5%), 0 to 5 percent slopes; Ramona, (5%), 0 to 5 percent slopes; Visalia (2%), 0 to 5 percent slopes; Riverwash (2%), 0 to 5 percent slopes; and Unnamed (1%), 0 to 5 percent slopes (Figure 5, *Soils*). Of these soil mapping unit types, no series is known to support sensitive plant species in the region.

3.3 VEGETATION COMMUNITIES

A total of six vegetation communities or land use types occur within the project site: coastal brackish salt marsh (including disturbed), southern coastal bluff scrub (including lemonade berry dominated), southern willow scrub, Diegan coastal sage scrub (including disturbed), disturbed habitat, and developed lands (Table 2, *Existing Vegetation Communities and Land Covers On-site*; Figures 6a-6f, *Existing Vegetation Communities and Land Cover Types Within the Project Site*). The off-site target mitigation property is dominated by non-native vegetation, but small patches of coastal brackish marsh (including disturbed) also occur on the property.

Table 2
EXISTING VEGETATION COMMUNITIES AND LAND COVERS ON-SITE[1]

Vegetation Community or Land Cover Type[1]	Acres[2]
Sensitive	
Tier I	
Coastal Brackish Marsh (Including disturbed; 52200)	0.009
Southern Coastal Bluff Scrub (Including lemonadeberry dominated; 31200)	0.01
Southern Willow Scrub (63320)	0.002
Tier II	
Diegan coastal sage scrub (Including disturbed; 32500)	0.06
Subtotal Sensitive Communities	*0.08*
Non-Sensitive	
Tier IV	
Disturbed Habitat (11300)	0.21
Non-Sensitive (cont.)	
N/A	
Developed Land (12000)	<0.1
Subtotal Non-Sensitive Communities	*0.21*
TOTAL	**0.29**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008) and are listed by Habitats and Tiers within the MSCP.

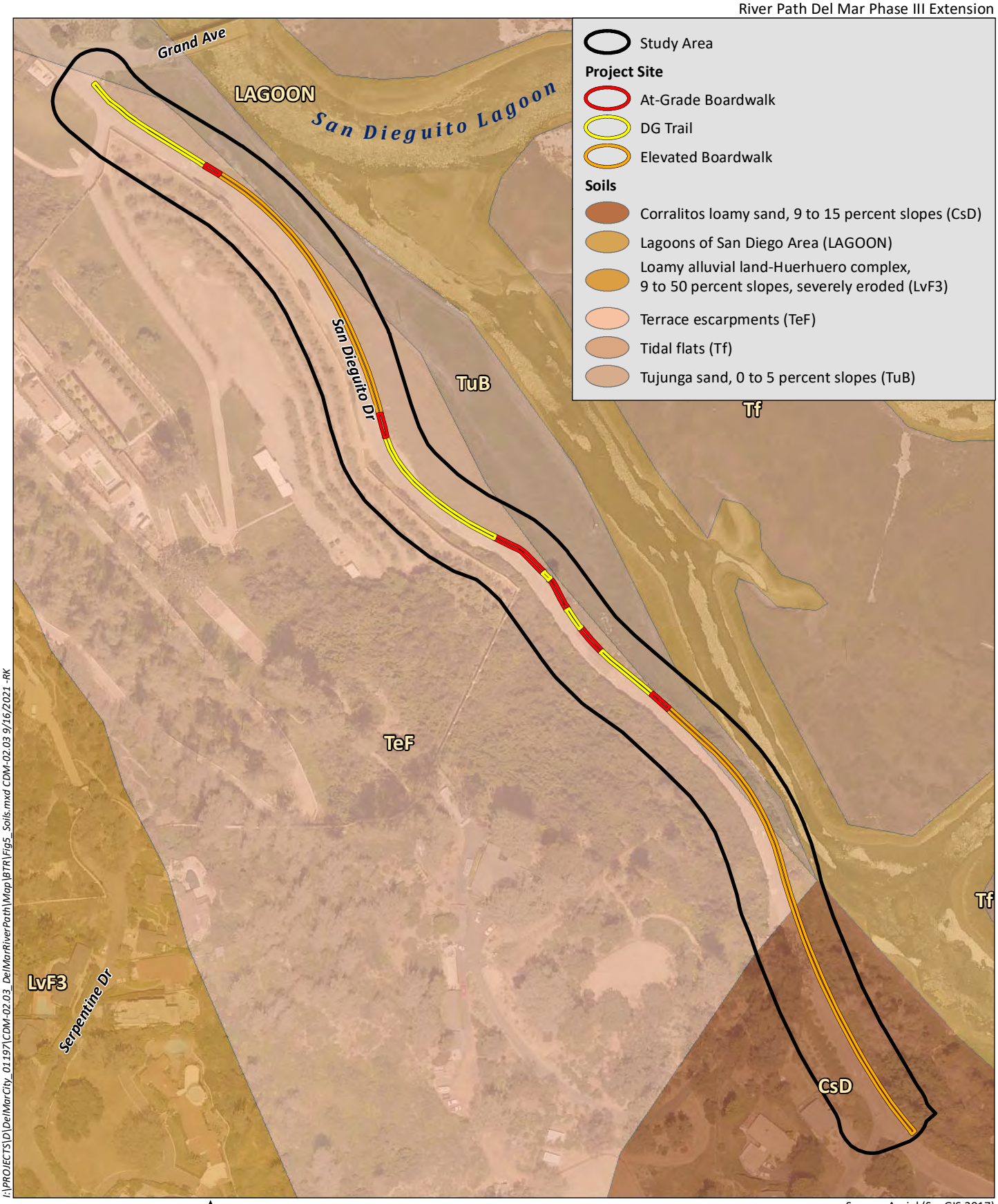
[2] Upland habitats are rounded to the nearest 0.01 acre, while wetland habitats are rounded to the nearest 0.001; thus, total reflects rounding. Acreages do not include the off-site target mitigation property.

3.3.1 Coastal Brackish Marsh (52200; Tier I)

Coastal brackish marsh is dominated by perennial, emergent, herbaceous monocots up to two meters (m) in height. Cover is often complete and dense. This vegetation community is similar to salt marshes and freshwater marshes, with some plant characteristics of each type. The coastal brackish marsh on-site is dominated by pickleweed (*Salicornia* sp.) with several scattered individuals of southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*).

3.3.2 Southern Coastal Bluff Scrub (including lemonadeberry dominated and disturbed; 31200; Tier I)

Southern coastal bluff scrub is dominated by low scrub forming continuous (or more scattered) mats. Most plants are woody and/or succulent. Dwarf shrubs, herbaceous perennials, and annuals are represented, with the majority of growth and flowering occurring from late winter through spring. This vegetation community is exposed to nearly constant winds with high salt content, and the soil is usually rocky and poorly developed. Within the project site, southern coastal bluff scrub is dominated by goldenbush (*Isocoma menziesii*), saltgrass (*Distichlis spicata*), and lemonadeberry (*Rhus integrifolia*). There are lemonadeberry dominated portions of southern coastal bluff scrub, and the disturbed portions of southern coastal bluff scrub are dominated by garland daisy (*Glebionis coronaria*) and crystalline ice plant (*Mesembryanthemum crystallinum*).



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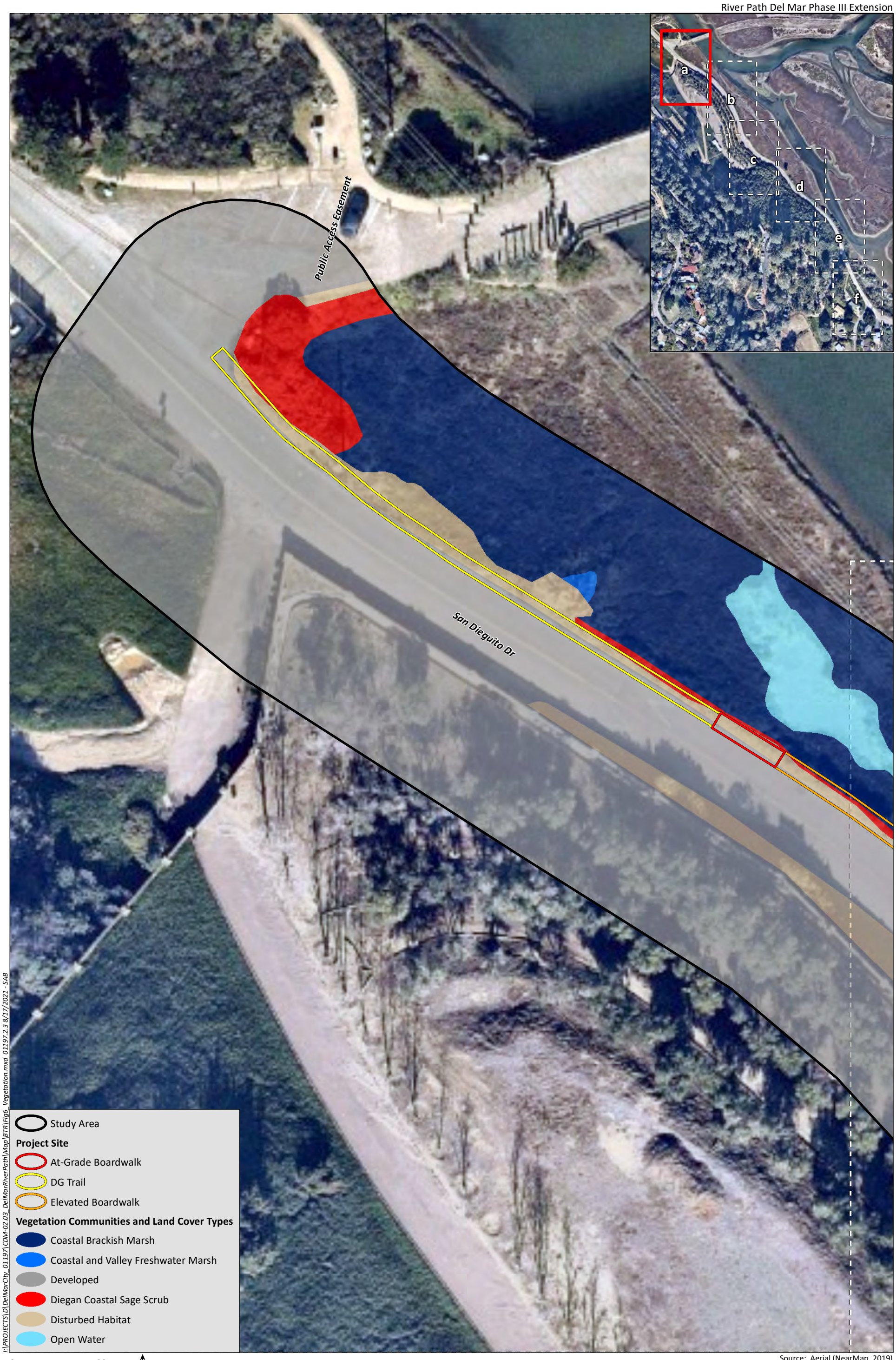
Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Soils

Figure 5



Source: Aerial (NearMap, 2019)

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HELIX Environmental Planning

Existing Vegetation Communities and Land Cover Types

Figure 6a

Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Existing Vegetation Communities and Land Cover Types

Figure 6b

Source: Aerial (NearMap, 2019)

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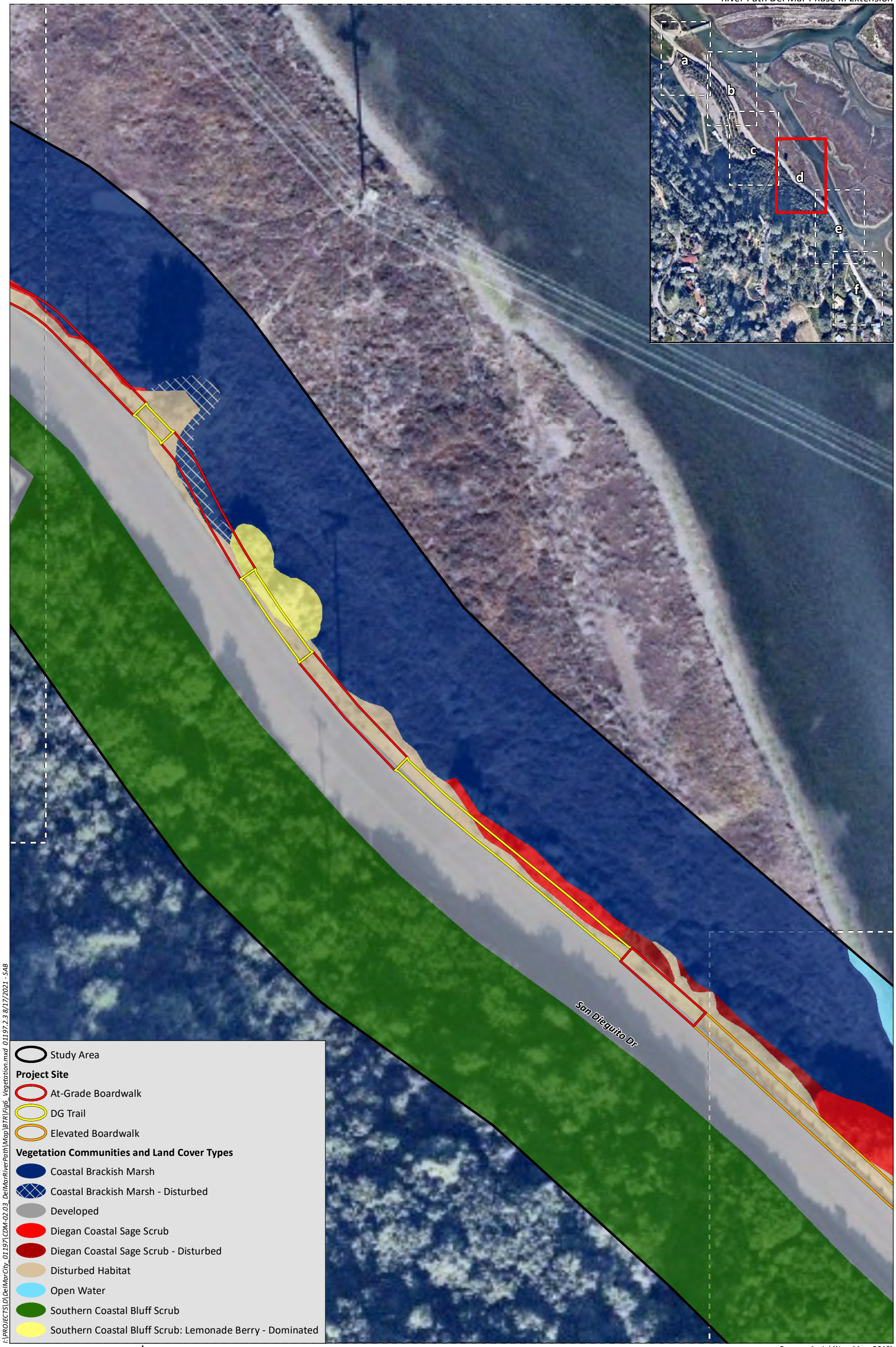
HELIX Environmental Planning

Existing Vegetation Communities and Land Cover Types

Figure 6c



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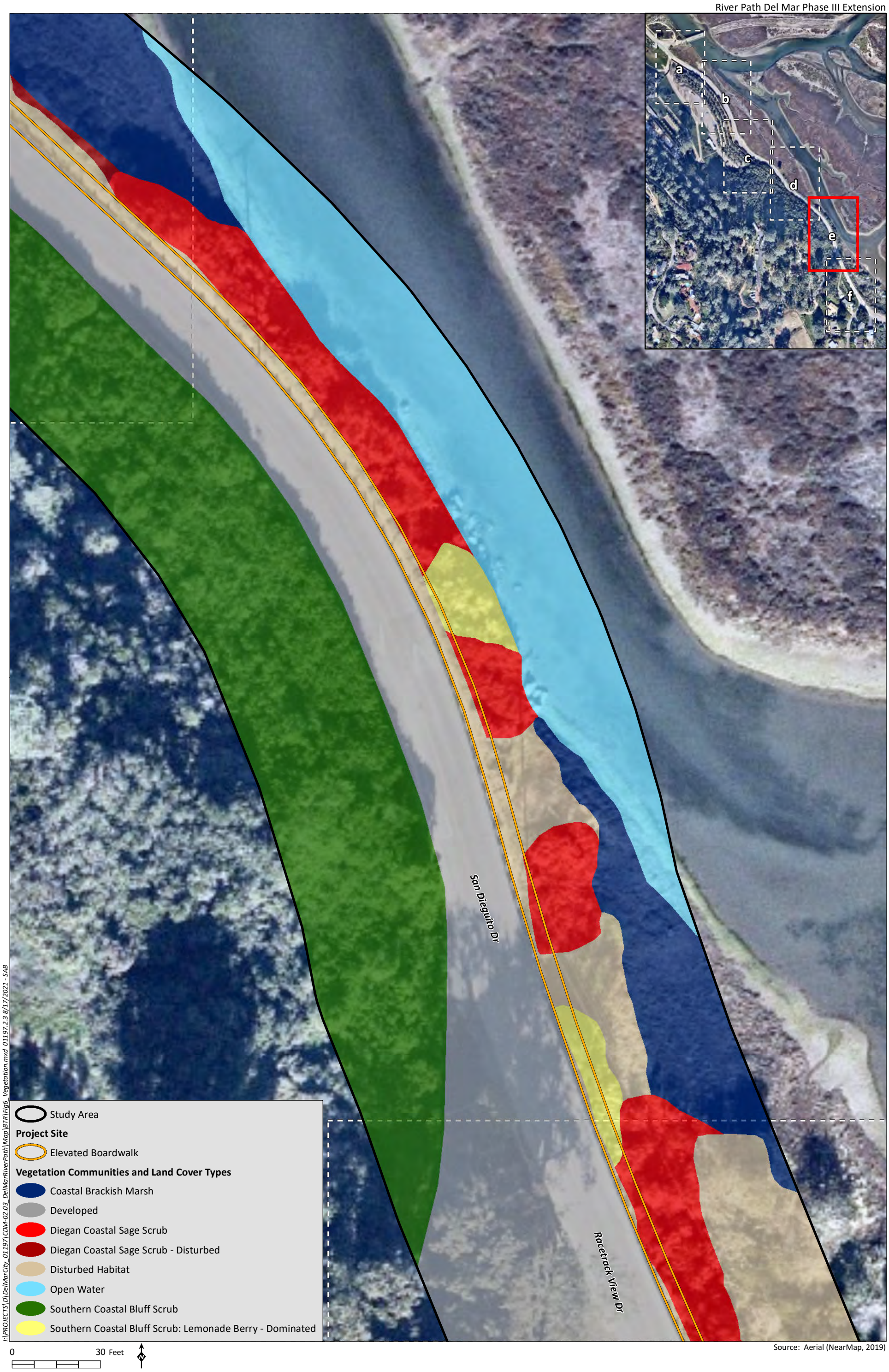
Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Existing Vegetation Communities and Land Cover Types

Figure 6d



Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Existing Vegetation Communities and Land Cover Types

Figure 6e

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Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Existing Vegetation Communities and Land Cover Types

Figure 6f

3.3.3 Southern Willow Scrub (63320; Tier I)

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat (*Baccharis salicifolia*), and may contain scattered emergent cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). This vegetation community occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows (Oberbauer 2008). Within the project site, southern willow scrub is dominated by arroyo willow (*Salix lasiolepis*) and narrow leaved willow (*Salix exigua*). No willow trees are rooted in the project site, but willow branches from trees off-site overhang into the project.

3.3.4 Diegan Coastal Sage Scrub (32500; Tier II)

Diegan coastal sage scrub is one of the major shrub communities in southern California that occupies xeric sites with shallow soils. Dominated by drought-deciduous shrubs with shallow root systems and open canopies, coastal sage scrub communities often contain a substantial herbaceous component. Diegan coastal sage scrub occurs in coastal southern California from Los Angeles County into northwestern Baja California, Mexico (Baja; Holland 1986), where it supports a number of threatened, endangered, and rare vascular plants, as well as several bird and reptile species that are candidates for federal listing. Diegan coastal sage scrub is the dominant vegetation community on-site. Characteristic plant species observed within this community on-site include California sagebrush (*Artemisia californica*), flat-top buckwheat, broom baccharis (*Baccharis sarothroides*), laurel sumac (*Malosma laurina*), and white sage (*Salvia apiana*).

3.3.5 Disturbed Habitat (11300; Tier IV)

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Within the project site, disturbed habitat consists of bare ground with scattered annual non-native species, including mustard (*Brassica* ssp.), Russian thistle (*Salsola tragus*), and filaree (*Erodium cicutarium*). Disturbed habitat within the project site consists of dirt roads and undeveloped land adjacent to the road.

3.3.6 Developed Land (12000; No Tier)

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Developed land within the project site consists of residential housing, landscaped areas, and paved roads.

3.4 PLANTS

A total of 56 plant species were observed within, or adjacent to, the project study area during the biological surveys for the project, of which 20 (36 percent) are non-native species (Appendix A, *Plant Species Observed*).

3.5 ANIMALS

A total of 49 animal species were observed/detected within, or adjacent to, the project study area during the biological surveys for the project, including one butterfly, one reptile, three mammals, and 44 bird species (Appendix B, *Animal Species Observed or Detected*).

3.6 SENSITIVE RESOURCES

3.6.1 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitat types are defined as land areas that support unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the State CEQA Guidelines.

The rarity of natural communities is evaluated by CDFW using the NatureServe's Heritage Methodology (Faber-Langendoen et al. 2012), in which communities are given a G (global) and S (State) rank based on their degree of imperilment (as measured by rarity, trends, and threats). Communities are assigned an overall rank of 1 through 5, with 1 being considered very rare and threatened and 5 being considered demonstrably secure. Communities with a Rarity Ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable) are considered sensitive by the CDFW.

Sensitive vegetation communities/habitat types are defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the State CEQA Guidelines. Four sensitive vegetation communities/habitat types were mapped within the project site: coastal brackish marsh, southern coastal bluff scrub, lemonadeberry-dominated southern coastal bluff scrub, and Diegan sage scrub. Disturbed habitat and developed lands do not meet the definition of sensitive habitat under CEQA.

3.6.2 Special Status Plant Species

Special status plant species have been afforded special status and/or recognition by the USFWS and/or CDFW. They may also be included in the CNPS' Inventory of Rare and Endangered Plants. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. Sensitive species are those considered unusual or limited in that they are: (1) only found in the region; (2) a local representative of a species or association of species not otherwise found in the region; or (3) severely depleted within their ranges or within the region. No sensitive plant species have been recorded on-site or observed within the site during the general biological surveys for the project.

Special Status Plant Species with Potential to Occur

A search of CNPS and CNDDB records (two-mile radius from the project site) was used to develop a matrix of sensitive plant species that may have the potential to occur on-site due to the presence of suitable habitat (e.g., vegetation communities, soils, elevation, and geographic range, life form/blooming period, etc.). The matrix is presented in Appendix C, *Special Status Plant Species Observed or with Potential to Occur*, and includes 75 special status plant species, their favorable habitat conditions, and their potential to occur on-site.

Three special status plant species were observed adjacent to the project during surveys by others in 2018: Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), South coast branching phacelia (*Phacelia ramosissima* var*. austrolitoralis*), and Estuary seablite (*Suaeda esteroa*)(Dudek 2018). However, these species were not observed within the project site during biological surveys in 2019 or 2021 and are presumed absent for this project assessment. No special status plant species were determined to have a high potential to occur due to the lack of suitable habitat within the project site (i.e., road edge). Three special status plant species have a moderate potential to occur on the project site, including: Nuttall's lotus (*Acmispon prostratus*), Southern tarplant (*Centromadia parryi ssp. australis*), and Orcutt's pincushion (*Chaenactis glabriuscula var. orcuttiana*)(see Appendix C). The remaining 72 special status plant species have low potential to occur, or are presumed to be absent, are not expected, or have not occurred at the project site.

3.6.3 Special Status Animal Species

Special status animal species include those that have been afforded special status and/or recognition by the USFWS and/or CDFW. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss. No special status animal species were observed within the project site during the 2019 or 2021 biological surveys.

Special Status Animal Species with Potential to Occur

A search of CNDDB and USFWS records (a two-mile radius from the project site) was used to develop a matrix of sensitive animal species that may have the potential to occur on-site due to the presence of suitable habitat (e.g., vegetation communities, soils, elevation, geographic range, etc.). The matrix is presented in Appendix D, *Special Status Animal Species Observed or with Potential to Occur*, and includes 20 special status animal species, their favorable habitat conditions, and their potential to occur on-site.

Three special status animal species were observed adjacent to the project. The Coastal California Gnatcatcher (*Polioptila californica californica*) was detected during surveys by others in 2018 (Dudek 2018); osprey (*Pandion haliaetus*) and California gull (*Larus californicus*) were observed during the survey by HELIX in 2021. California gnatcatcher was not detected within the project site during surveys but is considered to have moderate potential to occur on-site. Although observed near the site in association with open water habitats with the San Dieguito Lagoon/River, osprey and California gull have a low potential to occur on-site due to the lack of open water habitats required for these species.

Based on the habitats on-site and records of occurrence associated with the San Dieguito Lagoon Reserve adjacent to the project, a total of four special status animal species have at least a moderate potential to occur on the project site, including: Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*), Coastal California Gnatcatcher (*Polioptila californica californica*), Light-footed Ridgway's Rail (*Rallus obsoletus levipes*), and Least Bell's Vireo (*Vireo bellii pusillus*)(see Appendix D).

Belding's savannah sparrow has a moderate potential to occur on the project site in areas of salt marsh habitat dominated by dense pickleweed. Minimal removal of habitat would not impact the long-term survival of this species. In addition, impacts to potential habitat would be minimal compared to the amount of habitat present in the project vicinity and not proposed to be impacted. This is a relatively common species and widespread throughout San Diego county, such that even if these species were

confirmed present, removal of a small amount of habitat would not impact the local long-term survival of the species. In addition, impacts to potential habitat would be minimal compared to the amount of habitat present in the project vicinity and not proposed to be impacted.

Coastal California gnatcatcher was determined to have a moderate potential to occur in the project site in areas of coastal sage scrub, but impacts to potential habitat would be minimal compared to the amount of habitat present in the project vicinity that would be avoided and not impacted. Light-footed Ridgway's Rail was determined to have a moderate potential to occur based on the presence of marginal-quality habitat on the project site and recent observations within the immediate vicinity. Pre-construction nesting bird surveys would also protect these bird species.

Least Bell's vireo has a moderate potential to occur in the southern willow scrub habitat on-site and contiguous with the site. Minimal removal of habitat (minor branch trimming) would not impact the long-term survival of this species. In addition, impacts to potential habitat would be minimal compared to the amount of habitat present in the project vicinity and not proposed to be impacted.

No other special status animal species were determined to have a high potential to occur due to the lack of suitable habitat on-site.

Nesting Birds

Trees and shrubs both within and adjacent to the project site could provide suitable nesting habitat for bird species, including raptors, known to occur in the region.

3.7 JURISDICTIONAL AQUATIC RESOURCES

Results of the delineation concluded there are three types of potentially jurisdictional resource types on-site: wetland waters of the U.S./State, riparian/wetland habitat, and coastal wetlands. A summary of the acreages is provided below in Table 3, *Potentially Jurisdictional Aquatic Resources*, and presented on Figures 7a-7f, *Potentially Jurisdictional Aquatic Resources*.

Table 3
POTENTIALLY JURISDICTIONAL RESOURCES (acres)[1]

Habitat	Resource Agency Jurisdiction		Total
	USACE/RWQCB/CDFW/CCC	CDFW/CCC Only	
Wetlands/Riparian			
Coastal Brackish Marsh (Including disturbed; 52200)	0.009	-	0.009
Southern Willow Scrub (63320)	-	0.002	0.002
TOTAL	**0.009**	**0.002**	**0.011**

[1] Areas are presented in acre(s) rounded to the nearest 0.001. Acreages do not include the off-site target mitigation property. USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife; CCC = California Coastal Commission

3.7.1 Wetland Waters of the U.S./State

Potential wetland waters of the U.S. identified within the project site are subject to regulation by USACE and include areas of coastal brackish marsh. The waters of the U.S. also represent waters of the State

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HELIX Environmental Planning

Potentially Jurisdictional Aquatic Resources

Figure 7a

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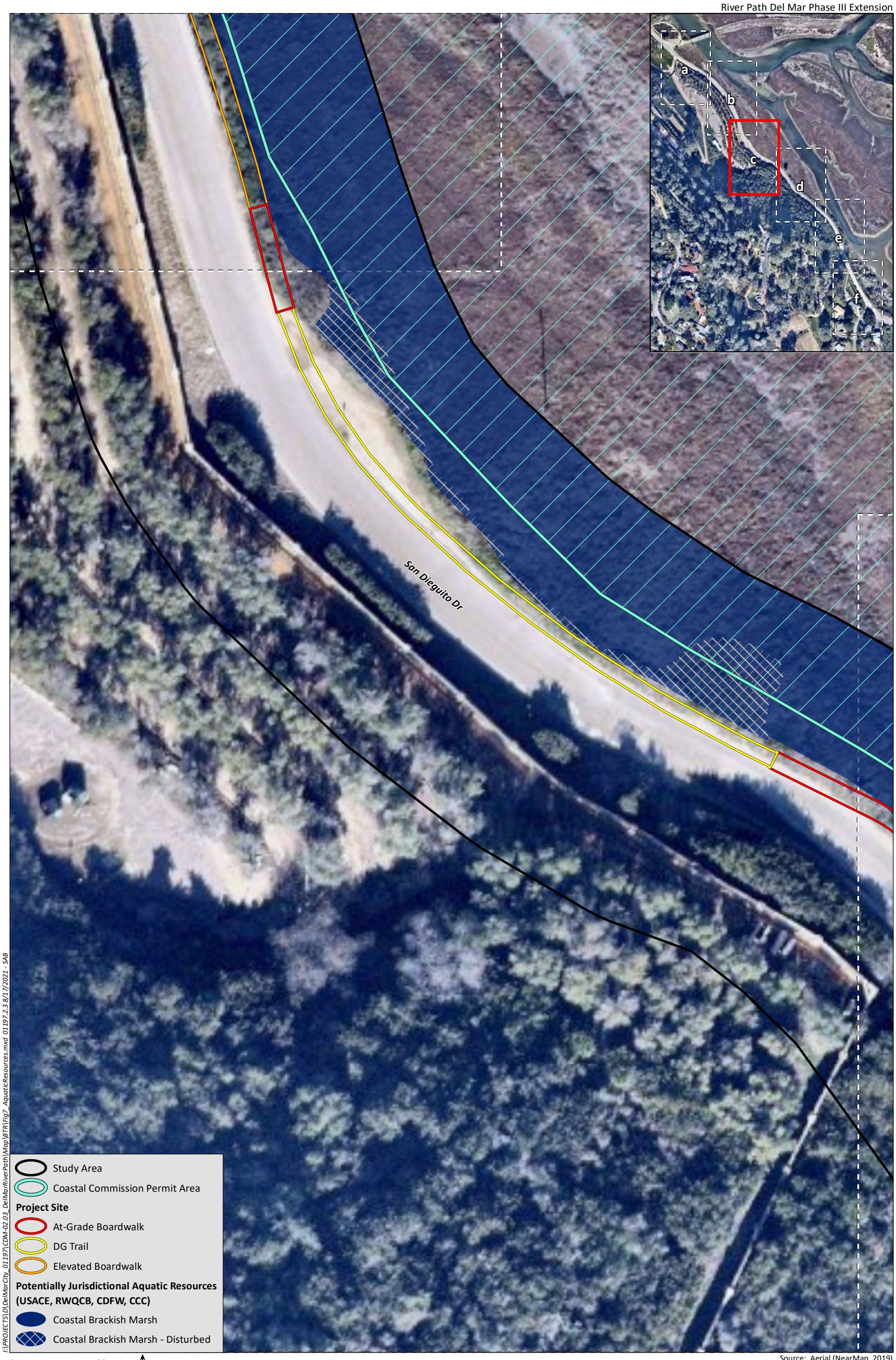
Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Potentially Jurisdictional Aquatic Resources

Figure 7b



Source: Aerial (NearMap, 2019)

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HELIX Environmental Planning

Potentially Jurisdictional Aquatic Resources

Figure 7c

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Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Potentially Jurisdictional Aquatic Resources

Figure 7d

Source: Aerial (NearMap, 2019)

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HELIX Environmental Planning

Potentially Jurisdictional Aquatic Resources

Figure 7e

Source: Aerial (NearMap, 2019)

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HELIX Environmental Planning

Potentially Jurisdictional Aquatic Resources

Figure 7f

subject to RWQCB jurisdiction pursuant to Section 401 of the CWA. The project site does not contain non-wetland waters.

3.7.2 State Riparian and Wetland Habitat

Potential riparian and wetland habitat under the jurisdiction of CDFW within the project site consists of areas of coastal brackish marsh and southern willow scrub. Areas of riparian and wetland habitat on-site under the jurisdiction of CDFW are generally consistent with the wetland waters of the U.S./State; however, an area of riparian vegetation extends beyond the jurisdictional limits defined by USACE and RWQCB.

3.7.3 Coastal Wetlands

Potential coastal wetlands within the project are generally the same as the CDFW jurisdictional areas presented above, and include coastal brackish marsh and southern willow scrub vegetation, as summarized. Coastal wetlands are considered jurisdictional and subject to regulation by CCC. The specific limits of CCC jurisdiction were provided for the project by the CCC in January 2021 and are presented on Figures 7a through 7f.

3.8 WILDLIFE CORRIDOR/CORE WILDLIFE AREAS

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species and may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

One biological core area is identified immediately north of the site and is associated with the San Dieguito Lagoon (County 1998), which connects to two habitat linkages: San Dieguito River Valley between Del Mar and Santa Fe Valley. Core Areas are defined as areas generally supporting a high concentration of sensitive biological resources, which, if lost or fragmented, could not be replaced or mitigated elsewhere. The linkages were identified as building blocks to connect preserved Core Areas and to provide access for special status species to move between Core Areas. By providing special status species Core Areas and linkages between these areas, populations of special status species do not become isolated and are able to ensure the balance of the ecosystem is maintained.

The project site is not considered to facilitate wildlife movement with respect to the San Dieguito Lagoon Core Area. Lands surrounding the project site to the south are developed and constrained by existing development. North of the project site contains undeveloped lands associated with the San Dieguito Lagoon Ecological Reserve and adjacent San Dieguito Lagoon State Marine Conservation Area. The project site occurs in an area frequently used by humans (including hiking and for walking pets) and outside of areas where wildlife movement opportunities do occur (i.e., within San Dieguito Lagoon Ecological Reserve and Conservation Area).

The aquatic, riparian, and upland habitats within the project site are contiguous with similar or better habitats to the north and east (associated with San Dieguito Lagoon); however, the majority of the proposed project site is disturbed and developed. Resources within the project site are undisturbed in character and support both native and non-native species. These habitats are very limited in size within the narrow project site (i.e., approximately six feet wide) alignment and may provide marginal-quality foraging and breeding habitat for native species. Small terrestrial wildlife species (i.e., birds, mammals, reptiles, etc.) and possibly two larger mammals (coyote [*Canis latrans*] and bobcat [*Lynx rufus*]) would use the project site.

In summary, given the project site's location immediately adjacent to an existing roadway, the narrow (approximately six feet wide) project alignment, and urban setting, the project site itself does not serve as a wildlife corridor or habitat linkage for the region.

4.0 REGULATORY FRAMEWORK

Biological resources in the project site are subject to regulatory review by federal, State, and local agencies. Under CEQA, impacts associated with a proposed project are assessed with regard to significance criteria determined by the CEQA Lead Agency (in this case, City of Del Mar, pursuant to CEQA Guidelines. Biological resources-related laws and regulations that apply to the project include the Federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), CWA, CEQA, California Endangered Species Act (CESA), and CFG Code.

4.1 FEDERAL

4.1.1 Federal Endangered Species Act

Administered by the USFWS, the federal ESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species, and the habitats upon which they rely, are considered take under the ESA. Section 9(a) of the ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 7 and 4(d) of the Federal ESA regulate actions that could jeopardize endangered or threatened species. Section 7, administered by the USFWS, describes a process of Federal interagency consultation for use when Federal actions may adversely affect listed species. A Section 7 Consultation (formal or informal) is required when there is a nexus between a listed species' use of a site and if the project is funded (wholly or in part) by the State Revolving Fund. A biological assessment is required for any major construction activity if it may affect a listed species. Take can be authorized via a letter of Biological Opinion, issued by the USFWS, for non-marine related listed species issues. The project would be funded in part by the State Resolving Fund. A Section 7 Consultation would be required if impacts to a federally listed species would occur.

Identified by the USFWS, critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. The ultimate goal is to restore healthy populations of listed species within their native habitat, so they can be removed from the list of threatened or

endangered species. Once an area is designated as critical habitat pursuant to the federal ESA, all federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of the critical habitat.

4.1.2 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on the disturbance of active bird nests during the nesting season (generally February 1 to August 31, including raptors). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests.

4.1.3 Clean Water Act and Rivers and Harbors Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. is overseen by the USACE under Section 404 of the CWA. Most development projects are permitted using Individual Permit or Nationwide Permit instruments.

4.1.4 Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) creates a broad program for the management of coastal lands based on land development control. It was enacted to encourage the participation and cooperation of state, local, regional, federal agencies, and governments to have programs affecting the coastal zone. The CZMA allows state involvement through the development of Coastal Zone Management Plans (CZMP) for comprehensive management at the state level. The CZMPs define permissible land and water use within the state coastal zone. This coastal zone extends three miles seaward and inland as far as necessary to protect the coast. The CZMA also requires federal agencies or licensees to carry out their activities in such a way that they conform to the maximum extent practicable with a state's coastal zone management program. The California Coastal Act is California's coastal zone management program under the CZMA. This program is discussed below.

4.2 STATE

4.2.1 California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (i.e., impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

4.2.2 California Endangered Species Act

The CESA established it is state policy to conserve, protect, restore, and enhance state endangered species and their habitats. Under state law, plant and animal species may be formally designated rare,

threatened, or endangered by official listing by the California Fish and Game Commission. The CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with CESA (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of the CFG Code authorizes the CDFW to issue an Incidental Take Permit for state-listed threatened and endangered species if specific criteria are met. The MSCP is a regional Natural Communities Conservation Plan that was granted take coverage under Section 2081 of the CESA.

4.2.3 California Fish and Game Code

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities.

If the project could result in adverse impacts to a state-listed species that is not also federally listed, Section 2081(b) of the California Fish and Game Code provides a mechanism for CDFW to permit, on a project-specific basis, incidental take of species listed under CESA. Preparation and submittal of an Incidental Take Permit application with CDFW by the project proponent are required. The application must include project details, potential project impacts, an analysis of "jeopardy" for the continued existence of the impacted species, and species-specific mitigation and avoidance measures that would fully mitigate for the project impacts.

Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle, unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

4.2.4 California Coastal Act of 1976

The California Coastal Act (CCA) provides for the protection of environmentally sensitive habitat identified by the CDFW from adjacent developments in the coastal zone. The CCA is California's coastal zone management program under the CZMA, discussed above. The CCA establishes the CCC as having jurisdiction over California's coastal zone. The CCA identifies environmentally sensitive habitat areas as any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. Compliance with requirements in the CCA is ensured for specific development projects in the coastal zone through the issuance of a Coastal Development Permit (CDP). In most incorporated areas within the coastal zone, compliance with the CCA is regulated by local government through the implementation of a certified LCP. The local government typically issues CDPs

and implements their approved LCP in regulating developments within the coastal zone. Portions of the project are within areas under the jurisdiction of the City's certified LCP and the CCC permit authority area (Figures 7a through 7f and 8a through 8f).

4.2.5 Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning (NCCP) program is a cooperative effort to protect habitats and species. It began under the state's NCCP Act of 1991, legislation broader in its orientation and objectives than the CESA or FESA. These laws are designed to identify and protect individual species that have already declined significantly in number. The NCCP Act of 1991 and the associated Southern California Coastal Sage Scrub NCCP Process Guidelines (1993), Southern California Coastal Sage Scrub NCCP Conservation Guidelines (1993), and NCCP General Process Guidelines (1998) have been superseded by the NCCP Act of 2003.

The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by a species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

This voluntary program allows the state to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a threatened or endangered species, and the areas that may be less important. These NCCP plans may become the basis for a state permit to take threatened and endangered species in exchange for conserving their habitat. The CDFW and USFWS worked to combine the NCCP program with the federal Habitat Conservation Plan process to provide take permits for state and federal listed species. Under the NCCP, local governments, such as the County, can take the lead in developing these NCCP plans and become the recipients of state and federal take permits.

4.3 LOCAL

4.3.1 Multiple Species Conservation Program

The California NCCP Act of 1991 (Section 2835) allows the CDFW to authorize take of species covered by plans in agreement with NCCP guidelines. A Natural Communities Conservation Program, initiated by the State of California, focuses on conserving coastal sage scrub, and in concert with the USFWS and the federal ESA, is intended to avoid the need for future federal and state listing of coastal sage scrub-dependent species.

The MSCP Plan was approved in August 1998 covers 85 species and includes a 900-square mile area in southwestern San Diego County (County 1998). The Draft City of Del Mar Subarea, portions of the unincorporated County, and 10 additional city jurisdictions comprise the MSCP Plan area. It is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space in order to link core biological areas into a regional wildlife preserve. The MSCP is one of several large multiple jurisdictional habitat planning efforts in San Diego County, each of which constitutes a subregional plan under the NCCP Act of 1991. The MSCP includes incorporated cities in southwestern San Diego County that will implement their respective portions of the MSCP through citywide "subarea" plans, which describe the specific implementing mechanisms each city will institute for the MSCP. The City of Del Mar has not approved or adopted their

Draft Subarea Plan; therefore, the project is not subject to the provisions of the MSCP, although it is referenced for project planning considerations and demonstration of voluntary consistency.

4.3.2 Del Mar Municipal Code

The Del Mar Municipal Code includes a Lagoon Overlay Zone to protect wetland resources of the San Dieguito Lagoon, including sensitive upland habitats. The proposed project is within the Lagoon Overlay Zone, which is codified and described in Chapter 30.53.10 of the Del Mar Municipal Code. All development activities in the Lagoon Overlay Zone are to be designed and implemented in a manner consistent with the required wetland protection, wetland enhancement, and permitted uses specified under Sections 30.53.040 through 30.53.170 of the City's Municipal Code. Additionally, development in the Lagoon Overlay Zone requires the approval of both a Conditional Use Permit (CUP) and CDP by the City. Permitted uses in wetlands are limited to aquaculture, scientific research, and wetland restoration projects. Section 30.52.080 prohibits activities that would involve "grading, filling, construction, or placement of structures within the boundaries of wetlands as determined pursuant to the provisions of this Chapter."

5.0 SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

This section describes potential direct and indirect impacts on biological resources associated with the proposed project. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Indirect impacts can be short-term or long-term and incorporate areas adjacent to the project (i.e., edge effects). Examples of short-term indirect impacts include construction-related noises, dust, increased human presence, and hydrology modifications. Long-term indirect impacts primarily result from anthropogenic disturbances by humans such as noise, lighting, domesticated animals, spread of non-native ornamental and weedy plant species, and urban run-off (including potentially toxic or hazardous contaminants). The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes longer to become apparent.

5.1 CRITERIA FOR DETERMINING IMPACT SIGNIFICANCE

The significance of impacts to biological resources present or those with the potential to occur was determined based upon the sensitivity of the resource and the extent of the anticipated impacts. For certain highly sensitive resources (e.g., a federally listed species), any impact would be significant. Conversely, other resources that are of low sensitivity (e.g., species with a large, locally stable population in the County but declining elsewhere) could sustain some impact with a less than significant effect.

According to Appendix G of the CEQA Guidelines, project impacts to biological resources would be considered significant if they would:

(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 CDFW or USFWS.

(b) Have a substantial adverse effect on any riparian habitat or sensitive natural community identified by local or regional plans, policies, regulations, or by CDFW or USFWS.

(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (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 within an established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

(e) Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

(f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.2 ISSUE 1: SPECIAL-STATUS SPECIES

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 CDFW or USFWS?

5.2.1 Impact Analysis

5.2.1.1 Special Status Plant Species

Less than Significant with Mitigation. The project would have no impact on federal or State-listed plant species (Figures 8a-8f, *Proposed Project Impacts*). No sensitive plant species have been recorded on-site, and none were observed within the site during the 2018, 2019, and 2021 biological surveys for the project.

Three non-listed sensitive plant species have moderate potential to occur on-site: Nuttall's lotus, Southern tarplant, and Orcutt's pincushion. All three species are designated as California Rare Plant Rank (CRPR) List 1B.1 plant species. As a CRPR 1B.1 plant species, they have been assigned to a watch list for plants reported as rare and high degree and immediacy of threat by the CNPS. Because focused surveys for these annual growing species were not conducted as part of this biological study, absence within the project site cannot be assumed. Although there is moderate potential for these species to occur on-site, impacts to these species would be considered significant if found within the proposed project impact area. For purposes of this analysis, given the minimal impacts to suitable habitats by the project, the number of individuals that could be impacted by the project are presumed to be relatively low. Nevertheless, direct impacts on individuals would be considered to be significant and would require mitigation.

Mitigation measures **BIO-1**, **BIO-2,** and **BIO-3** would require the installation of temporary construction fencing, biological monitoring where work limits occur adjacent to known sensitive resources, and that the implementation of a mitigation and monitoring plan include the planting of these three species to ensure no loss. Implementation of mitigation measures **BIO-1**, **BIO-2,** and **BIO-3** would ensure that potential impacts on sensitive plant species would be reduced to a level below significant.

5.2.1.2 Special Status Animal Species

Less than Significant with Mitigation. The project would result in significant direct and/or indirect impacts on special status bird species during construction. Minimal direct impacts to suitable habitat for the federally endangered light-footed Ridgway's rail and least Bell's vireo, federally threatened coastal California gnatcatcher, state endangered Belding's savannah sparrow would occur as a result of the project (Figures 8a-8f). Mitigation measures **BIO-1** and **BIO-2** require the installation of temporary construction fencing and biological monitoring where work limits occur adjacent to suitable habitat. If take authorization is required, mitigation measure **BIO-4** would require authorization, and the corresponding mitigation requirements shall be obtained by consultation with USFWS through the ESA Section 7 process, as well as CDFW in accordance with CESA Section 2081.

Although the project impact footprint has been specifically designed to primarily occur within disturbed areas, minimal project impacts would occur in suitable habitats for these species, and additional suitable habitats are immediately off-site within the San Dieguito Lagoon. Light-footed Ridgway's rail, least Bell's vireo, coastal California gnatcatcher, and Belding's savannah sparrow have the potential to breed in on- and off-site habitat areas. If construction is scheduled to occur during the breeding season for these species, such activities could result in inadvertent and adverse indirect impacts on these species, if found breeding in the area. These impacts would be significant. Thus, mitigation measure **BIO-5** would require pre-construction surveys in accordance with the applicable USFWS protocols to ensure that the appropriate avoidance measures are implemented prior to and during construction to avoid any impacts on these species. With the implementation of mitigation measures **BIO-4** and **BIO-5**, no significant impacts on special-status animal species would occur. Therefore, with the implementation of required mitigation measures, impacts on these special-status animal species would be reduced to less than significant.

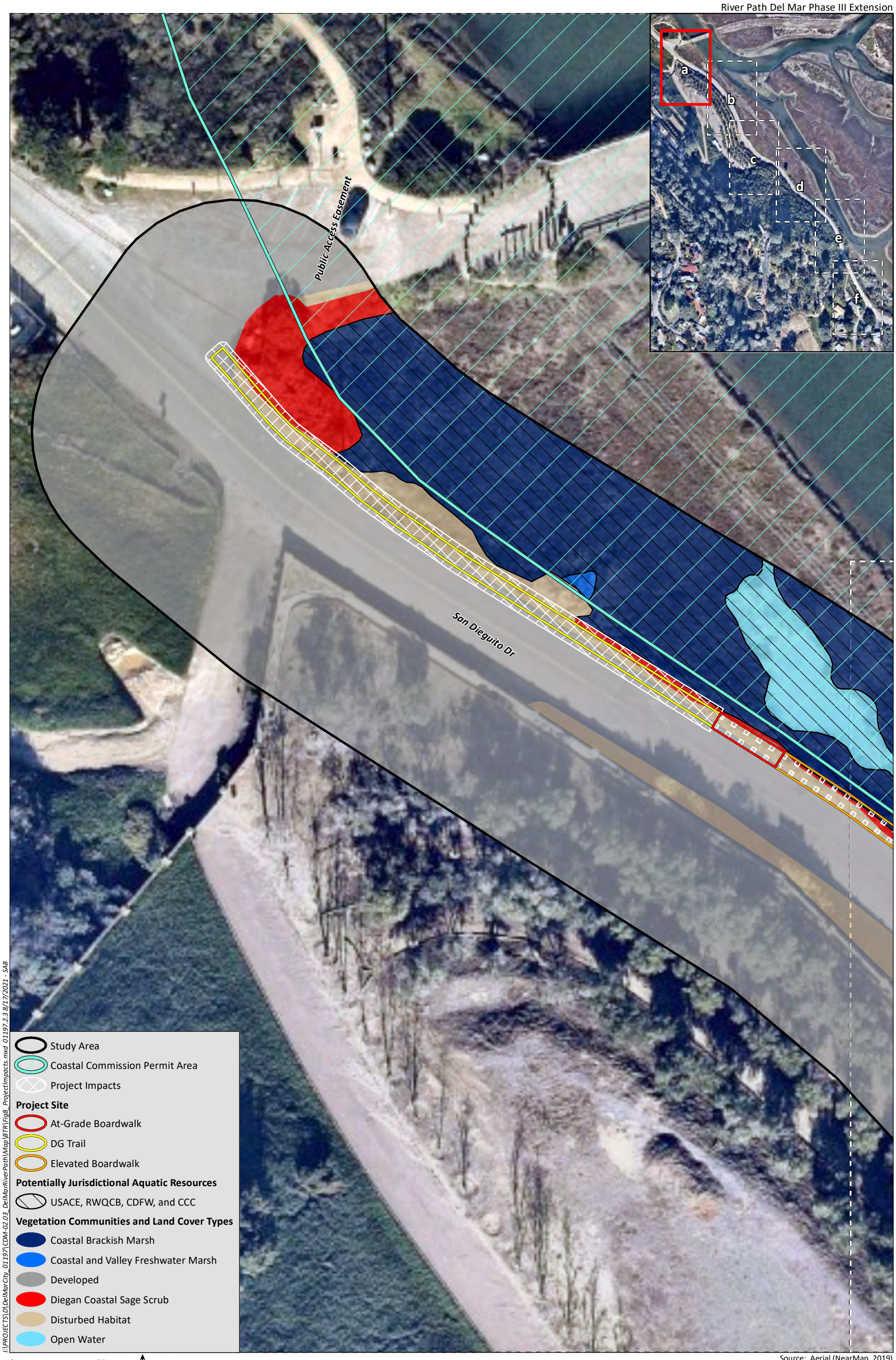
The project proposes the removal of vegetation and other potential nesting habitat for common birds and raptors protected under the MBTA and CFG Code. Impacts on active nests belonging to bird species protected under the MBTA and CFG Code would be significant. Mitigation measure **BIO-6** would ensure that the appropriate pre-construction survey and avoidance measures are implemented prior to and during construction to avoid any impacts on nesting birds and raptors. With the implementation of mitigation measure **BIO-6**, no impacts would occur.

5.2.2 Mitigation Measures

The following mitigation measures would ensure that potential impacts on special status animal species are avoided by the project.

BIO-1 **Temporary Construction Fencing:** Prior to construction, to help ensure inadvertent/unauthorized impacts to environmentally sensitive areas outside of the approved impact footprint are avoided, temporary construction fencing, including silt fencing as appropriate, shall be installed at the edges of the approved impact limits of grading for the project. Temporary fencing shall be installed at all locations where the project grading components occur adjacent to resources depicted on Figures 8a-8f. A qualified biologist shall be retained to monitor the installation of the temporary construction fencing wherever it would abut environmentally sensitive areas. Construction activities shall be restricted to areas within the approved impact limits at all times during construction.

River Path Del Mar Phase III Extension



Source: Aerial (NearMap, 2019)

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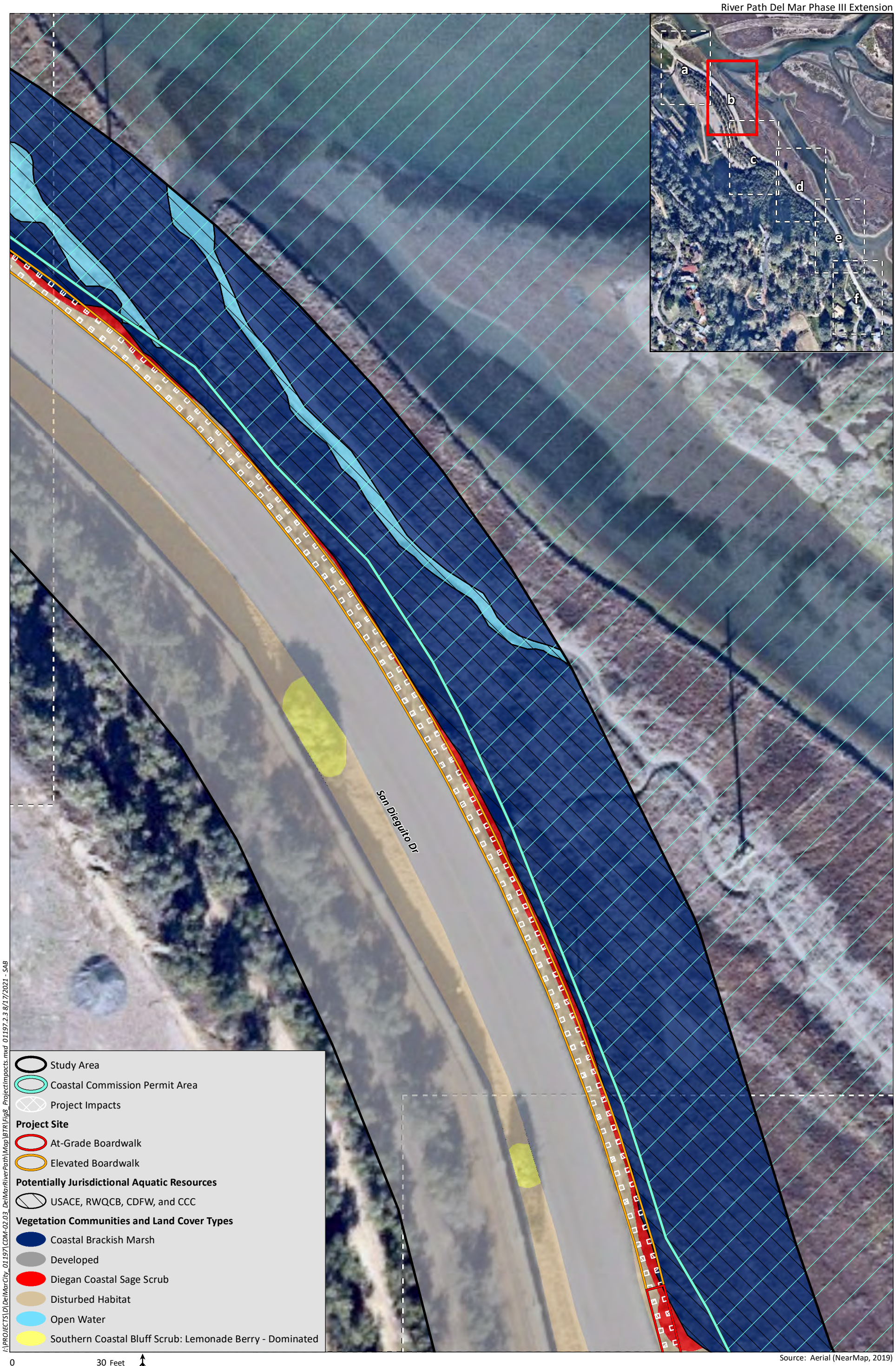
HELIX Environmental Planning

Proposed Project Impacts

Figure 8a



Source: Aerial (NearMap, 2019)

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HELIX Environmental Planning

Proposed Project Impacts

Figure 8b

River Path Del Mar Phase III Extension

San Dieguito Dr

Study Area
Coastal Commission Permit Area
Project Impacts

Project Site

At-Grade Boardwalk
DG Trail
Elevated Boardwalk

Potentially Jurisdictional Aquatic Resources

USACE, RWQCB, CDFW, and CCC

Vegetation Communities and Land Cover Types

Coastal Brackish Marsh
Coastal Brackish Marsh - Disturbed
Developed
Diegan Coastal Sage Scrub
Disturbed Habitat
Southern Coastal Bluff Scrub
Southern Coastal Bluff Scrub: Lemonade Berry - Dominated

0 30 Feet

N

Source: Aerial (NearMap, 2019)

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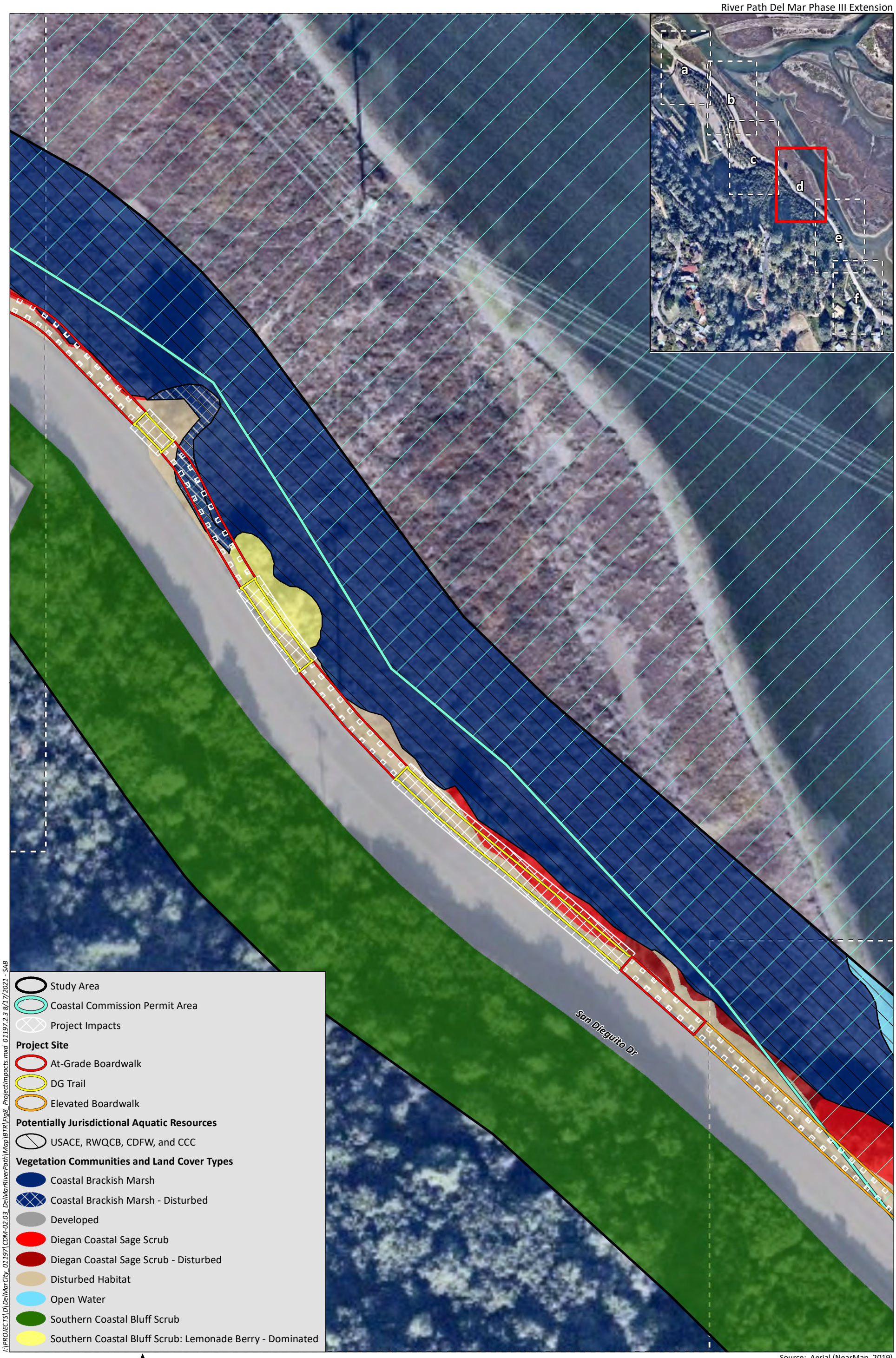
HELIX Environmental Planning

Proposed Project Impacts

Figure 8c



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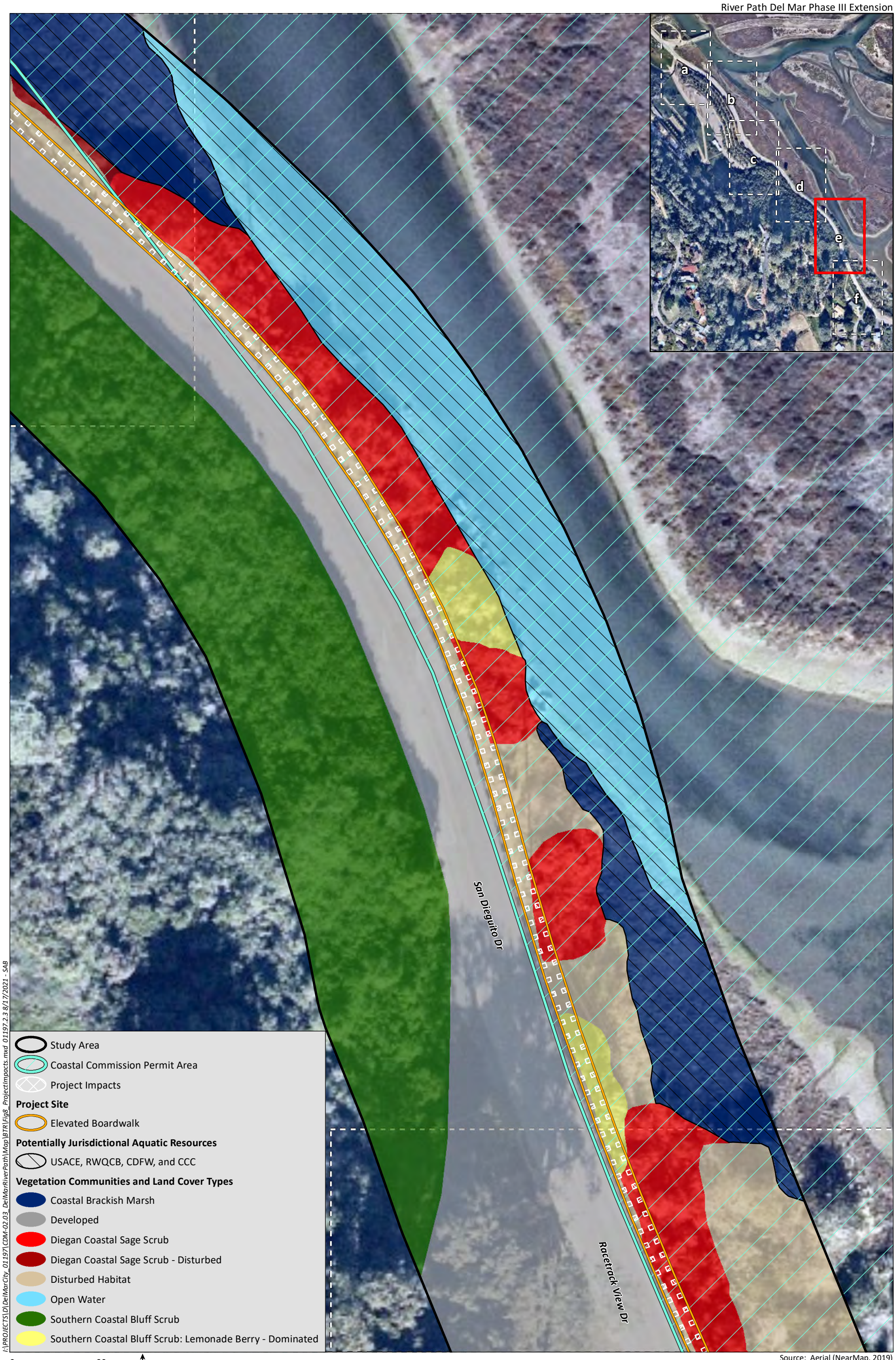
Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Proposed Project Impacts

Figure 8d



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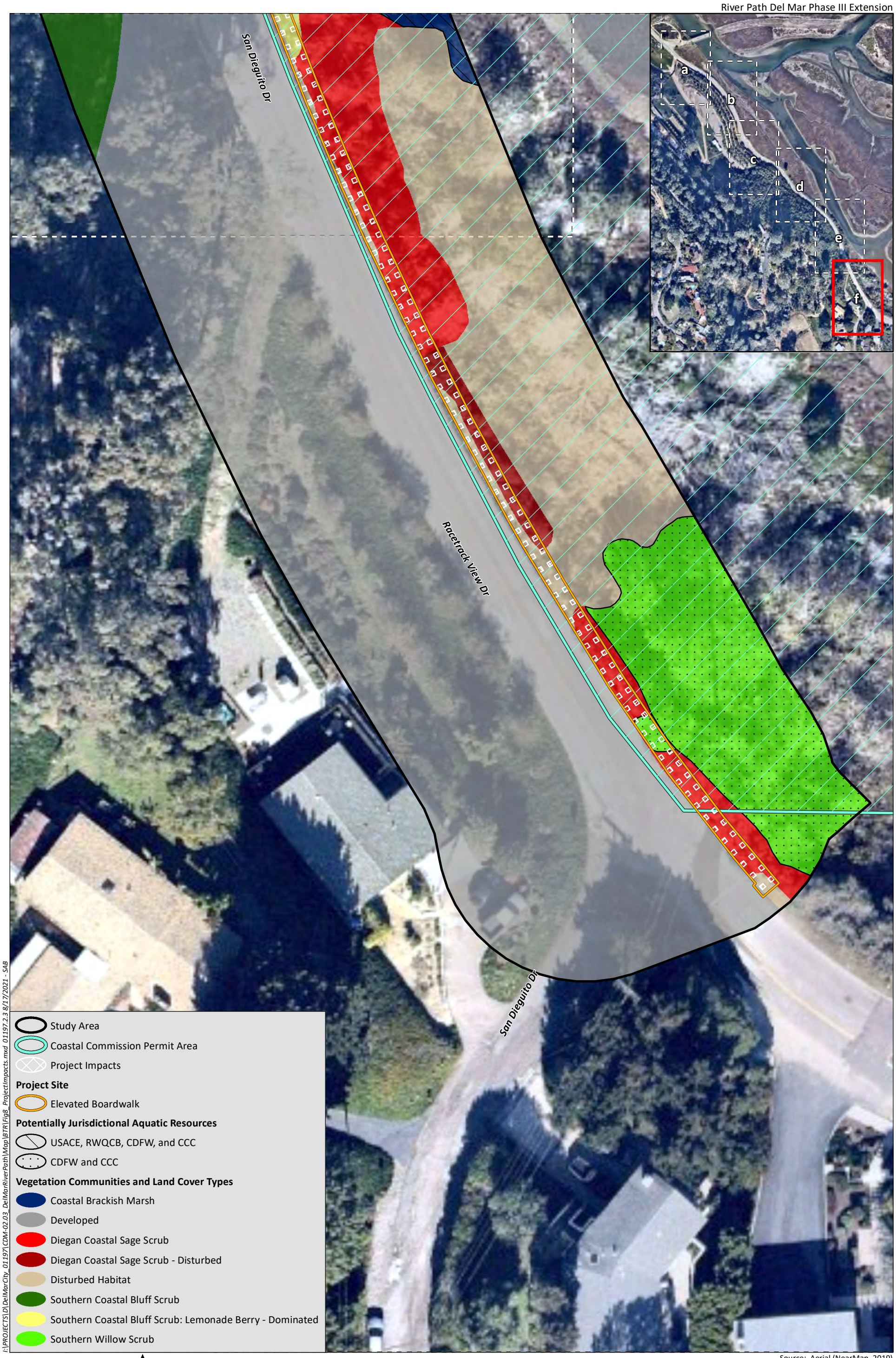
Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Proposed Project Impacts

Figure 8e



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Source: Aerial (NearMap, 2019)

HELIX Environmental Planning

Proposed Project Impacts

Figure 8f

BIO-2 **Biological Monitoring:** A qualified biologist will conduct a pre-construction environmental training session for construction personnel to inform them of the sensitive biological resources in the local area and the avoidance measures in place to remain in compliance. The biologist will regularly monitor construction activities throughout construction, including fencing installed in accordance with mitigation measure **BIO-1**. If items of non-compliance are identified, the biologist shall notify the on-site construction superintendent immediately to discuss and implement corrective actions. Issues of non-compliance that result in additional impacts to sensitive biological resources shall be documented and provided to the City within 72-hours of identification. Unless otherwise required, mitigation shall adhere to the applicable measures in this report.

BIO-3 **Habitat-Based Compensatory Mitigation:** To mitigate potential impacts on non-listed rare plant individuals (Nuttall's lotus, Southern tarplant, and Orcutt's pincushion) and sensitive habitat types (coastal brackish marsh, Diegan coastal sage scrub, southern coastal bluff scrub, southern willow scrub), the City shall prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) that will prescribe actions for on- and/or off-site mitigation of the impacted resources at a minimum 1:1 ratio (no net loss) through establishment/re-establishment, substantial rehabilitation, and/or preservation. Off-site mitigation shall be implemented within the subject target site/property located approximately 225 feet northwest of the project (Figure 9, *Proposed Mitigation*). A portion of the off-site target mitigation property shall be assigned to mitigate for the project (approximately 0.01 acre), and the remaining portion of the property shall be available for other mitigation efforts/projects. The HMMP shall include requirements for site preparation, soil amendments, temporary irrigation, native plant palettes, installation methods, maintenance, and performance monitoring, as appropriate. HMMP shall require that the habitat establishment/creation, re-establishment, rehabilitation, and restoration mitigation efforts be subject to a minimum five-year performance monitoring period with specific success criteria to ensure that the impacted functions and services are restored. A protective instrument, such as a conservation easement or restrictive covenant, shall be recorded over the mitigation areas where such a protective instrument does not already exist, unless otherwise not required. The mitigation areas shall be subject to long-term management by a qualified entity approved by the City with experience in managing preserve lands (i.e., CDFW list of qualified entities). Funding for long-term management shall be provided through a non-wasting endowment or other financial mechanism approved by the City. Where project impacts and mitigation involve resources regulated by the USFWS, USACE, RWQCB, CDFW, and/or other responsible agencies, the City shall coordinate HMMP preparation and implementation with these agencies and obtain all necessary permits and approvals from these agencies prior to HMMP implementation, as appropriate.

BIO-4 **Listed Wildlife Species Avoidance and Conservation Measures:** Impacts to listed wildlife species determined to have potential to occur, including: Belding's savannah sparrow, coastal California gnatcatcher, light-footed Ridgway's rail, and least Bell’s vireo, shall be compensated by the implementation of habitat-based mitigation via a Habitat Mitigation and Monitoring Plan (see mitigation measure **BIO-3** above).

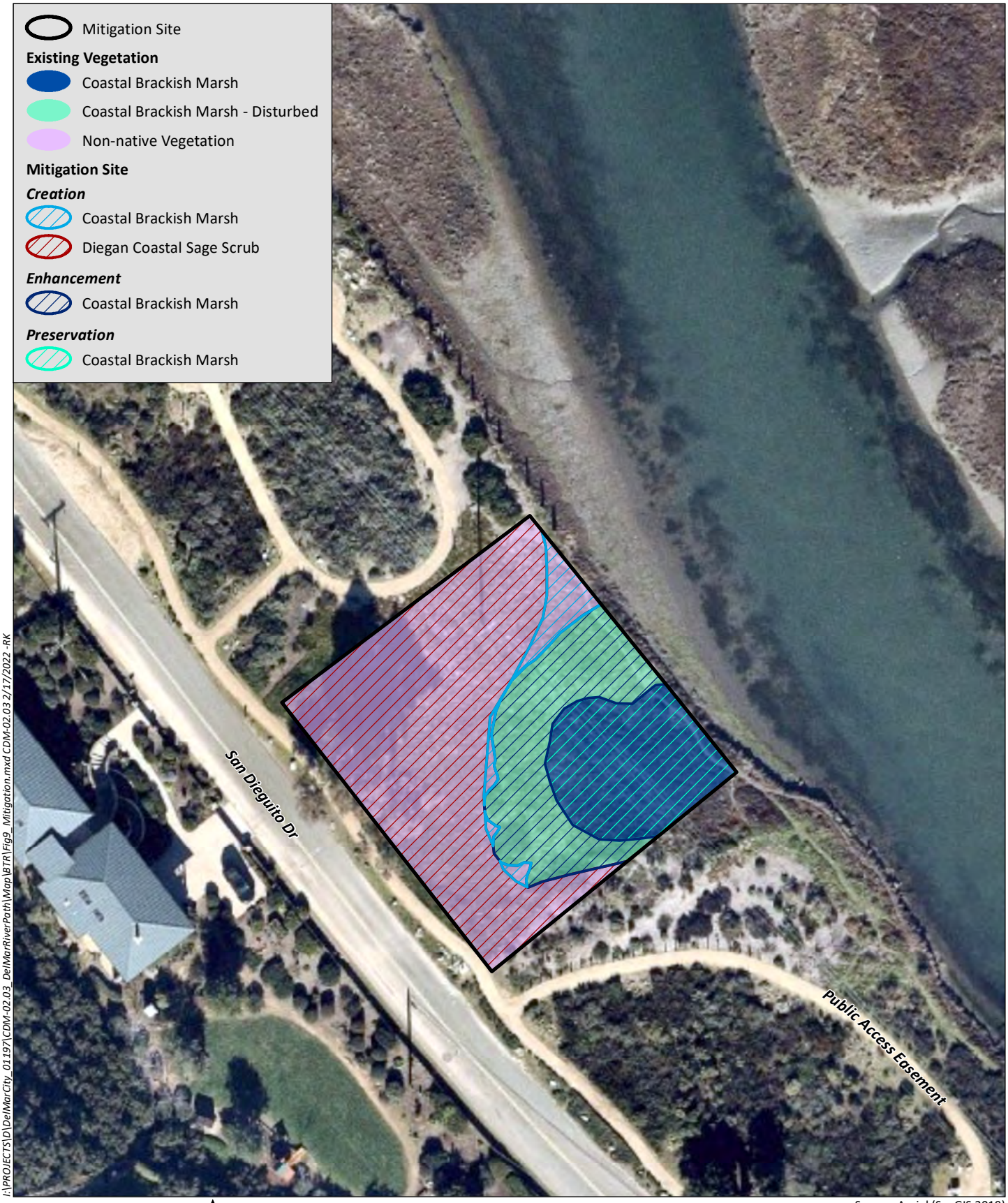
If project impacts to vegetation or grading are necessary within and/or adjacent to native habitat between February 15 and September 15, then pre-construction surveys shall be conducted for federally listed bird species identified with potential to occur; including coastal California gnatcatcher, light-footed Ridgway’s rail, least Bell’s vireo, and Belding’s savannah

sparrow (see **BIO-5** below). Grubbing, grading, or clearing during the breeding season for these species could occur if it is determined based on the results of the pre-construction protocol surveys that the species is/are not present. If surveys conclude the presence of the target species in the survey area, the City and/or federal action agency for the project shall consult with the USFWS (Section 7 or Section 10) regarding project-level related significant adverse effects to coastal California gnatcatcher, light-footed Ridgway's rail, and/or least Bell's vireo, as appropriate. If Belding's savannah sparrow is detected during pre-construction protocol surveys, the City shall notify CDFW, and if required by CDFW, shall prepare/submit an application for a Section 2081(b) Incidental Take Permit for impacts to Belding's savannah sparrow.

BIO-5 **Pre-Construction Protocol Surveys:** If construction activities are scheduled to occur during the nesting season for coastal California gnatcatcher (March 1 through August 30), light-footed Ridgway's rail (April 1 through August 31), least Bell's vireo (April 15 to September 15), and Belding's savannah sparrow (February 15 through June 30), a qualified biologist shall conduct pre-construction surveys to determine the presence or absence of these species. The final survey shall not be completed more than three days prior to the beginning of impacts or grading activities. If the results are negative, construction shall be allowed to proceed. The Wildlife Agencies (USFWS and CDFW) shall be notified if any special status species are observed nesting within 500 feet of proposed grading activities and additional measures imposed by the Agencies shall be implemented.

No activities which would result in noise levels exceeding 60 hourly average A-weighted decibels (dBA L_{EQ}) within this 500-foot buffer shall be allowed. Ambient background noise shall be excluded from the 60 dBA calculation. If noise-generating construction activities are not completed prior to the breeding season, sensitive bird species are present nesting, and noise levels exceed this threshold, appropriate measures shall be implemented to reduce construction noise levels at occupied habitat to below 60 dBA L_{EQ} (one hour) including, but not be limited to, the following:

- Construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.
- Diesel equipment shall be operated with closed engine doors and equipped with factory-recommended mufflers.
- Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- Electrically powered equipment shall be used instead of pneumatic or internal- combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (e.g., in excess of five minutes) shall be prohibited.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.



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Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

Proposed Mitigation

Figure 9

- No project-related public address or music system shall be audible at any adjacent sensitive receptor.

- Temporary sound barriers or sound blankets shall be installed between construction operations and adjacent noise-sensitive habitat. The project Contractor shall construct a temporary noise barrier at least six feet in height meeting the specifications listed below (or of a Sound Transmission Class [STC] 19 rating or better) to attenuate noise.

- All barriers shall be solid and constructed of wood, plastic, fiberglass, steel, masonry, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove or close butted seams and must be at least 3⁄4-inch thick or have a surface density of at least 3.5 pounds per square-foot. Sheet metal of 18-gauge (minimum) may be used if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Noise blankets, hoods, or covers also may be used, provided they are appropriately implemented to provide the required sound attenuation.

BIO-6 **Nesting Bird and Raptor Avoidance:** Trimming, grubbing, and clearing of vegetation shall be avoided during the general avian breeding season (generally February 1 to August 31, including raptors) to the extent feasible. If trimming, grubbing, or clearing of vegetation is proposed to occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to vegetation clearing to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, trimming, grubbing, and clearing of vegetation shall be allowed to proceed. If active bird nests are confirmed to be present during the pre-construction survey, a buffer zone will be established by the biologist. Construction activities shall avoid any active nests until a qualified biologist has verified that the young have fledged, or the nest has otherwise become inactive.

5.2.3 Conclusion

Project implementation would potentially result in significant impacts to special status plant and animal species, including general nesting birds and raptors, within or adjacent to the project site. However, implementation of mitigation measures **BIO-1** through **BIO-6** would ensure that potential impacts are avoided by the project or are reduced to below significant.

5.3 ISSUE 2: RIPARIAN HABITAT AND SENSITIVE NATURAL COMMUNITIES

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS?

5.3.1 Impact Analysis

Less than Significant with Mitigation. The proposed project would result in impacts to coastal brackish marsh (including disturbed), southern coastal bluff scrub (including lemonadeberry dominated), southern willow scrub, and Diegan coastal sage scrub (including disturbed), which are considered sensitive natural communities and require mitigation. The project would also result in impacts to

disturbed habitat, non-native vegetation, and developed land, which are not considered sensitive natural communities. Impacts to non-sensitive vegetation communities are not considered significant and, therefore, do not require mitigation.

Project impacts are depicted on Figures 8a through 8f, and are summarized below within Table 4, *Proposed Impacts to Vegetation Community/Land Cover Types*.

Table 4
PROPOSED PROJECT IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES[1]

Vegetation Community or Land Cover Type[1]	Project Impacts	
	Permanent (Acres) [1]	Temporary (Acres) [1, 3]
Sensitive		
Tier I		
Coastal Brackish Marsh (Including disturbed; 52200)	0.0004	0.0002
Southern Coastal Bluff Scrub (Including lemonadeberry dominated; 31200)	<0.01	<0.01
Southern Willow Scrub (63320)	0.0003	-
Tier II		
Diegan coastal sage scrub (Including disturbed; 32500)	0.01	0.01
Subtotal Sensitive Communities	*0.01*	*0.01*
Non-Sensitive		
Tier IV		
Disturbed Habitat (11300)	0.06	0.02
N/A		
Developed Land (12000)	0.01	0.03
Subtotal Non-Sensitive Communities	*0.07*	*0.05*
TOTAL	**0.08**	**0.06**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008) and are listed by Habitats and Tiers within the MSCP.
[2] Upland habitats are rounded to the nearest 0.01 acre. Because impact areas are small in size, wetland/riparian habitats are rounded to the nearest 0.0001.
[3] Reflects off-site impacts by the project. Acreages do not include the off-site target mitigation property.

5.3.2 Mitigation Measures

Mitigation measure **BIO-3** would require the preparation and implementation of an approved HMMP. This plan would ensure that impacts on riparian habitat and sensitive natural communities would be reduced to a level below significant.

5.3.3 Conclusion

The project would result in permanent impacts to 0.01 acre as well as 0.01 acre temporary impacts to sensitive natural communities (comprised of coastal brackish marsh, Diegan coastal sage scrub, southern coastal bluff scrub, southern willow scrub) that occur within utility easements and alongside an existing road edge. Native habitat restoration/re-establishment/preservation of impacted habitats would fully compensate for the permanent loss of habitat and reduce impacts to below a level of significance. With the implementation of mitigation measure **BIO-3**, impacts on sensitive natural communities would be reduced to less than significant.

5.4 ISSUE 3: JURISDICTIONAL WETLANDS AND WATERWAYS

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the federal CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

5.4.1 Impact Analysis

Less than Significant with Mitigation. Although the project was designed and sited to avoid and minimize impacts to jurisdictional resources to the extent practicable, the project would impact potentially protected wetlands and waters under Section 404 of the CWA subject to the jurisdiction of USACE. The project would also impact potentially jurisdictional waters of the State subject to jurisdiction by RWQCB under Section 401 of the CWA and protected streambed and associated riparian habitat under the jurisdiction of CDFW per Section 1602 of the CDFW Game Code. Lastly, the project would impact coastal wetlands subject to the permit authority of the CCC.

Table 5
IMPACTS TO JURISDICTIONAL RESOURCES (acres)[1]

Habitat	Project Impacts		Total
	Permanent	Temporary[2]	
Wetland - USACE/RWQCB/CDFW/CCC Jurisdiction			
Coastal Brackish Marsh (Including disturbed; 52200)	0.0004	0.0002	0.0006
Riparian - CDFW/CCC Jurisdiction			
Southern Willow Scrub (63320)	0.0003	-	0.0003
TOTAL	**0.0007**	**0.0002**	**0.0009[3]**

[1] Areas are presented in acre(s) rounded to the nearest 0.0001.

[2] Includes off-site impacts associated with grading for the DG trail. Acreages do not include the off-site target mitigation property.

USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife; CCC = California Coastal Commission.

[3] Represents approximately 39 square feet.

As presented in Table 5 above, the project would result in impacts (permanent and temporary) to a total of less than 0.01 (i.e., approximately 0.0009 acre or 39 square feet) acre of habitat considered to be jurisdictional wetlands and riparian habitat (i.e., coastal brackish marsh, and southern willow scrub, respectively). Project impacts to less than 0.001 acre (i.e., approximately 0.0006 acre or 26 square feet) coastal brackish marsh wetlands (including disturbed) would be significant and mitigation would be required (BIO-3). Impacts to less than 0.01 acre (i.e., approximately 0.0003 acre or 13 square feet) of riparian habitat via trimming of overhanging southern willow scrub branches are considered less than significant and would not warrant mitigation. Impacts to jurisdictional resources (i.e., wetland waters of the U.S./State, including streamed and CCC wetlands), would be mitigated as described in **BIO-7** below. Mitigation measures **BIO-1** and **BIO-2** would also avoid additional impacts to adjacent resources.

5.4.2 Mitigation Measures

Implementation of required construction BMPs, in combination with Mitigation Measures **BIO-1** and **BIO-2**, would ensure that construction activities are contained within the proposed work limits and that potentially significant direct and indirect impacts on jurisdictional resources are avoided.

BIO-7 Prior to any project impacts to potentially jurisdictional resources, the demonstration that regulatory permits from USACE, RWQCB, CDFW, and CCC have been issued or that no such permits are required, shall be provided to the City. Unless otherwise required by USACE, RWQCB, CDFW, or CCC, temporary impacts to less than 0.01 acre (i.e., approximately 0.0002 acre or 9 square feet) of wetland waters of the U.S. shall be replaced immediately following project construction. Permanent impacts to less than 0.01 acre (i.e., approximately 0.0004 acre or 18 square feet) of wetland waters of the U.S. shall be mitigated at a 3:1 ratio consisting of a minimum 1:1 establishment/re-establishment provided through on or off-site habitat revegetation or through the purchase of conservation Mitigation Bank credits deemed acceptable by the agencies; totaling a minimum of 0.0012 acre (i.e., minimum of approximately 53 square feet). Off-site mitigation (approximately 0.0012 acre) shall occur at the subject target property located approximately 225 feet northwest of the project; the remaining portions of the property shall be available for other mitigation efforts/projects (Figure 9). Final mitigation requirements shall be determined by the Resource Agencies (i.e., USACE, RWQCB, CDFW, and CCC).

5.4.3 Conclusion

The project would result in potentially significant impacts to protected wetland under the jurisdiction of USACE, RWQCB, CDFW, and the CCC. Mitigation is proposed at ratios consistent with those typically required by the Resource Agencies, and thus, would fully compensate the loss and reduce impacts to below a level of significance. With the implementation of mitigation measure BIO-7, impacts on potentially jurisdictional wetlands, waters, streambed, and associated habitat, would be less than significant. Notification for securing necessary regulatory permits prior to impacts would be required for the project per BIO-7. If the potential wetlands or waters of the U.S. are ruled jurisdictional by the Resource Agencies, the anticipated permits would be a 404 permit from the USACE, 401 Certification from the RWQCB, and a 1602 agreement from CDFW. Additionally, CCC would issue a CDP for the project. Final permit requirements would be determined through consultation with the Resource Agencies.

5.5 ISSUE 4: WILDLIFE MOVEMENT AND NURSERY SITES

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 corridors, or impede the use of native wildlife nursery sites?

5.5.1 Impact Analysis

Less than Significant. While the project site generally occurs within the San Dieguito Lagoon Core Area (County 1998), it occurs within and alongside a City road right-of-way, which is frequently used by humans (including use of vehicles and for pedestrians), and outside of areas where wildlife movement opportunities do occur (along beaches and areas of open water in the San Dieguito Lagoon Ecological Reserve). Within the project site, habitat is limited to the proposed River Path extension and roadside narrow (less than 10 feet wide) strips of disturbed vegetation. Project areas may be used by smaller urban-adapted mammal species and bird species, but are not considered refuge as a wildlife corridor or habitat linkage. While the Lagoon to the north does provide suitable habitat, the proposed project site itself (i.e., existing road right-of-way) does not support an area considered to be a wildlife linkage or corridor. Although native habitat occurs on-site and is contiguous with habitat adjacent to the north of

the site, the project would not impede wildlife access to, within, or through off-site areas in the Lagoon that may be used for urban wildlife movements, foraging, or breeding. The project site is bounded to the south by existing development. Additionally, as evidenced by biological surveys discussed herein, the project areas (i.e., road edge right-of-way) do not support critical populations of animal species. Based on the analysis above, project impacts to wildlife movement and nursery sites would be less than significant, no mitigation is required or proposed, and as such is not discussed further.

5.5.2 Mitigation Measures

No mitigation is required.

5.5.3 Conclusion

Project impacts would be less than significant and no additional mitigation measures are required.

5.6 ISSUE 5: LOCAL POLICIES AND ORDINANCES

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

5.6.1 Impact Analysis

Less than Significant Impact with Mitigation. The project is located within the City's Lagoon Overlay Zone, which guides development within areas identified as "wetlands" and wetland buffer areas." To the extent practicable, the project alignment has been sited and designed to occur within and immediately adjacent to the existing roadway/edge, outside of areas in which plant or animal life and their habitats are rare or especially valuable because of their special nature or role in an ecosystem, and in areas currently subject to disturbance or degradation by human activities and developments. The biological resources within the project site are in narrow strips directly adjacent to San Dieguito Road and Racetrack View Road and are currently subject to substantial disturbance from vehicle traffic, noise, and pedestrian/bicycle activities. Project consistency with the City's Municipal Code and Lagoon Overlay Zone was considered as a guide for the proposed design, and the project design was modified to avoid wetland areas as possible. Due to existing topography, roadways, and utilities that occur along the project site, portions of the project as proposed would occur within wetlands and could not be further avoided. As shown above in Table 4, impacts to sensitive vegetation communities would total 0.02 acre of wetland habitat. Impacts to wetlands would be mitigated with the implementation of mitigation measure BIO-3, which requires that habitat-based compensatory mitigation is identified and implemented to mitigate impacts on wetlands in the San Dieguito Lagoon. With the implementation of mitigation measure BIO-3, conflicts with the City's Lagoon Overlay Zone that protects biological resources in the Lagoon would occur; however, impacts on biological resources, including wetlands, would be less than significant.

5.6.2 Mitigation Measures

No mitigation is required.

5.6.3 Conclusion

The project would not conflict with local policies or ordinances protecting biological resources.

5.7 ISSUE 6: ADOPTED CONSERVATION PLANS

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?

5.7.1 Issue 6 Impact Analysis

No Impact. The project would occur within the boundaries of the County MSCP, particularly within the Del Mar Subarea. However, the Draft Del Mar Subarea Plan was not approved or adopted and remains in draft form as of the date of this report. Therefore, the draft policies and guidelines of these plans are not applicable to the proposed project. The project, however, considered the context of such draft plans, and implementation of the proposed project would not preclude or prevent finalizing and adoption of the plan. The proposed project impacts would be less than significant; no mitigation is required or proposed. No conflict would occur.

5.7.2 Mitigation Measures

Compliance with existing regulations and implementation of Mitigation Measures **BIO-1** through **BIO-7** would ensure project consistency with the MSCP.

5.7.3 Conclusion

The project could result in potential significant impacts to sensitive biological resources addressed under the MSCP; however, compliance with existing regulations and implementation of measures **BIO-1** through **BIO-7** would help ensure that impacts are avoided and the project activities are not in conflict with the MSCP.

6.0 CERTIFICATION/QUALIFICATION

The following individuals contributed to the fieldwork and/or preparation of this report.

Rebecca Kress	B.A., Geography and Environmental Studies, State University of New York at Geneseo, 1999
Jessica Lee+	M.S., Biology, California State University, Long Beach, 2018 B.S., Marine Biology, Auburn University, 2013
Thomas Liddicoat*	B.S., Biology, Emphasis in Ecology, San Diego State University, 2005
Laura Moreton	M.S., Biodiversity Survey University of Sussex, England, 2007 B.S., Biology, San Diego State University, 2006

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*Principal Author

+ Contributing Author

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Appendix A

Plant Species Observed

Appendix A
Plant Species Observed

Family	Scientific Name*,†	Common Name	Habitat[1]
Dicots			
Aizoaceae	*Carpobrotus edulis**	hottentot-fig	DH
	*Mesembryanthemum nodiflorum**	slender-leaved iceplant	DH
Anacardiaceae	*Rhus integrifolia*	lemonadeberry	BS, DCSS
Asteraceae	*Ambrosia psilostachya*	western ragweed	DH
	Artemisia californica	California sagebrush	BCSM, BS
	Baccharis sarothroides	broom baccharis	DCSS
	Brickellia californica	Brickell brush	DH
	Centaurea melitensis	star-thistle	DH
	Encelia californica	California encelia	BS, DCSS
	Erigeron canadensis	horseweed	DH
	Heterotheca grandiflora	telegraph weed	DH
	Isocoma menziesii	goldenbush	DCSS
	Pluchea sericea	arrow weed	DH
	Pseudognaphalium sp.	everlasting	DCSS
Boraginaceae	*Phacelia* sp.	phacelia	DH
Brassicaceae	*Brassica nigra**	black mustard	DH
	*Hirschfeldia incana**	short-pod mustard	BS, DH
	*Raphanus sativus**	wild radish	DH
Cactaceae	*Cylindropuntia prolifera*	coastal cholla	DCSS
	Opuntia littoralis	coastal prickly pear	DCSS
Caprifoliaceae	*Lonicera subspicata*	honeysuckle	DCSS
Chenopodiaceae	*Arthrocnemum subterminale*	Parish's pickleweed	BCSM
	Atriplex canescens ssp. *canescens*	shad scale	DCSS
	Atriplex semibaccata	Australian saltbush	DH
	*Salsola tragus**	Russian thistle	DH
	Suaeda esteroa	estuary seablite	BCSM
Convolvulaceae	*Cressa truxillensis*	alkali weed	BCSM
	Cuscuta sp.	dodder	BCSM
Cucurbitaceae	*Marah macrocarpa*	wild cucumber	BCSM, DCSS
Ericaceae	*Comarostaphylis diversifolia* ssp. *diversifolia*†	summer holly	BS, DCSS
Euphorbiaceae	*Chamaesyce maculata**	spotted spurge	DH
	*Ricinus communis**	castor bean	DH
Fabaceae	*Acmispon glaber*	deerweed	DH
Fagaceae	*Quercus dumosa*†	Nuttall's scrub oak	BS
Frankeniaceae	*Frankenia salina*	alkali-heath	BCSM
Geraniaceae	*Erodium botrys**	long-beak filaree	DH
Grossulariaceae	*Ribes* sp.	gooseberry	DCSS
Lamiaceae	*Salvia mellifera*	black sage	DCSS
Malvaceae	*Malva parviflora*	Cheeseweed mallow	DH
Myrsinaceae	*Lysimachia arvensis**	scarlet pimpernel	DH
Myrtaceae	*Eucalyptus* sp.*	eucalyptus	DH
Phrymaceae	*Mimulus aurantiacus*	monkey-flower	BS
Pinaceae	*Pinus torreyana* ssp. *torreyana*†	Torrey pine	BS
Polygonaceae	*Eriogonum fasciculatum*	buckwheat	DCSS
	*Rumex crispus**	curly dock	DH
Rhamnaceae	*Ceanothus verrucosus*†	wart-stemmed ceanothus	DCSS

Appendix A
Plant Species Observed

Family	Scientific Name*,†	Common Name	Habitat[1]
Salicaceae	*Salix lasiolepis*	arroyo willow	SWS
Scrophulariaceae	*Myoporum* sp.*	myoporum	DCSS
Solanaceae	*Datura wrightii*	jimson weed	DH
	*Nicotiana glauca**	tree tobacco	DH
	Solanum sp.*	nightshade	DH
Monocots			
Agavaceae	*Yucca* sp.*	yucca	DH
Poaceae	*Bromus madritensis* ssp. *rubens**	red brome	DH
	*Cynodon dactylon**	Bermuda grass	DH
	Distichlis spicata	saltgrass	BCSM
Typhaceae	*Typha* sp.	cattail	FWM

* Non-Native Species

† Special Status Species

[1] BCSM=Brackish coastal salt marsh; BS=Bluff scrub; DCSS=Diegan coastal sage scrub; DH=Disturbed habitat; SWS=Southern willow scrub.

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Appendix B

Animal Species Observed or Detected

Appendix B
Animal Species Observed or Detected

Taxon		Scientific Name	Common Name
Order	**Family**		
INVERTEBRATES			
Lepidoptera	Pieridae	--	sulphur butterfly
VERTEBRATES			
Amphibians			
Anura	Hylidae	*Pseudacris cadaverina*	California treefrog
Birds			
Accipitriformes	Pandionidae	*Pandion haliaetus*†	osprey
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Bucephala albeola	bufflehead
		Mareca americana	American wigeon
		Mergus serrator	red-breasted merganser
		Oxyura jamaicensis	ruddy duck
		Calypte anna	Anna's hummingbird
Apodiformes	Trochilidae	*Selasphorus sasin*	Allen's hummingbird
		Charadrius vociferus	killdeer
Charadriiformes	Charadriidae	*Larus californicus*†	California gull
	Laridae	*Larus occidentalis*	western gull
		Actitis macularius	spotted sandpiper
	Scolopacidae	*Calidris mauri*	western sandpiper
		Limosa fedoa	marbled godwit
		Numenius phaeopus	whimbrel
		Tringa semipalmata	willet
		Zenaida macroura	mourning dove
Columbiformes	Columbidae	*Megaceryle alcyon*	belted kingfisher
Coraciiformes	Alcedinidae	*Psaltriparus minimus*	bushtit
Pelecaniformes	Cinclidae	*Aphelocoma californica*	California scrub-jay
	Corvidae	*Haemorhous mexicanus*	house finch
	Fringillidae	*Spinus psaltria*	lesser goldfinch
		Mimus polyglottos	northern mockingbird
	Mimidae	*Toxostoma redivivum*	California thrasher
		Geothlypis trichas	common yellowthroat
	Parulidae	*Leiothlypis celata*	orange-crowned warbler
		Setophaga coronate	yellow-rumped warbler
		Melospiza melodia	song sparrow
	Passerellidae	*Melozone crissalis*	California towhee
		Zonotrichia leucophrys	white-crowned sparrow
		Regulus calendula	ruby-crowned kinglet
	Regulidae	*Chamaea fasciata*	wrentit
	Sylviidae	*Cistothorus palustris*	marsh wren
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
		Catharus guttatus	hermit thrush
	Turdidae	*Sayornis nigricans*	black phoebe
	Tyrannidae	*Sayornis saya*	Say's phoebe
		Tyrannus verticalis	western kingbird
		Tyrannus vociferans	Cassin's kingbird
		Ardea alba†	great egret

Appendix B
Animal Species Observed or Detected

Taxon		Scientific Name	Common Name
Order	**Family**		
Pelecaniformes (cont.)	Ardeidae	*Ardea herodias*†	great blue heron
		Bubulcus ibis	cattle egret
		Dryobates nuttallii	Nuttall's woodpecker
Piciformes	Picidae	*Phalacrocorax auritus*†	double-crested cormorant
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*†	double-crested cormorant
Mammals			
Carnivora	Canidae	*Canis latrans*	coyote
		Procyon lotor	raccoon
	Procyonidae	*Procyon lotor*	raccoon

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Appendix C

Special Status Plant Species Observed or with Potential to Occur

Appendix C
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
Red sand-verbena (*Abronia maritima*)	--/-- CRPR 4.2	Perennial herb. Occurs in coastal dunes. Elevation: below 328 feet (100 meters). Flowering period: February–December.	**Presumed Absent.** Suitable habitat present on-site, but this perennial shrub would have been observed during biological surveys and was not detected.
San Diego thornmint *(Acanthomintha ilicifolia)*	FT/SE CRPR 1B.1	Annual herb. Occurs in chaparral, coastal scrub, valley, and foothill grassland vernal pools supported by clay soils. Elevation: below 3,281 feet (1,000 meters). Flowering period: April–June.	**None.** Clay soils are not mapped on site, there are no vernal pools on-site, and the species was not detected during biological surveys.
Nuttall's lotus (*Acmispon prostratus*)	--/-- CRPR 1B.1	Annual herb. Found in the coastal regions of southern California and Baja California. Habitats include coastal dunes, coastal scrub with sandy soils, and disturbed areas. Elevation: below 33 feet (10 meters). Flowering Period: March-June.	**Moderate.** Coastal sage scrub with sandy soils present on-site and this species has been observed 0.75 miles east nearby.
California adolphia (*Adolphia californica*)	--/-- CRPR 2B.1	Perennial shrub. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks on clay soils. Elevation: below 1,312 feet (400 meters). Flowering period: December-April.	**Presumed Absent.** Suitable coastal sage scrub habitat present on-site, but this perennial shrub would have been observed during biological surveys and was not detected.
Shaw's agave (*Agave shawii* var. *shawii*)	--/-- CRPR 2B.1	Perennial. Occurs in coastal bluff scrub and coastal sage scrub often on volcanic soils. Elevation: below 328 feet (100 meters). Flowering period: September-May.	**Presumed Absent.** Suitable coastal sage scrub habitat present on-site, but no volcanic soils. Species is perennial and would have been observed during biological surveys.
San Diego ambrosia *(Ambrosia pumila)*	FE/None CRPR 1B.1	Perennial rhizomatous herb. Generally found along creeks or seasonal drainages along the upper terraces of rivers or periphery of willow riparian areas, primarily on sandy loam or clay soils. Also found in native grassland, valley bottoms, dry drainages, and vernal pool margins. Occurs on loam or clay soils. Often on disturbed sites. Elevation: 65 - 2000 ft. Flowering period: Apr – Oct.	**None.** Clay soils are not mapped on site, there are no vernal pools on-site, and the site occurs outside of the known elevation for the species.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)	FE/-- CRPR 1B.1	Perennial shrub. Found within Relatively open, coastal chaparral. At occasional inland sites it occurs in denser mixed chaparral vegetation. Elevation: below 1,200 feet (365 meters). Flowering Period: December-June.	**Presumed Absent.** Coastal sage scrub habitat present on-site and does support chaparral species; however, this perennial shrub would have been observed during biological surveys and was not detected.
San Diego sagewort (*Artemisia palmeri*)	--/-- CRPR 4.2	Medium shrub. Occurs along streams in coastal sage scrub and chaparral. Identifiable from leaves year-round. Elevation: below 3,000 feet (914 meters). Flowering period: May-September.	**Presumed Absent.** Coastal sage scrub habitat present on-site, but this perennial shrub would have been observed during surveys and was not detected.
Coastal dunes milk-vetch *(Astragalus tener var. titi)*	FE/CE CRPR 1B.1	Annual herb. Occurs on moist, sandy depressions on coastal bluffs or dunes. Elevation range 1–50 meters. Flowering March–May.	**Not Expected.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species, however this species has not been observed in San Diego County since 1969.
South coast saltscale (*Atriplex pacifica*)	--/-- CRPR 1B.2	Annual herb. Found coastally on dunes and within playas in alkali sinks, sage scrub and wetland riparian communities. Elevation: below 984 feet (300 meters). Flowering period: March-October.	**Not Expected.** Sage scrub habitat present on-site, however this species has not been observed in San Diego County since 2009.
Encinitas baccharis (*Baccharis vanessae*)	FT/SE CRPR 1B.1	Perennial shrub. Grows on sandstone within chaparral, maritime chaparral, woodlands, and Torrey-pine forest understory. Elevation: 196-2,400 feet (60-720 meters). Flowering period: August-December.	**None.** Coastal scrub present on-site, but the site occurs outside of the known elevation for the species.
golden-spined cereus *(Bergerocactus emoryi)*	None/None CRPR 2B.2	Shrub (stem succulent). Occurs on sandy soils and dry bluffs along the coast associated with maritime succulent scrub. Elevation below 328 ft. Flowering period May-Jun.	**Presumed Absent.** Suitable habitat is present on-site, but this shrub would have been observed during surveys and was not detected.
San Diego goldenstar (*Bloomeria clevelandii*)	None/None CRPR 1B.1	Perennial bulbiferous herb. Occurs in valley grasslands, particularly near mima mound topography or in the vicinity of vernal pools, on clay soils. Elevation below 328 ft. Flowering period Apr – May.	**None.** Clay soils are not mapped on site, there are no vernal pools on-site, and the species was not detected during biological surveys.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
Orcutt's brodiaea (*Brodiaea orcuttii*)	--/-- CRPR 1B.1	Perennial bulbiferous herb. Occurs within closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Prefers mesic or clay soils. Elevation: 98-5,550 feet (30-1,692 meters). Flowering period: May to July.	**None**. Clay soils are not mapped on site, there are no vernal pools on-site, and site occurs outside of the known elevation for the species.
Lewis' evening-primrose *(Camissoniopsis lewisii)*	None/None CRPR 3	Annual herb. Occurs in very sandy substrates near the beach, typically on beach bluffs. Elevation below 984 ft. Flowering period Mar-Jun.	**Presumed Absent.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species; however, this species has not been observed on-site and there are no records of this species occurring within 0.5 miles of the site.
Lakeside ceanothus Ceanothus cyaneus	None/None CRPR 1B.2	Perennial shrub. Occurs in inland mixed chaparral, specifically in the region from Crest to the Lakeside foothills. Elevation range 148–3,445 ft. Flowering period Apr–Jun.	**None.** No inland mixed chaparral habitat is present on site, and the site occurs outside of the known elevation for the species.
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	--/-- CRPR 2B.2	Perennial shrub. Found on rocky slopes within chaparral, particularly southern maritime chaparral. Elevation: below 1,148 feet (350 meters). Flowering period: December-May.	**Presumed Absent.** Coastal sage scrub present on-site and does support few chaparral species; however, this species has not been observed on-site and there are no records of this species occurring within 0.25 miles of the site.
Southern tarplant *(Centromadia parryi ssp. australis)*	None/None CRPR 1B.1	Annual herb. Occurs in seasonally moist (saline) grasslands. Mesic areas in valley and foothill grasslands, alkaline locales, and peripheral salt marsh are utilized. Elevation below 200 meters. Flowering period May – November.	**Moderate.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species. This species has been recorded on CNDDB within 0.1 mile of the site.
Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*)	--/-- CRPR 1B.1	Annual herb. Found on coastal dunes and sandy coastal bluff scrub. Typically, in proximity to moist ocean breezes. Elevation: below 328 feet (100 meters). Flowering Period: January-August.	**Moderate.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species, and this

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
			species was recorded on CNDDB within 1 mile of the site.
salt marsh bird's-beak *(Chloropyron maritimum ssp. maritimum)*	FE/CE CRPR 1B.2	Annual herb. Occurs in salt marshes, particularly slightly raised hummocks, and dunes. Elevation below 33 ft. Flowering period May-Oct.	**Not Expected.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species. Additionally, this species has only been recorded in Imperial and National City, San Diego County.
Orcutt's spineflower (*Chorizanthe orcuttiana*)	FE/SE CRPR 1B.1	Annual herb. Found in sandy openings of coastal sage scrub, chaparral, and coniferous forests. Elevation: below 410 feet (125 meters). Flowering period: March-May.	**Not Expected.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species. Additionally, this species has only been recorded once on CNDDB approximately 1-mile West in 1962.
Long-spined spineflower *(Chorizanthe polygonoides* var. *longispina)*	--/-- CRPR 1B.2	Annual herb. Occurs in chaparral, coastal scrub, and native grassland, often in sandy soils. Elevation: 98-4,920 feet (30-1,500 meters). Flowering period: April-June.	**None:** Suitable coastal sage scrub, grassland, and sandy soils occur on site, but the site occurs outside of the known elevation for the species.
Seaside cistanthe (*Cistanthe maritima*)	--/-- CRPR 4.2	Annual herb. Occurs on sandy bluffs near the beach. Sandy openings in Diego sage scrub are the preferred habitat. Elevation: below 984 feet (300 meters). Flowering period: March-June.	**Not Expected.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species; however, this species has not been observed on-site and there are no records of this species occurring within 2 miles of the site.
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	--/-- CRPR 1B.2	Perennial shrub. Occurs in chaparral and cismontane woodland. Elevation: 328-1,804 feet (100-550 meters). Flowering period: May-June.	**None.** The site occurs outside of the known elevation for the species, and this perennial shrub would have been observed during biological surveys and was not detected.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
Small-flowered morning-glory (*Convolvulus simulans*)	--/-- CRPR 4.2	Annual herb. Occurs on clay and serpentinite seeps in openings within chaparral, coastal scrub, and native grassland. Elevation: 98–2,871 feet (30-875 meters). Flowering period: March–July.	**None**. Clay soils are not mapped on site, there are no vernal pools on-site, and site occurs outside of the known elevation for the species.
San Diego sand aster *(Corethrogyne filaginifolia var. incana)*	None/None CRPR 1B.1	Perennial herb. Occurs in coastal sage scrub and chaparral. Elevation range 16-2,362 ft. Flowering period Jun-Sept.	**None.** Coastal scrub present on-site, but the site occurs outside of the known elevation for the species.
Del Mar Mesa sand aster (*Corethrogyne filaginifolia* var. *linifolia*)	--/-- CRPR 1B.1	Perennial herb. Found on sandy soils and disturbed areas within southern maritime chaparral, coastal sage scrub, and coastal bluffs. Elevation: below 492 feet (150 meters). Flowering Period: May-September.	**Presumed Absent.** Coastal sage scrub habitat present on-site and does support chaparral species; however, this perennial herb would have been observed during biological surveys and was not detected.
snake cholla *(Cylindropuntia californica var. californica)*	None/None CRPR 1B.1	Perennial herb (stem succulent). Occurs in chaparral and Diegan coastal sage scrub. Elevation below 820 ft. Flowering period Apr-Jul.	**Presumed Absent.** Coastal sage scrub habitat present on-site and does support chaparral species; however, this perennial herb would have been observed during biological surveys and was not detected.
Western dichondra (*Dichondra occidentalis*)	--/-- CRPR 4.2	Perennial rhizomatous herb. Occurs on dry, sandy banks in coastal sage scrub, chaparral, or southern oak woodland. Often proliferates on recently burned slopes. Elevation: below 1,706 feet (520 meters). Flowering period: March-July.	**Presumed Absent.** Suitable coastal sage scrub and sandy soils present on-site, but this perennial species would have been observed during surveys.
Short-leaved dudleya *(Dudleya brevifolia)*	None/CE CRPR 1B.1	Perennial herb. Occurs in open areas and sandstone bluffs of chamise chaparral or Torrey pine forest. Elevation below 820 ft. Flowering period Apr-May.	**Presumed Absent.** Suitable coastal sage scrub and sandy soils present on-site, but this perennial species would have been observed during surveys.
Variegated dudleya *(Dudleya variegate)*	None/None CRPR 1B.2	Perennial herb. Occurs in chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland, and vernal pools. Elevation below 984 ft. Flowering period Apr-Jun.	**Presumed Absent.** Suitable coastal sage scrub and sandy soils present on-site, but this perennial species would have been observed during surveys.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
Sticky dudleya *(Dudleya viscida)*	None/None CRPR 1B.2	Perennial herb. Occurs on rocky areas in coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub. Grows predominantly on very steep north-facing slopes in shady, mesic conditions. Elevation range 30–1,805 ft. Flowering period Apr–Jun.	**None.** Coastal scrub present on-site, but the site occurs outside of the known elevation for the species.
Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*)	--/-- CRPR 1B.1	Large evergreen shrub. Occurs in coastal drainages, mesic chaparral, and occasionally in coastal sage scrub. Elevation: below 1,968 feet (600 meters). Flowering period: September–November.	**Presumed Absent:** Suitable coastal sage scrub present on-site, but this perennial species would have been observed during surveys.
San Diego button-celery (*Eryngium aristulatum* var. *parishii*)	FE/SE CRPR 1B.1	Perennial herb. Occurs in vernal pools or mima mound areas with vernally moist conditions, and in mesic areas on coastal scrub and native grassland. Elevation: below 1,640 feet (500 meters). Flowering period: Apr - August.	**None.** No vernal pool habitat on-site.
Sand-loving wallflower (*Erysimum ammophilum*)	--/-- CRPR 1B.2	Perennial herb. Occurs in coastal dunes and coastal strand. Elevation below 164 feet (50 meters). Flowering period February–June.	**Presumed Absent:** Suitable coastal sage scrub present on-site, but this perennial species would have been observed during surveys.
Cliff spurge (*Euphorbia misera*)	--/-- CRPR 2B.2	Perennial shrub. Occurs on rocky soils and coastal bluffs in coastal sage scrub and Mojavean desert scrub. Elevation below 1,640 feet (500 meters). Flowering period: December-August.	**Presumed Absent:** Suitable coastal sage scrub present on-site, but this perennial species would have been observed during surveys.
San Diego barrel cactus (*Ferocactus viridescens*)	--/-- CRPR 2B.1	Perennial (stem succulent) shrub. Grows in sandy to rocky areas within chaparral, valley grassland and coastal sage scrub communities. Elevation: 33-492 feet (10-150 meters). Flowering period: May-June.	**None.** Coastal scrub present on-site, but the site occurs outside of the known elevation for the species.
Palmer's frankenia *(Frankenia palmeri)*	None/None CRPR 2B.1	Perennial herb. Occurs on alkali flats, the edges of coastal salt marsh, and dunes. Elevation below 1,476 ft. Flowering period Apr-Sept.	**Presumed Absent:** Suitable coastal salt marsh present on-site, but this perennial species would have been observed during surveys.
Campbell's liverwort *(Geothallus tuberosus)*	None/None CRPR 1B.1	Ephemeral liverwort. Occurs on mesic soil, in coastal scrub and vernal pools. Elevation range 9-600 meters.	**Presumed Absent.** Coastal scrub present on-site, but this perennial species would have been observed during surveys.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
San Diego gumplant *(Grindelia hallii)*	None/None CRPR 1B.2	Perennial herb. Occurs in montane meadows and lower montane coniferous forests, typically with sunny openings. Prefers very wet locales in early spring, although such places usually dry quickly as spring turns to summer. Elevation range 2,625-5,577 ft. Flowering period Jul-Oct.	**None.** Montane meadow or coniferous forest habitat is not present on-site, and the site occurs outside of the known elevation for the species.
Palmer's grapplinghook (*Harpagonella palmeri*)	--/-- CRPR 4.2	Annual herb. Clay soils in annual grasslands and coastal sage scrub. Elevation: below 3,300 feet (1,005 meters). Flowering period: March-May.	**Not expected.** Suitable grassland and coastal sage scrub habitat present on-site, but clay soils are not mapped.
Beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*)	--/-- CRPR 1B.1	Perennial herb. Occurs in coastal chaparral, coastal dunes, and coastal scrub. Elevation: below 4,020 feet (1,225 meters). Flowering Period: March-December.	**Presumed Absent.** Suitable coastal sage scrub present on-site, but this perennial species would have been observed during surveys and was not detected.
graceful tarplant *(Holocarpha virgata ssp. elongate)*	None/None CRPR 4.2	Annual herb. Occurs in chaparral, cismontane woodland, coastal scrub, and native grassland. Elevation range 195–3,610 ft. Flowering period May–Nov.	**None.** Coastal scrub present on-site, but the site occurs outside of the known elevation for the species.
Vernal barley (*Hordeum intercedens*)	--/-- CRPR 3.2	Annual herb. Occurs in coastal dunes, coastal scrub, native grassland (saline flats and depressions), and vernal pools. Elevation: below 1,640 feet (500 meters). Flowering period March–June.	**Not Expected.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species, however this species has not been observed on-site and there are no records of this species occurring within 2 miles of the site.
Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)	--/-- CRPR 1B.2	Perennial Shrub. Occurs in chaparral and sandy coastal sage scrub, often in disturbed areas. Elevation: below 656 feet (200 meters). Flowering period April-November.	**Presumed Absent.** Suitable coastal sage scrub present on-site, but this perennial species would have been observed during surveys.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
San Diego marsh-elder (*Iva hayesiana*)	--/-- CRPR 2B.2	Perennial herb. Occurs preferentially in creeks of intermittent streambeds. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized. May occur in a variety of wetland/riparian areas. Elevation: generally below 984 feet (300 meters). Occasionally below 2,953 feet (900 meters). Flowering period: March-October.	**Presumed Absent.** No suitable intermittent streambed present on-site, and this perennial species would have been observed during surveys.
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	--/-- CRPR 4.2	Perennial herb. Occurs in alkaline meadows and seeps, coastal salt marshes, and coastal dunes. Elevation: below 984 feet (300 meters). Flowering period: May–August.	**Presumed Absent.** Suitable marsh areas are present on-site, and this species was recorded adjacent to the site in 2018; however, this perennial species was not observed on-site during surveys in 2019 and 2021.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	--/-- CRPR 1B.1	Annual herb. Grows in vernal pools, playas, and saline habitats within alkali sinks, coastal salt marshes, and wetland communities. Elevation: below 3,281 feet (1,000 meters). Flowering period: April-May.	**Low.** No vernal pools or playas on-site. Coastal salt marsh with sandy soils present on-site and the site occurs inside of the known elevation for the species. However the last record of this species on CNDDB was in 1999, approximately 0.1 mile southeast of the site.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	--/-- CRPR 4.3	Annual herb. Occurs in openings in chaparral and coastal scrub. Typically found in relatively dry, exposed locales. Elevation: below 9,186 feet (2,800 meters). Flowering period January–July.	**Presumed Absent.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species, however the closest CNDDB record of this species is approximately 5 miles southeast in 2008.
Sea dahlia (*Leptosyne maritima*)	--/-- CRPR 2B.2	Perennial herb. Occurs within coastal scrub and coastal bluffs scrub. Elevation: below 500 feet (150 meters). Flowering period: March-May.	**Presumed Absent.** Coastal scrubs dunes are present on-site; however, this perennial species would have been observed during surveys.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
California box-thorn *(Lycium californicum)*	None/None CRPR 4.2	Perennial shrub. Occurs in coastal sage scrub and coastal bluff scrub in exposed sites on southwestern-facing slopes. Flowering period March–August.	**Presumed Absent.** Coastal scrubs dunes are present on-site; however, this perennial species would have been observed during surveys.
Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*)	--/-- CRPR 4.2	Annual herb. Occurs on clay soils in cismontane woodland, coastal scrub, native grassland, and vernal pools. Elevation: below 3,609 feet (1,100 meters). Flowering period: March–May.	**Not Expected:** Suitable grassland and coastal sage scrub habitat present on-site, but clay soils are not mapped and species would have been detected during focused surveys.
Willowy monardella *(Monardella viminea)*	FE/CE CRPR 1B.1	Perennial herb. Occurs in riparian scrub, usually at sandy locales in seasonally dry washes. Generally, occurs where no canopy cover, and river cobbles may lie in close proximity. Elevation below 1,312 ft. Flowering period Jun – Aug.	**Presumed Absent.** No riparian scrub is present on-site, and, this perennial species would have been observed during surveys.
Little mousetail (*Myosurus minimus* ssp. *apus*)	--/-- CRPR 3.1	Annual herb. Occurs in alkaline vernal pools in native grassland. Elevation: 65–2,100 feet (213-640 meters). Flowering period: March–June.	**None.** Vernal pool habitat not present and the site occurs outside of the known elevation for the species.
Spreading navarretia (*Navarretia fossalis*)	FT/-- CRPR 1B.1 MHCP Covered NE	Annual herb. Occurs in vernal pools in chenopod scrub, marshes and swamps, and playas. Elevation: 98–4,265 feet (30-1,300 meters). Flowering period: April–June.	**None.** Vernal pool habitat not present and the site occurs outside of the known elevation for the species.
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)	--/-- CRPR 1B.2	Annual herb. Occurs within coastal dunes. The back dunes in mildly protected areas seem to be preferred. Elevation: below 330 feet (100 meters) Flowering Period: April-September.	**None.** Coastal dune habitat not present on-site.
California adder's-tongue *(Ophioglossum californicum)*	None/None CRPR 4.2	Rhizomatous fern. Occurs in grassy, open areas where it is generally associated with short grasses and other herbs. Although often found near vernal pools, can also occur in relatively dry, stony areas. Elevation range 197-1,476 ft. Above-ground Jan – Jun.	**None.** Vernal pool habitat not present and the site occurs outside of the known elevation for the species.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
California Orcutt grass (*Orcuttia californica*)	FE/SE CRPR 1B.1	Annual herb. Occurs in vernal pools. Seriously threatened by agriculture, development, non-native plants, grazing, and vehicles. Elevation: below 2,297 feet (700 meters). Flowering April–August.	**None.** Vernal pool habitat not present on-site.
Short lobed broomrape (*Orobanche parishii* ssp. *brachyloba)*	--/-- CNPS List 4.2	Perennial herb. Found in coastal bluff scrub and coastal dunes. Elevation: 195-6,235 feet (60-1,900 meters). Flowering period: April-October.	**None.** Coastal scrub present on-site, but the site occurs outside of the known elevation for the species.
South coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*)	--/-- CNPS List 3.2	Perennial herb. Found in diverse habitats, including sand dunes, salt marshes, coastal bluffs, canyons, washes, flats, meadows, and conifer forest. Elevation: below 12,467 feet (3,800 meters). Flowering period: April-October.	**Presumed Absent.** Marginal suitable habitat on-site and species was recorded adjacent to the site in 2018; however, this perennial herb would have been observed during biological surveys of the project site in 2019 and 2021 and was not detected.
Brand's star phacelia *(Phacelia stellaris)*	None/None CRPR 1B.1	Annual herb. Found in sandy openings in Diegan coastal sage scrub near the coast. Elevation: < 400 m. Flowering period Mar-May.	**Not Expected.** Coastal sage scrub with sandy soils present on-site and the site occurs inside of the known elevation for the species, however, this species has only been recorded once on CNDBB, approximately 2 miles south.
Torrey pine (*Pinus torreyana* ssp. *torreyana*)	--/-- CRPR 1B.2	Perennial evergreen tree. Occurs within closed cone coniferous forest and chaparral atop sandstone soils. Elevation: 98-430 feet (29-131 meters).	**Not Expected.** The site occurs outside of the known elevation for the species, and this perennial species was observed during surveys.
Chaparral rein orchid *(Piperia cooperi)*	None/None CRPR 4.2	Perennial herb. Occurs in chaparral, cismontane woodland, and grassland habitats, in vernally moist areas and in shallow soils adjacent to water courses. Elevation below 4,921 ft. Flowering period Mar-Jun.	**Presumed Absent.** Coastal sage scrub habitat present on-site and does support chaparral species; however, this perennial shrub would have been observed during biological surveys and was not detected.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
San Diego mesa mint *(Pogogyne abramsii)*	FE/CE CRPR 1B.1	Small annual herb. Occurs within vernal pools in grasslands, chamise chaparral, and coastal sage scrub on mesas. Elevation range 328–656 ft. Flowering period Mar-Jul.	**None.** Vernal pool habitat not present and the site occurs outside of the known elevation for the species.
Otay Mesa mint *(Pogogyne nudiuscula)*	FE/CE CRPR 1B.1	Small annual herb. Occurs within vernal pools. Elevation range 328–820 ft. Flowering period May-Jul.	**None.** Vernal pool habitat not present and the site occurs outside of the known elevation for the species.
Nuttall's scrub oak (*Quercus dumosa*)	--/-- CRPR 1B.1	Perennial shrub. Occurs on sandy or clay loam soils near the coast within coastal scrub, chaparral, cismontane woodland, and riparian woodland. Elevation: below 656 feet (200 meters). Flowering period: March-May.	**Presumed Absent.** Minimal suitable coastal sage scrub habitat present on-site and does support chaparral species; however, this perennial shrub would have been observed during biological surveys and was not detected.
Ashy spike-moss (*Selaginella cinerascens*)	--/-- CNPS List 4.1	Rhizomatous fern. Occurs on flat mesas in coastal sage scrub and chaparral. A good indicator of site degradation, as it rarely inhabits disturbed soils. Elevation: below 1,804 feet (550 meters).	**Presumed Absent.** Coastal sage scrub habitat present on-site and does support chaparral species; however, this perennial shrub would have been observed during biological surveys and was not detected.
Chaparral ragwort *(Senecio aphanactis)*	None/None CRPR 2B.2	Annual herb. Occurs in foothill woodlands and coastal sage scrub on alkali flats. Elevation range 33-1,804 ft. Flowering period Jan- Apr.	**None.** Coastal sage scrub habitat is present; however, the site occurs outside of the known elevation for the species.
Salt spring checkerbloom *(Sidalcea neomexicana)*	None/None CRPR 2B.2	Perennial herb. Occurs in alkaline springs, marshes, and playas. Elevation below 1,500 meters. Flowering period April – June.	**Not Expected.** Minimal suitable habitat present on-site, but species would have been detected during focused surveys.
Bottle liverwort *(Sphaerocarpos drewei)*	None/None CRPR 1B.1	Ephemeral liverwort. Occurs on openings in chaparral and coastal scrub. Elevation range 295–1,970 ft.	**None.** Coastal scrub habitat is present, but the site occurs outside of the known elevation for the species.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
San Diego County needle grass (*Stipa diegoensis*)	--/-- CRPR 4.2	Perennial grass. Occurs in chaparral, sage scrub, particularly near streams or the coast. The species is closely associated with metavolcanic soils and can been found in fine sandy loam and rocky silt loams. Peaks and upper ridgelines of mountains appear the preferred microhabitat. Elevation: below 7,480 feet (2,280 meters). Flowering period: February-June.	**Presumed Absent.** Suitable coastal sage scrub and riparian areas occur on site, but this perennial species would have been observed during surveys.
Estuary seablite (*Suaeda esteroa*)	--/-- CRPR 1B.2	Perennial herb. Occurs in coastal salt marsh and wetland-riparian communities. Elevation: below 16 feet (5 meters). Flowering period: May-October.	**Presumed Absent.** Suitable habitat on-site and species was recorded adjacent to the site in 2018; however, this perennial herb would have been observed during biological surveys of the project site in 2019 and 2021 and was not detected.
Woolly seablite *(Suaeda taxifolia)*	None/None CRPR 4.2	Perennial evergreen shrub. Found in Coastal bluff scrub, Coastal dunes, Marshes and swamps (margins of coastal salt) Elevation: < 15 m. Flowering period: year round.	**Presumed Absent.** Suitable coastal sage scrub and riparian areas occur on site, but this perennial species would have been observed during surveys.

Appendix C (cont.)
Sensitive Plant Species Potential to Occur

Species Name	Status	Habit, Ecology and Life History	Potential to Occur On-Site
Woven-spored lichen *(Texosporium sancti-jacobi)*	None/None CRPR 3	Lichen. Occurs on soil, small mammal pellets, dead twigs, and on *Selaginella* spp. in openings in chaparral. Elevation range 195–2,165 ft.	**None.** No suitable habitat is present, and the site occurs outside of the known elevation for the species.
San Diego County viguiera *(Viguiera laciniate)*	None/None CRPR 4.3	Perennial shrub. Occurs in coastal sage scrub, often at high density. Elevation range 295-2,460 ft. Flowering period Feb – Aug.	**None.** No suitable habitat is present, and the site occurs outside of the known elevation for the species.

[1] Listing codes as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare
CRPR = California Native Plant Society Rare Plant Rank: 1A – presumed extirpated in California and either rare or extinct elsewhere; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California, but more common elsewhere; 2B – rare, threatened, or endangered in California, but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

[2] Potential to Occur is assessed as follows: **None**: There are no present or historical records of the species occurring on or in the immediate vicinity (i.e. as defined by the 2 mile search radius) of the study area and the diagnostic habitats and soils associated with the species do not occur on or in the immediate vicinity of the project; **Not Expected**: There are no present or historical records of the species occurring on or in the immediate vicinity of the study area. Suitable habitat not present on site; or, suitable habitat is present; but the species would have been observed during focused surveys for the species. **Low**: Suitable habitat is present in the study area and a historical record of the species occurs in the immediate vicinity but existing conditions such as elevation, soils, density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, and/or isolation substantially reduce the possibility that the species may occur; **Moderate**: The diagnostic habitats associated with the species occur on or in the immediate vicinity of the study area, but there is not a recorded occurrence of the species within the immediate vicinity. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity; **High**: Suitable habitat occurs in the study area and the species has been recorded recently on or in the immediate vicinity but the species was not observed during project surveys; **Present**: The species was observed during biological surveys for the project and is assumed to occupy the study area; **Presumed Absent**: Species would be visible all year and would have been observed if present.

Appendix D

Special Status Animal Species Observed or with Potential to Occur

Attachment D
Special Status Animal Species Potential to Occur

Species Name	Status	Habitat Associations	Potential to Occur On-Site
VERTEBRATES			
Amphibians			
Western spadefoot toad (*Spea hammondii*)	--/SSC	Suitable upland habitats include coastal sage scrub, chaparral, and grasslands. Most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas. Breeds in temporary pools formed by heavy rains, but also found in riparian habitats with suitable water resources. Breeding pools must lack exotic predators such fish, bullfrogs, and crayfish for the species to successfully reproduce. Estivates in burrows within upland habitats adjacent to potential breeding sites.	**Not Expected.** Minimal coastal sage scrub is present on-site; however, there are no suitable breeding pools on-site or adjacent to the site and was not detected during project surveys.
Reptiles			
Southern California legless lizard (*Anniella stebbinsi*)	--/SSC	Occurs in sparsely vegetated areas with moist warm, loose soil with plant cover; moisture is essential. Common in several habitats but especially in beach dunes, coastal scrub, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Sometimes found in suburban gardens in southern California.	**Not Expected**. Minimal suitable coastal sage scrub and riparian areas occur on-site. This species has not been recorded within 0.25 miles of the site since 1950 and was not detected during project surveys.
California glossy snake (*Arizona elegans occidentalis*)	--/SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas and areas with soils loose enough for easy burrowing.	**Not Expected.** Minimal suitable grassland habitat occurs on-site. This species has not been recorded within 0.25 miles of the since 1946 and was not detected during project surveys.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status	Habitat Associations	Potential to Occur On-Site
Orange-throated whiptail (*Aspidoscelis hyperythra)*	—/WL	Occurs in open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions, particularly termites (Reticulitermes sp.).	**Not Expected.** Minimal suitable coastal sage scrub, chaparral, and woodlands occurs on-site. This species has not been recorded within 1.25 miles of the site since 2017 and was not detected during project surveys.
Coast horned lizard (*Phrynosoma blainvilli*)	--/SSC	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* sp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**Not expected.** Minimal **s**uitable coastal sage scrub habitat present on-site. This species has not been recorded within 1.5 miles of the site since 1998 and was not detected during project surveys.
Birds			
Great Egret (*Ardea alba*)	--/SSC	Found in a variety of estuarine, marine subtidal, and marine pelagic waters and non-marine aquatic habitats along the California coast. Nests in roosting colonies within tree canopies/groves adjacent to good fishing areas.	**Moderate.** Suitable habitat present on-site. This species was observed off-site adjacent to the project in 2019, but was not observed on-site during surveys conducted in 2019 and 2021.
Great Blue Heron (*Ardea herodias*)	--/SSC	Year-round resident of California occurring throughout most of the State in saline and freshwater wetlands and shallow estuaries. Nests as single pairs and in small colonies with nests located on the ground, in trees and bushes, and on artificial structures that are usually adjacent to water and secluded from human disturbance. Found in a wide variety of habitats foraging in various wetland habitats, water bodies, and occasionally uplands.	**Moderate.** Suitable habitat present on-site. This species was observed off-site adjacent to the project in 2019, but was not observed on-site during surveys conducted in 2019 and 2021.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status	Habitat Associations	Potential to Occur On-Site
Western Snowy Plover (*Charadrius alexandrinus nivosus*)	FT, BCC/SSC	Chiefly found on sea coasts, but also occur in open flats near brackish or saline lakes, lagoons, seasonal water courses, salt-works and depressions. Usually prefer sand, silt or dry mud with even surface, avoiding rocky or broken ground. This species exhibits breeding site fidelity.	**None**. Suitable costal beach and sandy shoreline habitat not present on-site.
California Gull (*Larus californicus*)	--/WL	In California, the species winters along coastal regions with breeding populations localized at Mono Lake and southern San Francisco Bay. Breeding colonies nearly always occur on islands in natural lakes, rivers, or reservoirs. In the winter, the species is found along coastal California at beaches, rocky coasts, mudflats, coastal estuaries, and deltas of rivers and streams.	**Low**. Although this species has not been reported within two miles of the Study Area, this species was observed off-site flying over the San Dieguito Lagoon during the survey in 2021. Suitable breeding or open water foraging habitats required for this species is not present on-site.
Osprey (*Pandion haliaetus*)	--/WL	Within California, breeding populations reside in the Cascade and Sierra mountain ranges, though small numbers of the species also breed within San Diego County. Although widely seen on the coast, these birds are rare transients in the interior portions of southern California. Restricted to large water bodies such as rivers, lakes, and reservoirs supporting fish with suitable nesting habitat such as rocky pinnacles or large trees and snags. Build their large nests, often in dead tops of older trees and man-made structures.	**Low**. Although this species has not been reported within two miles of the Study Area, there are occupied nesting perches on the north portion of the San Dieguito Lagoon. This species was observed off-site flying over the San Dieguito Lagoon during the survey in 2021. Suitable breeding or open water foraging habitats required for this species is not present on-site.
Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)	--/SE	Generally found in salt marshes. Nests on the ground in natural depression or scrape, primarily in pickleweed habitat at the higher levels of the marsh, above the reach of the highest spring tides.	**Moderate.** Suitable salt marsh and pickleweed habitat is present on-site and species has been recorded by CNDDB 0.25 miles east from the project site in 2001. Species not observed during surveys.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status	Habitat Associations	Potential to Occur On-Site
Coastal California Gnatcatcher (*Polioptila californica californica*)	FT/SSC	Typically occurs in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 3,000 feet. The composition of sage scrub in which gnatcatchers are found varies; however, California sagebrush is at least present as dominant or co-dominant species. The species is mostly absent from areas dominated by black sage, white sage, or lemonadeberry, though the species may occur more regularly in inland regions dominated by black sage.	**Moderate.** Suitable coastal sage scrub habitat present on-site; however this species was not observed during surveys for the project in 2019 and 2021. This species has been recorded by CNDDB 0.25 miles from the site and was detected adjacent to the site in 2018.
Double-crested Cormorant *(Phalacrocorax auritus*)	--/WL	Year-round resident along the entire coast also occupying fresh and saltwater estuaries, and inland lakes. Occurs east of the coast within the Central Valley, lower Colorado River, and Salton Sea. Habitat requirements include suitable places for feeding, resting, loafing, and nighttime roosts. Diet mostly consists of fish but may include other aquatic animals, and at times terrestrial animals based on opportunity. Breeds in colonies at TRVRPs safe from predators and adjacent to feeding areas such as rocky or sandy islands, bridges, docks, nesting towers, trees, emergent marsh vegetation, and on the ground.	**Low.** Suitable habitat present directly off-site. This species was observed off-site adjacent to the project in 2019, but was not observed on-site during surveys conducted in 2019 and 2021.
Light-footed Ridgway's Rail (*Rallus obsoletus levipes*)	FE/SE, FP	Occurs in coastal marshes, lagoons and maritime environments with dense vegetation and shallow waters.	**Moderate.** Suitable costal marsh habitat is present on-site site and species has been recorded by CNDDB 200 feet from the site in 2007. Species not observed during surveys in 2019 and 2021.
California Least Tern (*Sternula antillarum browni*)	FE/SE, FP	Nest in colonies on relatively open beaches kept free of vegetation by natural scouring from tidal action. Found along the Pacific Coast of California.	**None.** Suitable costal beach and sandy shoreline habitat not present on-site.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status	Habitat Associations	Potential to Occur On-Site
Least Bell's Vireo (*Vireo bellii pusillus*)	FE/SE	Found in mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood and willows with mule fat, oaks, and sycamore, and mesquite (*Prosopis glandulosa*) and arrowweed (*Pluchea sericea*) within desert habitats. The species can be tolerant of the presence of non-native species such as tamarisk.	**Moderate.** Minimal riparian scrub habitat is present on-site. However, nearest record of this species is from CNDDB in 2003 approximately 0.75 miles northeast of the project site. This species was not detected during project surveys.
Mammals			
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC	Inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. Forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices.	**Not expected.** Minimal **c**oastal sage scrub and grasslands present on-site, but no gravelly or rocky soils on-site. This species has not been recorded within 0.2 miles of the site since 2002 and was not detected during project surveys.
Monarch butterfly (*Danaus plexippus*)	—/—	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Larval host plants consist of milkweeds (*Asclepias* spp.).	**None.** Wind-protected tree groves (eucalyptus, Monterey pine, cypress), and larval host plants do not occur on-site.
San Diego desert woodrat (*Neotoma lepida intermedia*)	--/SSC	Occurs in chaparral and sage scrub, often where succulent vegetation may be used as a water source. Builds large, stick nests in rock outcrops, around clumps of cactus or yucca, and in lower tree branches.	**Not expected.** Minimal **s**uitable coastal sage scrub and riparian habitat present on-site. However, this species has not been recorded within 0.2 miles of the site since 1996 and was not detected during project surveys.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status	Habitat Associations	Potential to Occur On-Site
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE/SSC	Occurs on fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces.	**Not expected.** Minimal **s**uitable coastal sage scrub present on-site. However, this species has not been within 0.2 miles of the site since 1994 and was not detected during project surveys.

[1] Listing codes are as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; FP = State Fully Protected; WL = Watch List

[2] Potential to Occur is assessed as follows: **None**: Species is so limited to a particular habitat that it cannot disperse on its own, and habitat suitable for its establishment and survival does not occur in the study area; **Not Expected**: There are no present or historical records of the species occurring on or in the immediate vicinity of the study area. The species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur; **Low**: Suitable habitat is present in the study area and there is a historical record of the species in the project vicinity, but no sign of the species was observed during surveys. Existing conditions such as elevation, species composition, density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, and/or isolation may substantially reduce the possibility that the species may occur; **Moderate:** Diagnostic habitats associated with the species occur on or adjacent to the study area, but there is not a recorded occurrence of the species within the immediate vicinity. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity; **High**: Suitable habitat associated with the species occurs in the study area and the species has been recorded recently on or near the project, but was not observed during biological surveys; **Present**: The species was observed during biological surveys for the project and is assumed to occupy the study area.

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Appendix E

Explanation of Codes

Appendix E
Explanation of Status Codes for Plant and Animal Species

FEDERAL AND STATE CODES

U.S. Fish and Wildlife Service (USFWS)

BCC	Bird of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
FC	Federal candidate species
FE	Federally listed endangered
FPD	Federally proposed for delisting
FPE	Federally proposed endangered
FPT	Federally proposed threatened
FT	Federally listed threatened

USFWS Birds of Conservation Concern (BCC)

The primary legal authority for Birds of Conservation Concern (2008) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Other authorities include the Endangered Species Act, Fish and Wildlife Act (1956) and 16 USC §701. A FWCA 1988 amendment (Public Law 100-653, Title VIII) requires the Secretary of the Interior through the USFWS to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The 2008 BCC report is the most recent effort by the USFWS to carry out this proactive conservation mandate.

The BCC report aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS' highest conservation priorities and draw attention to species in need of conservation action. The USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. Birds of Conservation Concern 2008 lists are available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php.

USFWS Federal Candidate (FC) Species

Federal candidate species are those for which the USFWS has on file "sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. [The USFWS] maintain[s] this list for a variety of reasons: to notify the public that these species are facing threats to their survival; to provide advance knowledge of potential listings that could affect decisions of environmental planners and developers; to provide information that may stimulate conservation efforts that will remove or reduce threats to these species; to solicit input from interested parties to help us identify those candidate species that may not require protection under the [Endangered Species Act] or additional species that may require the Act's protections; and to solicit necessary information for setting priorities for preparing listing proposals" (Federal Register 70:90 [May 11, 2005]).

Appendix E (cont.)
Explanation of Status Codes for Plant and Animal Species

USFWS Federal Proposed Endangered (FPE) Species

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Federal Proposed Threatened (FPT) Species

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Bald and Golden Eagle Protection Act (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

California Department of Fish and Wildlife (CDFW)

SCE	State candidate for listing as endangered
SCT	State candidate for listing as threatened
SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List
FP	Fully Protected species refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.
Special Animal	Refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Database regardless of legal or protection status.

Appendix E (cont.)
Explanation of Status Codes for Plant and Animal Species

Federal and State Forest Service Codes

Federal

FS U.S. Department of Agriculture Forest Service Sensitive

The USDA Forest Service defines sensitive species as those plant and animal species identified by a regional forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species existing distribution. Regional foresters shall identify sensitive species occurring within the region. More information is available at http://www.fs.fed.us/r5/projects/sensitive-species.

State

CDF California Department of Forestry and Fire Protection Sensitive

The Board of Forestry classifies as "sensitive species" those species that warrant special protection during timber operations. The list of "sensitive species" is given in §895.1 (Definitions) of the California Forest Practice Rules, which are available online at www.fire.ca.gov.

California Environmental Quality Act (CEQA)

For plants with no current federal or state legal standing, "CEQA" refers to the fact that under the Act, impacts to species may be found significant under certain circumstances (e.g., the species are regionally sensitive and/or are protected by a local policy, ordinance, or habitat conservation plan; or the impact involves interference with certain movements or migrations, with wildlife corridors or with nursery sites).

Appendix E (cont.)
Explanation of Status Codes for Plant and Animal Species

OTHER CODES AND ABBREVIATIONS

California Native Plant Society California Rare Plant Rank (CRPR) Codes

Lists

1A = Presumed extirpated in California and either rare or extinct elsewhere. Eligible for state listing.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but common elsewhere. Eligible for state listing.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Review List: Plants about which more information is needed. Some eligible for state listing.

4 = Watch List: Plants of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 = Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

A “CA Endemic” entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

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Appendix F

Federal Jurisdictional Information

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WETLANDS AND "WATERS OF THE U.S." DEFINITIONS

WETLANDS

The U.S. Army Corps of Engineers (USACE; 33 CFR 328.3) and the Environmental Protection Agency (EPA; 40 CFR 230.3) jointly define wetlands as "[t]hose 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" (Environmental Laboratory 1987).

WATERS OF THE U.S.

The official definition of "Waters of the U.S." and their limits of jurisdiction (as they may apply) are defined by the USACE' Regulatory Program Regulations (33 CFR 328.3, paragraphs [a] 1-3 and [e], and Section 328.4, paragraphs [c] 1 and 2) as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters,
    i. which are or could be used by interstate or foreign travelers for recreation or other purposes; or
    ii. from which fish or shellfish are or could be taken and sold in interstate commerce; or
    iii. which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands)…

Appendix F (cont.)
Federal Jurisdictional Information

NON-TIDAL WATERS OF THE U.S.

The limits of jurisdiction in non-tidal waters: In the absence of adjacent wetlands, the jurisdiction extends to the OHWM, or when adjacent wetlands are present, the jurisdiction extends to the limit of the adjacent wetlands.

The term OHWM refers to that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation (scouring), the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Waters of the U.S. must exhibit an OHWM or other evidence of surface flow created by hydrologic physical changes. These physical changes include (Riley 2005):

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

Further guidance on identifying the OHWM in the Arid Southwest (Lichvar and McColley 2008). This publication provided geomorphic and vegetation OHWM indicators specific to the Arid Southwest.

Jurisdictional areas also must be connected to Waters of the U.S. (Guzy and Anderson 2001; U.S. Supreme Court 2001).

As a consequence of the U.S. Supreme Court decision in Rapanos v. United States, a memorandum was developed regarding Clean Water Act jurisdiction (Grumbles and Woodley 2007). The memorandum states that the EPA and the USACE will assert jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNW, tributaries to TNWs that are a relatively permanent water body (RPW), and wetlands adjacent to TNW. An RPW has year-round flow or a continuous seasonal flow (i.e., typically for three months or longer). Jurisdiction over other waters (i.e., non TNW and RPW) will be based on a fact-specific analysis to determine if they have a significant nexus to a TNW.

Pursuant to the USACE Instructional Guidebook (USACE and EPA 2007), the significant nexus evaluation will cover the subject reach of the stream (upstream and downstream) as well as its adjacent wetlands (Illustrations 2 through 6, USACE and EPA 2007). The evaluation will include the flow characteristics,

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annual precipitation, ability to provide habitat for aquatic species, ability to retain floodwaters and filter pollutants, and proximity of the subject reach to a TNW, drainage area, and the watershed.

WETLAND CRITERIA

Wetland boundaries are determined using three mandatory criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) established for wetland delineations and described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Following is a brief discussion of the three criteria and how they are evaluated.

Vegetation

"Hydrophytic vegetation is defined herein as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987).

The wetland indicator status (obligate upland, facultative upland, facultative, facultative wetland, obligate wetland, or no indicator status) of the dominant plant species of all vegetative layers is determined. Species considered to be hydrophytic include the classifications of facultative, facultative wetland, and obligate wetland as defined in the current list of wetland plants of the Arid Southwest (Lichvar, et al. 2016; Table A-1). The percent of dominant wetland plant species is calculated. The hydrophytic vegetation criterion is considered to be met if it meets the "Dominance Test," "Prevalence Index," or the vegetation has morphological adaptations for prolonged inundation.

Table A-1
DEFINITIONS OF PLANT INDICATOR CATEGORIES

Indicator Categories	Abbreviation	Qualitative Description
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands but may occur in wetlands
Upland	UPL	Almost never occur in wetlands

Hydrology

"The term 'wetland hydrology' encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic reducing conditions, respectively" (Environmental Laboratory 1987).

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year (approximately 18 days for

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most of low-lying southern California). Hydrology criteria are evaluated based on the characteristics listed below (USACE 2008). Where positive indicators of wetland hydrology are present, the limit of the OHWM (or the limit of adjacent wetlands) is noted and mapped. Evidence of wetland hydrology is met by the presence of a single primary indicator or two secondary indicators.

Primary

- surface water (A1)
- high water table (A2)
- saturation (A3)
- water marks (B1; non-riverine)
- sediment deposits (B2; non-riverine)
- drift deposits (B3; non-riverine
- surface soil cracks (B6)
- inundation visible on aerial imagery (B7)
- water-stained leaves (B9)
- salt crust (B11)
- biotic crust (B12)
- aquatic invertebrates (B13)
- hydrogen sulfide odor (C1)
- oxidized rhizospheres along living roots (C3)
- presence of reduced iron (C4)
- recent iron reduction in tilled soils (C6)
- thin muck surface (C7)

Secondary

- watermarks (B1; riverine)
- sediment deposits (B2; riverine)
- drift deposits (B3; riverine)
- drainage patterns (B10)
- dry-season water table (C2)
- crayfish burrows (C8)
- saturation visible on aerial imagery (C9)
- shallow aquitard (D3)
- FAC-neutral test (D5)

In the absence of all other hydrologic indicators and in the absence of significant modifications of an area's hydrologic function, positive hydric soil characteristics are assumed to indicate positive wetland hydrology. This assumption applies unless the site visit was done during the wet season of a normal or wetter-than-normal year. Under those circumstances, wetland hydrology would not be present.

Soils

The USACE and EPA, in their administration of Section 404 of the Clean Water Act, rely on the National Technical Committee for Hydric Soils (NTCHS) for a definition of hydric soils. According to the NTCHS, "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Federal Register 1994)

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Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation. Soil matrix and mottle colors are identified at each sampling plot using a Munsell soil color chart (Kollmorgen 1994). Generally, an 18-inch or deeper pit is excavated with a shovel at each sampling plot unless refusal occurs above 18 inches.

Soils in each area are closely examined for hydric soil indicators, including the characteristics listed below. Hydric soil indicators are presented in three groups. Indicators for "All Soils" (A) are used in any soil regardless of texture, indicators for "Sandy Soils" (S) area used in soil layers with USDA textures of loamy fine sand or coarser, and indicators for "Loamy and Clayey Soils" (F) are used with soil layers of loamy very fine sand and finer (USACE 2008 and Vasilias et al. 2017).

- histosols (A1)
- histic epipedons (A2)
- black histic (A3)
- hydrogen sulfide (A4)
- stratified layers (A5)
- 1 cm muck (A9)
- depleted below dark surface (A11)
- thick dark surface (A12)
- sandy mucky mineral (S1)
- sandy gleyed matrix (S4)
- sandy redox (S5)
- stripped matrix (S6)
- loamy mucky mineral (F1)
- loamy gleyed matrix (F2)
- depleted matrix (F3)
- redox dark surface (F6)
- depleted dark surface (F7)
- redox depressions (F8)
- vernal pools (F9)
- 2 cm muck (A10)
- reduced vertic (F18)
- red parent material (TF2)

Hydric soils may be assumed to be present in plant communities that have complete dominance of obligate or facultative wetland species. In some cases, there is only inundation during the growing season and determination must be made by direct observation during that season, recorded hydrologic data, testimony of reliable persons, and/or indication on aerial photographs.

NON-WETLAND WATERS OF THE U.S.

The non-wetland Waters of the U.S. designation is met when an area has periodic surface flows but lacks sufficient indicators to meet the hydrophytic vegetation and/or hydric soils criteria. For purposes of delineation and jurisdictional designation, the non-wetland Waters of the U.S. boundary in non-tidal areas is the OHWM as described in the Section 404 regulations (33 CFR Part 328).

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U.S. Geological Survey Mapping

The U.S. Geological Survey (USGS) quad maps are one of the resources used to aid in the identification and mapping of jurisdictional areas. Their primary uses include understanding the subregional landscape position of a site, major topographical features, and a project's position in the watershed.

In our experience, the designation of watercourse as a blue-line stream (intermittent or perennial) on USGS maps has been unreliable and typically overstates the hydrology of most streams. This has also been the experience of others, including the late Dr. Luna Leopold. Dr. Leopold was a hydrologist with USGS from 1952 to 1972, professor in the Department of Geology and Geophysics and Department of Landscape Architecture, University of California, Berkeley from 1972 to 1986, and Professor Emeritus from 1987 until his death in 2006. In regard to USGS maps, Dr. Leopold wrote, "I tried to devise a way of defining hydrologic criteria for the channels shown on topographic maps and developed some promising procedures. None were acceptable to the topographers, however. I learned that the blue lines on a map are drawn by non-professional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic" (Leopold 1994).

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Appendix G

State Jurisdictional Information

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CALIFORNIA FISH AND WILDLIFE REGULATIONS

The California Department of Fish and Wildlife (CDFW) regulates alterations or impacts to streambeds or lakes (wetlands) under Fish and Game Code Sections 1600 through 1616 for any private, state, or local government or public utility-initiated projects. The Fish and Game Code Section 1602 requires any entity to notify the CDFW before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, and streams as well as lakes in the state.

In order to notify the CDFW, a person, state, or local governmental agency or public utility must submit a complete notification package and fee to the CDFW regional office that serves the county where the activity will take place (CDFW 2016). A fee schedule is included in the notification package materials. Under the Permit Streamlining Act (Government Code Sections 65920 et seq.), the CDFW has 30 days to determine whether the package is complete. If the requestor is not notified within 30 days, the application is automatically deemed to be complete.

Once the notification package is deemed to be complete, the CDFW will determine whether the applicant will need a Lake or Streambed Alteration Agreement (SAA) for the activity, which will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an SAA is required, the CDFW will conduct an on-site inspection, if necessary, and submit a draft SAA that will include measures to protect fish and wildlife resources while conducting the project. If the applicant is applying for a regular SAA (less than five years), the CDFW will submit a draft SAA within 60 calendar days after notification is deemed complete. The 60-day time period does not apply to notifications for long-term SAAs (greater than five years).

After the applicant receives the SAA, the applicant has 30 calendar days to notify the CDFW whether the measures in the draft SAA are acceptable. If the applicant agrees with the measures included in the draft SAA, the applicant will need to sign the SAA and submit it to the CDFW. If the applicant disagrees with any measures in the draft SAA, the applicant must notify the CDFW in writing and specify the measures that are not acceptable. Upon written request, the CDFW will meet with the applicant within 14 calendar days of receiving the request to resolve the disagreement. If the applicant fails to respond in writing within 90 calendar days of receiving the draft SAA, the CDFW may withdraw that SAA. The time periods described above may be extended at any time by mutual agreement.

After the CDFW receives the signed draft SAA, the CDFW will make it final by signing the SAA; however, the CDFW will not sign the SAA until it both receives the notification fee and ensures that the SAA complies with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.). After the applicant receives the final agreement, the applicant may begin the project, provided that the applicant has obtained any other necessary federal, state, and/or local authorizations.

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WATER RESOURCE CONTROL BOARD REGULATIONS

SECTION 401 WATER QUALITY CERTIFICATION

Whenever a project requires a federal Clean Water Act (CWA) Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification. The Regional Water Quality Control Board (RWQCB) administers the 401 Certification program. Federal CWA Section 401 requires that every applicant for a Section 404 permit must request a Water Quality Certification that the proposed activity will not violate state and federal water quality standards.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The State Water Resource Control Board (SWRCB) and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code (SWRCB 2017). The California Water Code is the State's version of the federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. State waters that are not federal waters may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

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IS/MND Appendix C

Cultural Resources Technical Report

River Path Del Mar Phase III Extension Project

Cultural Resources Technical Report

February 2022 | 01197.00002.003

Prepared for:

City of Del Mar
Planning Department
1050 Camino del Mar
Del Mar, CA 92104

Stacie Wilson
Senior Archaeologist

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

National Archaeological Database Information

Authors:	Stacie Wilson, Theodore G. Cooley, and James Turner
Firm:	HELIX Environmental Planning, Inc.
Client/Project:	City of Del Mar / River Path Del Mar Phase III Extension Project
Report Date:	February 2022
Report Title:	Cultural Resources Technical Report for the River Path Del Mar Phase III Extension Project
Type of Study:	Cultural Resources Survey and Assessment
New Sites:	None
Updated Sites:	P-37-036420 (CA-SDI-22048)
USGS Quad:	Del Mar 7.5' Quadrangle
Acreage:	Approximately 4 acres
Key Words:	San Diego County; Township 14 South, Range 4 West; Del Mar; San Dieguito Drive; San Dieguito Lagoon shoreline; P-37-036420 (CA-SDI-22048), concrete lamp post rubble

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effects
BP	before present
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
DG	decomposed granite
DPR	Department of Parks and Recreation
HELIX	HELIX Environmental Planning, Inc.
LF	linear feet
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
PRC	Public Resources Code
SCIC	South Coastal Information Center
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) was contracted to provide cultural resources services for the River Path Del Mar Phase III Extension Project (River Path; project) in the City of Del Mar, San Diego County, California. The project proposes to construct an approximately one-half-mile extension of the River Path along the San Dieguito Lagoon. A cultural resources study including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and pedestrian survey was conducted for the River Path alignment. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA), as amended.

The records search conducted at the South Coastal Information Center (SCIC) on May 4, 2020 indicated that 92 previous cultural resources studies have been conducted within one mile of the project area, of which one overlaps with the project area of potential effects (APE). The records search results also indicated that a total of 52 cultural resources have been previously recorded within one mile of the project APE, with one site, P-37-036420 (CA-SDI-22048), having been recorded within the APE. P-37-036420 (CA-SDI-22048) consists of a dump of concrete blocks and pillars that are likely pieces of possibly historic-aged lamp posts. The concrete fragments are partially submerged in the San Dieguito lagoon.

The field investigations included intensive pedestrian survey of the APE by a HELIX archaeologist and a Native American monitor on May 8, 2020 and February 14, 2022. The survey resulted in the re-identification of the previously recorded cultural resource within the project APE. Based on the results of the current study, P-37-036420 (CA-SDI-22048) does not meet the criteria for inclusion in CRHR or the NRHP. No other cultural resources were identified in the APE.

As such, no known historic properties or significant cultural resources will be affected by the project. However, during the field the survey the original ground surface within the APE was frequently obscured by dense vegetation. Additionally, the project area is located within alluvial soils, where there is a potential for buried cultural resources and, in general, the project location is known to be a culturally sensitive area, with a large number of resources being located in the project vicinity. Based on this, it is recommended that an archaeological and Native American monitoring program be implemented for ground-disturbing activities. The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the construction contractor and the presence of archaeological and Native American monitors during initial vegetation removal or grading activities. Both the archaeological and Native American monitor would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the project archaeologist, City of Del Mar staff, and the tribal monitor will coordinate to develop and implement appropriate mitigation measures.

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1.0 INTRODUCTION

HELIX Environmental Planning, Inc. (HELIX) was contracted by the City of Del Mar (City) to provide cultural resources services for the River Path Del Mar Phase III Extension Project (River Path; project). The proposed project involves the Phase III extension of the River Path pedestrian trail in the City of Del Mar along the southern edge of the San Dieguito Lagoon. The project would extend the path for about one-half mile to the City limits near the Crest Canyon Trail. A cultural resources study including a records search, Sacred Lands File search, Native American outreach, a review of historic aerial photographs and maps, and a pedestrian survey was conducted for the project area. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

1.1 PROJECT LOCATION

The project is located in coastal north-central San Diego County in the northern part of the City, south of the Del Mar Fairgrounds and west of Interstate (I-) 5 (Figure 1, *Regional Location*). The project alignment is situated within the southeast quarter of Section 11 of Township 14 South, Range 4 West, on the U.S. Geological Survey (USGS) 7.5' Del Mar quadrangle (Figure 2, Site Topography (*USGS*). The River Path is oriented in a northwest to southeast direction along the San Dieguito Lagoon between the railroad tracks near Camino Del Mar and the Lagoon Viewpoint at the Old Grand Avenue Bridge (Grand Avenue Lookout). The trail would extend southeast from the Grand Avenue Lookout to about 165 feet west of the northern terminus of the Crest Canyon Trail (Figure 3, *Aerial Photograph*). An off-site target mitigation site was identified for the project and is located just west of the Old Grande Avenue Bridge, approximately 225 feet northwest of the project alignment.

1.2 PROJECT DESCRIPTION

The project consists of an approximately one-half mile pedestrian extension of the River Path along the San Dieguito Lagoon. The proposed extension would connect to existing trail segments and improve a portion of the San Dieguito segment of the City's Loop Trail. The project includes a single, 5-foot-wide decomposed granite (DG) trail and six-foot wide boardwalk (both at-grade and elevated) path alignment along the San Dieguito Lagoon to extend the River Path from the Grand Avenue Lookout to near the Crest Canyon Trail. The trail extension would extend a total of 2,164 linear feet (LF) and would primarily be comprised of an elevated boardwalk (1,283 LF), or about 60 percent of the proposed trail. About 94 LF (or about 4 percent of the proposed trail) would include boardwalk decking at grade and about 787 LF (or about 36 percent of the proposed trail) would include a DG trail. The three types are described in detail below:

- **DG Trail**. The two DG trail sections of the River Path would include a five-foot wide pathway constructed with three inches of compacted and stabilized DG material. Each side of the trail would include plastic and wood stakes drilled down approximately 18 inches beneath the ground with a gopher screen between the ground level and DG trail. The surface of the DG trail would be edged with recycled plastic lumber on both sides. Construction would be similar to the Phase II DG trail.

- **At-Grade Boardwalk**. Three at-grade boardwalks are proposed to transition to and from the DG trail to the elevated boardwalk and would involve a six-foot wide pathway constructed of composite decking material with pre-made footings/pins associated with the foundations spaced about 46 inches apart. The boardwalk would include repurposed material from a removed segment from the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (1/2-inch maximum) to allow for adequate drainage and indirect sunlight to penetrate to areas below the boardwalk portions of the project. Foundation footings would extend between 3.5 and 10.5 feet beneath the ground surface.

- **Elevated Boardwalk**. Most of the proposed trail would comprise an elevated boardwalk near the edge of the San Dieguito Lagoon. The elevated boardwalk would include a six-foot wide pathway and would be constructed with the same composite decking material and pre-made footings/pins as the at-grade boardwalk. The elevated boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking would be spaced to allow for drainage and sunlight to penetrate the elevated boardwalk portions of the project. Elevated boardwalk sections would also include a cable/post fence railing along the San Dieguito Lagoon constructed of 10-inch wide and 60-inch tall redwood cable post fencing with horizontal cable wires for safety and to keep users from meandering off of the boardwalk and encroaching into biologically sensitive areas. The fence posts would be drilled approximately 28 inches into the ground with concrete foundations or securely fastened to the elevated boardwalk (where appropriate).

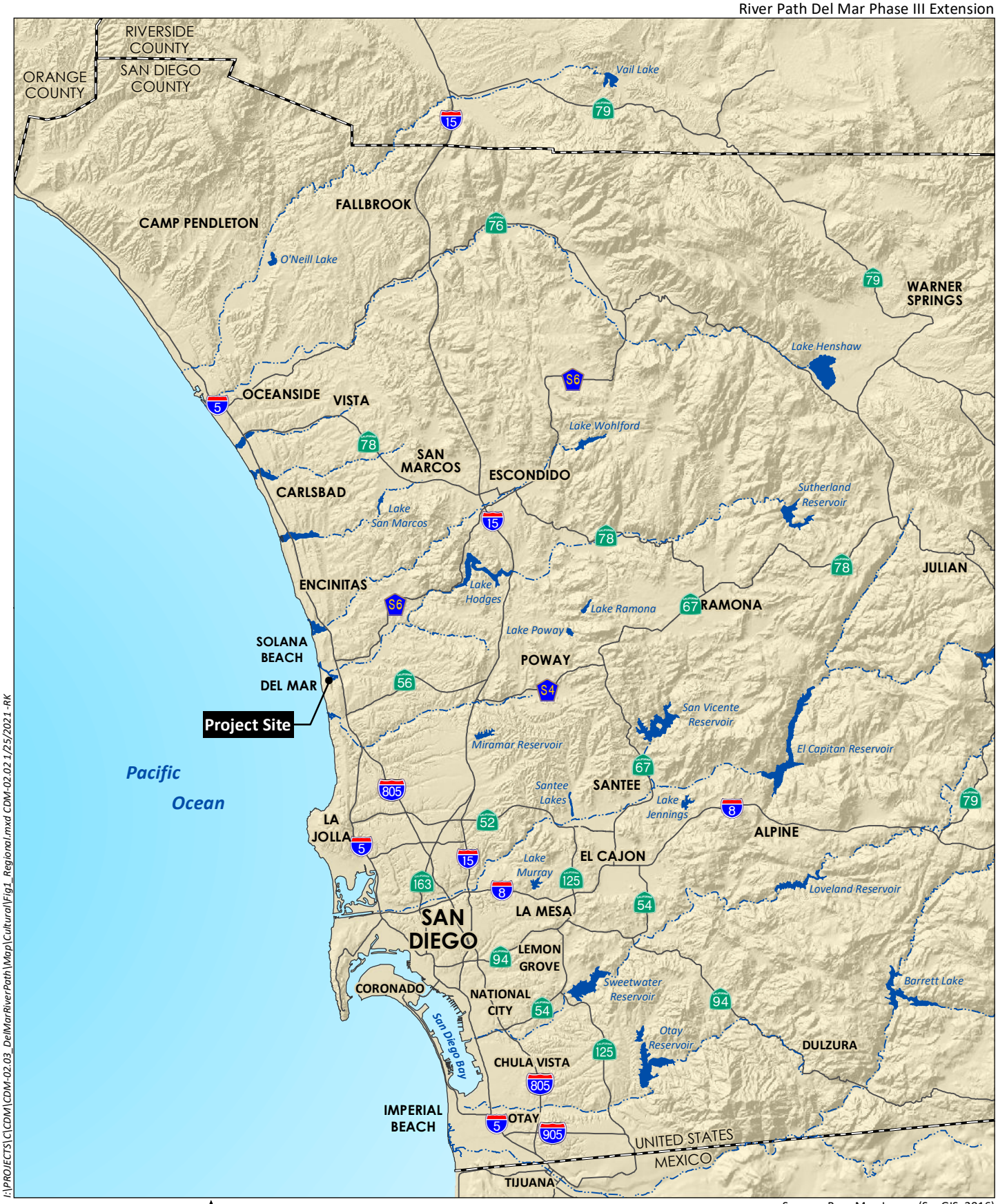
The proposed project would involve minor grading, vegetation removal, and debris removal along the path alignment within the upland habitat areas. No excavation, grading, or filling would occur in wetland habitat areas; the installation of the trail in such areas would include pre-made footings/pins with a concrete head to support the elevated boardwalk deck structure, which would substantially avoid and reduce impacts. No utilities in the project area would be affected by the proposed project and existing above-ground electric utility lines and power poles would remain as they are under existing conditions. Other project components would involve interpretive and wayfinding signage as well as trash cans along the trail alignment. No benches or picnic tables are proposed as part of the project.

Construction is anticipated to begin in 2023 for a duration of approximately four months. Following construction of the project, the City would oversee perpetual management of the Phase III extension of the River Path in conjunction with Phases I and II.

1.3 REGULATORY FRAMEWORK

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Significant resources are those resources which have been found eligible to the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP), as applicable.

In support of a possible U.S. Army Corps of Engineers (USACE) permit, federal regulations that would be applicable to the project consist of the NHPA and its implementing regulations (16 United States Code 470 et seq., 36 Code of Federal Regulations [CFR] Part 800). Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on “historic properties,” that is, properties (either historic or archaeological) that are eligible for the NRHP. To be eligible for the NRHP, a



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1

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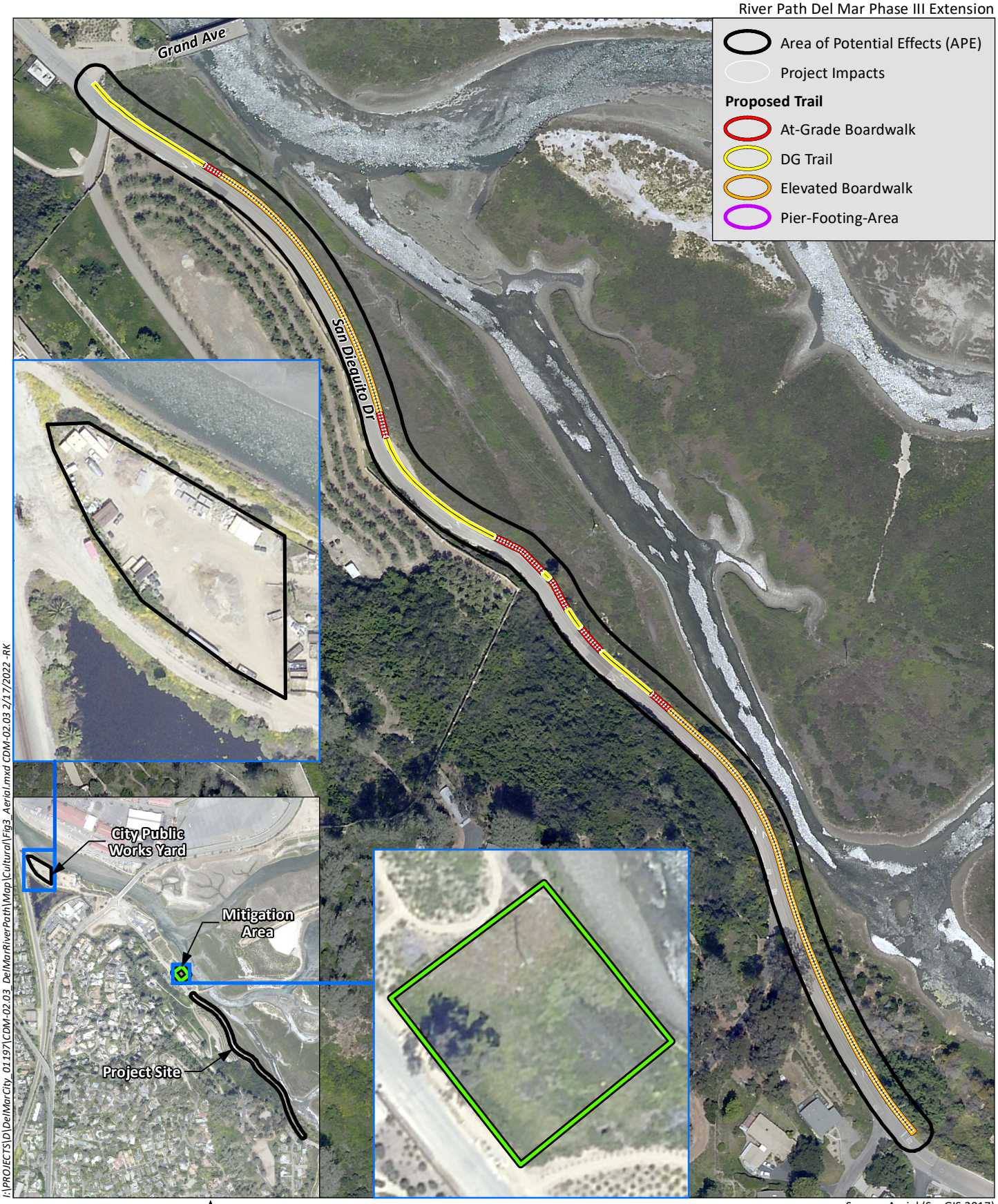
HELIX Environmental Planning

Site Topography (USGS)

Figure 2

River Path Del Mar Phase III Extension



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Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Aerial Photograph

Figure 3

historic property must be significant at the local, state, or national level under one or more of the following four criteria:

1. Associated with events that have made a significant contribution to the broad patterns of our history;

2. Associated with the lives of persons significant in our past;

3. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or

4. Has yielded or may be likely to yield, information important in prehistory or history.

CEQA Public Resources Code (PRC) 21084.1, and California Code of Regulations (CCR) Title 14 Section 15064.5, address determining the significance of impacts to archaeological and historic resources and discuss significant cultural resources as "historical resources," which are defined as:

- Resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR Section 15064.5[a][1])

- Resource(s) either listed in the NRHP or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2])

- Resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or

4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the NRHP or CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their

historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination. Under Section 106 of the NHPA, actions that alter any of the characteristics that qualify a property for eligibility for listing in the NRHP "in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR 800.5[a]) constitute an adverse effect to the historic property.

1.3.1 City of Del Mar CEQA Guidelines

For cultural resources, the City of Del Mar Guidelines implements CEQA and the State Guidelines (City of Del Mar 2015). Amendments to CEQA and the State Guidelines are automatically included as part of the City CEQA Guidelines. If the City Guidelines conflict with CEQA or the State Guidelines, CEQA and the State Guidelines prevail (PRC 21082).

1.3.2 Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties (TCP) in discussions of cultural resource management performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, either orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Cultural resources can include TCPs, such as gathering areas, landmarks, and ethnographic locations, in addition to archaeological districts. Generally, a TCP may consist of a single site, or group of associated archaeological sites (district or traditional cultural landscape), or an area of cultural/ethnographic importance.

In California, the Traditional Tribal Cultural Places Bill of 2004 requires local governments to consult with Native American Tribes during the project planning process, specifically before adopting or amending a General Plan or a Specific Plan, or when designating land as open space for the purpose of protecting Native American cultural places. The intent of this legislation is to encourage consultation and assist in the preservation of Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance. State Assembly Bill (AB) 52, effective July 1, 2015, introduced the Tribal Cultural Resource (TCR) as a class of cultural resource and additional considerations relating to Native American consultation into CEQA. As a general concept, a TCR is similar to the federally defined TCP; however, it incorporates consideration of local and state significance and the required mitigation under CEQA. A TCR may be considered significant if included in a local or state register of historical resources; or determined by the lead agency to be significant pursuant to criteria set forth in PRC §5024.1; or is a geographically defined cultural landscape that meets one or more of these criteria; or is a historical

resource described in PRC §21084.1, a unique archaeological resource described PRC §21083.2; or is a non-unique archaeological resource if it conforms with the above criteria.

1.4 AREA OF POTENTIAL EFFECTS

Pursuant to 36 CFR 800.4(a)(1), the area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly alter the character or use of historic properties. The APE for the project consists of the 2,164-foot River Path alignment and a 25-foot buffer on either side of the impact corridor, as well as the off-site target mitigation property (Figure 3). Construction staging and laydown areas would utilize the City Public Works Yard, located about one-third mile west of the proposed River Path extension, just west of the intersection of Jimmy Durante Boulevard and San Dieguito Drive. The APE consists of the approximately 3.7-acre project site and the 0.33-acre target mitigation property; for a total of 4.03 acres.

As noted above, pathway construction would involve a DG trail, at-grade boardwalk, and elevated boardwalk. The proposed project would involve minor grading, vegetation removal, and debris removal along the path alignment within upland habitat areas. No excavation or grading would occur in wetland habitat areas; the installation of the trail in such areas would include pre-made footings/pins with a concrete head to support the elevated boardwalk deck structure, which would substantially avoid and reduce impacts.

1.5 PROJECT PERSONNEL

Stacie Wilson, M.S., RPA, served as principal investigator and is the co-author of this technical report. Theodore Cooley M.A., RPA, is report co-author. Mr. James Turner M.A., RPA, is contributor to the report. Ms. Wilson and Mr. Cooley both meet the qualifications of the Secretary of Interior's Standards and Guidelines for archaeology. Mary Robbins-Wade, M.A., RPA, provided senior technical review. Julie Roy, B.A., conducted the field survey. Gabe Kitchen (Kumeyaay Native American monitor) from Red Tail Environmental participated in the pedestrian survey. Resumes for key project personnel are presented in Appendix A.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project area is located within the coastal plain of western San Diego County, where the climate is characterized as semi-arid steppe, with warm, dry summers and cool, moist winters (Hall 2007; Pryde 2004). This coastal plain lies along the westernmost area of the Peninsular Ranges geomorphic province of southern California. The project area is situated along the southern shoreline of the San Dieguito lagoon, approximately 0.8 mile from the mouth of the lagoon and the Pacific Ocean. Development in the project area is characterized by a mixture of residential development and roadway infrastructure. The elevation of the project area ranges from approximately five to 32 feet above mean sea level.

Geologically, the River Path alignment is underlain by sedimentary alluvium and slopewash deposits of Holocene age and by the Bay Point Formation of middle Pleistocene age. An older formation, the Torrey Sandstone, of Eocene age, is also present in the adjacent bluffs bordering the project area (Kennedy 1975a). The Bay Point and Torrey Sandstone formations are both mostly marine sedimentary in origin

and variously consist of siltstone, sandstone, shale, and conglomerate. Both of these formations are also potentially fossiliferous (Kennedy 1975b).

One natural soil association is mapped for the project area, the Salinas-Corralitos association, consisting of moderately well drained to somewhat excessively drained loamy clays, clay loams, and loamy sands on alluvial fans. The soils series predominating in the project area is the Tujunga sand, 0 to 5 percent slopes consisting of soils formed on alluvial fans and floodplains, with slopes predominantly 2 percent (Bowman 1973:80). Terrace escarpments soils are also present along the base of the adjacent eroded bluffs (Bowman 1973:79). Natural vegetation for the Tujunga soils series is mainly grasses and forbs and a few scattered oaks, while the north-facing slopes of the adjacent Terrace escarpment soils generally support thick growths of brush (Bowman 1973:79).

Prehistorically, the natural vegetation in project area and vicinity likely consisted mostly of freshwater and/or salt marsh, and riparian communities along lagoon and creek areas, with Diegan coastal sage scrub vegetation and possibly intermittent areas of grassland in the scrub present on most of the adjacent bluff top areas. Southern mixed chaparral vegetation would likely have been present on the slopes of the ravines and canyons extending down from the bluff top areas (Beauchamp 1986; Hall 2007; Munz 1974).

Prehistorically, plants common to fresh-water marsh include reed grass (*Phragmites australis*) marsh mallow (*Kosteletzkya virginic*), soft rush (*Juncus effusus*), pickerelweed (*Pontederia cordata*), narrow-leaved cattail (*Typha angustifolia*), and button bush (*Cephalanthus occidental*). Plants common to salt-water marshes include alkali heath (*Frankenia* sp.), seashore saltgrass (*Distichlis spicata*), marsh jaumea (*Jaumea* sp.), Salicornia (*Salicornia* sp.), and seepweed (*Suaeda* sp.) Plants of the Diegan coastal sage scrub community include California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), flat-top buckwheat (*Eriogonum fasiculatum),* broom baccharis (*Baccharis sarothroides*), wild onion (*Allium haematochiton*), laurel sumac (*Malosma laurina*), San Diego sunflower (*Bahiopsis laciniata*), golden-yarrow (*Eriophyllum confertiflorum*), sawtooth goldenbush (*Hazardia squarrosa*), yucca (*Yucca schidigera*, *Hesperoyucca whipplei),* prickly pear cactus (*Opuntia* sp.), and scrub oak (*Quercus dumosa*). These would likely have covered most of the mesa and canyons in the area interspersed with areas of native grasslands *(Stipa*, *Elymus*, *Poa*, *Muhlenbergia*). In addition to some of the plants in the scrub community, plant characteristics of the southern mixed chaparral include toyon *(Heteromoles arbutifolia*), chamise (*Adenostoma* spp.), mission manzanita (*Xylococcus bicolor*), wart stemmed ceanothus (*Ceanothus verrucosus*), and mariposa-lillies (*Calochortus* sp.). Prior to historic and modern activities, major drainages such as the San Dieguito River likely contained extensive stands of the riparian community with plants such as western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), and willow (*Salix* sp.) (Beauchamp 1986: Hall 2007; Munz 1974). Plant species naturally occurring in the project area and vicinity are known to have been used by native populations for food, medicine, tools, basketry and netting, ceremonial, and other uses, while many of the animal species living within these communities (such as deer, small mammals, and birds) would have been used by native inhabitants as well (Christenson 1990; Hedges and Beresford 1986; Luomala 1978).

Major wildlife species found in this environment prehistorically were coyote (*Canis latrans*); mule deer (*Odocoileus hemionus*); grizzly bear (*Ursus arctos*); mountain lion (*Puma concolor*); desert cottontail (*Sylvilagus audubonii*); jackrabbit (*Lepus californicus*); and various rodents, the most notable of which are the valley pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi)*, and dusky footed woodrat (*Neotoma fuscipes*) (Burt and Grossenheider 1976; Head 1972). Desert

cottontails, jackrabbits, and rodents were very important to the prehistoric diet; deer were somewhat less significant for food, but were an important source of leather, bone, and antler (Christenson 1990; Luomala 1978).

2.2 CULTURAL SETTING

2.2.1 Prehistoric Period

The project area is located along the central San Diego coast, within the Southern Coast Archaeological Region of California (Moratto 1984). The following culture history outlines and briefly describes the known prehistoric cultural traditions in the vicinity of the study area. The documented prehistory of the San Diego region has often been divided into three periods: Early Prehistoric Period (San Dieguito Tradition/complex), Archaic Period (Milling Stone Horizon, Encinitas Tradition, and La Jolla and Pauma complexes), and Late Prehistoric Period (Cuyamaca and San Luis Rey complexes).

2.2.1.1 Early Prehistoric Period Traditions/Complexes

The Early Prehistoric Period represents the time period of the first known inhabitants in California. In some areas of California, it is referred to as the Paleo-Indian period and is associated with the Big-Game Hunting activities of the peoples of the last Ice Age, occurring during the Terminal Pleistocene (pre-10,000 years ago) and the Early Holocene, beginning circa 10,000 years ago (Erlandson 1994, 1997; Erlandson et al. 2007). In the western United States, most evidence for the Paleo-Indian or Big-Game Hunting peoples during this time period derives from finds of large fluted spear and projectile points (Fluted-Point Tradition) at sites outside of California in places such as Clovis and Folsom in the Great Basin and the Desert southwest (Moratto 1984:79–88). In California, most of the evidence for the Fluted-Point Tradition derives from less substantial sites in the southeastern areas of the state along the margins of the Great Basin and adjacent Mojave Desert and from isolated fluted point occurrences scattered elsewhere in the state (Dillon 2002; Rondeau et al. 2007). Some of these isolated finds, however, have occurred along or adjacent to the southern California coast (Erlandson et al. 1987; Fitzgerald and Rondeau 2012; Kline and Kline 2007), including some finds on the Baja Peninsula (Des Lauriers 2008; Hyland and Gutierrez 1995).

While one of these isolated fluted points has recently been found in the eastern mountains of San Diego County (Kline and Kline 2007), the most well-documented sites in the San Diego area dating to the Early Prehistoric Period, belong to the San Dieguito Tradition, now documented to be over 9,000 years old (Warren et al. 1998; Warren and Ore 2011). The San Dieguito Tradition, with an artifact assemblage distinct from that of the Fluted-Point Tradition, has been documented mostly in the coastal area in San Diego County, as well as in the southeastern California deserts, (Carrico et al. 1993; Rogers 1966; Warren 1966, 1967; Warren and True 1961), with only sparse evidence for it discovered in the coastal area north of San Diego County (e.g., Sutton and Grenda 2012). The content of the earliest component of the C.W. Harris Site, (CA-SDI-149/316/4935B), located along the San Dieguito River, approximately 11.0 kilometers (6.3 miles) up river to the east from the project, formed the basis upon which Warren and others (Rogers 1966; Warren 1966, 1967; Warren and True 1961) identified the “San Dieguito complex,” which Warren later reclassified as the San Dieguito Tradition (1968). This tradition is characterized by an artifact inventory consisting almost entirely of flaked stone biface and scraping tools, but lacking the fluted points associated with the Fluted-Point Tradition. Diagnostic artifact types and categories associated with the San Dieguito Tradition include elongated bifacial knives; scraping

tools; crescentics; and Silver Lake, Lake Mojave, and leaf-shaped projectile points (Rogers 1939; Warren 1967).

The subsistence system, or emphasis, of the San Dieguito Tradition, while not as of yet entirely agreed upon, is suggested by Warren as having an orientation toward a hunting rather than gathering economy, based on an artifact assemblage of primarily hunting associated tools, in contrast to the more gathering-oriented complexes that were to follow in the Archaic Period (Warren 1967, 1968, 1987; 1998; Warren et al. 1998). Other researchers have interpreted the San Dieguito subsistence system to be possibly ancestral to, or a developmental stage for, the predominantly gathering-oriented "La Jolla/Pauma complex" of the subsequent Archaic Period (e.g., Bull 1983, 1987; Ezell 1987; Gallegos 1985, 1987, 1991; Koerper et al. 1991). Based on uncalibrated radiocarbon dates, Warren originally indicated this tradition to have begun sometime prior to 9,000 years before present (BP) and to have ended sometime between 8500 and 7500 BP (1967; 1968:4). Recent calibrations, however, have indicated these dates to be significantly earlier, extending to circa 10,000 BP (Warren et al. 1998:II-25; Warren and Ore 2011).

2.2.1.2 Archaic Period Traditions/Complexes

In the southern coastal region, the Archaic Period dates from circa 8600 BP to circa 1300 BP (Warren et al. 1998). A large number of archaeological site assemblages dating to this period have been identified at a range of coastal and inland sites. This appears to indicate that a relatively stable, sedentary hunting and gathering complex, possibly associated with one people, was present in the coastal and immediately inland areas of what is now San Diego County for more than 7,000 years. These assemblages, designated as the La Jolla/Pauma complexes, are considered part of Warren's (1968) "Encinitas Tradition" and Wallace's (1955) "Early Milling Stone Horizon." In general, the content of these site assemblages includes manos and metates; shell middens; terrestrial and marine mammal remains; burials; rock features; bone tools; doughnut stones; discoidals; stone balls; plummets; biface points/ knives; beads made of stone, bone, or shell; and cobble-based tools at coastal sites and increased hunting equipment and quarry-based tools at inland sites (True 1958, 1980). As originally defined by True (1958), the "Pauma complex" aspect of this culture is associated with sites located in inland areas that lack shellfish remains but are otherwise similar in content to the La Jolla complex. The Pauma complex may, therefore, simply represent a non-coastal expression of the La Jolla complex (True 1980; True and Beemer 1982). Additional radiometric dating in the archaeological record has indicated that an increase in hunting activity, and the gathering and processing of acorns, may have begun during the latter half of the Archaic Period, with artifacts such as dart points and mortars and pestles becoming increasingly present in site assemblages dating after circa 5500 BP and being essentially absent during the early Archaic Period. This evidence in the archaeological record, indicative of an increase in hunting activity and the gathering and processing of acorns for subsistence, represents a major shift in the Encinitas/La Jolla/Pauma complex subsistence system in the southern coastal region at this time (Warren et al. 1998; Warren 2012).

While sites dating to the Archaic Period are numerous along the coast, including several in proximity to the study area, evidence in the archaeological record for sites associated with the Archaic Period in upper-elevation inland foothill and mountain areas of San Diego County is less common relative to the Late Prehistoric complexes that succeed them. McDonald (1995:14) has observed that "most sites in the Laguna Mountains can be expected to date from late prehistoric or ethnohistoric occupation of the region, and Archaic Period remains, while not unknown, are relatively rare." While inland archaeological sites containing Archaic Period assemblages are not unknown in the central San Diego County area (e.g., Cooley 1995; Cooley and Barrie 2004; Raven-Jennings and Smith 1999; Warren et al. 1961:10),

similar to the sites associated with San Dieguito complex during the Early Prehistoric Period, most of the substantiating archaeological evidence for Archaic Period sites in present-day San Diego County is derived from sites located in near-coastal valleys and around estuaries and/or embayments that are present along the San Diego coast south of the San Luis Rey River. One such site, dated to the Archaic Period, is CA-SDI-10,238 located on the bluffs along the San Dieguito Lagoon, in relative proximity to the project, approximately 1.5 kilometers (0.95 miles) to the north, along the northern edge of the Lagoon. Subsurface investigations conducted at the site in 1985 and 1999 produced a steatite charm stone and nine radiocarbon dates spanning a period from 5,790 to 8,360 BP (Cooley et al. 2000; Smith 1986). Other nearby coastal sites radiocarbon dated to the Archaic Period include site CA-SDI-13903 on San Elijo Lagoon (Smith 1995); site CA-SDI-603 (Crabtree et al. 1963) on Batiquitos Lagoon; site CA-SDI-4629 (SDM-W-20) along Peñasquitos Lagoon (Smith and Moriarty 1985); sites CA-SDI-210/UCLJ-M-15 (Moriarty 1967), CA-SDI-10965/SDM-W-131 (Gallegos 1991; Gallegos and Carrico 1984), the Allen O. Kelly Site, CA-SDI-9649 (Koerper et al. 1991) around Agua Hedionda Lagoon; the Scripps Estate Site, CA-SDI-525 in La Jolla (Moriarty et al. 1959; Shumway et al. 1961); site CA-SDI-11767 (Cooley and Mitchell 1996) on the Lower San Diego River; and sites CA-SDI-48 (Gallegos and Kyle 1998) and CA-SDI-10945 (Pigniolo et al. 1991) on San Diego Bay. The location of the proposed project in proximity to these and other archaeological sites along the coast, places it within an area where sites that can be definitely dated to the Archaic Period and that contain La Jolla or Pauma complex assemblages are the most common (Warren et al. 1998).

2.2.1.3 Late Prehistoric Period Complexes

The beginning of the Late Prehistoric Period is marked by evidence of a number of new tool technologies and subsistence shifts in the archaeological record. Compared to those shifts noted for the middle and late Archaic Period, those occurring at the onset of the Late Prehistoric Period were rather abrupt changes. The magnitude of these changes and the short period of time within which they took place seem to indicate a significant alteration in subsistence practices in what is now San Diego County circa 1500 to 1300 BP. The changes observed in the archaeological record during the Late Prehistoric Period include shifts in settlement patterning indicative of population increases; shifts in subsistence practices such as a reduction, in some areas, of shellfish gathering (possibly due to silting of the coastal lagoons), and an increase in the storage of foodstuffs such as acorns; new technologies such as the production of pottery and the use of the bow and arrow for hunting instead of atlatl and dart; and new traits such as the cremation of the dead instead of burial by inhumation (Gallegos 2002; McDonald and Eighmey 1998).

Movements of people during the last 2,000 years can account for at least some of these changes. Yuman-speaking people had occupied the Gila/Colorado River drainages of what is now western Arizona by 2,000 years ago (Moriarty 1968) and then continued to migrate westward. An analysis by Moriarty (1966, 1967) of materials recovered from the Spindrift site in La Jolla indicated a preceramic Yuman phase. Based on this analysis and a limited number of radiocarbon samples, Moriarty concluded that the Yuman speakers, lacking ceramic technology, penetrated into and occupied what is now the San Diego coastline circa 2000 BP. Subsequently, approximately 1200 to 1300 BP, ceramic technology diffused into the coastal area from the eastern deserts. Although these Yuman speakers may have shared cultural traits with the people occupying what is now eastern San Diego County before 2000 BP, their influence is better documented throughout present-day San Diego County after 1300 BP with the introduction of small points, ceramics, Obsidian Butte obsidian, and the practice of cremation of the dead.

Early research by Meighan (1954) and True (1970), defined two distinct archaeological complexes for the Late Prehistoric Period in what is now San Diego County. True (1970) defined a Late Prehistoric Period complex for southern San Diego County, the Cuyamaca complex that was distinct from one defined by Meighan (1954), the San Luis Rey complex in the northern county area. The presence or absence, or differences in the relative occurrence, of certain diagnostic artifacts in the archaeological assemblages at sites provide the principal distinctions between these archaeological complexes. Cuyamaca complex sites, for example, generally contain both Cottonwood Triangular-style points and Desert Side-notched arrow points, while Desert Side-notched points are quite rare or absent in San Luis Rey complex sites (Pigniolo 2004). Other examples include Obsidian Butte obsidian, which is far more common in Cuyamaca complex sites than in San Luis Rey complex sites, and ceramics. While ceramics are present during the Late Prehistoric Period throughout what is now San Diego County, they are more common in the southern or Cuyamaca complex portions of San Diego County where they occur earlier in time and appear to be somewhat more specialized in form. Both complexes have produced a variety of vessel types, along with rattles, straight and bow-shaped pipes, and effigies. Interment of the dead at Cuyamaca complex sites is almost exclusively by cremation, often in special burial urns for interment, while archaeological evidence from San Luis Rey complex sites indicates both inhumation and cremation. Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples (Diegueño/Kumeyaay) and the Takic-speaking peoples (Luiseño) at the time of contact, it is generally accepted that the Cuyamaca complex is associated with the Diegueño/Kumeyaay and the San Luis Rey complex with the Luiseño/Juaneño. Based on archaeological data, the proposed project lies within the area currently defined for the Cuyamaca complex.

Compared to Archaic Period sites, substantial Late Prehistoric Period sites attributable to the San Luis Rey or Cuyamaca complexes, while not absent, are less common in the near-coastal areas of the county. Gallegos (1995:200) stated that "for San Diego County, there is temporal patterning, as the earliest sites are situated in coastal valleys and around coastal lagoons. Late Prehistoric Period sites are also found in coastal settings but are more common along river valleys and interior locations." It has also been observed at some coastal sites with substantial Archaic Period occupations, that evidence for Late Prehistoric occupation, when present, is often minimal in comparison to earlier occupations (e.g., Crabtree et al. 1963: 343). In contrast, numerous Late Prehistoric Period sites, attributable to the San Luis Rey or Cuyamaca complexes have been identified for the near-coastal inland foothill areas of the County through diagnostic artifacts and/or radiocarbon dating (e.g., Chace and Hightower 1979; Cooley and Barrie 2004; McCown 1945; Raven-Jennings and Smith 1999; Willey and Dolan 2004). The best archaeologically documented site, and nearest site to the project, with evidence of substantial Late Prehistoric Period occupation is site CA-SDI-4513/4609/5443, also known ethnographically as the ethnohistoric village of *Ystagua,* located approximately 8.5 kilometers (5.3 miles) to the south on the Peñasquitos Lagoon (Carrico and Taylor 1983; Gallegos et al. 1989). A total 38 radiocarbon dates spanning from approximately 5040 BP to circa 220 BP (Byrd and Reddy 2002), as well as documented occupation of the site in 1769 by the Spaniards (Carrico 1977), indicate a pattern of settlement connected with the repeated occupation of the location and the surrounding vicinity, extending from the middle Archaic Period through to the Late Prehistoric Period and into ethnohistoric times. Other nearby coastal sites, radiocarbon dated to the Late Prehistoric Period, include site CA-SDI-5017, also recognized as the location of an ethnographic village occupied at the time of Spanish contact (Carrico 1977), the village of *Jamo* (Rinconada), located at the mouth of the Rose Canyon drainage on Mission Bay (Winterrowd and Cardenas 1987); and site CA-SDI-5213, located to the north near Buena Vista Lagoon (Robbins-Wade 1986).

2.2.2 Ethnohistory

Ethnographically, the study area is situated within the traditional territory of the prehistoric Yuman people who inhabited the area at the time of European contact. These people were first designated by the Spaniards as the Diegueño (Kroeber 1925 [1976]), a term derived from the mission with which they came to be associated after 1769, i.e., the Mission San Diego de Alcalá. More recently, Shipek (1982) has initiated use of a Yuman language term "Kumeyaay" for the people formerly designated as the Diegueño. The term Diegueño was adopted by early anthropologists (e.g., Kroeber 1925 [1976]) and further divided into the southern and northern Diegueño. Other researchers have designated the Kumeyaay living north of the San Diego River as 'Iipai (Northern Diegueño), and those living south of the river and into Baja California as Tipai (Southern Diegueño) (Hedges 1975:71-83; Langdon 1975:64-70; Luomala 1978). The southern boundary between the territories of the Northern Diegueño or 'Iipai Kumeyaay and their Luiseño/Juaneño neighbors to the north, extended from the coast, east along Agua Hedionda Creek as far as the northern tip of the valley of San José and Palomar Mountain (Bean and Shipek 1978:550).

The Kumeyaay lived in semi-sedentary, politically autonomous villages or rancherias. Most rancherias were the seat of a clan, although it is thought that, aboriginally, some clans had more than one rancheria and some rancherias contained more than one clan, often depending on the season within the year (Luomala 1978). Subsistence was plant-based, supplemented by game and also by shellfish on the coast. Acorns from a variety of oaks (*Quercus* spp.) were a staple, and the variety of seeds that also formed an important part of the diet included chia (*Salvia columbarie*), buckwheat (*Eriogonum fasciculatum*), and grasses (*Bromus*/*Stipa* spp., *Hordeum* sp., *Phalaris* sp., and *Sporobulus* sp.) (Byrd and Raab 2007; Luomala 1978). Several sources indicate that large Kumeyaay villages or rancherias were located in river valleys and along the shoreline of coastal estuaries (Carrico 1998; Kroeber 1925 [1976]; Luomala 1978). An ethnohistoric Kumeyaay village in proximity to the project was *Sallagua* (San Dieguito) near the mouth of San Dieguito Lagoon (Carrico 1998; Trafzer and Carrico 1992). While the exact location of *Sallagua* is unknown, in 1769 the Spanish Portola expedition made note of visiting a village in the vicinity of the San Dieguito River (Carrico 1977:34-35), which may have been the village of *Sallagua*, a village later documented in, but without a specific location confirmed by, mission baptismal records in the early nineteenth century (Carrico 1998). Other ethnohistoric villages in the vicinity of the project include, *Kulauma* to the north near the mouth of San Elijo Lagoon, and *Jayal* (San Elijo) inland on San Elijo lagoon (Carrico 1998; Kroeber 1925 [1976]; Trafzer and Carrico 1992:53). Trading networks moved coastal resources such as salt and shells, inland, and acorns, agave, and mesquite beans toward the coast (Luomala 1978).

2.2.3 Historic Period

2.2.3.1 Spanish Period

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. In the mid-eighteenth century, Spain had escalated its involvement in California from exploration to colonization (Weber 1992) and in that year, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra established the Royal Presidio of San Diego. Portolá then traveled north from San Diego seeking suitable locations to establish military presidios and religious missions in order to extend the Spanish Empire into Alta California. On the route that the expedition took, it is reported that the party spent a night camped in the San Dieguito Valley and were visited by affable native people who lived nearby (Carrico 1977:34-35).

Initially, both a mission and a military presidio were located on Presidio Hill overlooking the San Diego River. A small pueblo, now known as Old Town San Diego, developed below the presidio. The Mission San Diego de Alcalá was constructed in its current location five years later. The missions and presidios stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Cattle ranching, animal husbandry, and agriculture were the main pursuits of the missions.

2.2.3.2 Mexican Period

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained in the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities.

2.2.3.3 American Period

American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the war. The following years saw a great influx of settlers to California and the San Diego region. The increase in population resulted from several factors, including the discovery of gold in the state in 1848, the end of the Civil War, the availability of free land through passage of the Homestead Act, and later, the importance of San Diego County as an agricultural area supported by roads, irrigation systems, and connecting railways.

While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government. The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued throughout the following years. Eventually, more than 30 land grants covering almost 1,000 square miles were established within San Diego County.

In San Diego County, the 1880s were characterized by “boom and bust” cycles that brought thousands of additional people to the region. In 1885, the Transcontinental Railroad reached San Diego, making the journey of American settlers from the east and Midwest easier. By the end of the decade, many of the new settlers had left after the development bust; however, some remained to form the foundations of small communities based on dry farming, orchards, dairies, and livestock ranching. During the late nineteenth and early twentieth centuries, rural areas of San Diego County developed small agricultural communities centered on one-room schoolhouses. Such rural farming communities consisted of individuals and families tied together through geographical boundaries, a common schoolhouse, and a church.

The influence of military development, beginning in 1916 and 1917 during World War I, and the need to fight a two-ocean war during World War II resulted in substantial development in infrastructure and industry to support the military and accommodate soldiers, sailors, and defense industry workers. In 1917, the U.S. Army established Camp Kearny on the site of what is now Marine Corps Air Station Miramar, located in the central portion of the County. San Diego Bay became the home of the United

States Navy Pacific Fleet in 1919. Marine Corps Base Camp Pendleton was established within Rancho Santa Margarita y Las Flores in 1942, which became the largest Marine Corps base in the United States. Many military bases and military industrial operations were established across San Diego County due to World War II, resulting in an economic shift away from agricultural industries in San Diego County.

After World War II, San Diego County experienced massive development. San Diego State College (now University), established in the 1920s, spurred the development of the eastern portion of the City of San Diego and new roadways, freeways, infrastructure, tract housing, multi-family housing, commercial, and recreational developments were constructed in the 1950s, 1960s, and 1970s.

2.2.3.4 Specific History of the City of Del Mar and Vicinity

In 1882, Theodore M. Loop, a contractor and engineer from New York who worked on the California Southern Railroad, purchased land and constructed a home on the north shore of Los Peñasquitos Creek (Del Mar Historical Society n.d.). Loop built a tent city on the nearby beach, now Torrey Pines State Beach, and his wife Ella called it "Del Mar" after the poem *The Fight on Paseo Del Mar*.

That same year, Colonel Jacob Taylor, a resident of Rancho Peñasquitos, met Loop, and the two decided to build a town in the area. In 1885, the two purchased roughly 338.11 acres of land from homesteader Enoch Talbert for $1,000 (Del Mar Historical Society n.d.). Taylor, a dynamic visionary, pictured Del Mar as a seaside resort for the rich and famous. With help from Loop, Taylor designed and built the town around Casa del Mar, a hotel-resort; other attractions included the general store, a train station, a dance pavilion, and a bathing pool that extended out into the sea (Del Mar Historical Society n.d.). In 1889, a fire broke out at the Casa del Mar, destroying the hotel. Because of this, and due to widespread economic hardships, further development of Del Mar did not occur for the remainder of the century (Del Mar Historical Society n.d.).

A new hotel, the Stratford Inn, was built in Del Mar in the early 1900s. Opening in 1910, the hotel served as a magnet for Hollywood stars, and the construction of new attractions and infrastructure within Del Mar quickly followed, including a pier, a saltwater bath house, a golf course, and a powerhouse to supply the town (Del Mar Historical Society n.d.). Large homes were built in Del Mar between 1912 and 1920; however, development again stalled, this time due to the Great Depression. In the 1930s, Ed Fletcher suggested that the San Dieguito Valley be selected as a site for the San Diego County Fair, due to its location near the main highways and the Santa Fe Railroad (Del Mar Fairgrounds n.d.; Del Mar Historical Society n.d.). The Works Progress Administration provided initial funding, and construction began in 1936. Nine months later, more than 50,000 people enjoyed the exhibits and entertainment at the first Del Mar Fair (Del Mar Historical Society n.d.; Del Mar Fairgrounds n.d.).

The Del Mar Turf Club opened next to the fairgrounds in 1937; Bing Crosby took a leadership role in making the club a reality and recorded the song *Where the Turf Meets the Surf,* which was played at the opening and closing of each day (Del Mar Historical Society n.d.). During World War II, the racetrack closed, and the club and surrounding fairgrounds were utilized by the U.S. Military. The grounds became a training facility and temporary quarters for the military personnel, and the grandstand became a bomber assembly production facility (Del Mar Historical Society n.d.; Del Mar Fairgrounds n.d.).

After the war, racing resumed, and the Fair opened again. New attractions included livestock, agricultural equipment and development, rides, games, and military demonstrations (Del Mar Fairgrounds n.d.; Del Mar Historical Society n.d.; Welch et al. 2008). In the late 1940s, new marketing

campaigns were launched to draw people back to the fair. These campaigns included the creation of Don Diego, a character based on Don Diego Alvarado, who owned the Rancho San Dieguito (Del Mar Fairgrounds n.d.). During this time, the fair also introduced the Fairest of the Fair Pageant, a yearly beauty contest in which the winner was escorted around the fair by Don Diego (Del Mar Fairgrounds n.d.).

In 1959, Del Mar was incorporated as a city. The University of California San Diego opened in La Jolla in 1960, drastically changing the culture of the area. With this change came the shift to protect the environment, with open space areas being established along with the construction of luxury hotels and boutique shops in Del Mar (Del Mar Historical Society n.d.).

3.0 ARCHIVAL RESEARCH AND CONTACT PROGRAM

3.1 RECORDS SEARCH

HELIX obtained a record search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC) on May 4, 2020. The records search covered a one-mile radius around the project alignment and included the identification of previously recorded cultural resources and locations and citations for previous cultural resources studies. A review of the California Historical Resources and the state Office of Historic Preservation (OHP) historic properties directories was also conducted. The records search summary and map are included as Appendix B (Confidential Appendices, bound separately).

3.1.1 Previous Studies

The records search results identified 92 previous cultural resource reports within the record search limits (Table 1, *Previous Investigations Conducted within One Mile of the Project Area*). The studies include cultural resource reports of inventories, record searches, site visit, archaeological surveys, historical resource investigations, architectural evaluations, archaeological monitoring of construction projects, and environmental impact reports and environmental Impact statements. One of the studies included a recent survey covering a portion of the current project area, which recorded one cultural resource within the project APE, discussed below (Foglia et al. 2017).

Table 1
PREVIOUS INVESTIGATIONS CONDUCTED WITHIN ONE MILE OF THE PROJECT AREA

SCIC Report ID	Date	Report Title	Author
SD-00219	1983	Widening of Del Mar Heights Road Overcrossing at I-5, 11-SD-I5	Cardenas, Sean
SD-00312	1986	Cultural Resource Assessment: El Camino Real Realignment Right-of-Way	Cardenas, Sean
SD-00672	1988	A Cultural Resource Overview for the San Dieguito River Valley San Diego, California	Gallegos, Dennis, Roxana Phillips, and Andrew Pigniolo
SD-00809	1985	Archaeological Survey Report for Proposed Widening and Ramp Construction Route I-5/Carmel Valley Road San Diego County	Laylander, Don
SD-01242	1975	An Archaeological Survey Report on “the Point”	Kaldenberg, Russell L.

SCIC Report ID	Date	Report Title	Author
SD-01441	1986	A Report of An Archaeological Sampling Program at Site W-36 (SDI-10238), La Vida Del Mar Project, Solana Beach, California	Smith, Brian F.
SD-01667	1988	Archaeological Test Excavations at SDM-W-36 City of Solana Beach, California	Wade, Sue A.
SD-01851	1989	Cultural Resources Survey of the San Diego Commuter Rail Project	Hector, Susan
SD-01864	1987	Archaeological Investigations on the Calle Cristobal Assessment District and Genstar Assessment District Parcel 16 City of San Diego	Hector, Susan
SD-02249	1990	The Stallions Crossing Project: Cultural Resource Significance Testing at SDI-7290, SDI-7293, SDI-7298, SDI-7300, SDI-10118, SDI-10535	Eighmey, James
SD-02845	1985	Cultural Resource Survey Report: Proposed Access to Del Mar Fairground Parking Area on the West Side of I-5	Leach, Larry L.
SD-02958	1994	Negative Archaeological Survey Report 11-SD-5, P.M. R35.2, 189161	Caltrans
SD-02959	1994	Negative Archaeological Survey Report, First Addendum, 11-SD-5, P.M. R35.2,189616	Caltrans
SD-03338	1995	Negative Archaeological Survey Report, Second Addendum, 11-SD-5 P.M. R35.2 189161	Rosen, Martin, and Karen Crafts
SD-03495	1998	An Archaeological Survey of the Marani Residence Project, 13748 Pine Needles Drive, San Diego, California	Pierson, Larry J.
SD-03510	1998	An Archaeological Survey of the Pine Needles Drive Project, 13700 Block of Pine Needles Drive, San Diego, California	Baker, R. Todd, and Larry J. Pierson
SD-03542	1998	An Archaeological Survey of the Sander Residence Project, 13770 Pine Needles Drive, San Diego, California	Pierson, Larry J.
SD-03549	1997	Results of a Data Recovery Program at Site SDI-7979, the Whittier-Del Mar Project at Border Avenue, Del Mar, California	Kirkish, Alex N, and Brian F. Smith
SD-04177	2000	Archaeological Investigations for the San Dieguito Wetland Restoration Project EIR/EIS	Berryman, Judy, and Craig Woodman
SD-04207	1977	Archaeological/Historical Survey of the Stratford Inn Garage	WESTEC
SD-04236	1981	Environmental Impact Report for San Dieguito River Study Draft Conceptual Master Plan	APEC (American Pacific Environmental Consultants, Inc.)
SD-04480	1987	2nd Supplemental Historic Property Survey - 11-SD-5, P.M. R29.51	Rosen, Martin
SD-04658	2002	Proposed Mitigated Negative Declaration: Formation of Underground Utility Districts	City of San Diego
SD-04911	1985	Archaeological Survey Report for Proposed Widening & Ramp Construction Route I-5/ Carmel Valley Road San Diego County	Laylander, Don
SD-04968	1982	Draft EIR for the Mickellar Joseph Development	RECON
SD-05040	1985	Historic Property Survey 11-SD-5 R30.0-R34.1	Caltrans
SD-05067	2000	An Enhanced Archaeological Survey of the Asbeck Residence Project 2234 El Amigo Road San Diego, California	Pierson, Larry
SD-05441	1983	Negative Archaeological Survey Report District 11 County of San Diego Route I-5 Post Mile R.34.1	Cardenas, D. Sean
SD-05518	2001	Results of Cultural Resource Survey for the Dumka Property	Gilmer, Joanne

SCIC Report ID	Date	Report Title	Author
SD-06198	1986	First Supplemental Historic Property Survey 11-SD-5 P.M.R30.0-R34.5 11222-030100	Laylander, Don
SD-06383	1996	Public Notice of a Draft EIR-Ranch at Stallions Crossing	City of San Diego
SD-06388	1997	Notice of Preparation of a Draft Subsequent EIR-Neighborhood 10 Plan Amendments	City of San Diego
SD-06426	1996	DEIR Ranch at Stallions Crossing	City of San Diego
SD-06427	1993	The Village and the Ranch at Stallions Crossing: Cultural Resources Survey and Testing at SDI-5957, SDI-7287, SDI-7290, SDI-7291, SDI-7293, SDI-7298, SDI-7300, SDI-10118, SDI-10535	Eighmey, James
SD-06440	1999	Draft Archaeological Investigations for the San Dieguito Wetlands Restoration Project EIR/EIS	Berryman, Judy, and Craig Woodman
SD-06444	2000	Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the San Dieguito Wetlands Restoration Project	U.S. Fish & Wildlife Service and San Dieguito River Park Joint Authority
SD-06645	1994	Negative Archaeological Survey Grand Avenue & Old Del Mar Airport	Rosen, Martin
SD-07109	1959	Test Excavations at the Del Mar Site (SDI-191)	Warren, C. N.
SD-07417	2002	Cultural Resources Monitoring Report for A 1.6 Acre Revegetation Project Within the San Dieguito River Valley Regional Park San Diego, California	Pigniolo, Andrew, and Dustin Kay
SD-07724	1995	Negative Archaeological Survey Report 11-SD-5 P.M. R 35.2	Caltrans
SD-07805	2002	AT&T Wireless Services Facility No. 10001a	Duke, Curt
SD-07842	2002	Significance Evaluation of the Del Mar Bluffs Spillway (P-37-024195)	Ní Ghabhláin, Sinéad
SD-08425	2002	Historic Property Survey Report Interstate 5 Northbound Auxiliary Lane Project 11-SD-5 KP R 56.0/R57.5 P.M. R334.81/R35.7; EA. 065100	Rosen, Martin D.
SD-09145	1991	Cultural Resource Survey Report San Diego Bikeways Project San Diego, California	Gallegos, Dennis, and Carolyn Kyle
SD-09329	2004	EIR for the Gad and Schroeder Residences Project	-
SD-09331	2004	Historical Assessment of the Residence at 351 13th Street	Crawford, Kathleen
SD-09361	2002	Archaeological Survey Report for the Phase I Archaeological Survey Along Interstate 5 San Diego County, California	Byrd, Brian F., and Collin O'Neill
SD-09362	2004	Archaeological Testing at Twelve Prehistoric Sites (SDI-603, -628, -4553, -6831, -6882, 10965, -12670, -13484, -15678, -15679, -15680) on the Central San Diego Coast, San Diego County, California	Laylander, Don, and Mark Becker
SD-09516	2005	The Cemeteries and Gravestones of San Diego County: An Archaeological Study	Caterino, David
SD-10415	2006	Cultural Resources Assessment Del Mar Fairgrounds Project Cities of Del Mar and San Diego, San Diego County, California	Fulton, Phil
SD-10550	2002	National Register of Historic Places Registration Form for the Canfield-Wright House	May, Vonn Marie
SD-10610	1980	National Register of Historic Places Inventory- Nomination Form for the Del Mar North Bluffs Preserve, the Site of Del Mar Man	Braciszewski, Bruce, and Bob Nelson

SCIC Report ID	Date	Report Title	Author
SD-10885	2007	Archaeological and Geospatial Investigations of Fire-Altered Rock Features at Torrey Pines State Reserve, San Diego, California	Mattingly, Scott A.
SD-11218	2007	Results of Cultural Resource Survey for the Racetrack View Drive Property	Price, Harry J.
SD-11623	2002	San Dieguito River Valley Inventory of Archaeological Resources	Hector, Susan M., and Alice Brewster
SD-11761	2007	Historic Property Survey Report, I-5 North Coast Widening Project	Dominici, Deb
SD-11783	2008	Archaeological Survey for the Caltrans I-5 North Coast Corridor Project Biological Mitigation Parcels, San Diego County, California	Laylander, Don, and Linda Akyüz
SD-12117	2009	Results of the Archaeological Monitoring Program for the San Dieguito Wetlands Restoration Project, San Diego County, California	Zepeda-Herman, Carmen, and Harry Price
SD-12273	2004	Cultural Resource Evaluation of the Riverpark Office Project, City of Del Mar, California	Gross, G. Timothy
SD-12279	2008	Archaeological Survey Report Cavallo Farms Improvement Project City of San Diego, San Diego County, California	Mock, Kevin, Mike Kelly, and Shelby Gunderman
SD-12662	2003	Archaeological Resources Survey, Dyson Property, Del Mar Estates, San Diego, California	Gross, G. Timothy
SD-12762	2010	Historic Property Survey Report for the Interstate 5 North Coast Corridor Project	Dominici, Deborah
SD-12817	2010	Cultural Resources Survey for 57 Wood to Steel Pole Undergrounding and Pole Replacements Along TL667 and TL610 and Staging Yard Areas Along Via De La Valle and El Camino Real, Del Mar Area of San Diego County, California	Bowden-Renna, Cheryl
SD-12844	2010	Archaeological Resource Report Form; Mitigation Monitoring of the Racetrack View Drive Project, San Diego, California	Pierson, Larry J.
SD-13488	2011	Cultural Resources Investigation in Support of Consultation for the Regional Beach Sand II Project San Diego County, California	York, Andrew L., and John Hildebrand
SD-13916	2012	Interstate 5 North Coast Corridor Project Supplemental Draft Environmental Impact Report/ Environmental Impact Statement	Caltrans
SD-14049	2011	Cultural Resource Survey Update Bridge 243.0 Revetment Project, Del Mar, California	Ní Ghabhláin, Sinéad
SD-14086	2012	Cultural and Historical Resources Constraints Report for the San Dieguito Bridge Replacement and Second Track Project; Del Mar Tunnel Alternatives Analysis	Pham, Angela N., and Sinéad Ní Ghabhláin
SD-14092	2009	Cultural and Historical Resource Inventory and Evaluation Report for the San Dieguito River Bridge Replacement and Second Track Project, Del Mar, San Diego County, California	Ní Ghabhláin, Sinéad, Sarah Stinger Bowsher, and James Daniels
SD-14397	2010	Record Search Results for the Underground Utility District Via de La Valle Project	Pigniolo, Andrew R.
SD-14495	2013	Interstate 5 North Coast Corridor Project Final Environmental Impact Report/Environmental Impact Statement and Section 4(F) Evaluation	Caltrans

SCIC Report ID	Date	Report Title	Author
SD-14523	2013	Cultural Resources Monitoring for Transmission Line Undergrounding and Pole Installation for Tie Line 610 and Tie Line 667 Along Via de La Valle, City of Del Mar, San Diego County, California	Bietz, Spencer
SD-14615	2013	I-5 North Corridor Project Supplementals	Caltrans
SD-14784	2013	Cultural Resource Records Search and Site Survey AT&T Site N7 San Diego Das 2425 1/3 Malibu Way San Diego, San Diego County, California	Loftus, Shannon
SD-14891	2013	FEMA HSGP: 2012-SS-00123 (16267) Del Mar City Hall	U.S. Department of Homeland Security
SD-15568	2013	Cultural Resources Records Search and Site Visit Results for T Mobile West, LLC Candidate SD06288a (Crest Way Water Tank) 14098 Crest Way, Del Mar, San Diego County, California	Bonner, Wayne H., and Kathleen A. Crawford
SD-15569	2013	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SD06288a (Crest Way Water Tank) 14098 Crest Way, Del Mar, San Diego County, California	Bonner, Wayne H., and Kathleen A. Crawford
SD-15797	2010	Draft Cultural Resources Assessment Regional Beach Sand Project II, San Diego County, California	York, Andrew, and John Hildebrand
SD-16127	2008	2007 Cultural Resources Treatment Plan North Coast Interstate 5 Corridor	Dominici, Deb, and Don Laylander
SD-16130	2013	Fifth Supplemental Historic Property Survey Report (HPSR): San Dieguito Biological Mitigation Project	Blake, Michelle
SD-16131	2013	Sixth Supplemental Historic Property Survey Report (HPSR): Revised Area of Potential Effects (APE) I-5 North Coast Corridor	Blake, Michelle
SD-16381	2015	Cultural Resources Assessment of the Del Mar Grandstands Project, Del Mar, San Diego County, California	Brunzell, David, and Kara Brunzell
SD-16729	2015	Cultural Resources Monitoring for Pole Replacement P61716, Del Mar, North San Diego County, California	Villalobos, Mary M.
SD-16877	2016	Cultural Resource Records Search and Site Visit Results for Cellco Partnership and Their Controlled Affiliates Doing Business as Verizon Wireless Candidate 'Jimmy Durante', 2260 Jimmy Durante Boulevard, Del Mar, San Diego County, California	Wills, Carrie D., and Bruce, Bonnie
SD-16910	2017	Cultural Resources Monitoring Report for Install 2040-4 Pe Pipe Del Mar Fairgrounds, City of Del Mar, California	Ports, Kyle
SD-17006	1995	Cultural Resource Significance Testing of CA-SDI-10,940 (SDM-W-34a); Whittier Property TPM 94-1	Cheever, Dayle M.
SD-17103	**2017**	**Cultural Resources Survey Report for the Proposed San Diego Gas & Electric TL674a Reconfiguration & TL666d Removal Project, San Diego County, California**	**Foglia, Shannon E., Theodore G. Cooley, and Monica Mello**
SD-17135	2015	Archaeological Survey for Pole Brushing Project, Various Locations, San Diego County, California	Cordova, Isabel
SD-17966	2017	Cultural Resources Records Search for Cello Partnership and their Controlled Affiliates Doing Business as Verizon Wireless Candidate 'Del Mar Race Track' 2260 Jimmy Durante Boulevard, Del Mar, San Diego County, California	Wills, Carrie D., and Bonnie Bruce
SD-18130	2019	Cultural Resources Monitoring Report for the Anchor Replace, TL666, Z33135 Project, City of Del Mar, San Diego County, California	Wolfe, Tim

SCIC Report ID	Date	Report Title	Author
SD-18132	2019	Cultural Resources Monitoring Report for the Anchor Replace, TL666, Z12313 Project, City of Del Mar, San Diego County, California	Cooley, Theodore G.
SD-18133	2019	Cultural Resources Monitoring Report for the Del Mar Potholing, City of Del Mar, San Diego County, California	Wolfe, Tim

Bold - Within Project APE

3.1.2 Previously Recorded Resources

The SCIC has a record of 52 previously recorded cultural resources within a one-mile radius of the project, one of which is located within the project APE (Table 2, *Previously Recorded Resources within One Mile of the Project Area*). The resource that has been documented within the project APE is P-37-036420 (CA-SDI-22048), described in further detail below. The resources recorded within the one-mile search radius include 30 prehistoric resources, 20 historic-period resources, one multi-component site, and one resource of indeterminate age. The prehistoric resources consist of village-level habitation sites, seasonal habitation campsites, artifact scatters, marine shell scatters, and isolated artifacts. The multi-component site is recorded as a prehistoric lithic artifact and marine shell scatter, and a scatter of historic trash. The time association of one of the recorded resources, a rock pile (possibly a cairn, is unknown, and it may be of modern origin. The 20 historic resources consist mostly of various infrastructure elements (e.g., bridges, culverts, foundations, retaining walls, lamp posts, power lines, water tanks), but also include individual residences, commercial buildings, former military facilities, the Del Mar Racetrack complex, the Del Mar Pavilion complex, and isolated artifacts. In addition to these recorded resources are five historic addresses of private residences on file at the SCIC.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN ONE MILE OF THE PROJECT AREA

Primary Number	Trinomial	Age	Description	Recorder, Date
P-37-000191	CA-SDI-191	Prehistoric	Shell midden	Treganza, n.d.; Bull and Gross, n.d., Foglia and Spelts, 2016
P-37-000192	CA-SDI-192	Prehistoric	Shell midden	Treganza, n.d.; Bull and Gross, n.d.; Foglia and Spelts, 2016
P-37-000193	CA-SDI-193	Prehistoric	Shell midden	Treganza, n.d.; Bull and Gross, n.d.; Foglia and Spelts, 2016
P-37-000613	CA-SDI-613	Prehistoric	Shell scatter	Kowta, 1959
P-37-007290	CA-SDI-7290	Prehistoric	Sparse lithic and ground stone artifact and marine shell scatter	Carrillo, 1979
P-37-007291	CA-SDI-7291	Multi-component	Lithic and marine shell scatter, Historic ceramics	Carrillo, 1979; Robbins-Wade and Sparrevohn, 1984
P-37-007293	CA-SDI-7293	Prehistoric	Sparse lithic and ground stone artifact and marine shell scatter	Carrillo, 1979; Robbins-Wade and Sparrevohn, 1984

Primary Number	Trinomial	Age	Description	Recorder, Date
P-37-007296	CA-SDI-7296	Prehistoric	Shell scatter	Carrillo, 1979; O'Neil, 2000; Andrews, 2001; Laylander, 2006; Akyüz and Laylander, 2008
P-37-007297	CA-SDI-7297	Prehistoric	Shell scatter	Carrillo, 1979
P-37-007298	CA-SDI-7298	Prehistoric	Shell scatter	Carrillo, 1979
P-37-007299	CA-SDI-7299	Prehistoric	Mano	Carrillo, 1979
P-37-007300	CA-SDI-7300	Prehistoric	Lithic and ground stone artifact and marine shell scatter	Carrillo, 1979; Robbins-Wade and Sparrevohn, 1984; Zepeda-Herman, 2009
P-37-007301	CA-SDI-7301	Prehistoric	Three mano fragments	Carrillo, 1979
P-37-007302	CA-SDI-7302	Prehistoric	Lithic and ground stone artifacts, shell midden	Carrillo, 1979
P-37-008591	CA-SDI-8591	Prehistoric	Lithic scatter	Apple and Apple, 1980
P-37-010238	CA-SDI-10238	Prehistoric	Shell midden habitation site	Smith, 1986; RECON 1988; Cooley and Barrie, 2002
P-37-010940	CA-SDI-10940	Prehistoric	Shell midden habitation site	Rogers, n.d.; Pigniolo, 1988
P-37-012120	CA-SDI-12120	Prehistoric	Lithic scatter, shell scatter, fire-affected rock	Dominici, 1991; Laylander, 2003
P-37-012121	CA-SDI-12121	Prehistoric	Lithic scatter, shell scatter	Dominici, 1991; Foglia, Spelts, and Morales, 2016
P-37-014785	-	Prehistoric	Metavolcanic flake	Robbins-Wade and Sparrevohn, 1984
P-37-014786	-	Prehistoric	Lithic flake, shell	Robbins-Wade and Sparrevohn, 1984
P-37-016324	CA-SDI-14795	Prehistoric	Shell scatter	Hector, 1984
P-37-017025	CA-SDI-15065	Historic	Former U.S. Naval Auxiliary Air Facility, Del Mar (NAAF)	Berryman, 1998
P-37-017450	-	Historic	Powerhouse building and smokestack	Bahorski, 1988
P-37-024194	-	Historic	Concrete storm pipe and retaining wall	Pallette, 2001
P-37-024195	-	Historic	Concrete retaining wall and chute	Pallette, 2001
P-37-024196	-	Historic	Concrete retaining wall	Pallette, 2001
P-37-024197	-	Historic	Foundations of a wooden footbridge and gazebo	Pallette, 2001
P-37-024198	-	Prehistoric	Shell scatter	Carrillo, 1979
P-37-024199	-	Prehistoric	Mano	Carrillo, 1979
P-37-026493	CA-SDI-17389	Prehistoric	Midden remnants. flakes, shell, fire-affected rock	Rogers, n.d.
P-37-029577	-	Unknown	Rock pile (cairn)	Akyüz, 2008
P-37-029949	-	Prehistoric	Lithic scatter	Hanna, 1979
P-37-029954	-	Prehistoric	Lithic scatter	Hanna, 1979
P-37-031575	-	Prehistoric	Flaked stone, cobble tool	Bowden-Renna, Ramos, Droessler, and Bietz, 2010

Primary Number	Trinomial	Age	Description	Recorder, Date
P-37-033561	-	Prehistoric	Sandstone bowl/mortar fragment	York, 2014
P-37-033562	-	Prehistoric	Sandstone mortar	York, 2014
P-37-034567	-	Prehistoric	Flaked stone, cobble chopper tool	Foglia and Spelts, 2016
P-37-034956	-	Historic	The San Dieguito River Railroad Bridge	ASM Affiliates, Inc. n.d.
P-37-035160	-	Historic	Modern style, round, bolted steel water tank	Crawford, 2013
P-37-035508	--	Historic	A 23-foot tall, streamlined concrete streetlight with steel crook and pendulous luminary in Modern Stylized Mission Bishops Crook	Loftus, 2013
P-37-035935	--	Historic	The Del Mar Infield Pavilion	Brunzell, 2015
P-37-035936	--	Historic	Del Mar Thoroughbred Club Grandstand and Racetrack Complex	Brunzell, 2015; AECOM, 2016
P-37-036412	--	Historic	A raised ranch-style single-family residence built in 1965	Mello, 2016
P-37-036413	--	Historic	An eclectic ranch style single-family residence built in 1967	Mello, 2016
P-37-036415	--	Historic	A 6-mile portion of the San Diego Gas & Electric (SDG&E) owned electric transmission line constructed to transmit power distribution to communities in San Diego County	Foglia and Spelts, 2016
P-37-036418	--	Historic	The Del Mar Substation	Foglia and Spelts, 2016
P-37-036420	**CA-SDI-22048**	**Historic**	**A dump of concrete blocks and pillars that are likely pieces of historic lamp posts, partially submerged in the San Dieguito lagoon**	**Foglia and Spelts, 2016**
P-37-036421	--	Historic	A clear, double-ridge, glass insulator crown fragment	Foglia and Spelts, 2016
P-37-036422	--	Historic	A large rectangular corrugated metal warehouse that is currently occupied by the Del Mar Blue Print Company and Del Mar Automotive	Foglia, Spelts, and Mello, 2016
P-37-036423	--	Historic	The old Grand Avenue bridge that once served as the entry point from Del Mar into the U.S. Navy Auxiliary Air Facility during World War II	Foglia, Spelts, and Mello, 2016
P-37-036525	--	Historic	A clear glass bottle with a screw top found during monitoring near Solana Gate entrance	Ports, 2016

Bold - Within project APE

3.1.2.1 P-37-036420 (CA-SDI-22048)

This historic resource consists of a dump of concrete blocks and pillars that are likely pieces of possibly historic lamp posts imported to this location from elsewhere. The materials are situated at the base of a very steep, embankment slope for San Dieguito Drive and are partially submerged in the San Dieguito lagoon. A total of approximately 15 fragments of concrete blocks and pillars were observable from the edge of the road. Modern trash was also noted at the site (Foglia et al. 2017).

3.2 OTHER ARCHIVAL RESEARCH

Various additional archival sources were also consulted, including historic topographic maps and aerial imagery. These include historic aerials from 1947, 1953, 1964, and 1966 (NETR Online 2020) and several historic USGS topographic maps, including the 1904 San Diego (1:250,000) and the 1953, 1967, and 1975 Del Mar (1:24,000) topographic maps (USGS Online Historical Topographic Map Explorer 2020). The purpose of this research was to identify historic structures and land use in the area. While the scale on the 1904 San Diego map is large (1:250,000), almost no residential development is shown in the Del Mar area and it doesn't appear that any structures or roadways are present on the project location. The coastal railroad line is present on this map, to the west of the project location. The roadway near the project that, today, is called Jimmy Durante Boulevard, while straighter in 1904, angled across the river as it does today, but without the presence of the Del Mar Race Track along its route.

Considerable change is evident on the next historic topographic map available, the 1953 Del Mar 1:24,000 scale map. While not heavily developed, the Del Mar area has considerably more infrastructure and residential development. The Del Mar Race Track is present and an airport labeled "Del Mar Airport" is present on the "Island" in the lagoon to the northeast of the project location. The roadway to it and the bridge across the channel are shown on this map. Also shown is a roadway that continues south, past the bridge that follows the route of the current San Dieguito Drive along the current project trail alignment route. This road is shown as improved and it seems to be associated with a particular dwelling up the slope of the bluff, as the improved extent is shown only from the turnoff at the bridge to this dwelling and is elsewhere show as dirt road. Other than this road and the bridge, no other structures are shown in the project area or immediate vicinity. On the 1967 map, no changes are evident from the 1953 map in the project location. The roadway (San Dieguito Drive) appears essentially the same, but there are now more residential destinations to the south than were present on the 1953 map, and it is an improved road to these locations.

The 1953 aerial photograph matches well with the 1953 topographic map, showing the roadway along present day San Dieguito Drive, and the dwelling destination upslope is also evident on the aerial. One feature clearly visible on the aerial is a concrete wall that is still present today. This wall encompasses a large area of the slope above the roadway and to the west and seems to be associated with a large structure (dwelling?) towards the top of the bluff. The wall is still present along the south/west side of the San Dieguito Drive roadway for the entire length of the proposed trail route. While development increases elsewhere in Del Mar in the vicinity of the project location, no significant development change is evident on the 1964, 1966, 1967, and 1980 aerial photographs along the proposed River Path alignment (NETR Online 2020).

3.3 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the Native American Heritage Commission (NAHC) on May 5, 2020 for a Sacred Lands File search and list of Native American contacts for the project area. The NAHC indicated in a response dated May 13, 2020 that no known sacred lands or Native American cultural resources are within the project area, but contact should also be made with local tribal representatives and interested parties in regard to cultural resources in the area. Letters were sent on May 29, 2020 to Native American representatives and interested parties identified by the NAHC. One response has been received to date (Table 3, *Native American Contact Program Responses*). If any additional responses are received, they will be forwarded to City staff. Native American correspondence is included as Appendix C (Confidential Appendices, bound separately).

Table 3
NATIVE AMERICAN CONTACT PROGRAM RESPONSES

Contact/Tribe	Response
San Pasqual Band of Mission Indians	Responded on June 12, 2020; determined that the project is not located within the boundaries of the recognized San Pasqual Indian Reservation but does lie within the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). They, therefore, request to be kept in the information loop as the project progresses and would appreciate being maintained on the receiving list for project updates, reports of investigations, and/or any documentation that might be generated regarding previously reported or newly discovered sites. Further, they recommend archaeological monitoring pending the results of surveys and records searches associated with the project. If the project boundaries are modified to extend beyond the currently proposed limits, they request updated information and the opportunity to respond to the changes. They also indicate that if the project calls for a certified Kumeyaay monitor, San Pasqual Band of Mission Indians can provide this service.

4.0 METHODS

4.1 SURVEY METHODOLOGY

A pedestrian survey of the project site was conducted on May 8, 2020 by HELIX Field Director Julie Roy and Kumeyaay Native American monitor, Gabe Kitchen, from Red Tail Environmental. The project area is situated along the southern shoreline of the San Dieguito lagoon, along the lagoon side of San Dieguito Drive (Plate 1). The APE for the River Path alignment includes the impact area for the path and a 25-foot buffer on either side of the impact corridor (Figure 3). Where feasible, this area was walked in transects spaced approximately 5 meters (m) apart. Due to the presence of a thick growth of weeds, reeds, rushes, and willow brush, the varying occurrence of the lagoon water level in portions of the survey area, and the presence of a steep road embankment to the water edge in many areas, reconnaissance survey (i.e., surveying where it was possible to see the ground versus in regular transects) was used to cover most of the area. Due to the thick vegetation, ground visibility was generally no more than 5 percent in the APE. The proposed construction staging and laydown area is graded and utilized as a City Public Works Yard and was not included in the pedestrian field survey.

An additional pedestrian survey of a potential off-site mitigation property was conducted on February 14, 2022 by HELIX archaeologist James Turner and Kumeyaay Native American monitor, Alyssa Soto, From Red Tail Environmental. The potential off-site mitigation property is located along the lagoon side of San Dieguito Drive, just northwest of the Grand Avenue Overlook (Plate 2). The property was walked in transects spaced approximately 5 meters apart; due to the presence of large patches of ice plant and willow brush, the ground visibility ranged from 10 to 20 percent.

Plate 1. Overview of project area along south side of San Dieguito Lagoon. View east.

Plate 2. Overview of the potential off-site mitigation property. View northwest.

4.1.1 Documentation

Cultural resources identified during the records search and survey were updated on appropriate Department of Parks and Recreation (DPR) 523 forms. All completed DPR site forms were submitted to the SCIC.

5.0 RESULTS

One previously recorded cultural resource within the APE, P-37-036420 (CA-SDI-22048), was re-identified during the survey. This resource is a historic archaeological site consisting of a pile of concrete lamp post bases and chunks of concrete located at the base of the road embankment slope, partially submerged at the water's edge (Plate 3). The resource was observed to be in a similar condition as documented in 2017, with marine shell (oysters) appearing to have overtaken some of the pieces of concrete.

No other cultural resources were observed within the project APE during the survey. A map of the APE and the resource location is provided on Figure 4, *Cultural Resources* (Confidential Appendix D). Copies of the DPR forms for the cultural resource are included in Appendix E (confidential, bound separately).

Plate 3. Overview of P-37-036420 (CA-SDI-22048). View to the north.

6.0 SUMMARY AND MANAGEMENT RECOMMENDATIONS

A study was undertaken to identify cultural resources that are present in the River Path Del Mar Phase III Extension Project APE and to determine the effects of the project on historical resources, per CEQA, or historic properties, per Section 106 of the NHPA. The cultural resources records search and field survey identified one cultural resource within the APE, a dump of concrete blocks and pillar fragments that are likely pieces of historic lamp posts, partially submerged along the margin of the San Dieguito lagoon. This resource has not been previously evaluated for listing in the NRHP or CRHR.

The entire APE has been disturbed by nineteenth and twentieth century activities, including dirt and paved road construction, and utility (transmission, sewer, and gas line) installation. The majority of the project APE is located along an existing road edge (San Dieguito Drive), some of which has been built-up with fill for the roadbed placement. The project APE also lies along the shoreline of the San Dieguito River and Lagoon and, consequently, through time, has been subject to both substantial erosional and depositional processes.

6.1 ELIGIBILITY RECOMMENDATIONS

P-37-036420 (CA-SDI-22048) consists of a dump of concrete blocks and pillars that are likely pieces of possibly historic lamp posts. The age and context of the concrete are unknown, and as such it cannot be determined if the concrete remnants are associated with an event that made a significant contribution to the broad patterns of our history, the development of Del Mar, or are associated with the lives of persons significant in our past (Criteria A/1 and B/2). The concrete blocks and pillars may have once represented a lamppost that was representative of a type or period; however, the resource currently consists of approximately 15 fragments of concrete with no absolutely discernible architectural feature. As such, the resource does not represent a historic property eligible under Criterion C/3. Lastly, the limited and fragmented nature of the concrete rubble significantly limits any research potential of the resource beyond recordation. Therefore, P-33-026831 is recommended as not eligible for the NRHP and CRHR and as not significant for the purposes of CEQA.

6.2 MANAGEMENT RECOMMENDATIONS

Based on the results of the current study, no historic properties or CRHR-eligible resources would be affected by the River Path Del Mar Phase III Extension Project.

However, while no historic properties or significant cultural resources have been identified within the APE, there are numerous and important cultural resources in the project vicinity. Additionally, due to the thick vegetation, the ground visibility during the current field survey was generally no more than 5 percent, and the project is located within alluvial soils, where there is a potential for buried cultural resources. Also, the San Pasqual Band of Mission Indians have indicated that the project lies within the boundaries of the territory that the tribe considers its Traditional Use Area and recommended archaeological monitoring pending the results of surveys and records searches associated with the project.

Due to the sensitivity of the project vicinity, and the potential for buried cultural resources, it is recommended that an archaeological and Native American monitoring program be implemented for the vegetation removal, minor grading, or other ground-disturbing activities required for trail construction. The monitoring program would include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the construction contractor and the presence of archaeological and Native American monitors during initial ground-disturbing activities (e.g., mechanical brushing) on site. Both archaeological and Native American monitors would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the project archaeologist, tribal monitor, and City staff will coordinate to develop and implement appropriate mitigation measures.

In the event that human remains are discovered, the County Coroner shall be contacted. If the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the NAHC, shall be contacted in order to determine proper treatment and disposition of the remains. All requirements of Health & Safety Code §7050.5 and PRC §5097.98 shall be followed.

Should the project limits change to incorporate new areas of proposed disturbance, archaeological survey of these areas will be required.

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Appendix A

Resumes

Stacie Wilson, RPA

Senior Archaeologist

HELIX Environmental Planning

Summary of Qualifications

Ms. Wilson has been professionally involved in cultural resources management for 15 years and has more than 17 years of unique experience in both archaeology and GIS. She has served as principal investigator on numerous cultural resources management projects, and regularly coordinates with local, state, and federal agencies and Native American tribal representatives. She is skilled in project management, archaeological inventories and excavation, and report documentation and has broad experience with utility, municipal, federal, renewable energy, and private development projects. Her years of experience also encompass an understanding of CEQA and NEPA compliance regulations. She is proficient at creating, organizing, and analyzing GIS data; technical skills include ArcGIS 10.4, Spatial Analyst, Geostatistical Analyst, and working with datasets in Microsoft Word and Excel. Ms. Wilson is detail-oriented and has strong organizational and coordination capabilities.

Selected Project Experience

Eastern Municipal Water District As-Needed Environmental Services (2015 - 2019). Serving as Senior Archaeologist on several individual task orders for HELIX's as-needed environmental services agreement with EMWD, including Well 59 Wellhead Treatment Facilities (2018), Cactus II Feeder Transmission Pipeline (2017 – 2018), and Fox Tank Replacement (2017). Responsible for coordinating cultural resources studies including records searches, Sacred Lands File searches, Native American outreach, reviews of historic aerial photographs and maps, and pedestrian surveys. Authored cultural resources technical reports.

Crescent Drive Sewer Improvements Project (2018). Cultural Task Lead for a sewer improvements project in the City of Vista. The project proposes to conduct improvements to the sewer main and connecting sewer laterals within Crescent Drive. Duties included conducting a record search and a Sacred Lands File search; reviewing existing cultural resources information for the project site and immediate vicinity; coordinating a field visit; and preparing a constraints report. Work performed for KEH and Associates, Inc. with the City of Vista as the lead agency.

Padre Dam Municipal Water District East County Advanced Water Purification Program (2018). Senior Archaeologist for cultural resources inventory and assessment of approximately 10 miles of pipeline. The East County Advanced Water Purification project proposes to increase the region's supply of potable water. Duties included preparation of a cultural resources study, assisting with community outreach with regard to the historic resources, and working with the agencies and interested parties to develop appropriate measures to avoid or minimize impacts. Work performed for Kennedy/Jenks Consultants, Inc., with Padre Dam Municipal Water District as the lead agency and Helix Water District, the County of San Diego, and the City of El Cajon as participating agencies.

Education

Master of Science, Applied Geographical Information Science, Northern Arizona University, 2008

Bachelor of Arts, Anthropology, University of California, San Diego, 2001

Bachelor of Science, Biological Psychology, University of California, San Diego, 2001

Registrations/ Certifications

The Register of Professional Archaeologists #16436, 2008

Riverside County Approved Cultural Resources Consultant, 2017

Professional Affiliations

Society for California Archaeology

City of San Diego Water Group Job 939 (2018). Principal Investigator for the Water Group Job 939, located in the Sorrento Valley area of the City of San Diego. Conducted as part of an as-needed contract with the City of San Diego, Public Works Department, Project Implementation Division, the project proposes approximately 6,846 linear feet of water main replacement and installation. Duties included conducting background research, reviewing previous cultural resource surveys, and coordination of Native American and archaeological monitors.

Alvarado 2nd Pipeline Extension (2018 - 2019). Principal Investigator overseeing completion of cultural resource management services for the geotechnical investigations related to this approximately 8.5-mile pipeline project, which will include the extension of the existing Alvarado 2nd Pipeline along Friars Road between Interstate 805 and West Mission Bay Drive. Responsibilities included overseeing a record search and submitting a request for a Sacred Lands File search; reviewing environmental, geological, and existing cultural resources information for the project alignment; coordinating a field visit; and preparing a report that provided monitoring recommendations. Oversaw subsequent archaeological and Native American monitoring program. Work performed for Kennedy/Jenks Consultants, Inc., with the City of San Diego as the lead agency.

City of San Diego Sewer Group 806 (2017 - 2018). Principal Investigator for the Sewer Group Job 806, located in the College Area and Mid City Kensington-Talmadge community planning areas in the City of San Diego. Conducted as part of an as-needed contract with the City of San Diego, Public Works Department, Project Implementation Division, the project proposes both the replacement and rehabilitation of existing sewer mains, including replacing-in-place approximately 2,158 linear feet of existing vitrified clay pipe sewer mains. Duties included conducting background research, reviewing previous cultural resource surveys, conducting a field survey with a Native American monitor, and the preparation of a cultural resources technical report.

Quince Street Senior Housing Project (2017). Principal Investigator for the demolition of an existing warehouse complex within a developed property in order to construct affordable housing for seniors. Managed reconnaissance survey of the project area, which included photography of the built environment within the project site and documentation/evaluation of structures over 50 years of age. Assisted with cultural resources technical report preparation. Work performed for San Diego InterFaith Housing Foundation, with the City of Escondido as the lead agency.

City of San Diego Long-term Mitigation Strategy Development (2016). Principal Investigator for a cultural resources study of the Kearny Mesa East Mitigation Site, a 7.57-acre City of San Diego owned parcel located in Murphy Canyon. Conducted as part of an as-needed contract with the City of San Diego, Transportation & Storm Water Department, the project evaluated the potential mitigation opportunities for the parcel. Duties included conducting background research, a field survey and recording of cultural resources, Native American outreach and coordination, and report preparation. Work performed for the City of San Diego.

Theodore G. Cooley, RPA

Senior Archaeologist

HELIX Environmental Planning

Summary of Qualifications

Mr. Cooley has over 45 years of experience in archaeological resource management. He has directed test and data recovery investigations, monitoring programs, and archaeological site surveys of large and small tracts, and has prepared reports for various cultural resource management projects. He is well-versed in National Historic Preservation Act, National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) regulations and processes. Mr. Cooley's experience also includes Native American consultation for monitoring of archaeological field projects, including some with human remains and reburial-related compliance issues.

Selected Project Experience

8016 Broadway Self Storage Project (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the Lemon Grove Self-Storage project located in the City of Lemon Grove, San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Summit Environmental Group, Inc.

Briggs Road Walton Development Project (Assessor's Parcel Number 461-170-001) (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the Briggs Road Residential project located in Riverside County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the Walton International Group, LLC.

Brown Field and Montgomery Field Airport Master Plans (2019 - Present). Senior Archaeologist for Phase I cultural resource inventory and pedestrian survey programs at the Brown Field Municipal Airport and the Montgomery-Gibbs Executive Airport, in the City of San Diego, in support of updating of the Airport Master Plan and its Programmatic Environmental Impact Report. Involvement included participation in the analysis of the results from the survey programs and co-authorship of the technical reports. Work performed as a subconsultant to C&S Companies, with the City of San Diego as the lead agency.

Cubic Redevelopment Environmental Consulting (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory and assessment program in support of a 20-acre redevelopment project, located in the community of Kearny Mesa, City of San Diego. Involvement included participation in the analysis of the results from the survey program and preparation of the technical report. Work performed for Cubic Redevelopment Environmental Consulting, with the City of San Diego as lead agency.

Education

Master of Arts, Anthropology, California State University, Los Angeles, 1982

Bachelor of Arts, Anthropology, California State College, Long Beach, 1970

Registrations/ Certifications

Register of Professional Archaeologists #10621, 2019

City of San Diego, Certified Principal Investigator for Monitoring Projects

County or Riverside, Certified Cultural Resources Consultant Principal Investigator

County of Orange, Certified Cultural Resources Consultant Principal Investigator

County of San Diego, Approved Consultant for Archaeological Resources

Los Angeles, Ventura, San Luis Obispo, and Santa Barbara Approved Consultant

Theodore G. Cooley, RPA

Senior Archaeologist

French Valley 303 Project (2019 - Present). Senior Archaeologist for an archaeological construction monitoring program for the French Valley 303 Site residential development project, located in the French Valley area of unincorporated Riverside County. Involvement included participation in the analysis of the results from the monitoring program and co-authorship of the technical report. Work performed for Pulte Home Co., LLC.

Hiser Property Project (2019 - Present). Senior Archaeologist for a due diligence study prepared to summarize potential cultural resources constraints to the 9.2-acre Hiser Property development project, located in the Mission Gorge area of the City of Santee, San Diego County. The study consisted of background research including a record search and limited archival study, a field survey, and a review of the Sacred Lands File from the Native American Heritage Commission (NAHC). Involvement included participation in the analysis of the results and preparation of a summary letter report of the potential cultural resources-related constraints to the planned development. Work performed for KB Home.

Ponto Hotel Technical Studies (2019 - Present). Senior Archaeologist for a cultural resources assessment study for the Ponto Hotel development project in the City of Carlsbad, San Diego County, California. Involvement included participation in the analysis of the results from the assessment program and preparation of the technical report. Work performed for Kam Sang Company, with the City of Carlsbad as the lead agency.

R.M. Levy Water Treatment Plant Sewer Replacement (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory and assessment program in support of a water treatment plant, sewer pipeline, replacement project, located in the community of Lakeside, San Diego County. Involvement included participation in the analysis of the results from the survey program and preparation of the technical report. Work performed for HELIX Water District.

Salt Bay District Specific Plan EIR (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program in support of the 46.6-acre Salt Bay Design District Specific Plan mixed-use wholesale/retail shopping and light industrial development project, in the cities of San Diego and Chula Vista. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for M. & A. Gabaee, with the City of San Diego as lead agency.

San Jacinto Property Project (2019 - Present). Senior Archaeologist for a Phase I pedestrian survey and cultural resource inventory program of the 214 residential project located in Riverside County. Involvement included participation in the analysis

of the results from the survey program and co-authorship of the technical report. Work performed for the Walton International Group, LLC.

San Elijo Joint Powers Authority Roadway and Trail Addendum and Permitting (2019 - Present). Senior Archaeologist for Phase I cultural resource inventory, pedestrian survey, and resource testing at the San Elijo Water Reclamation Facility adjacent to San Elijo lagoon, in San Diego County, in support of the preparation by the San Elijo Joint Powers Authority of a Roadway and Trail Addendum for upgrades to the facility requiring verification of Nationwide Permit authorization from the U.S. Army Corps of Engineers (USACE). Involvement included participation in the analysis of the results from the survey and testing program and co-authorship of the technical report. Work performed as a subconsultant to Kimley-Horn & Associates, with the San Elijo Joint Powers Authority as lead agency.

Sycamore & Watson Project (2019 - Present). Senior Archaeologist for an archaeological construction monitoring program for the Sycamore & Watson residential development project, located in City of Vista, San Diego County. Involvement included participation in the analysis of the results from the monitoring program and preparation of the technical report. Work performed for Meritage Homes.

Sycamore Canyon/Goodan Ranch Public Access Plan IS/MND (2019 - 2019). Senior Archaeologist for Phase I pedestrian survey and cultural resource inventory in support of the preparation by the County of San Diego County Parks Department of a Public Access Plan for the Sycamore Canyon/Goodan Ranch Preserve located in coastal foothills of unincorporated west-central San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the County of San Diego.

Sycuan/Sloane Canyon Trail IS/MND (2019). Senior Archaeologist for Phase I pedestrian survey and cultural resource inventory in support of the preparation by the County of San Diego County Department of a Parks and Recreation for the Sycuan/Sloane Canyon Trail project located in the coastal foothills of unincorporated southwestern San Diego County. Involvement included participation in the analysis of the results from the survey program and co-authorship of the technical report. Work performed for the County of San Diego.

The Enclave at Delpy's Corner Project (2019 - Present). Senior Archaeologist for a cultural resources monitoring and data recovery program in support of a proposed 124-unit townhome development project, in the City of Vista, San Diego County. Involvement included participation in the analysis of the prehistoric lithic artifacts and preparation of technical report sections containing the results of these analyses. Work performed for CalAtlantic Homes.

Theodore G. Cooley, RPA

Senior Archaeologist

Previous Project Experience

NextEra Energy Genesis Solar Project (2012 - 2014). Archaeologist for a 2,000-acre solar project west of the City of Blythe, Riverside County. The work involved identification, evaluation, and treatment of unanticipated discoveries encountered during survey and construction monitoring, for compliance with Section 106 regulations through the Bureau of Land Management (BLM)and CEQA through the California Public Utilities Commission (CPUC). Performed analyses of 1,238 prehistoric flaked lithic and ground stone artifacts produced from survey and monitoring conducted as part of compliance for construction. Wrote technical report results sections from analyses. Work performed for NextEra Energy.

Sacramento Municipal Utility District Upper American River Project (2015 - 2016). Archaeologist performing analyses of 1,143 prehistoric flaked lithic artifacts produced from investigations conducted at 16 archaeological sites, located in the Sierra Nevada Mountains in the Eldorado National Forest, Eldorado County. Work was conducted as part of treatment program of archaeological sites in the Eldorado National Forest in compliance with Section 106 regulations through a Programmatic Agreement with the Federal Regulatory Commission (FERC) and State Historic Preservation Office (SHPO). Wrote technical report results sections from analyses. Work performed for Sacramento Municipal Utility District (SMUD).

Sycamore Canyon/Goodan Ranch Preserve, Cielo and Wu Additions (2016). Supervisory Archaeologist for Phase I pedestrian survey and cultural resource inventory of 139 acres of proposed parcel additions to the existing Sycamore Canyon/Goodan Ranch natural park preserve located in coastal foothills of unincorporated west-central San Diego County. Participated in the field survey for prehistoric and historic archaeological resources within the parcel additions and was senior co-author of the technical report of results from the survey program. Work performed for County of San Diego Department of Parks and Recreation.

Moosa Canyon Pipeline Protection (2014 - 2015). Supervisory Archaeologist for Phase I pedestrian survey and cultural resources inventory of a 7.2-acre area for proposed protective measures for three parallel underground pipelines at their crossing of the Moosa Canyon drainage, in the coastal foothills of north-central San Diego County. Conducted preparation of the field survey for prehistoric and historic archaeological resources within the survey area and co-authored of the technical report of results from the survey program. Work performed for San Diego County Water Authority.

University Heights Parcel Additions to the Escondido Creek Preserve (2015) Supervisory Archaeologist for Phase I pedestrian survey and cultural resource inventory 262 acres of proposed parcel additions to the existing of the Escondido Creek Open Space Preserve located in coastal foothills in unincorporated west-central San Diego County. Participated in the field survey for prehistoric and historic archaeological resources and was senior co-author of the technical report of results

from the survey program. Work performed for the County of San Diego Department of Parks and Recreation.

Mesa Trail Restoration and Dairy Mart Pond Overlook Projects (2014). Supervisory Archaeologist for Phase I pedestrian survey and cultural resources inventory of 281 acres of proposed restoration and trail construction within the Tijuana River Valley Regional Park located in coastal area of southwestern San Diego County. Participant in the field survey for prehistoric and historic archaeological resources within the survey area. Co-author of the technical report of results from the survey program. Work performed for the County of San Diego Department of Parks and Recreation.

NAVFAC Southwest Construction and Operation of Solar Photovoltaic Systems at Naval Weapons Station Seal Beach (2014 - 2015). Field Director for archaeological survey of an approximately 86-acre area of Naval Weapons Station Seal Beach in Orange County proposed for the construction of a solar project. Duties included direction of the field crew and participation in the analysis and report preparation. Work performed for U.S. Navy.

NAVFAC Southwest Conversion of Building H-100 for Administrative Reuse (MILCON P-1131)(2015). Field Director for archaeological survey for the proposed renovation of Building H-100 and associated facilities, and of locations proposed for the demolition of 37 buildings and structures in various areas on Marine Corps Base (MCB) Camp Pendleton in San Diego County. Duties included direction of the field crew, and participation in the analysis and report preparation. Work performed for U.S. Navy.

RE Barren Ridge/Cinco Solar Project Cultural Resources (2014). Supervisory Archaeologist directing the field survey and site documentation for prehistoric and historic archaeological resources within 800 acres including a 600-acre plant facility site and three proposed Gen-Tie power electrical line corridor alternatives for a solar plant facility, located along the eastern base of the southern Sierra Nevada Mountains near Mojave, Kern County. Co-authored the technical reports of results from the survey program. The program was conducted under both Section 106 regulations due to the Gen-Tie lines on BLM land and CEQA for the solar facility site on private land. Work performed for Recurrent Energy.

Sacramento Area Flood Control Agency Natomas Levee Improvement Program Landslide Improvements Project (2012 - 2014). Archaeologist performing analyses of 4,085 prehistoric flaked lithic artifacts produced from investigations conducted at archaeological sites CA-SAC-1142, CA-SAC-15 , and CA-SAC-16, located along the Sacramento River as part of a treatment program of archaeological sites in compliance with Section 106 regulations administered by the United States Army Corps of Engineers (USACE) for levee improvements along the Sacramento River.

Theodore G. Cooley, RPA

Senior Archaeologist

Wrote technical report results sections of the analyses. Work performed for Sacramento Area Flood Control Agency (SAFCA).

MCB Camp Pendleton Section 110 Resource Delineation and Evaluation Study (2011 - 2013). Archaeologist participating in the investigations conducted for resource delineation and evaluation of National Register of Historic Places-eligible prehistoric archaeological site CA-SDI-1313/14791 on MCB Camp Pendleton, San Diego County. Involved conducting archaeological excavations for the delineation of the site to allow the base to successfully plan, under Section 110, for the protection of this significant resource from potential future adverse affects. Involvement included artifact analysis of 1,280 flaked lithic artifacts, preparation of results sections of the lithic analysis, and co-authorship of technical report. Work performed for U.S. Navy.

Archaeological Data Recovery for the Topanga Library (2011 - 2013). Archaeologist participating in the data recovery investigations conducted at prehistoric archaeological site CA-LAN-8 in the community of Topanga in the Santa Monica Mountains, Los Angeles County. Work involved conducting archaeological excavations for data recovery within the Area of Potential Effects (APE) for pipeline construction associated with construction of a new public library. Responsibilities included field work participation, lithic artifact analyst, and co-authorship of technical report. Work performed for Los Angeles County Department of Public Works.

MCB Camp Pendleton Geomorphological Investigations (2009 - 2013). Field Supervisory Archaeologist on a project to conduct geomorphological investigations along three drainages within MCB Camp Pendleton in San Diego County to assess the potential for the presence of deeply buried prehistoric archaeological deposits. Duties included the design, coordination, and execution of the field geomorphological investigations; participation in the analysis of the results; and co-authorship of the technical report. Work performed for U.S. Navy.

California High-Speed Rail Authority, High Speed Rail Project (2011 - 2013). Field Director for a Phase I Cultural Resources Survey and Inventory of three alternative high-speed train alignment corridors, extending from Merced to Fresno in the San Joaquin Valley. Duties included direction of the field crew, participation in the analysis of results, and report preparation. Work performed for the State of California.

NAVFAC Southwest San Nicolas Island Archaeological Evaluations (2010 - 2012). Field Director for archaeological test investigations for the delineation an d evaluation of prehistoric site CA-SNI-41 on San Nicolas Island in the Channel Islands of the California Bight, Ventura County. The project involved testing for depth and horizontal extent, as well as significance evaluation of this Middle and Late Holocene site. Duties included direction of the field crew, participation in the analysis, and report preparation. Work performed for U.S. Navy.

Theodore G. Cooley, RPA

Senior Archaeologist

MCB Camp Pendleton Compliance Documentation Support Services for Environmental Security Section (2010 - 2012).Archaeologist providing compliance documentation support services to the MCB Camp Pendleton Cultural Resources Branch Head in San Diego County for several large construction projects. Duties included the preparation of documentation and correspondence for agency submittal for federal NEPA and Section 106 compliance requirements, principally to the State Historic Preservation Office (SHPO) and Advisory Council for Historic Preservation. Work performed for U.S. Navy.

Solar Millennium Ridgecrest Solar Project Cultural Resources Inventory Program (2009 - 2011). Co-Field Director of field survey for prehistoric and historic archaeological resources within a proposed 1,757-acre solar facility in the Mojave Desert, Kern County. Participated in the preparation of the Department of Parks and Recreation site forms and contributing author of the technical report of results from the survey program. Work performed for Solar Millennium.

NAVFAC Southwest Seal Beach Naval Weapons Station Archaeological Evaluations (2010 - 2011). Field Director for archaeological test investigations for the delineation and evaluation of prehistoric site P-30-1503 within the Seal Beach Naval Weapons Station along the margin of the Anaheim Creek drainage wetlands system in Orange County. The project involved testing for the depth and horizontal extent, as well as a significance evaluation of this Late Holocene site. Duties included direction of the field crew, participation in the analysis, and report preparation. Work performed for U.S. Navy.

NAVFAC Southwest San Nicolas Island Archaeological Evaluations (2009 - 2011). Field Archaeologist for archaeological evaluation of prehistoric sites CA-SNI-316, CA-SNI-361, and CA-SNI-550 on San Nicolas Island in the Channel Islands of the California Bight, Ventura County. The project involved significance testing and evaluation of these Middle and Late Holocene sites, and the analysis and synthesis of results with existing island-wide archaeological data. Duties included field crew member, participation in the analysis, and report preparation. Work performed for U.S. Navy.

Olivenhain Municipal Water District Raw Water Pipeline (2009 - 2010). Archaeologist and Principal Investigator for a Phase I Cultural Resources Survey and Inventory of two alternative pipeline alignment corridors in San Diego County totaling approximately 9 miles in length. Author of the technical report of results from the survey and inventory program. Work performed for Olivenhain Municipal Water District.

Sage Hill Open Space Preserve Cultural Resources Inventory (2009 - 2010). Supervisory Archaeologist for Phase I pedestrian survey and cultural resource inventory of the Sage Hill Open Space Preserve in unincorporated west-central San Diego County. Directed the field survey for prehistoric and historic archaeological

resources within the proposed 234-acre natural park preserve located in coastal foothills. Co-authored the technical report of results from the survey program. Work performed for County of San Diego Department of Parks and Recreation.

RRG Weldon Solar Project (2009 - 2010). Supervisory Archaeologist directing the field survey and site documentation for prehistoric and historic archaeological resources within a proposed 425-acre solar facility near Lake Isabella in the southern Sierra Nevada Mountains, Kern County. Co-author of the technical report of results from the survey program. The program was conducted under CEQA and local guidelines of the County of Kern for the implementation of CEQA. Work performed for RRG Weldon.

Abengoa Mojave Solar Project (2009 - 2010) Supervisory Archaeologist overseeing the survey of a proposed 1,765-acre solar facility in the Mojave Desert, San Bernardino County. Supervised the archaeological documentation and Phase II testing efforts and co-authored the technical reports of results from the survey and testing programs. Work performed for Abengoa.

IS/MND Appendix D

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION

RIVER PATH DEL MAR PHASE III EXTENSION
DEL MAR, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

HELIX
Environmental Planning

FEBRUARY 24, 2021
PROJECT NO. G2478-52-01

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. G2478-52-01
February 24, 2021

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, California 91942

Attention: Mr. Aaron Brownwood

Subject: GEOTECHNICAL INVESTIGATION
RIVER PATH DEL MAR PHASE III EXTENSION
DEL MAR, CALIFORNIA

Dear Mr. Brownwood:

In accordance with our on-call contract dated December 3, 2019, 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 extension of the pedestrian river path 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 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

Michael C. Ertwine
CEG 2659

Shawn Foy Weedon
GE 2714

MCE:SFW:arm

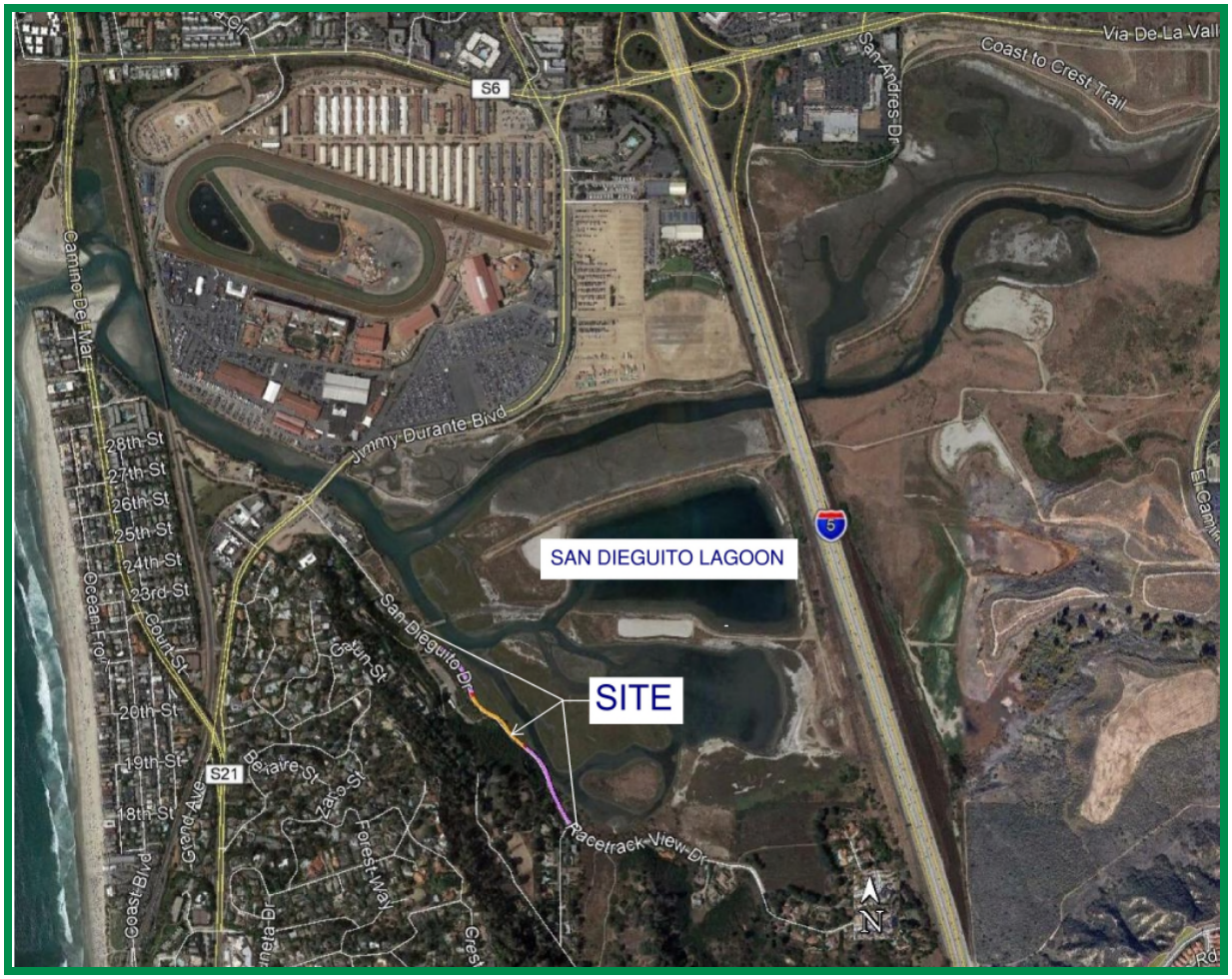
(e-mail) Addressee

TABLE OF CONTENTS

GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of our geotechnical investigation for the River Path Del Mar Phase III Extension project located adjacent to San Dieguito Drive, south of Jimmy Durante Boulevard in the City of Del Mar, California (see 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 proposed improvements including faulting, and provide recommendations for excavation characteristics of onsite materials, remedial grading measures, and preliminary pavement/sidewalk.



Vicinity Map

In order to prepare this report, we reviewed the CEQA project description in *River Path Del Mar Phase* III *Extension Project, City of Del Mar,* prepared by Helix Environmental Planning, dated November 30, 2020. Additionally, we reviewed *San Dieguito Trail Exhibit, Lagoon Path – Phase 3,* prepared by Michael Baker, International, dated December 2020. 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 4 exploratory, 4-inch diameter, hand-auger borings (Borings HA-1 through HA-4) to a maximum depth of about 5 feet, sampled the existing 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.

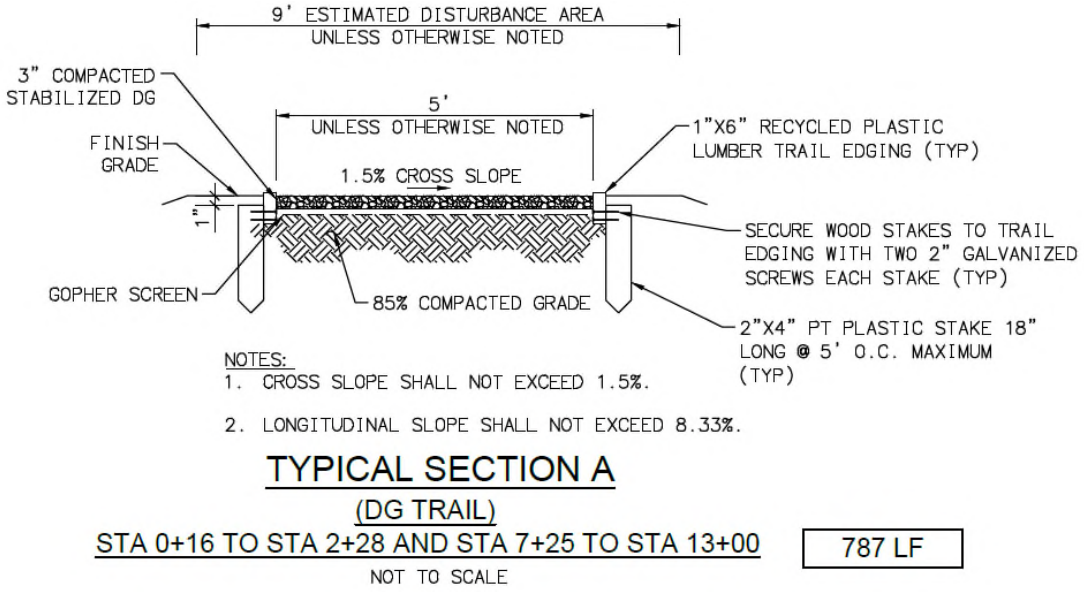
2. SITE AND PROJECT DESCRIPTION

The site is located southwest of the intersection of Jimmy Durante Boulevard and San Dieguito Drive, and along the southwestern margin of the San Dieguito Lagoon. Private residential estates are situated to west and south of the planned improvements. The site currently consists of natural and vegetated areas located east of the two-lane San Dieguito Drive and west of the lagoon. The site gently slopes to the north at elevations of about 5 to 32 feet above mean sea level (MSL). The Existing Site Map shows the current site conditions.

Existing Site Map

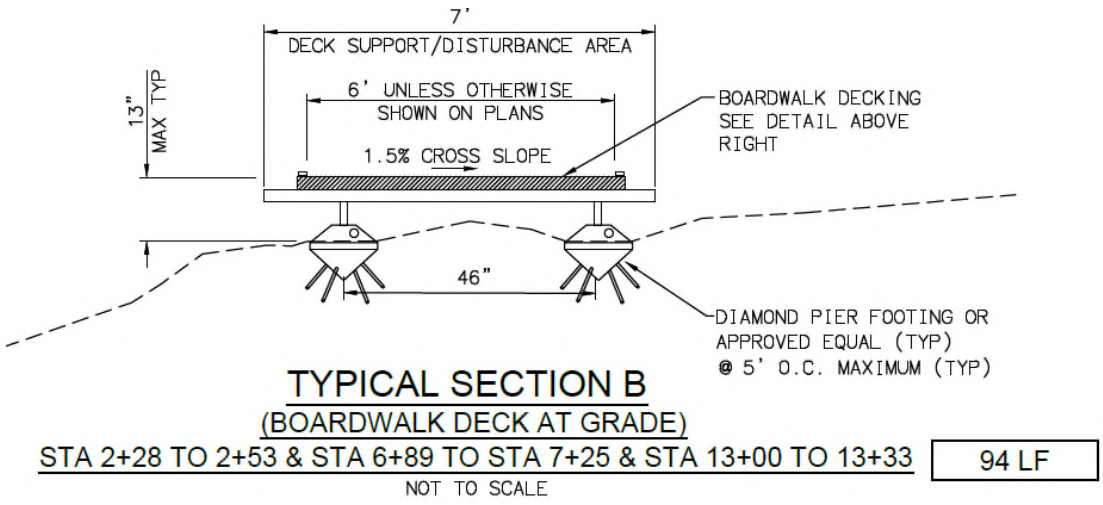
Based on discussions with you and referenced plans provided, we understand the River Path Del Mar Phase III Extension project will consist of constructing a decomposed granite (DG) trail, at-grade

boardwalk, and an elevated boardwalk. We understand the DG trail would consist of a 5-foot-wide pathway with compacted and stabilized material as shown herein.

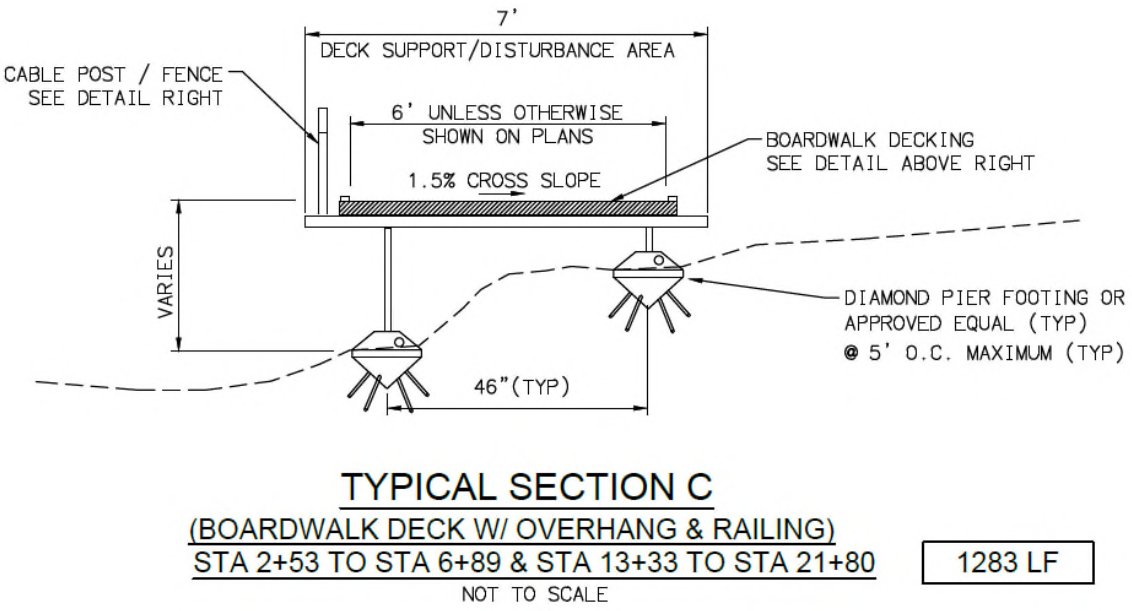


Proposed Site Plan – DG Trail

The at-grade boardwalk and elevated boardwalk would consist of a 6-foot-wide pathway constructed of composite decking material with pre-made diamond pier concrete foundations spaced at 5-feet on center. The following figures show the cross-sections of the planned boardwalks.



At Grade Boardwalk



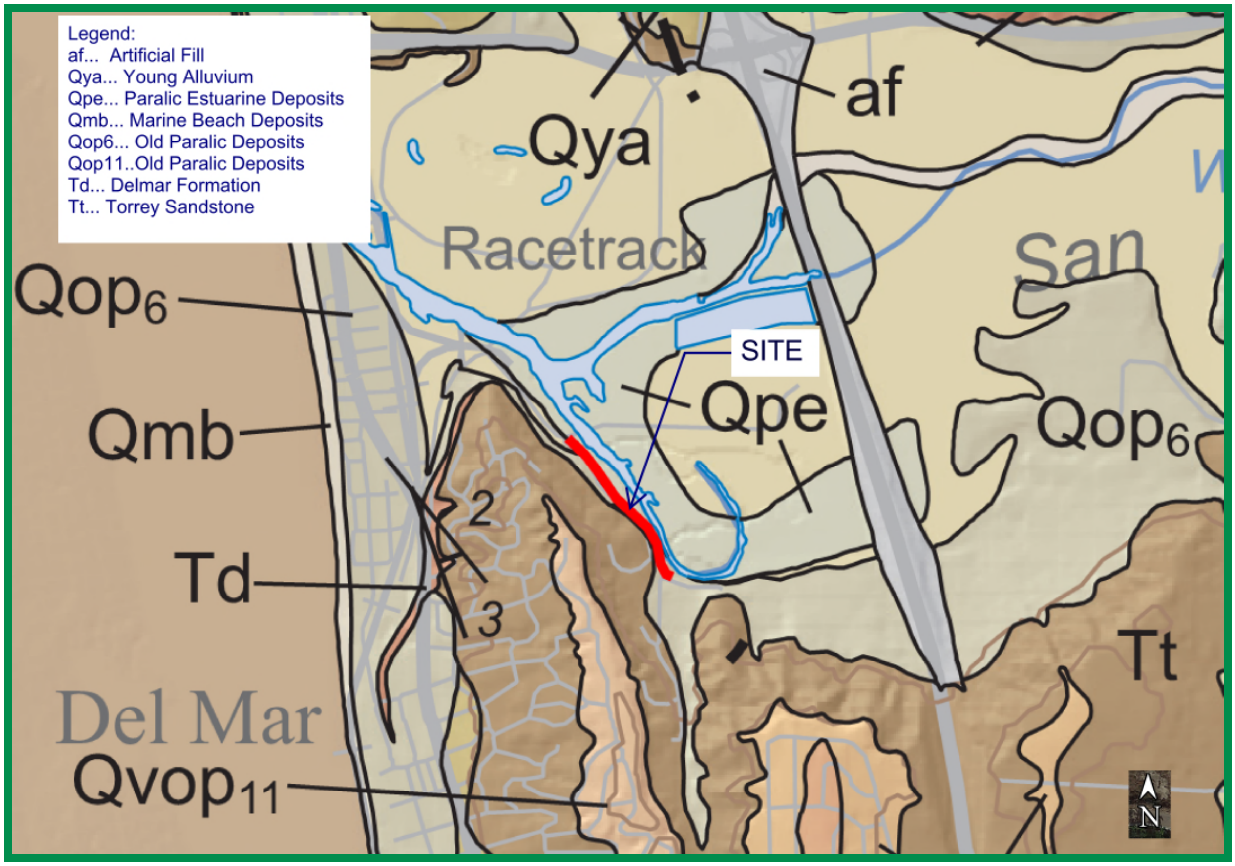
Elevated Boardwalk

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 coastal plain of the Peninsular Ranges 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. Crystalline basement rocks exist along the western side of the Peninsular Ranges and are dominated by pre-batholithic andesitic Metavolcanic Rock previously known as the Santiago Peak Volcanics with a late Jurassic and early Cretaceous age. The Metavolcanic Rock was intruded during the early to mid-Cretaceous by a variety of granitic to gabbroic plutons of the Southern California batholith. The coastal plain of San Diego County is underlain by a thick sequence of relatively undisturbed and non-conformable sedimentary rocks that range in age from Upper Cretaceous through Pleistocene with intermittent deposition. Geomorphically, the coastal plain is characterized by a stair-stepped series of marine terraces, which are younger to the west and have been dissected by west flowing rivers that drain the Peninsular Ranges to the east. 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 are 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.

The site is located on the western margin of the coastal plain within the San Dieguito River Valley. Marine and non-marine Holocene sedimentary surficial units are present at the site consisting of young alluvium, and estuarine deposits below the artificial fill. We expect the surficial units overlies Old Paralic Deposits, Torrey Sandstone and the Delmar Formation at depth. Regionally, the Old Paralic Deposits Torrey Sandstone and Delmar Formation comprises the prominent cliffs located to the northwest of the site. The Regional Geologic Map shows the geologic conditions in the vicinity of the subject project.



Regional Geologic Map

4. SOIL AND GEOLOGIC CONDITIONS

During our field investigation, we encountered two surficial soil units (consisting of artificial fill and Paralic Estuarine Deposits). We expect the surficial units are underlain by Old Paralic Deposits, and formational materials of the Torrey Sandstone and Delmar 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 surficial soil and geologic units are described herein in order of increasing age.

4.1 Artificial Fill (Qaf)

We encountered artificial fill in each of our borings to depths ranging from about 2 to 4 feet. Based on review of aerial photographs, the artificial fill was likely associated with the historic grading of San Dieguito Drive prior to 1953. In general, the fill consists of loose, moist to wet, silty sand and possesses a "very low" to "low" expansion index (expansion index of 50 or less). The artificial fill is not considered suitable in its current condition for the support of structural fill and minor remedial grading in the form of reprocessing the upper 1 to 2 feet should be considered. The artificial fill can be reused as compacted fill during grading operations provided it is generally free of roots and debris.

4.2 Paralic Estuarine Deposits (Qpe)

We encountered Paralic Estuarine Deposits in hand-auger boring HA-1 and HA-2 at approximately 4 feet. The estuarine deposits generally consist of unconsolidated sediment composed of wet, fine sand to silty clay. The estuarine deposits are not considered suitable in for structural fill loads; however, are suitable for the planned pedestrian walkway.

4.3 Old Paralic Deposits (Qop)

The Quaternary-age Old Paralic Deposits (formerly called the Bay Point Formation) may be present near the surface of the upper terrace in the southern portion of the site and below the artificial fill at hand auger borings HA-3 and HA-4. We expect, the Old Paralic Deposits to generally consist of medium dense to very dense, grayish brown to reddish brown, silty, fine to coarse sandstone with mica. The Old Paralic Deposits are generally considered suitable for support of additional structural fill and structural loading.

4.4 Torrey Sandstone (Tt)

Although not encountered in our exploratory borings, we observed the Eocene-age Torrey Sandstone deposits on the steep portions of the natural slopes at higher elevations along the eastern and southern portions of the site. The Torrey Sandstone consists primarily of fine- to medium-grained, well sorted, light brown to yellowish brown, weakly to moderately cemented sandstone. Localized siltstone beds and concretions may also exist within this unit. In general, the Torrey Sandstone possesses adequate shear strength and low compressibility characteristics in either undisturbed or properly compacted condition.

4.5 Delmar Formation (Td)

Regionally, the Middle Eocene-age Delmar Formation underlies the Torrey Sandston at depth. This formation consists of very dense, damp to moist, grayish to bluish green, silty, fine to medium sandstone with some interbeds of dark grey siltstone and claystone. We do not expect to encounter this unit during proposed construction.

5. GROUNDWATER

We did not encounter groundwater or seepage during our hand-auger borings. 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.

During previous studies in the area, groundwater was encountered at depths ranging from approximate elevation of 5 feet MSL. The design groundwater elevation should be considered at approximately 5 feet MSL. The water elevations fluctuate due to tidal influences. The groundwater should be considered brackish due to the proximity to the Pacific Ocean and San Dieguito Lagoon. Groundwater will be a factor in development especially in construction, and remedial grading operations. Groundwater and seepage is dependent on seasonal precipitation, tidal influence, irrigation, land use, among other factors, and varies as a result. Proper surface drainage will be important to future performance of the project.

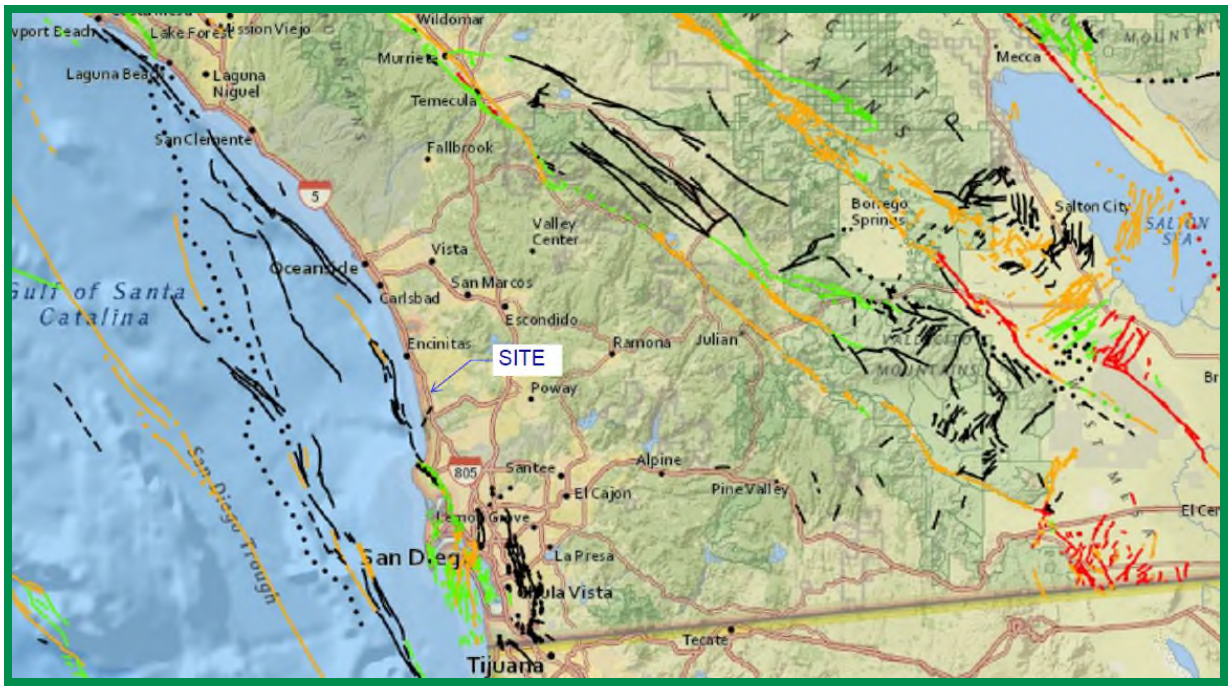
We do not expect groundwater to be encountered during construction of the proposed pathway improvements at elevations above approximately 5 feet MSL.

6. GEOLOGIC HAZARDS

6.1 Faulting and Seismicity

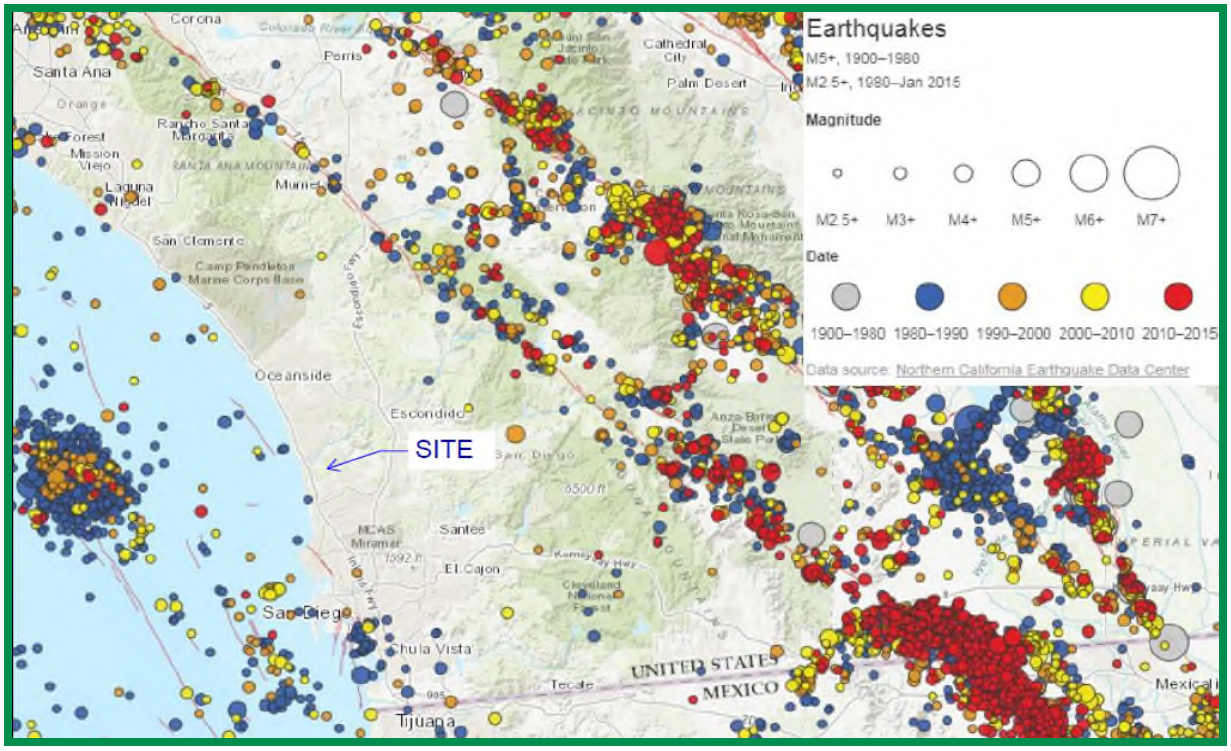
A review of the referenced geologic materials and our knowledge of the general area indicate that the site is not underlain by active, potentially active or inactive faults. An active fault is defined by the California Geological Survey (CGS) as a fault showing evidence for activity within the last 11,700 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 faults 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

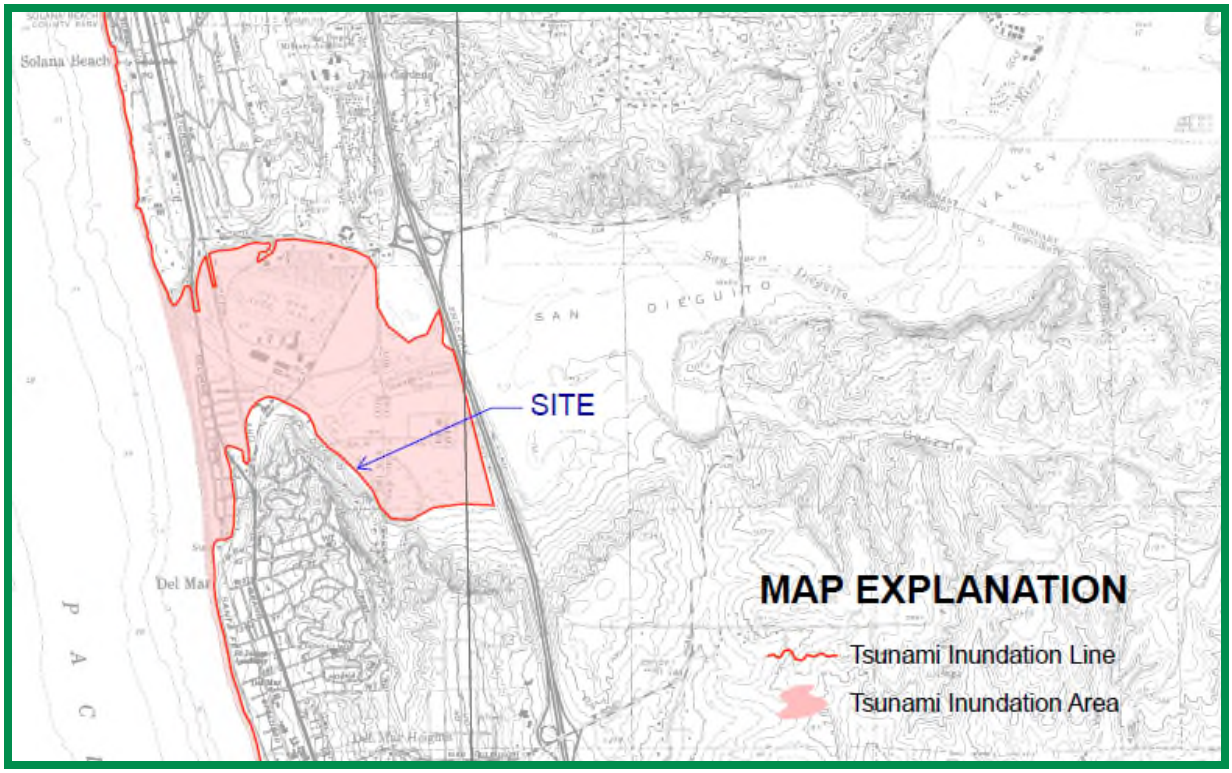
Ground surface rupture occurs when movement along a fault is sufficient to cause a gap or rupture where the upper edge of the fault zone intersects the ground surface. The potential for ground rupture is considered to be very low due to the absence of active faults at the subject site.

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. Liquefaction was not included as part of this study due to the lack of planned occupied buildings or structures.

6.4 Tsunamis and Seiches

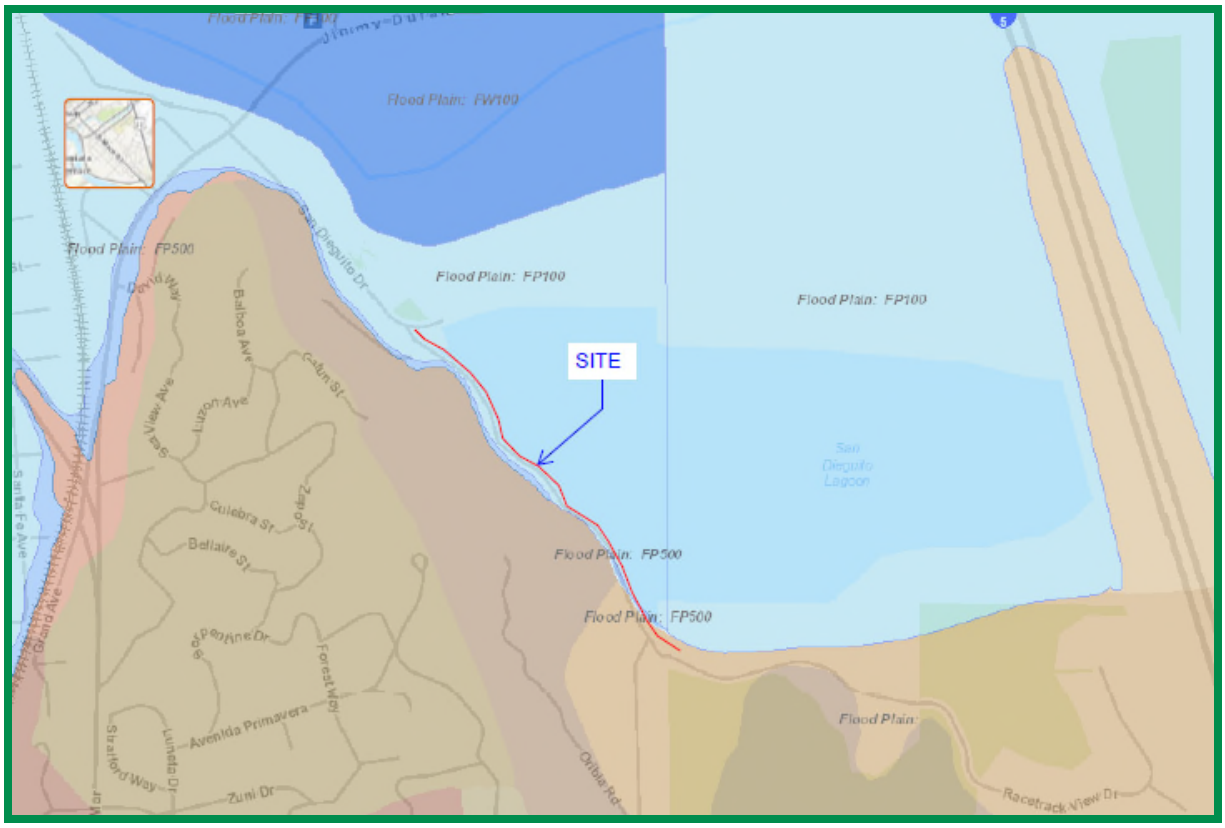
A tsunami is a series of long period waves generated in the ocean by a sudden displacement of large volumes of water. Causes of tsunamis include underwater earthquakes, volcanic eruptions, or offshore slope failures. The first-order driving force for locally generated tsunamis offshore southern California is expected to be tectonic deformation from large earthquakes (Legg, *et al.*, 2002). Historically, tsunami wave heights have ranged up to 3.7 feet in the San Diego area. According to the County of San Diego Hazard Mitigation Plan (2010), the largest tsunami effect recorded in San Diego since 1950 was May 22, 1960, which had maximum run-up amplitudes of 2.1 feet (0.7 meters). Wave heights and run-up elevations from tsunamis along the San Diego Coast have historically fallen within the normal range of the tides. The site is located within the Tsunami Inundation Area mapped by the State of California, County of San Diego, Tsunami Inundation for Emergency Planning Del Mar Quadrangle, June 1, 2009. Therefore the potential of storm surges, tsunamis, or seiches affecting the site are possible.



A seiche is a run-up of water within a lake or embayment triggered by fault- or landslide-induced ground displacement. The site has proposed elevations of approximately 5 feet to 32 feet MSL and is located approximately 0.3 miles from the Pacific Ocean to the west and along the San Dieguito Lagoon to the east Therefore, seiches affecting the property are possible.

6.5 Flooding

Review of County of San Diego SANGIS interactive maps, the northern portion of the site is mapped as being located in Flood Plain: FP100: *1 percent annual chance flood hazard*; and the southern portion of the site is mapped as Flood Plain: *Areas of 0.2 percent annual chance flood.*



County of San Diego SANGIS Interactive Flood Map

6.6 Landslides

The California Division of Mines and Geology *Relative Landslide Susceptibility and Landslide Distribution Map of the Del Mar Quadrangle* (1996) indicates that the steep slopes at the southern and eastern edges of the site are located within Relative Landslide Susceptibility Area 3-1: *Generally Susceptible* to landslides. Based on our on-site observations, we opine existing landslides are not mapped along the alignment.

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 undocumented fill is potentially compressible and unsuitable in its present condition for the support of compacted fill or settlement-sensitive improvements. Remedial grading of these materials should be performed as discussed herein.

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 may be encountered during the grading operations, especially during the rainy seasons.

7.1.5 Proper drainage should be maintained in order to preserve the engineering properties of the fill in both the building pads and slope areas. Recommendations for site drainage are provided herein.

7.1.6 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 planned development will destabilize or result in settlement of adjacent properties if properly constructed.

7.2 Soil and Excavation Characteristics

7.2.1 The soil encountered in the field investigation is considered to be “non-expansive” and “expansive” (expansion index [EI] of 20 or less) as defined by 2019 California Building Code (CBC) Section 1803.5.3. Table 7.2 presents soil classifications based on the expansion index. We expect a majority of the soil encountered possess a “very low” to “low” expansion potential (EI of 50 or less).

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	

7.2.2 We performed a laboratory test on a sample of the site materials to evaluate the percentage of water-soluble sulfate content. Appendix B presents results of the laboratory water-soluble sulfate content test. The test results indicate the on-site materials at the location tested possesses "S0" sulfate exposure to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-14 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.

7.2.3 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.

7.2.4 Excavation of the undocumented fill should generally be possible with moderate to heavy effort using conventional, heavy-duty equipment during grading and trenching operations. We expect very heavy effort with possible refusal in localized areas for excavations into strongly cemented portions of the Old Paralic Deposits, if encountered.

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 County of San Diego 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 county 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.

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 In general, the upper 1 to 2 feet of the existing artificial fill should be processed, moisture conditioned as necessary, and compacted prior to placing fill. Deeper removals may be required if saturated or loose fill soil is encountered. A representative of Geocon should be on-site during removals to evaluate the limits of the remedial grading.

7.3.6 We expect the planned DG will trail will be supported on compacted fill. Additionally, we expect the at-grade, as well as, elevated pedestrian walkway will be supported on a shallow timber foundation system supported on 28-inch drilled piers and pre-made diamond pier concrete foundations spaced at 5-feet on center, respectively. Therefore, we expect the upper 1 to 2 feet of the surficial soil in the planned the DG trail should be processed, moisture conditioned as necessary, and compacted prior to placing fill within the areas of the proposed improvements. The removals should extend at least 1 to 2 feet outside of the planned improvements, where possible. Table 7.3.1 provides a summary of the grading recommendations.

TABLE 7.3.1
SUMMARY OF GRADING RECOMMENDATIONS

Area	Removal Requirements
River Path (DG Trail)	Process Upper 1 to 2 ½ Feet of Existing Materials
Exposed Bottoms of Remedial Grading	Scarify and Moisture Condition (Where Practical)

7.3.7 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 removals may be required if saturated or loose fill soil is encountered. A representative of Geocon should be on-site during removals to evaluate the limits of the remedial grading.

7.3.8 Some areas of overly wet and saturated soil would likely be encountered due to the existing proximity to the lagoon. 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 contractor should be careful during the remedial grading operations to avoid a "pumping" condition at the base of the removals. Where recompaction of the excavated bottom will result in a "pumping" condition, the bottom of the excavation should be tracked with low ground pressure earthmoving equipment prior to placing fill. If needed to improve the stability of the excavation bottoms, reinforcing fabric or 2- to 3-inch crushed rock can be placed prior to placement of compacted fill.

7.3.10 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 and possesses the appropriate moisture content. 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 near to slightly 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.

7.3.11 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 "Low" (Expansion Index of 50 or less)
Particle Size	Maximum Dimension Less Than 3 Inches
	Generally Free of Debris

7.4 Temporary Excavations

7.4.1 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.

7.4.2 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

7.5 Site Drainage and Moisture Protection

7.5.1 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.

7.5.2 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.

7.5.3 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.

7.6 Grading and Foundation Plan Review

7.6.1 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.

7.7 Testing and Observation Services During Construction

7.7.1 Geocon Incorporated should provide geotechnical testing and observation services during the grading operations, foundation construction, utility installation, and DG trail installation. Table 7.7 presents the typical geotechnical observations we would expect for the proposed improvements.

TABLE 7.7
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 Operations	Full Time
Foundations	Foundation Excavation Observations	Part Time
Subgrade for DG Trail	Soil Compaction Operations	Part Time

LIMITATIONS AND UNIFORMITY OF CONDITIONS

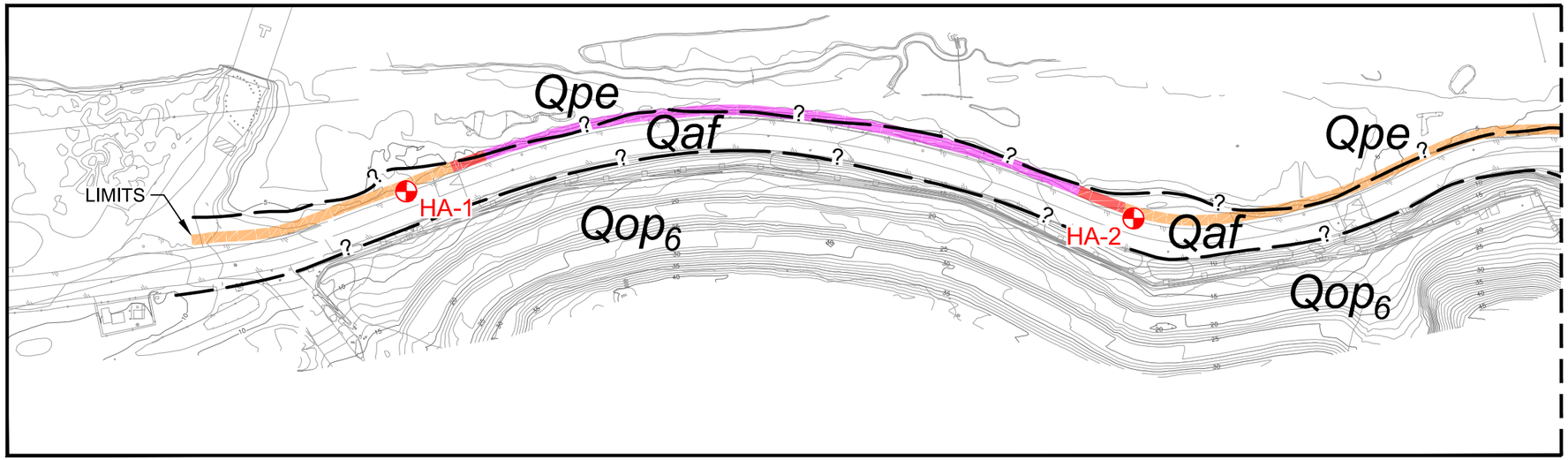
1. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development 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.

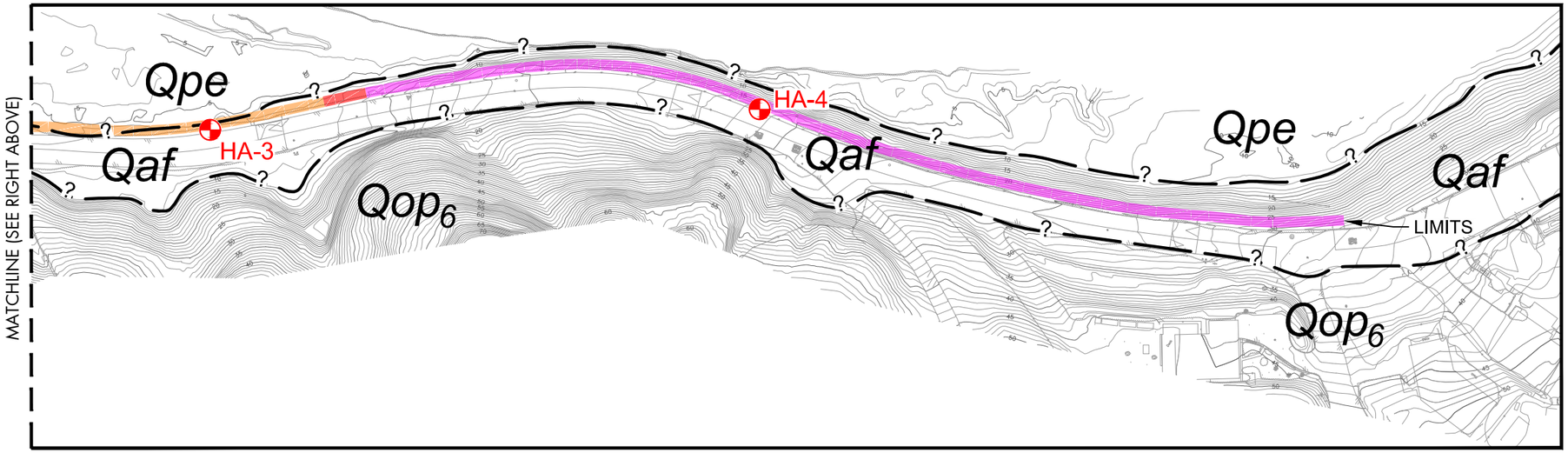
2. The recommendations of this report pertain only to the site investigated and are based on the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction 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 their 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.

RIVER PATH DEL MAR PHASE III EXTENSION
DEL MAR, CALIFORNIA





GEOCON LEGEND

Qaf .....ARTIFICIAL FILL

Qpe .....QUATERNARY PARALIC ESTUARINE DEPOSITS

Qop_6 .....QUATERNARY OLD PARALIC DEPOSITS

.....APPROX. LOCATION OF GEOLOGIC CONTACT (Queried Where Uncertain)

HA-4 .....APPROX. LOCATION OF HAND AUGER BORING

.....DG TRAIL

.....AT-GRADE BOARDWALK

.....ELEVATED BOARDWALK

0' 50' 100' 150' 200'

SCALE 1"=100'(on 11x17)

GEOCON INCORPORATED

GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159
PROJECT NO. G2478 - 52 - 01
FIGURE 1
DATE 02 - 24 - 2021

GEOLOGIC MAP

Plotted:02/23/2021 2:02PM | By:ALVIN LADRILLONO | File Location:W:\1_GEOTECH\G2000\G2478-52-01\2021-01-18 (Re-date Only)\G2478-52-01 Geo Map.20.dwg

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

We performed the hand-auger operations on December 13, 2019. Hand-auger borings extended to a maximum depth of approximately 5 feet. The locations of the exploratory borings are shown on the Geologic Map, Figure 1. 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 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.

PROJECT NO. G2478-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING HA 1** ELEV. (MSL.) **6'** DATE COMPLETED **12-13-2019** EQUIPMENT **HAND AUGER** BY: **M. ERTWINE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0	HA1-1			SM	**ARTIFICIAL FILL (Qaf)** Loose, moist, light reddish brown, Silty, fine to medium SAND; trace organics and trash			
2					-Becomes wet			
4	HA1-2			CL	**QUATERNARY PARALIC ESTUARIANE DEPOSITS (Qpe)** Soft, wet, gray, Silty CLAY			
					HAND AUGER TERMINATED AT 5 FEET Groundwater not encountered			

Figure A-1,
Log of Boring HA 1, Page 1 of 1

G2478-52-01.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. G2478-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING HA 2** ELEV. (MSL.) **7'** DATE COMPLETED **12-13-2019** EQUIPMENT **HAND AUGER** BY: **M. ERTWINE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0	HA2-1			SM	**ARTIFICIAL FILL (Qaf)** Loose, moist, light brown, Silty, fine to medium SAND			
2					-Becomes wet			
4	HA2-2			CL	**QUATERNARY PARALIC ESTUARIANE DEPOSITS (Qpe)** Soft, wet, gray, Silty CLAY			
					HAND AUGER TERMINATED AT 5 FEET Groundwater not encountered			

Figure A-2,
Log of Boring HA 2, Page 1 of 1

G2478-52-01.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. G2478-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING HA 3** ELEV. (MSL.) **7'** DATE COMPLETED **12-13-2019** EQUIPMENT **HAND AUGER** BY: **M. ERTWINE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0	HA3-1			SM	**ARTIFICIAL FILL (Qaf)** Loose, moist, light brown, Silty, fine SAND			
2					-Some gravel			
4					HAND AUGER TERMINATED AT 5 FEET Groundwater not encountered			

Figure A-3,
Log of Boring HA 3, Page 1 of 1

G2478-52-01.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. G2478-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING HA 4** ELEV. (MSL.) **19'** DATE COMPLETED **12-13-2019** EQUIPMENT **HAND AUGER** BY: **M. ERTWINE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0	HA4-1			SM	**ARTIFICIAL FILL (Qaf)** Loose, moist, light brown, Silty, fine SAND			
2					-Becomes dry			
4					-Trace gravel			
					HAND AUGER TERMINATED AT 5 FEET Groundwater not encountered			

Figure A-4,
Log of Boring HA 4, Page 1 of 1

G2478-52-01.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

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. Selected soil samples were tested for in-place dry density/moisture content, maximum density/optimum moisture content, direct shear strength, water-soluble sulfate, R-Value, and gradation characteristics. The results of our current laboratory tests are presented herein.

SUMMARY OF LABORATORY MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS ASTM D 1557

Sample No.	Description (Geologic Unit)	Maximum Dry Density (pcf)	Optimum Moisture Content (% dry wt.)
HA1-1	Light reddish brown, Silty, fine to medium SAND (Qaf)	124.2	10.5
HA4-1	Light brown, Silty, fine SAND (Qaf)	127.6	9.2

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				
HA-1	8.7	16.3	113.8	14	Non-Expansive	Very Low

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
HA1-1	0 – 4	Qaf	0.008	S0

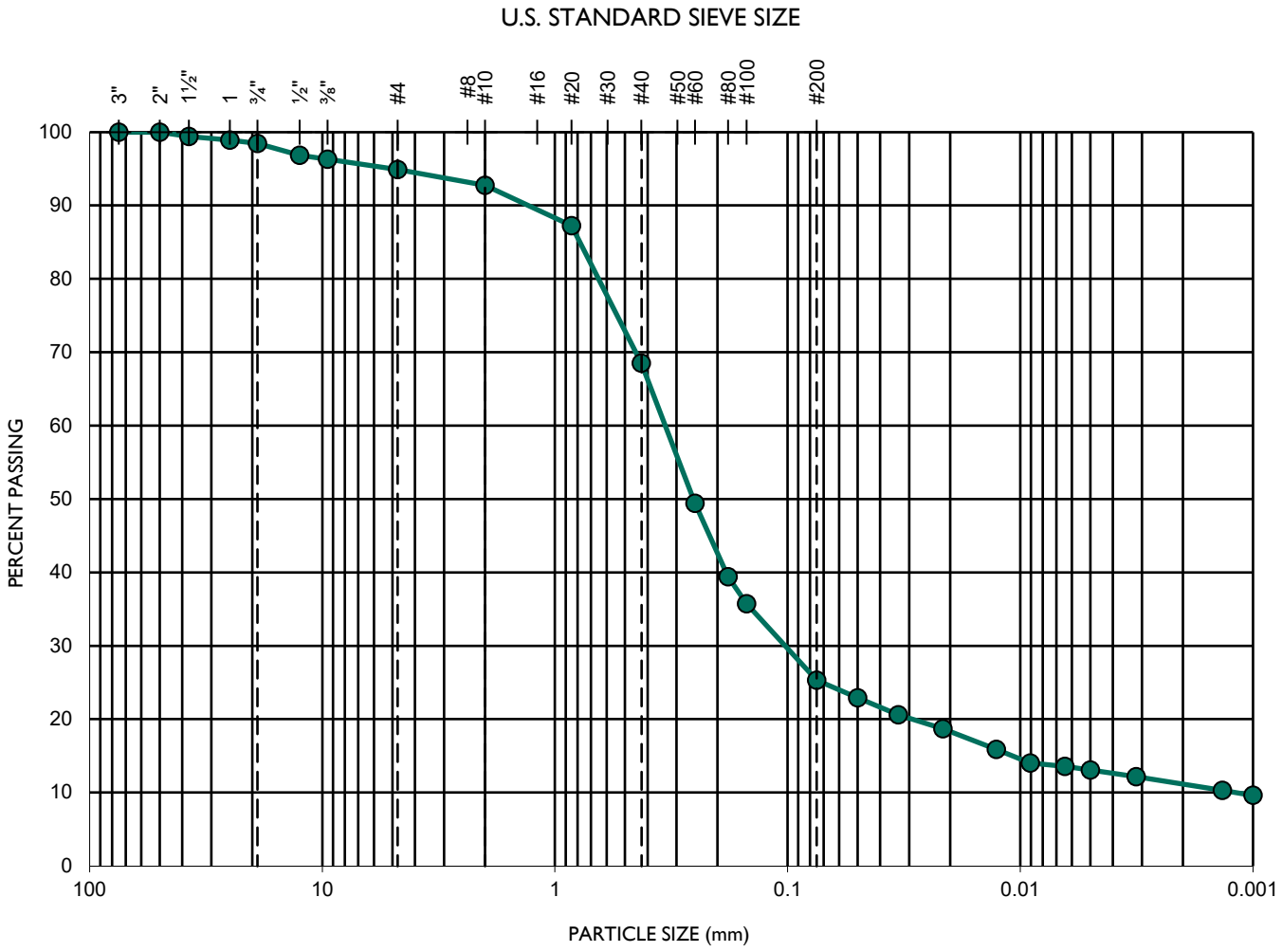
SUMMARY OF LABORATORY RESISTANCE VALUE (R-VALUE) TEST RESULTS ASTM D 2844

Sample No.	Depth (Feet)	Description (Geologic Unit)	R-Value
HA2-1	0 – 4	Light brown, Silty, fine to medium SAND (Qaf)	60
HA4-1	0 – 5	Light brown, Silty, fine SAND (Qaf)	37

SAMPLE NO.: **HA2-1** GEOLOGIC UNIT: **Qaf**

SAMPLE DEPTH (FT.): **0 - 4**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
0.00120	0.10878	0.34702	28.4	289.4	Silty SAND

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6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

SIEVE ANALYSES - ASTM D 135 & D 422

RIVER PATH DEL MAR

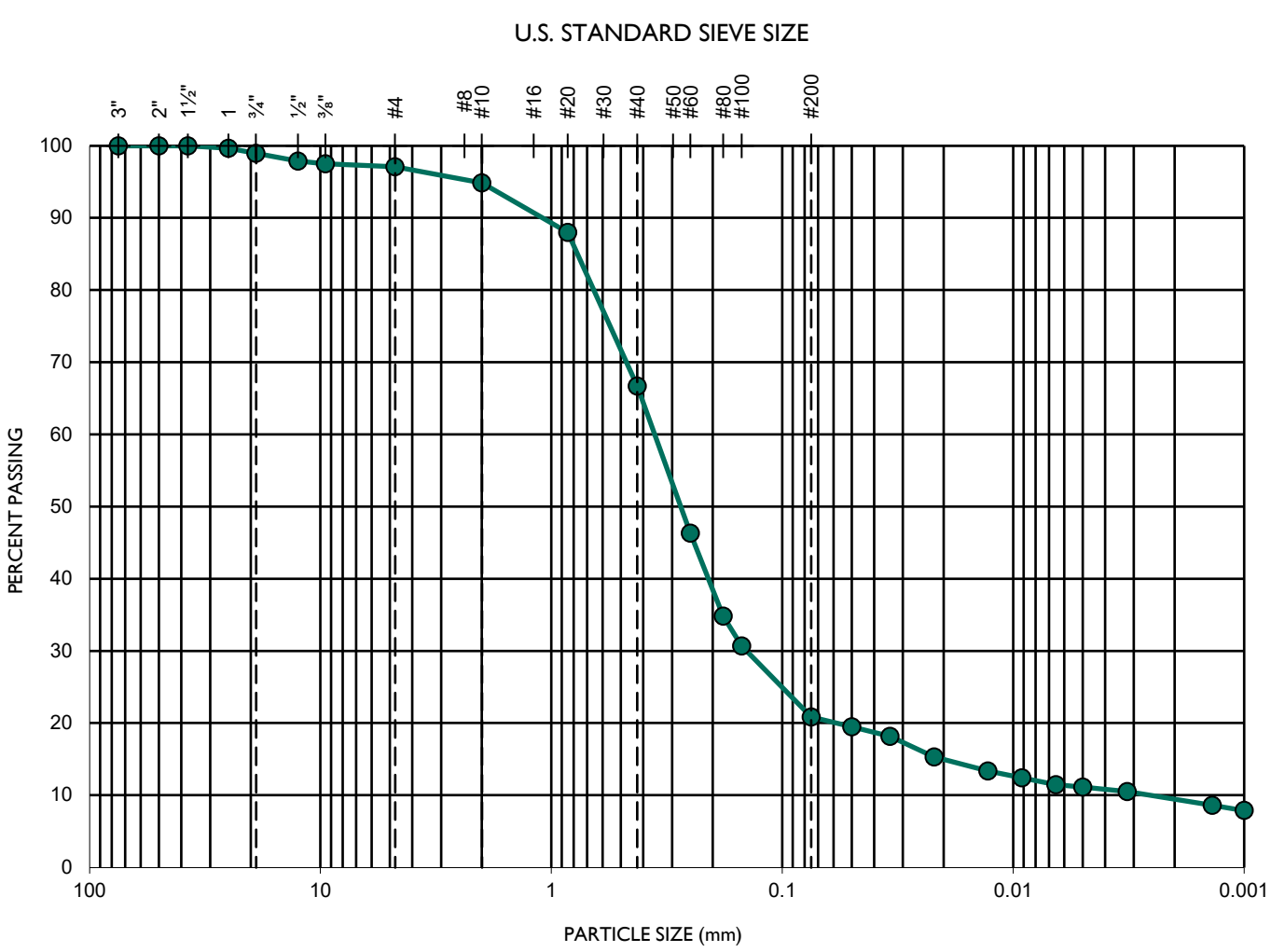
PROJECT NO.: G2478-52-01

SAMPLE NO.: **HA4-1**

SAMPLE DEPTH (FT.): **0 - 5**

GEOLOGIC UNIT: **Qaf**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
0.00271	0.14466	0.36752	21.0	135.4	Silty SAND

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PHONE 858 558-6900 - FAX 858 558-6159

SIEVE ANALYSES - ASTM D 135 & D 422

RIVER PATH DEL MAR

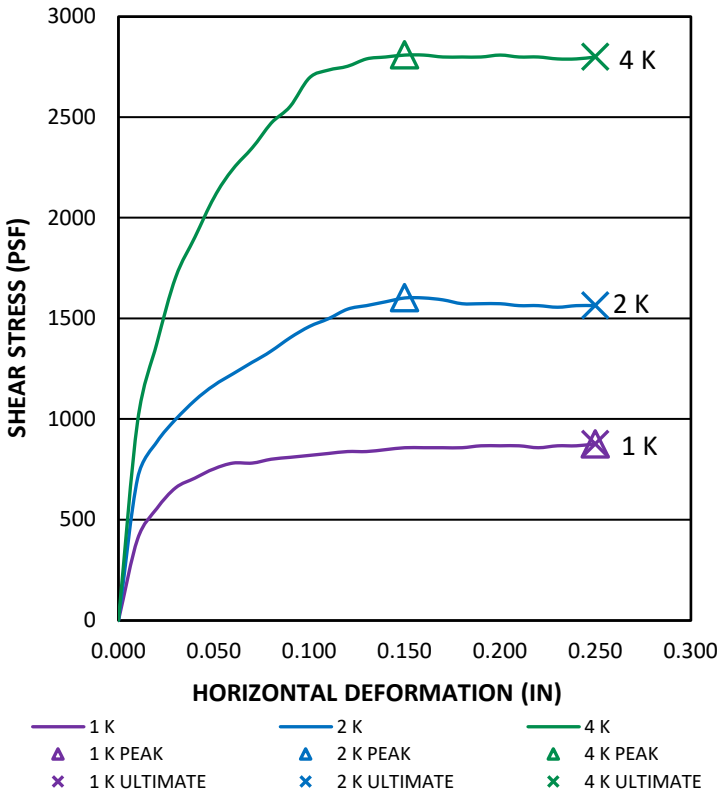
PROJECT NO.: G2478-52-01

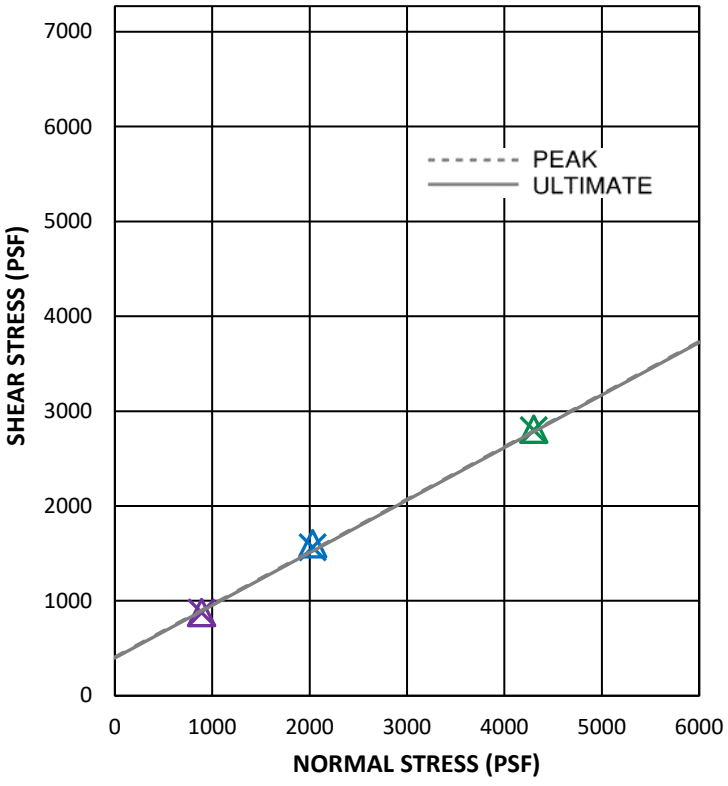
SAMPLE NO.:	**HA4-1**	GEOLOGIC UNIT:	**Qaf**
SAMPLE DEPTH (FT):	**0 - 4**	NATURAL/REMOLDED:	**R**

INITIAL CONDITIONS				
NORMAL STRESS TEST LOAD	**1 K**	**2 K**	**4 K**	**AVERAGE**
ACTUAL NORMAL STRESS (PSF):	890	2030	4300	--
WATER CONTENT (%):	9.0	9.2	9.0	9.0
DRY DENSITY (PCF):	115.2	115.3	115.2	115.3

AFTER TEST CONDITIONS				
NORMAL STRESS TEST LOAD	**1 K**	**2 K**	**4 K**	**AVERAGE**
WATER CONTENT (%):	12.7	13.6	14.0	13.4
PEAK SHEAR STRESS (PSF):	877	1603	2809	--
ULT.-E.O.T. SHEAR STRESS (PSF):	877	1565	2800	--

RESULTS		
PEAK	COHESION, C (PSF)	410
	FRICTION ANGLE (DEGREES)	29
ULTIMATE	COHESION, C (PSF)	400
	FRICTION ANGLE (DEGREES)	29





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INCORPORATED
GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

DIRECT SHEAR - ASTM D 3080

RIVER PATH DEL MAR

PROJECT NO.: G2478-52-01

APPENDIX C

APPENDIX C

RECOMMENDED GRADING SPECIFICATIONS

FOR

RIVER PATH DEL MAR PHASE III EXTENSION
DEL MAR, CALIFORNIA

PROJECT NO. G2478-52-01

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.

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

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

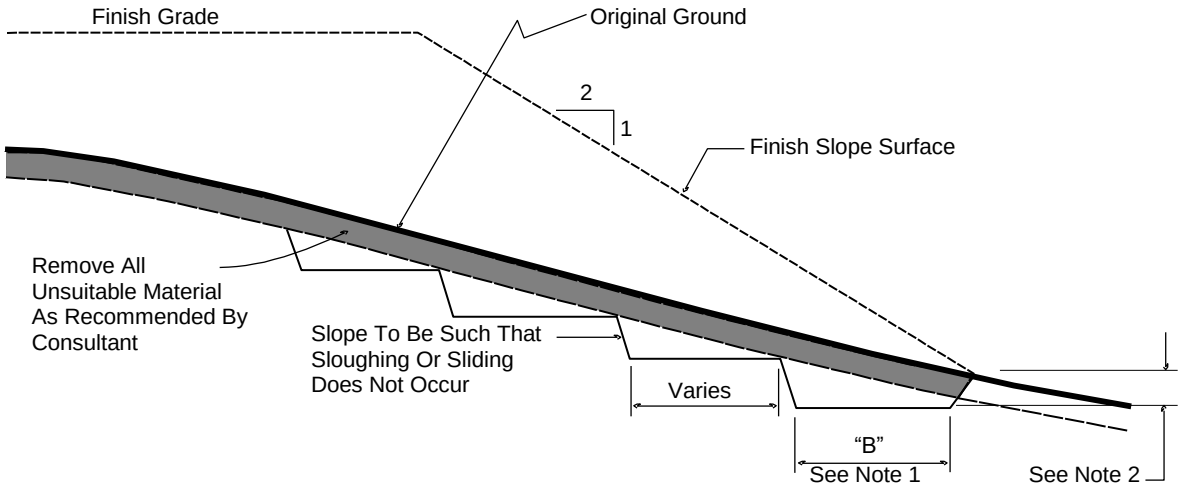
4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material 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.

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



No Scale

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.

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.

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

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.

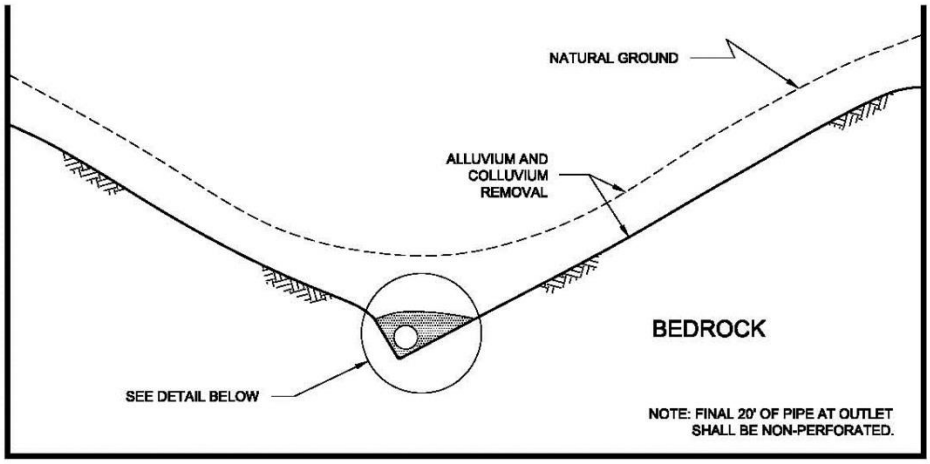
6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant 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.

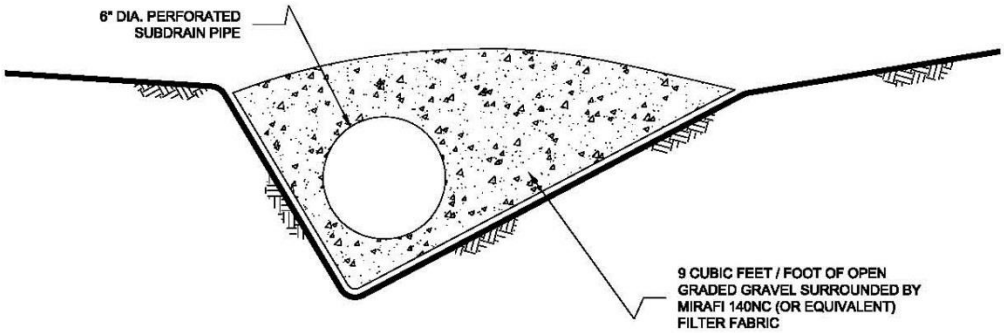
6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

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.

TYPICAL CANYON DRAIN DETAIL





NOTES:

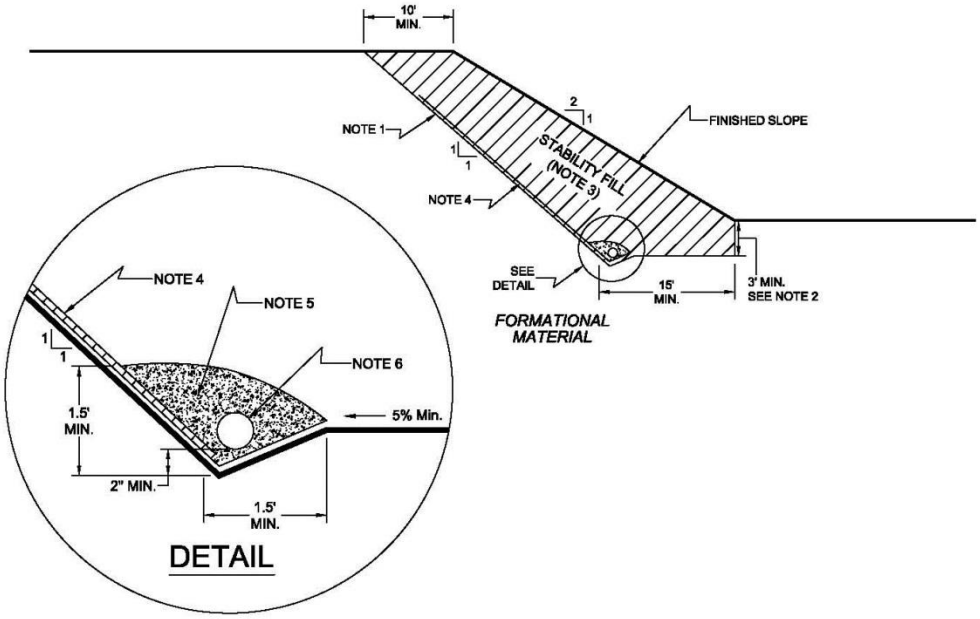
1.....6-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS
IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

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

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

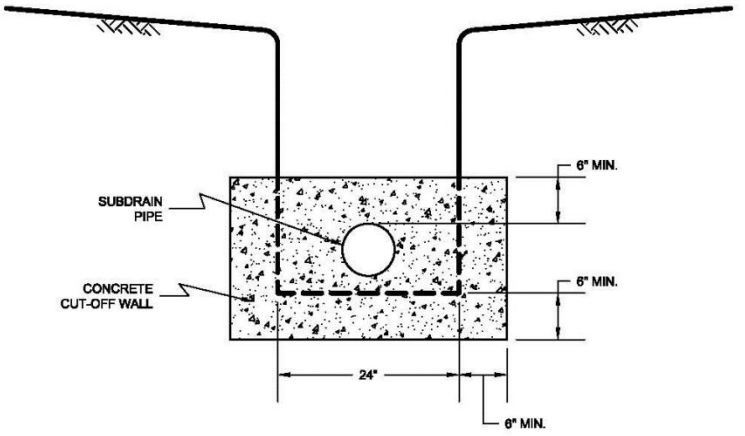
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 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.

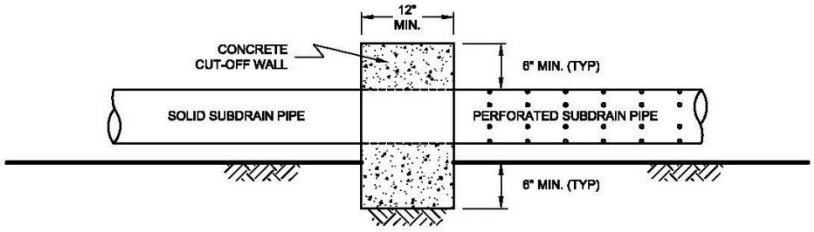
TYPICAL CUT OFF WALL DETAIL

FRONT VIEW



NO SCALE

SIDE VIEW

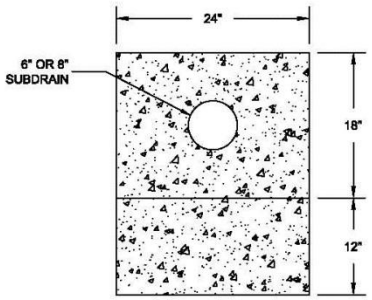


NO SCALE

7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

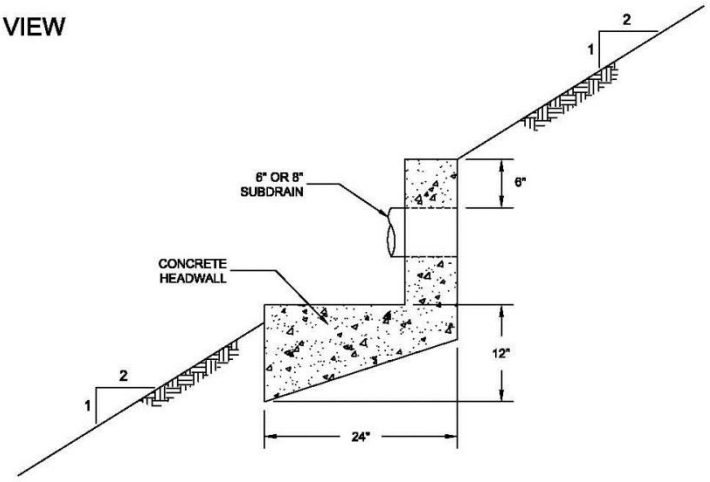
TYPICAL HEADWALL DETAIL

FRONT VIEW



NO SCALE

SIDE VIEW



NOTE: HEADWALL SHOULD OUTLET AT TOE OF FILL SLOPE OR INTO CONTROLLED SURFACE DRAINAGE

NO SCALE

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.*

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.

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. Aerial Photograph, San Diego County (1953), AXN-8M-9 and 8M-10, Scale 1 inch = 1700 feet.

3. Aerial Photograph, San Diego County (1973), AXN-31-29 and 31-30, Scale 1 inch = 1000 feet.

4. *ACI 318-14, Building Code Requirements for Structural Concrete* and *Commentary on Building Code Requirements for Structural Concrete*, prepared by the American Concrete Institute, dated September, 2014.

5. County of San Diego, *San Diego County Multi Jurisdiction Hazard Mitigation Plan, San Diego, California – Final Draft*, July 2010.

6. County of San Diego, *SANDAG, Parcel Lookup Tool, Interactive Map*, https://sdgis.sandag.org/.

7. Federal Emergency Management Agency (2012). *Flood Insurance Rate Map, San Diego County, California and Incorporated Areas, Panel No. 06073C1307G, Map Revised May 16.*

8. Geocon Incorporated (2018). *Groundwater Consultation, Watermark Del Mar, Del Mar, California*, dated January 22, 2018 (Project No. G2226-52-01).

9. Geocon Incorporated (2018). *Geotechnical Investigation, Watermark Del Mar, Jimmy Durante Boulevard and San Dieguito Drive, Del Mar, California*, dated February 13, 2018 (Project No. G2226-52-01).

10. Giffen and Tan, (1995). *California Division of Mines and Geology, Landslide Hazards in the Northern Part of the San Diego Metropolitan Area, San Diego County, California: Relative Landslide Susceptibility and Landslide Distribution Map of the Del Mar Quadrangle (Plate G).*

11. Historical Aerial Photos. *http://www.historicaerials.com*

12. 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.

13. 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.

14. Legg, M. R., J. C. Borrero, and C. E. Synolakis (2002), *Evaluation of Tsunami Risk to Southern California Coastal Cities*, 2002 NEHRP Professional Fellowship Report, dated January 2002.

15. State of California, County of San Diego, *Tsunami Inundation for Emergency Planning Del Mar Quadrangle*, June 1, 2009

16. Unpublished reports, aerial photographs, and maps on file with Geocon Incorporated.

IS/MND Appendix E

Drainage Study

CEQA Drainage Study

for

River Path Del Mar Phase III Extension Project

Prepared for

HELIX Environmental Planning
7578 El Cajon Blvd
La Mesa, CA 91942

Prepared By

Nasland Engineering
4740 Ruffner Street
San Diego, CA 92111
858-292-7770

NE Job No. 119-082.1
March 2, 2021

Table of Contents

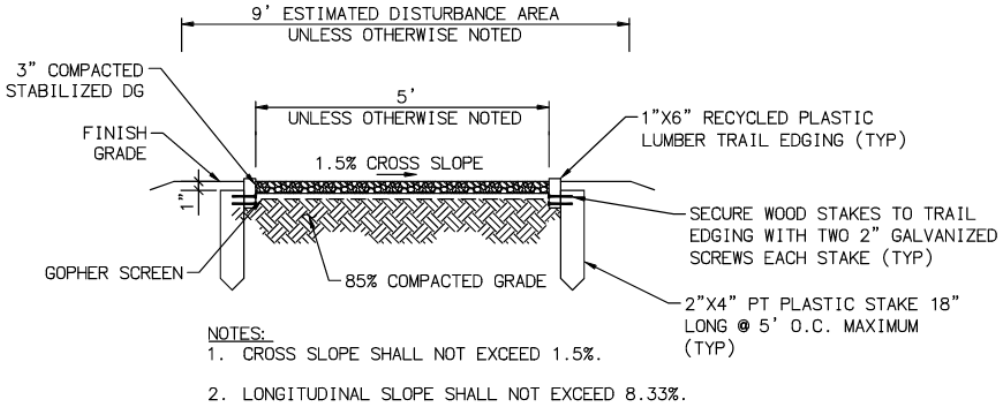
1.0 PURPOSE

The purpose of this hydrology study is to examine the existing hydrologic conditions and the effects that the proposed River Path Phase III extension project will have on the existing drainage system. The site is located west of the San Dieguito Lagoon on San Dieguito Drive in Del Mar. The nearest cross streets are Racetrack View Drive and Jimmy Durante Blvd. This study assesses both the existing and proposed hydrologic components of the onsite hydrology for the 100 year 6 hour storm.

2.0 VICINITY MAP

3.0 SUMMARY OF PROJECT

This project consists of the installing a single 5' wide path alignment along the west side of the San Dieguito Lagoon. To minimize the impacts to biological resources, the path will transition between 3 types of pathway construction including: a stabilized decomposed granite trail, an at-grade boardwalk, and an elevated boardwalk (see the cross-sections below).



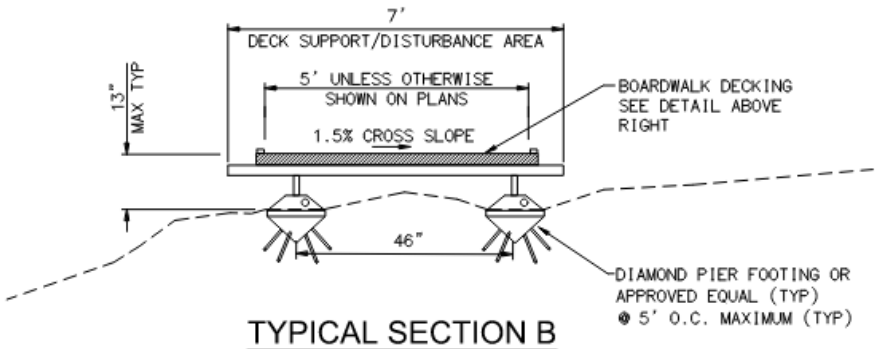
NOTES:
1. CROSS SLOPE SHALL NOT EXCEED 1.5%.
2. LONGITUDINAL SLOPE SHALL NOT EXCEED 8.33%.

TYPICAL SECTION A

(DG TRAIL)

STA 0+16 TO STA 2+28 AND STA 7+25 TO STA 13+00 | 787 LF

NOT TO SCALE

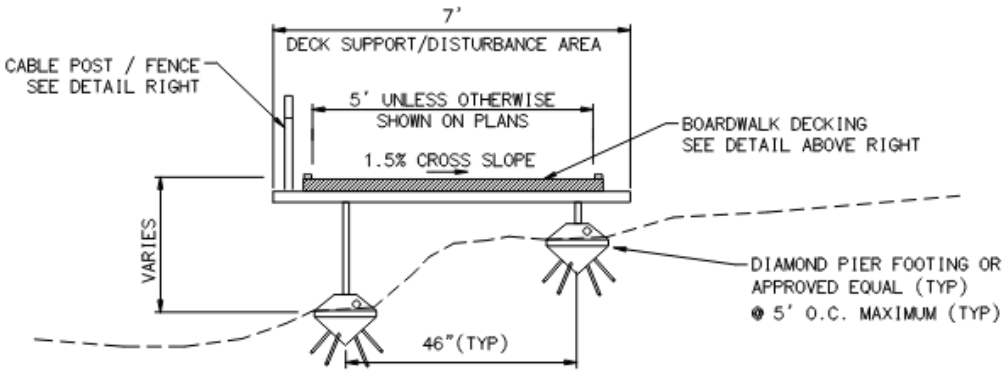


TYPICAL SECTION B

(BOARDWALK DECK AT GRADE)

STA 2+28 TO 2+53 & STA 6+89 TO STA 7+25 & STA 13+00 TO 13+33 | 94 LF

NOT TO SCALE



TYPICAL SECTION C

(BOARDWALK DECK W/ OVERHANG & RAILING)

STA 2+53 TO STA 6+89 & STA 13+33 TO STA 21+80 | 1283 LF

NOT TO SCALE

Nasland

The proposed project will be designed in such a manner as to minimize the effects of the proposed development to the existing hydrologic regime.

4.0 EXISTING SITE CONDITIONS

The existing site which is located on the east side of San Dieguito Drive consists of topography that slopes north and downward toward the Lagoon. Structures and trees within the project alignment are limited to guard rails, utility poles, storm drain outfalls and portions of willow tree limbs. Biologically sensitive animals and plants are known to occur in habitats associated with the Lagoon. Approximately 16 acres of undeveloped land and roadway surface drains across San Dieguito Drive prior to draining to the Lagoon.

The existing offsite drainage shown in Appendix E and F as "Not A Part" drains towards San Dieguito Drive but is collected in existing storm drains prior to the project limits. This area south of the project includes approximately 28 acres of land with existing slope ranging from 6% to 38%.

5.0 PROPOSED CONDITIONS

The proposed stabilized DG path and boardwalk will match existing grades to minimize the area of construction to protect as much sensitive habitat as possible. There are no impervious surfaces proposed for this project. Hydrology calculations for the system are made using methodologies presented in the County of San Diego Hydrology Manual.

6.0 ASSUMPTIONS AND METHODOLOGY

Runoff produced on the project site was calculated for the 100-year storm event using the methodology outlined in the San Diego County Hydrology Manual. Runoff was calculated using the Rational Method which is given by the following equation:

$Q = C \times I \times A$

- Q = flow rate in cubic feet per second (cfs)
- C = Runoff Coefficient
- I = Rainfall intensity in inches per hour (in/hr)
- A = Drainage basin area in acres (acres)

Runoff Coefficient: The runoff coefficient was determined by following Section 3.1.2 of the San Diego County Hydrology Manual.

$C = 0.90 \times (\%\ \text{Impervious}) + C_P \times (1 - \%\ \text{Impervious})$

C_P: Pervious Coefficient Runoff Value

C_P was set to 0.35, which is the coefficient for natural Soil Type D. The overall site has a very minor increase in impervious area from the pier foundations. C_P was assumed to be 0.50 for the proposed decomposed granite path and boardwalk area. The compaction of the decomposed granite path will not keep the same soil properties as the undisturbed terrain (Soil Type D); therefore, the runoff coefficient is assumed to be 0.50.

Rainfall Intensity: Intensity was calculated by applying Figure 3-2 of SDC Hydrology Manual.

$I = 7.44 * P_6 * T_C^{-0.645}$

- P_6 = Rainfall in inches for the 6-hour storm event (from County Isopluvial Maps)
- T_C = Time of concentration

Time of Concentration: Determined from using Figure 3-3 or Figure 3-4 of the SDC Hydrology Manual. Figure 3-3 provides the equation:

$$T_C = \frac{1.8(1.1-C)\sqrt{D}}{\sqrt[3]{s}}.$$

- C = Runoff Coefficient
- D = Watercourse Distance (ft)
- s = Slope of basin

NOTE: See Appendix A for Isopluvial Maps
See Appendix B for Soil Group Map
See Appendix C for Intensity-Duration Design Chart
See Appendix D for Runoff Coefficients for Urban Areas
See Appendix E for Pre Development Conditions and Calculations
See Appendix F for Post Development Conditions and Calculations

7.0 SUMMARY OF CALCULATIONS

Below is a summary of the results for the existing onsite hydrologic conditions and the proposed hydrologic conditions for a 6-hour 100 year design storm. For calculations and equations utilized in the study, see the appendices at the back of this report.

Rainfall Precipitation Depths

	100 Year Event
P_6 =	2.6
P_{24} =	4.0
P_6/P_{24} =	65%
Adjusted P_6 =	**2.6**

P_6/P_{24} is within 45% to 65% so the Adjusted P_6 is 2.6.

100 Year Design Storm

Existing

Basin	**Tributary Area, A (acres)**	**Runoff Coefficient, C**	**Rainfall Intensity, I ($^{in}/_{hr}$)**	**Runoff Rate, Q (cfs)**
1	0.54	0.35	6.85	1.29
2	15.36	0.35	6.85	36.83
3	5.18	0.35	6.85	12.42
4	14.43	0.35	6.85	34.59
5	4.28	0.35	6.85	10.26
6	2.48	0.35	6.85	5.95
7	1.73	0.35	6.85	4.14
			Total	**105.49**

Proposed

Basin	**Tributary Area, A (acres)**	**Runoff Coefficient, C**	**Rainfall Intensity, I ($^{in}/_{hr}$)**	**Runoff Rate, Q (cfs)**
1	0.54	0.368*	6.85	1.36
2	15.36	0.352*	6.85	37.01
3	5.18	0.35	6.85	12.42
4	14.43	0.35	6.85	34.59
5	4.28	0.35	6.85	10.26
6	2.48	0.35	6.85	5.95
7	1.73	0.35	6.85	4.14
			Total	**105.74**

*prorated runoff coefficient

Note:

- A minimum time of concentration of 5 minutes was utilized.
- The project assumes hydrologic type D soil.

8.0 ANALYSIS

The calculations show that the proposed development will increase the peak runoff rate due to the slight increase in runoff coefficient. The sites increase in overall 100 year storm runoff is negligible and the project should not impact the existing hydrologic conditions of the area.

9.0 SUMMARY OF CEQA QUESTIONS

This section is a response to each issue for Hydrology and Water Quality presented in the 2014 California Environmental Quality Act (CEQA) Statute and Guidelines.

a) **Would the project violate any water quality standards or waste discharge requirements?**
No. The post development follows the guidelines from the County of San Diego Model BMP Design Manual (September 2020) to comply with the NPDES MS4 permit and waste discharge requirements for all discharges from the MS4s draining the watersheds within the San Diego Region; Order No. R9-2013-0001 and all subsequent amendments issued by the California Regional Water Quality Control Board San Diego Region.

b) **Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?**
No Impact. This project does not propose a well or any other improvement that may draw from ground water supplies. Due to the steep topography and poor infiltrating soils, the existing site likely does not contribute to ground water recharge.

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, in a manner which would result in substantial erosion or siltation on or off site?**
No Impact. The post development drainage pattern will maintain the same drainage pattern as pre development. The project will not interrupt the course of natural drainage. Runoff from the site will not adversely affect streams or rivers with erosion or siltation.

d) **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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?**
No Impact. The post development drainage pattern will maintain the same drainage pattern as pre development. It is our professional opinion that this site will not increase the rate of surface runoff in a manner that would result in flooding both on and off site.

e) **Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?**
No Impact. No impervious surfaces are added creating no additional polluted runoff.

f) **Would the project otherwise substantially degrade water quality?**
No Impact. The project does not propose impervious surfaces and would not create additional pollutants.

g) **Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**
No Impact. The project will not place housing within a 100 year flood hazard zone.

h) **Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?**
No Impact. The project will not place structures within a 100 year flood hazard zone. The project proposes raised pier foundations for a portion of the elevated boardwalk. We would not anticipate the pier foundation would impede or redirect flood flows. See FEMA Map in Appendix G.

i) **Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?**
No Impact. The project is not placed downstream of a levee or dam and does not propose inhabited structures.

j) **Is the project at significant risk of inundation by seiche, tsunami, or mudflow?**
Less than significant. Due to the sites geographic location, the risks associated with inundation hazard due to tsunamis and seiches are low. Historically, tsunami wave heights have ranged up to 3.7 feet in the San Diego area. According to the County of San Diego Hazard Mitigation Plan (2010), the largest tsunami effect recorded in San Diego since 1950 was May 22, 1960, which had maximum run-up amplitudes of 2.1 feet (0.7 meters). The site has proposed elevations of approximately 5 feet to 30 feet MSL and is located approximately 0.3 miles from the Pacific Ocean to the west and along the San Dieguito Lagoon to the east. Therefore, seiches affecting the property are possible

10.0 CONCLUSION

This study has discussed the existing and proposed hydrologic conditions associated with the proposed River Path Del Mar Phase III Extension Project. While development will slightly increase the runoff coefficient, the total runoff from a flood related storm will increase by 0.25cfs. An overall increase of 0.7% for the 100-year storm event is in our opinion negligible and is a result of a minor increase in calculated C value for the pathway. The proposed development will not cause a hydrologic condition of concern for the site and downstream of the site.

11.0 DECLARATION OF RESPONSIBLE CHARGE

I hereby declare that I am the engineer of work for this project, that I have exercised responsible charge over the design of the project as defined in section 6703 of the Business and Professions Code, and that the design is consistent with the current standards.

03/02/21

Cory Schrack — Date
R.C.E. 65976

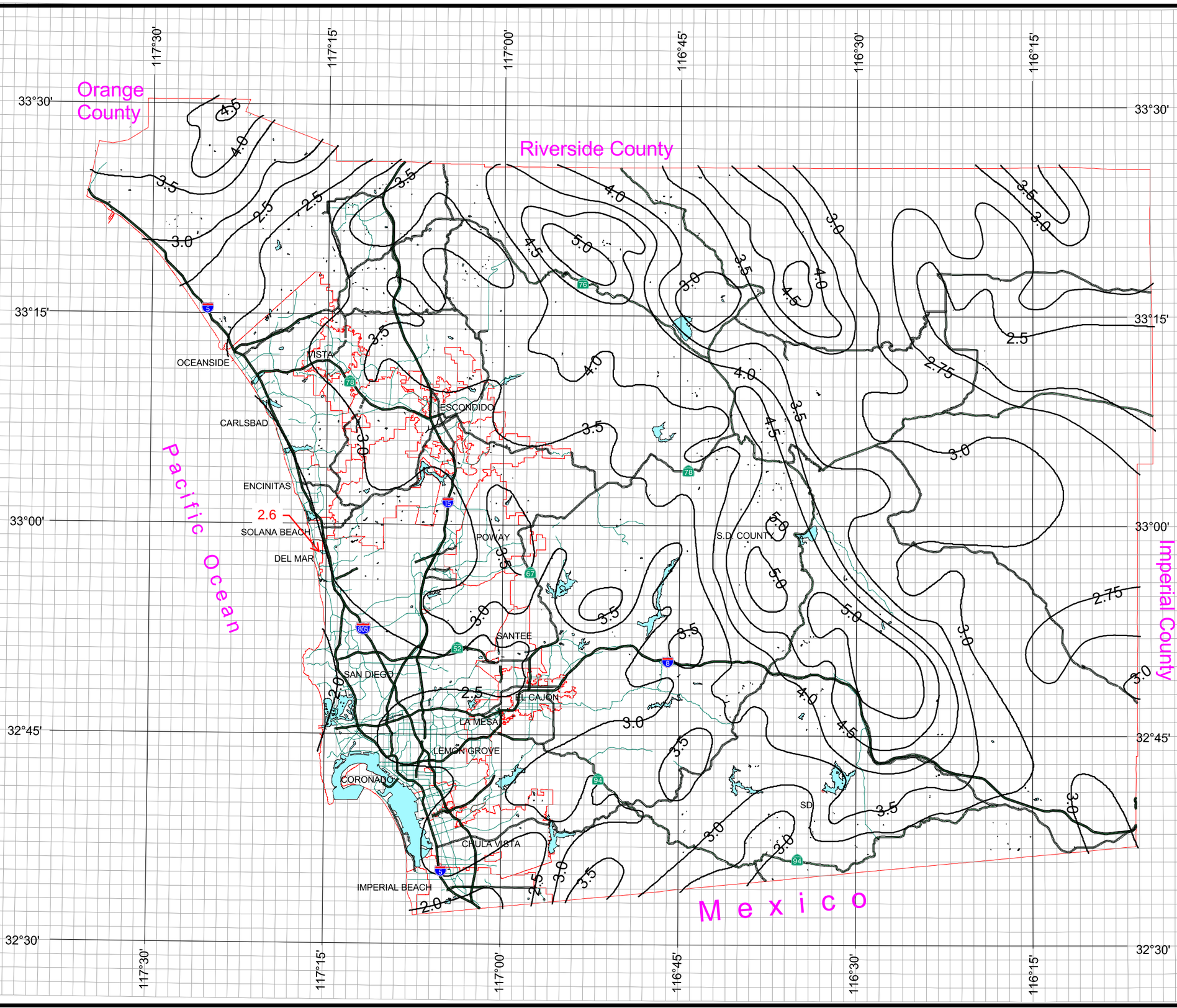
Appendix A

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 6 Hours

Isopluvial (inches)



DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
We Have San Diego Covered!

N
W E
S

3 0 3 Miles

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 24 Hours

Isopluvial (inches)

Orange County

Riverside County

Imperial County

Mexico

Pacific Ocean

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
SD

33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'

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N W E S

3 0 3 Miles

Appendix B

County of San Diego Hydrology Manual

Soil Hydrologic Groups

Orange County

Riverside County

Imperial County

Mexico

Pacific Ocean

PROJECT SITE

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH

117°30' 117°15' 117°00' 116°45' 116°30' 116°15'
33°30' 33°15' 33°00' 32°45' 32°30'

Legend

Soil Groups

- Group A
- Group B
- Group C
- Group D
- Undetermined
- Data Unavailable

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Geographic Information Services

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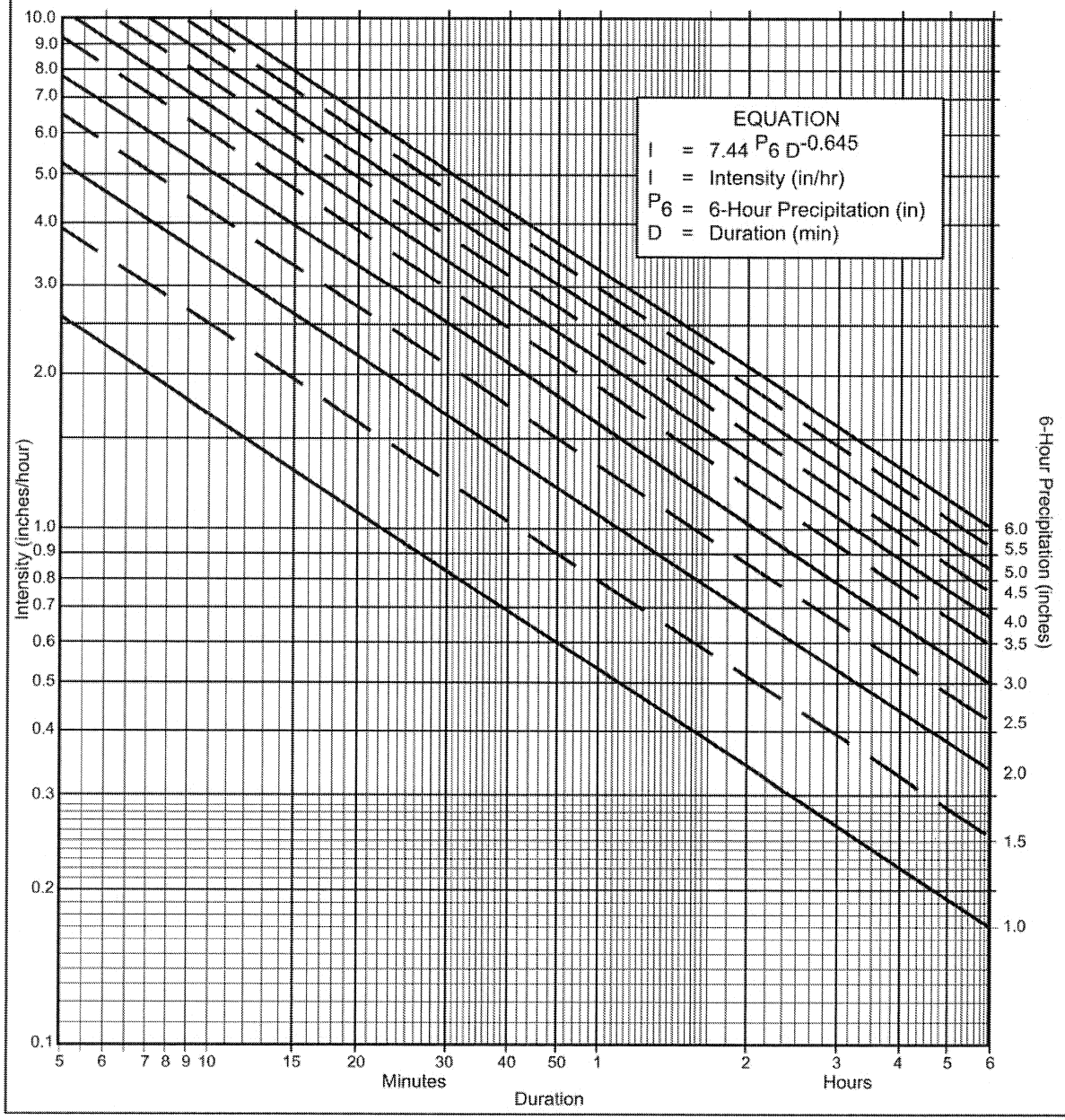
N W E S

3 0 3 Miles

Appendix C



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency _____ year

(b) P_6 = _____ in., P_{24} = _____, $\frac{P_6}{P_{24}}$ = _____ %(2)

(c) Adjusted P_6(2) = _____ in.

(d) t_x = _____ min.

(e) I = _____ in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE 3-1

Appendix D

Table 3-1
RUNOFF COEFFICIENTS FOR URBAN AREAS

Land Use		Runoff Coefficient "C"				
			Soil Type			
NRCS Elements	County Elements	% IMPER.	A	B	C	D
Undisturbed Natural Terrain (Natural)	Permanent Open Space	0*	0.20	0.25	0.30	0.35
Low Density Residential (LDR)	Residential, 1.0 DU/A or less	10	0.27	0.32	0.36	0.41
Low Density Residential (LDR)	Residential, 2.0 DU/A or less	20	0.34	0.38	0.42	0.46
Low Density Residential (LDR)	Residential, 2.9 DU/A or less	25	0.38	0.41	0.45	0.49
Medium Density Residential (MDR)	Residential, 4.3 DU/A or less	30	0.41	0.45	0.48	0.52
Medium Density Residential (MDR)	Residential, 7.3 DU/A or less	40	0.48	0.51	0.54	0.57
Medium Density Residential (MDR)	Residential, 10.9 DU/A or less	45	0.52	0.54	0.57	0.60
Medium Density Residential (MDR)	Residential, 14.5 DU/A or less	50	0.55	0.58	0.60	0.63
High Density Residential (HDR)	Residential, 24.0 DU/A or less	65	0.66	0.67	0.69	0.71
High Density Residential (HDR)	Residential, 43.0 DU/A or less	80	0.76	0.77	0.78	0.79
Commercial/Industrial (N. Com)	Neighborhood Commercial	80	0.76	0.77	0.78	0.79
Commercial/Industrial (G. Com)	General Commercial	85	0.80	0.80	0.81	0.82
Commercial/Industrial (O.P. Com)	Office Professional/Commercial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (Limited I.)	Limited Industrial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (General I.)	General Industrial	95	0.87	0.87	0.87	0.87

*The values associated with 0% impervious may be used for direct calculation of the runoff coefficient as described in Section 3.1.2 (representing the pervious runoff coefficient, Cp, for the soil type), or for areas that will remain undisturbed in perpetuity. Justification must be given that the area will remain natural forever (e.g., the area is located in Cleveland National Forest).
DU/A = dwelling units per acre
NRCS = National Resources Conservation Service

Decomposed Granite Path/Boardwalk C=0.50

Appendix E

N

100 0 100 200 300 400

SCALE 1" = 100'

EXISTING HYDROLOGY

RIVER PATH DEL MAR PHASE III
EXTENSION PROJECT

Nasland
Civil Engineering
Surveying
Land Planning
T (858) 292-7770
4740 Ruffner Street
San Diego, CA 92111
nasland.com

BASIN DATA: EXISTING SITE

Time of concentration

Travel Time $T_c = \left(\frac{11.9L^3}{\Delta E}\right)^{0.385}$

Basin	C Value	L (ft)	Δ Height (ft)	Slope (%)	T_i (min)
1	0.35	370	6	1.62	3.62
2	0.35	1100	286	26.00	2.88

Off-site Travel Time

Basin	C Value	L (ft)	Δ Height (ft)	Slope (%)	T_i (min)
3	0.35	560	208	37.14	1.49
4	0.35	850	254	29.88	2.24
5	0.35	1210	304	25.12	3.14
6	0.35	470	46	9.79	2.18
7	0.35	480	30	6.25	2.63

100 YEAR - 6 HOUR Storm

P_6 = 2.6 in $i = 7.44 P_6 T_c^{-0.645}$

Basin	C Value	T_c (mins)	Intensity ($^{in}/_{hr}$)	Area (acres)	Runoff (Q, cfs)
1	0.35	5.00	6.85	0.54	1.29
2	0.35	5.00	6.85	15.36	36.83

Basin	C Value	T_c (mins)	Intensity ($^{in}/_{hr}$)	Area (acres)	Runoff (Q, cfs)
3	0.35	5.00	6.85	5.18	12.42
4	0.35	5.00	6.85	14.43	34.59
5	0.35	5.00	6.85	4.28	10.26
6	0.35	5.00	6.85	2.48	5.95
7	0.35	5.00	6.85	1.73	4.14

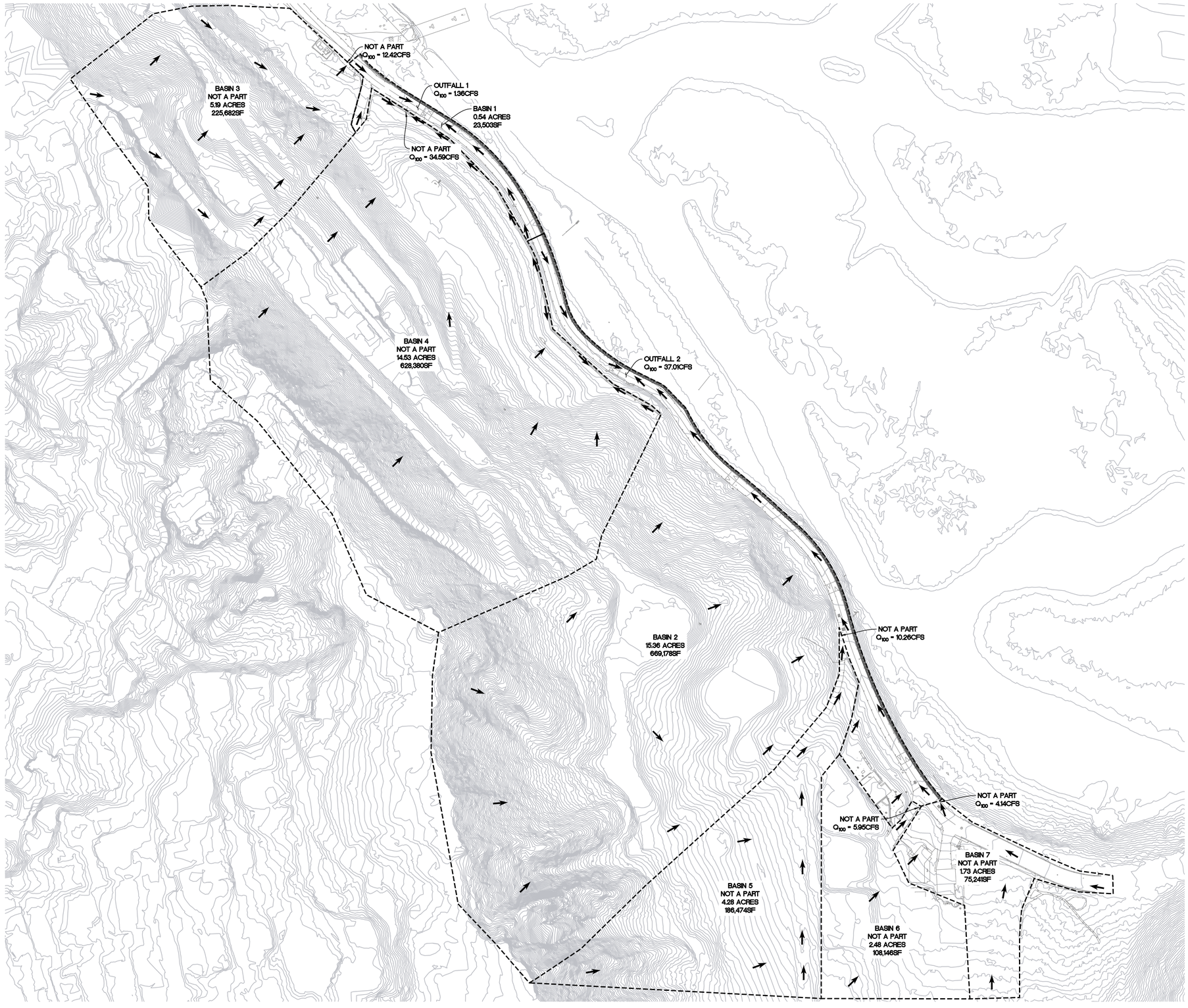
Note: A minimum Tc = 5 minutes was used for calculations with a Ti less than 5 minutes.

See the charts and graphs used for the hydrologic calculations at the end of this study.

BASIN SUMMARY

Runoff at Outfall 1 =	1.29 cfs
Runoff at Outfall 2 =	36.83 cfs
Runoff at Outfall 3 =	12.42 cfs
Runoff at Outfall 4 =	34.59 cfs
Runoff at Outfall 5 =	10.26 cfs
Runoff at Outfall 6 =	5.95 cfs
Runoff at Outfall 7 =	4.14 cfs

Appendix F



N

100 0 100 200 300 400

SCALE 1" = 100'

PROPOSED HYDROLOGY

RIVER PATH DEL MAR PHASE III
EXTENSION PROJECT

Nasland
Civil Engineering
Surveying
Land Planning
T (858) 292-7770
4740 Ruffner Street
San Diego, CA 92111
nasland.com

BASIN DATA: PROPOSED SITE

Runoff Coefficient

SubArea	Area (acres)	% DG	% Pervious	Description	C Value
1	0.54	11.84%	88.16%	Decomposed Granite	0.368
2	15.36	1.13%	98.87%	Decomposed Granite	0.352

Time of concentration

Travel Time $T_c = \left(\frac{11.9L^3}{\Delta E}\right)^{0.385}$

Basin	C Value	L (ft)	Δ Height (ft)	Slope (%)	T_i (min)
1	0.368	370	6	1.62	3.62
2	0.352	1100	286	26.00	2.88

Off-site Travel Time

Basin	C Value	L (ft)	Δ Height (ft)	Slope (%)	T_i (min)
3	0.35	560	208	37.14	1.49
4	0.35	850	254	29.88	2.24
5	0.35	1210	304	25.12	3.14
6	0.35	470	46	9.79	2.18
7	0.35	480	30	6.25	2.63

100 YEAR - 6 HOUR Storm

P_6 = 2.6 in $\quad i = 7.44 P_6 T_c^{-0.645}$

Basin	C Value	T_c (mins)	Intensity ($^{in}/_{hr}$)	Area (acres)	Runoff (Q, cfs)
1	0.368	5.00	6.85	0.54	1.36
2	0.352	5.00	6.85	15.36	37.01

Basin	C Value	T_c (mins)	Intensity ($^{in}/_{hr}$)	Area (acres)	Runoff (Q, cfs)
3	0.35	5.00	6.85	5.18	12.42
4	0.35	5.00	6.85	14.43	34.59
5	0.35	5.00	6.85	4.28	10.26
6	0.35	5.00	6.85	2.48	5.95
7	0.35	5.00	6.85	1.73	4.14

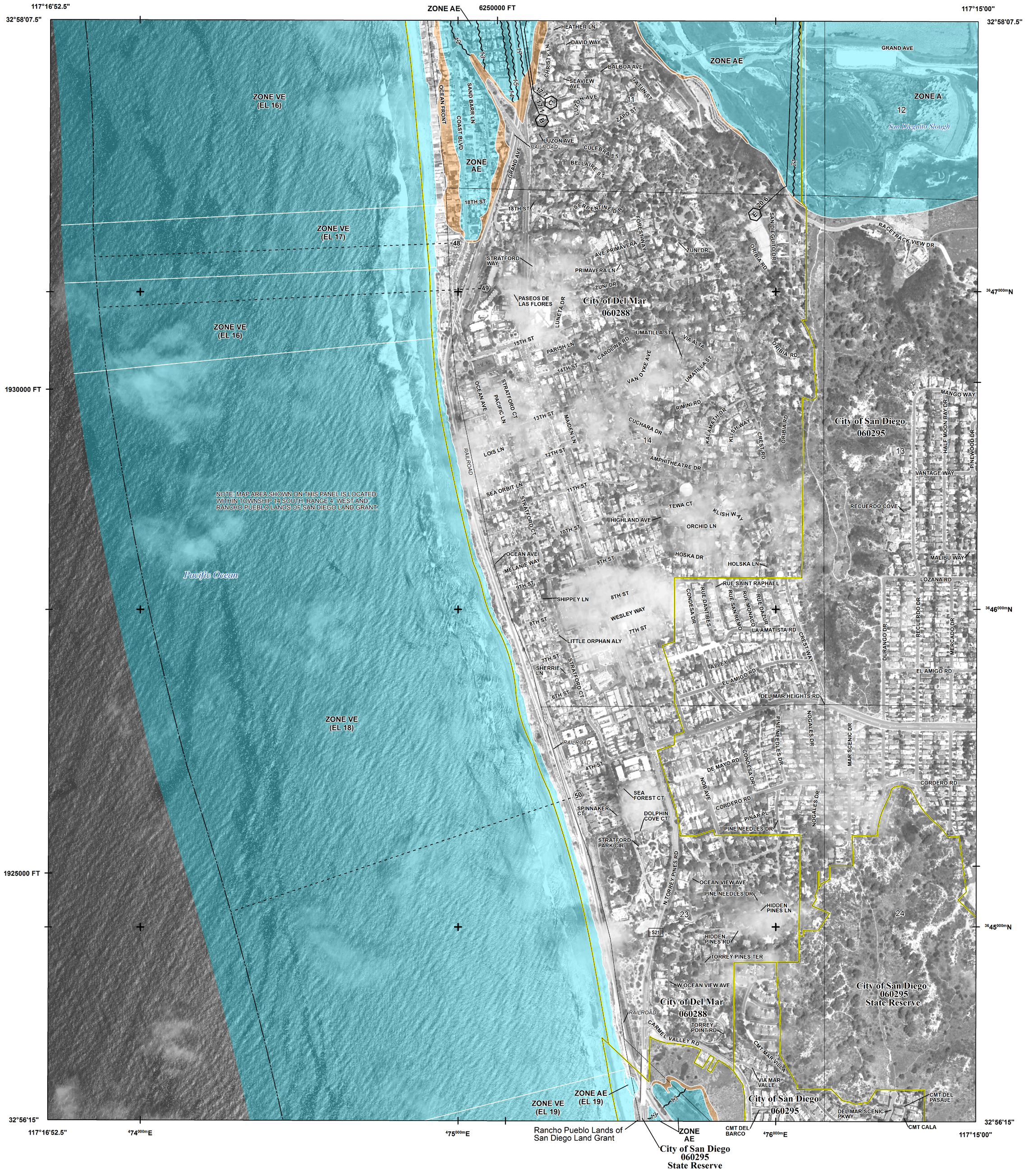
Note: A minimum Tc = 5 minutes was used for calculations with a Ti less than 5 minutes.

See the charts and graphs used for the hydrologic calculations at the end of this study.

BASIN SUMMARY

Runoff at Outfall 1 =	1.36 cfs
Runoff at Outfall 2 =	37.01 cfs
Runoff at Outfall 3 =	12.42 cfs
Runoff at Outfall 4 =	34.59 cfs
Runoff at Outfall 5 =	10.26 cfs
Runoff at Outfall 6 =	5.95 cfs
Runoff at Outfall 7 =	4.14 cfs

Appendix G



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- E 18.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from digital orthophotography collected by the U.S. Department of Agriculture Farm Service Agency. Department of Agriculture imagery was flown in 2016 and was produced with a 1-meter ground sample distance.

Coastal Base Flood Elevations shown on the map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Coastal flood elevations are also provided in the Coastal Transect Parameters table in the FIS Report for this jurisdiction. Elevations shown in the Coastal Transect Parameters table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on the FIRM.

SCALE

N

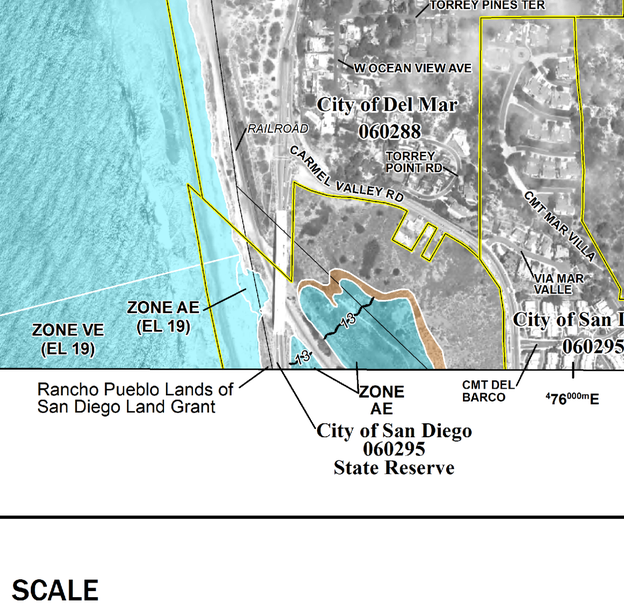
Map Projection:
Universal Transverse Mercator Zone 11N; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 250 500 750 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA
and Incorporated Areas

PANEL 1309 OF 2375

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
DEL MAR, CITY OF	060288	1309	H
SAN DIEGO, CITY OF	060295	1309	H

VERSION NUMBER
2.3.3.3

MAP NUMBER
06073C1309H

MAP REVISED
DECEMBER 20, 2019

IS/MND Appendix F

Acoustical Analysis Report

HELIX Environmental Planning

River Path Del Mar Phase III Extension Project

Acoustical Analysis Report

April 2021 | CDM 02.03

Prepared for:

City of Del Mar
Public Works Department
2240 Jimmy Durante Boulevard
Del Mar, CA 92014

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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TABLE OF CONTENTS

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibel
DG	decomposed granite
FHWA	Federal Highway Administration
Hz	Hertz
I-	Interstate
kHz	kilohertz
L_{DN}	Day-Night sound level
L_{EQ}	time-averaged noise level
LF	linear feet
L_{MAX}	maximum sound level
mPa	micro Pascal
MSCP	Multiple Species Conservation Program
NSLU	noise sensitive land use
PPV	peak particle velocity
RCNM	Roadway Construction Noise Model
SPL	sound pressure level
STC	Sound Transmission Class
USGS	U.S. Geological Survey

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EXECUTIVE SUMMARY

This report presents an assessment of potential construction noise impacts associated with the proposed River Path Del Mar Phase III Extension Project (project) located in the City of Del Mar. The project proposes the extension of the River Path Del Mar pedestrian trail along the southern edge of San Dieguito Lagoon.

Construction activities would involve site preparation, minor grading and debris removal, and pathway construction that would occur consecutively. Project construction would result in less than significant noise levels at nearby residences. Impacts may occur if construction is conducted during the avian breeding season. Construction noise would be reduced to less than significant with implementation of NOI-1, which requires a construction noise management plan. Vibration impacts from construction would not exceed thresholds for sensitive receptors. The project would not result in an increase in operational noise. Therefore, noise impacts from project operation would be less than significant.

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1.0 INTRODUCTION

1.1 PROJECT LOCATION

The proposed project is located in the City of Del Mar (City) in southwestern San Diego County (County). The project is located within the southeast quarter of Section 11 of Township 14 South, Range 4 West, on the U.S. Geological Survey (USGS) 7.5' Del Mar quadrangle. The project is situated in the northern part of the City, south of the Del Mar Fairgrounds and west of Interstate 5 (I-5) (Figure 1, *Regional Location*; Figure 2, *Site Topography [USGS]*). The project site is in close proximity to San Dieguito Lagoon, River Path Del Mar (completed Phases I and II), Crest Canyon Trail, Coast to Crest Trail, and Grand Avenue Lookout. The project site is located within the planning boundaries of the Draft City of Del Mar Multiple Species Conservation Program (MSCP) Subarea. The project site falls within portions of an area identified as the San Dieguito Lagoon MSCP Core Area.

1.2 PROJECT DESCRIPTION

The project consists of an approximately one-half mile pedestrian extension of the River Path along the San Dieguito Lagoon. The proposed extension would connect to existing trail segments and improve a portion of the San Dieguito segment of the City's Loop Trail. The project includes a single, five-foot wide decomposed granite (DG) trail and six-foot wide boardwalk (both at-grade and elevated) path alignment along the San Dieguito Lagoon to extend the River Path from the Grand Avenue Lookout to near the Crest Canyon Trail. The trail extension would extend a total of 2,164 linear feet (LF) and would primarily be comprised of an elevated boardwalk (1,283 LF), or about 60 percent of the proposed trail. About 94 LF (or about 4 percent of the proposed trail) would include boardwalk decking at grade and about 787 LF (or about 36 percent of the proposed trail) would include a DG trail. The three types are described in detail below:

- **DG Trail**. The two DG trail sections of the River Path would include a five-foot wide pathway constructed with three inches of compacted and stabilized DG material. Each side of the trail would include plastic and wood stakes drilled down approximately 18 inches beneath the ground with a gopher screen between the ground level and DG trail. The surface of the DG trail would be edged with recycled plastic lumber on both sides. Construction would be similar to the Phase II DG trail.

- **At-Grade Boardwalk**. Three at-grade boardwalks are proposed to transition to and from the DG trail to the elevated boardwalk and would involve a six-foot wide pathway constructed of composite decking material with pre-made footings/pins associated with the foundations spaced about 46 inches apart. The boardwalk would include repurposed material from a removed segment at the Coast to Crest Trail or similar material. Composite decking was designed and arranged with spacing (1/2-inch maximum) to allow for adequate drainage and indirect sunlight to penetrate to areas below the boardwalk portions of the project. Foundation footings would extend between 3.5 and 10.5 feet beneath the ground surface.

- **Elevated Boardwalk**. Most of the proposed trail would comprise an elevated boardwalk near the edge of the San Dieguito Lagoon. The elevated boardwalk would include a six-foot wide pathway and would be constructed with the same composite decking material and pre-made footings/pins as the at-grade boardwalk. The elevated boardwalk would include repurposed

material from a removed segment at the Coast to Crest Trail or similar material. Composite decking would be spaced to allow for drainage and sunlight to penetrate the elevated boardwalk portions of the project. Elevated boardwalk sections would also include a cable/post fence railing along the San Dieguito Lagoon constructed of 10-inch wide and 60-inch tall redwood cable post fencing with horizontal cable wires for safety. The fence posts would be drilled approximately 28 inches into the ground with concrete foundations.

The proposed project would involve minor grading and debris removal along the path alignment in upland areas and the installation of pre-made footings/pins with a concrete head to support the deck structure without the need for excavation within, and adjacent to, wetland areas in the San Dieguito Lagoon. No utilities in the project area would be affected by the proposed project, and existing aboveground electric utility lines and power poles would remain as they are under existing conditions. Construction is anticipated to begin in 2023 for a duration of approximately four months. Following construction of the project, the City would oversee perpetual management of the Phase III extension of the River Path in conjunction with Phases I and II.

2.0 ENVIRONMENTAL SETTING

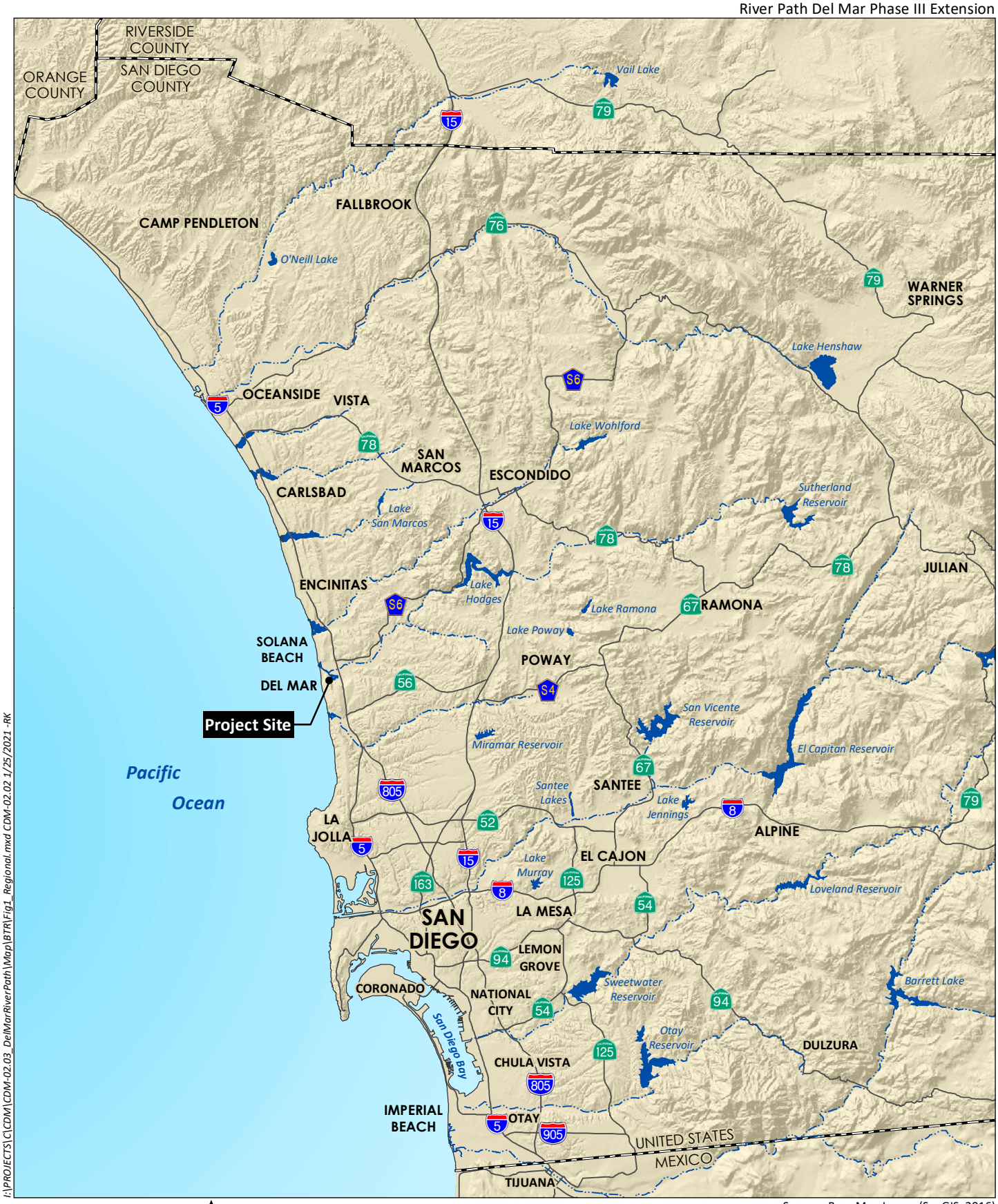
2.1 NOISE AND SOUND LEVEL DESCRIPTORS AND TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day-Night sound level (L_{DN}), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. The maximum sound level (L_{MAX}) is the maximum level during a measurement period or noise event. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.



I:\PROJECTS\C\CDM\CDM-02.03_DelMarRiverPath\Map\BTR\Fig1_Regional.mxd CDM-02.02 1/25/2021 -RK

0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1

I:\PROJECTS\D\DelMarCity_01197\CDM-02.03_DelMarRiverPath\Map\BTR\Fig2_USGS.mxd CDM-02.03 9/16/2021 -RK

0 2,000 Feet

Source: Del Mar 7.5' Quad (USGS)

HELIX Environmental Planning

Site Topography (USGS)

Figure 2

River Path Del Mar Phase III Extension

I:\PROJECTS\D\DelMarCity_01197\CDM-02.03_DelMarRiverPath\Map\BTR\Fig3_Aerial.mxd CDM-02.03 9/16/2021 - RK

0 200 Feet

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Aerial Photograph

Figure 3

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 micro Pascals (mPa).

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

2.2 NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, such as sensitive habitat, residential dwellings, schools, transient lodging (hotels), hospitals, educational facilities, exterior recreational facilities, and libraries. Noise receptors are individual locations that may be affected by noise. The nearest NSLUs to the project site are the existing single-family residences located along San Dieguito Drive and Racetrack View Drive. The closest residences to the project site are located approximately 150 feet south of the project terminus. Land uses in the vicinity of the project site consist of residential uses to the west and south, and open space to the north and east.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (California Department of Transportation [Caltrans] 2013) are considered “vibration-sensitive.” The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses or schools. The nearest land uses in the project area that are subject to annoyance from vibration include the single-family residences along San Dieguito Drive and Racetrack View Drive. The nearest residential uses are located approximately 150 feet south of the project terminus.

2.3 REGULATORY FRAMEWORK

Applicable noise standards for the proposed project are codified in the following regulations:

2.3.1 Biologically Sensitive Habitat

Some studies, such as that completed by the Bioacoustics Research Team (1997), have concluded that 60 dBA is a criterion to use as a starting point for passerine impacts until more specific research is done. Associated guidelines produced by the U.S. Fish and Wildlife Service (USFWS) require that project noise be limited to a level not to exceed 60 dBA L_{EQ} or, if the existing ambient noise level is above 60 dBA L_{EQ}, increase the ambient noise level by 3 dBA L_{EQ} at the edge of occupied habitat during the avian species breeding season.

2.3.2 City of Del Mar Municipal Code

The City’s Municipal Code regulates noise produced by construction activities. The City regulates noise produced on any property that may affect occupants of nearby properties. Section 9.20.050 of the City’s Municipal Code identifies construction noise level limits and states that:

Any person who operates powered construction or landscape equipment and/or who erects, constructs, demolishes, excavates for, alters, or repairs any building or structure within the City of Del Mar in such a manner as to cause noise to be received beyond the boundaries of the property on which the construction work is occurring shall comply with the following:

A. No construction work shall be performed on Sundays or City holidays.

B. No construction work shall be performed before 9:00 a.m. or after 7:00 p.m. on Saturday.

C. No construction work shall be performed before 7:00 a.m. or after 7:00 p.m. on Monday through Friday.

D. Construction activity shall not cause an hourly average sound level greater than 75 dB on property zoned or used for residential purposes.

E. Exception: A person may perform construction work on the person's own property, provided such construction activity is not carried on for profit or livelihood, between the hours of 10:00 a.m. and 5:00 p.m. on Sundays and City holidays.

2.4 EXISTING CONDITIONS

2.4.1 Surrounding Land Uses

The approximately 2,164 LF project alignment is bordered by San Dieguito Lagoon to the north and east, and single-family residences to the west and south. Land uses in the vicinity of the project site consist of residential developments to the west and south, open space and public trails to the north, and the San Dieguito Lagoon to the east. The nearest NSLUs include the adjacent sensitive habitat and single-family residences approximately 150 feet south of the project terminus.

2.4.2 Existing Noise Conditions

2.4.2.1 Ambient Noise Survey

A site visit was made on December 18, 2020 during the late morning and early afternoon to conduct ambient noise measurements. The primary ambient noise source in the project vicinity includes traffic along nearby roadways, including Interstate (I-) 5, San Dieguito Drive, and Racetrack View Drive. Three measurements were taken at the project site. The first measurement was taken at the northwestern terminus of the alignment near the Grand Avenue Overlook along the San Dieguito Lagoon. The second measurement was taken at the alignment midpoint along San Dieguito Drive, approximately 25 feet from the roadway centerline. The final measurement was taken at the southeastern terminus of the alignment near the existing residences (see Appendix A, *On-Site Noise Measurement Sheets*, for survey notes). The measured noise levels are shown in Table 1, *Site Visit Noise Measurement Results*.

Table 1
SITE VISIT NOISE MEASUREMENT RESULTS

Measurement 1	
Date:	December 18, 2020
Conditions:	Temperature: 61°F. Wind Speed: 10 mph. 63% humidity. Sunny.
Time:	12:23 p.m. – 12:33 p.m.
Location:	Northern edge of the alignment near the Grand Avenue Overlook near San Dieguito Lagoon.
Measured Noise Level:	51.2 dBA L_{EQ}
Notes:	Traffic noise from I-5 was the primary noise source; some occasional noise was generated from passing cars along San Dieguito Drive. Ambient nature sounds.
Measurement 2	
Date:	December 18, 2020
Conditions:	Temperature: 61°F. Wind Speed: 10 mph. 63% humidity. Sunny.
Time:	12:43 p.m. – 12:53 p.m.
Location:	Along San Dieguito Drive at the alignment midpoint, approximately 25 feet from roadway centerline.
Measured Noise Level:	54.8 dBA L_{EQ}
Notes:	Traffic noise from I-5 was the primary noise source; some occasional noise was generated from passing cars along San Dieguito Drive.
Measurement 3	
Date:	December 18, 2020
Conditions:	Temperature: 61°F. Wind Speed: 10 mph. 63% humidity. Sunny.
Time:	1:00 p.m. – 1:10 p.m.
Location:	Southern terminus of the alignment near the existing residences at intersection of San Dieguito Drive and Racetrack View Drive.
Measured Noise Level:	52.1 dBA L_{EQ}
Notes:	Traffic noise from I-5 was the primary noise source; some occasional noise was generated from passing cars along San Dieguito Drive and Racetrack View Drive.

dBA = A-weighted decibel; L_{EQ} = time-averaged noise level

3.0 ANALYSIS METHODOLOGY AND ASSUMPTIONS

3.1 METHODOLOGY AND EQUIPMENT

The following equipment was used to measure existing noise levels at the project site:

- Larson Davis System LxT Integrating Sound Level Meters
- Larson Davis Model CAL250 Calibrator
- Windscreen and tripod for the sound level meter
- Digital camera

The sound level meter was field-calibrated immediately prior to the noise measurements to ensure accuracy. All sound level measurements conducted and presented in this report were made with a sound level meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2006). All instruments were maintained with National Institute of Standards and Technology traceable calibration per the manufacturers' standards.

Project construction noise was analyzed using the Roadway Construction Noise Model (RCNM; USDOT 2008), which utilizes estimates of sound levels from standard construction equipment.

3.2 ASSUMPTIONS

3.2.1 Construction

Construction activities would occur over an approximately four-month period and are anticipated to begin as early as September 2023 and end in January 2024. Construction activities would involve site preparation, minor grading and debris removal, and pathway construction that would occur consecutively. It is estimated that the project would generate approximately 100 cubic yards (CY) of total export material during both the site preparation and grading phases. As noted above, pathway construction would involve a DG trail, at-grade boardwalk, and elevated boardwalk. For the DG trail segments (about 787 LF), construction equipment would consist of motorized construction machinery including a rubber-tired dozer, tractor, compactor, and backhoe.

At-grade and elevated boardwalk sections would be constructed using foundations, which would include pre-made footings with a concrete head to support the elevated structure without the need for excavation. These foundations would be placed by construction workers either by hand or using a small portable hoister crane and installed using a breaker/demolition hammer powered by a truck-mounted generator. Foundations would be spaced every five feet on center and would total up to about 600 individual foundations. Trucks are anticipated to be used to deliver construction materials such as decking and DG to the project site and construction workers would also arrive to the project site in a truck or personal vehicle. Construction staging and laydown areas would utilize the City Public Works Yard, located about one-third mile west of the proposed River Path extension, just west of the intersection of Jimmy Durante Boulevard and San Dieguito Drive. Existing parking at the Grand Avenue Overlook would remain open and available for public users throughout the project construction period. Table 2, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 2
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Phase	Equipment	Number
Site Preparation	Grader	1
	Tractor/Loader/Backhoe	1
Grading/Debris Removal	Rubber-tired Dozer	1
	Plate Compactor	1
	Tractors/Loaders/Backhoes	2
Construction	Rubber-tired Dozer	1
	Plate Compactor	1
	Generator	1

Source: CalEEMod (HELIX 2020)

3.2.2 Operation

The project would result in an extension of an existing recreational trail along the San Dieguito Lagoon for the use of pedestrians and recreationalists. While there would be some increase in operational noise associated with the addition of trail users, motorized or otherwise loud activities are not anticipated. As

a result, noise levels are not expected to result in a substantial increase and no further analysis is warranted. Impacts would remain less than significant and no mitigation measures are necessary.

4.0 IMPACTS

4.1 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE AND CONDITIONS OF APPROVAL

Implementation of the project would result in a significant adverse impact if it would exceed the following thresholds, as applicable to the project:

Threshold 1: Generate 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?

Impacts would be significant if the project would exceed an hourly limit of 60 dBA L_{EQ} at the edge of occupied habitat during the general avian breeding season (February 15 to September 15). If the existing ambient noise level is above 60 dBA L_{EQ}, the allowable noise level increase over ambient conditions is restricted to 3 dBA or less in habitat determined/assumed to be occupied during the breeding season.

Construction impacts would occur if the project generates construction noise that violates the limits established in the City Municipal Code, Section 9.20.050, which prohibits construction activity before 7:00 a.m. or after 7:00 p. Monday through Friday, before 9:00 a.m. or after 7:00 p.m. on Saturday, and all day Sunday. Construction activity shall not cause an hourly average sound level greater than 75 dBA L_{EQ} (one hour) on property zoned or used for residential purposes.

Threshold 2: Generate excessive ground-borne vibration or ground borne noise levels.

Excessive ground-borne vibration would occur if construction-related ground-borne vibration exceeds the “severe” vibration **annoyance** potential criteria for human receptors, as specified by Caltrans (2013), of 0.4 inch per second peak particle velocity (PPV), and 0.5 inch per second PPV for damage to older residential structures for continuous/frequent intermittent construction sources (such as impact pile drivers, vibratory pile drivers, and vibratory compaction equipment).

Threshold 3: 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 use airport or private airstrip, expose people residing or working in the project area to excessive noise.

An impact would occur if the project would expose land uses to noise levels that exceed the standards in the City’s noise compatibility standard for that use.

4.2 ISSUE 1: INCREASE IN AMBIENT NOISE LEVELS

Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the City's Municipal Code or limits for sensitive biological habitat?

4.2.1 Construction Noise

During the site preparation phase, equipment would include one grader and a tractor, loader, or backhoe. During the grading and debris removal phase, equipment would include one rubber-tire dozer and plate compactor, and two tractors, loaders, or backhoes. The construction phase would require one rubber-tire dozer, plate compactor and generator, and two tractors, loaders, or backhoes. All construction equipment would not be expected to be operating at the same time, would be along the project alignment, and would therefore not remain at one distance from a NSLU during the day. To prepare a conservative analysis, it was assumed that the construction equipment would be in operation simultaneously and that the equipment would be in operation for 40 percent of an hour (or 24 minutes of an hour).

Impacts related to temporary increases in ambient noise levels from operation of construction equipment is assessed using reference sound levels from typical construction equipment provided by the Federal Highway Administration (FHWA) in the RCNM (FHWA 2008). Elevated noise levels would be primarily experienced close to the noise source, and the magnitude of the impact would depend on the type of construction activity, noise levels generated by various pieces of construction equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures and topography. Construction would require the use of heavy equipment during each phase.

Construction activities associated with the proposed project would result in temporary increases in ambient noise levels. The nearest noise-sensitive receptors to general construction activities at the project site include the adjacent sensitive habitat and the single-family residences along San Dieguito Drive and Racetrack View Drive located approximately 150 feet south.

4.2.2 Residential Uses

Construction activities may occur as close as 150 feet to the single-family homes. At this distance, noise levels during the construction phase would not exceed 72.8 dBA L_{EQ} (1-hour) (see Appendix B for calculations). Since general construction noise levels would not exceed 75 dBA L_{EQ} (1-hour) at the nearest NSLU, construction activity would not cause an hourly average sound level greater than 75 dBA on property zoned or used for residential purposes. As a result, construction noise impacts are assessed as less than significant.

Short-term noise impacts on residential uses associated with construction activities would be less than significant. No mitigation is required.

4.2.3 Sensitive Habitat

Construction activities associated with the proposed project would result in temporary increases in ambient noise levels. The nearest noise-sensitive receptors to general construction activities at the project site include the adjacent habitat.

According to the on-site noise measurements, the existing ambient noise levels do not exceed 60 dBA L_{EQ} (1-hour) and are not assumed to exceed 60 dBA L_{EQ} (1-hour) during project construction. The allowable noise level increase for this analysis is therefore restricted to 3 dBA or less in habitat determined/assumed to be occupied during the breeding season. If construction activities would occur outside the breeding season, impacts to sensitive habitat would be less than significant and no mitigation would be required. However, if construction activities were to occur during a portion of the breeding season, indirect noise impacts on sensitive bird species could be significant and mitigation would be required.

On a given workday, construction equipment would be utilized at individual locations along the project alignment. Equipment may therefore be used at different distances from sensitive habitat depending on the day and location along the project alignment. Table 3, *Construction Equipment Noise Levels,* provides the percent operating time, or percent of a given hour that each equipment would be used, and the one-hour noise levels for each of the project's loudest construction equipment at a standard distance of 50 feet.

Table 3
CONSTRUCTION EQUIPMENT NOISE LEVELS

Unit	Percent Operating Time	dBA L_{EQ} (one hour) at 50 feet
Grader	40	81.0
Loader	40	75.1
Backhoe	40	73.6
Rubber-tired Dozer	40	77.7
Generator Set	40	76.6
Plate Compactor	40	62.6

Source: RCNM

Because construction would not be used at a standard distance from nearby land uses, this report analyzes individual construction equipment to determine the distances within which construction noise would be significant. Table 4, *Construction Equipment Setback Distances – Habitat*, provides the setback distances for biologically-sensitive habitats. If habitat is located within these distances from construction activities, impacts from construction noise would be potentially significant.

Table 4
CONSTRUCTION EQUIPMENT SETBACK DISTANCES - HABITAT

Equipment Type	Percentage Used per Hour	No Barrier*	With 6-foot Barrier[1]*
Grader	40	562 feet	237 feet
Loader	40	285 feet	120 feet
Backhoe	40	239 feet	101 feet
Rubber-tired Dozer	40	384 feet	162 feet
Generator Set	40	338 feet	142 feet
Plate Compactor	40	67.6 feet	29 feet

Source: RCNM; CadnaA

[1] Barrier is assumed to be approximately 8 feet from noise source.

* Distance Within Which Noise Levels Would Exceed Threshold

Threshold is noise levels exceeding 60 dBA L_{EQ} (1 hour)

Because it cannot be guaranteed that individual construction equipment would be used outside the setback distances provided in Table 4, impacts from temporary construction noise would be significant without mitigation if construction activities occur during a portion of the breeding season. Mitigation measure NOI-1 would implement a construction noise management plan to reduce noise levels.

4.2.4 Mitigation Measures

NOI-1 Pre-Construction Protocol Surveys and Construction Noise Management Plan: If construction activities are scheduled to occur during the nesting season for coastal California gnatcatcher (March 1 through August 30), light-footed Ridgway's rail (April 1 through August 31), least Bell's vireo (April 15 to September 15), and Belding's savannah sparrow (February 15 through June 30), a qualified biologist shall conduct pre-construction surveys to determine the presence or absence of these species. The final survey shall not be completed more than three days prior to the beginning of impacts or grading activities. If the results are negative construction shall be allowed to proceed. The Wildlife Agencies (USFWS and CDFW) shall be notified if any special status species are observed nesting within 500 feet of proposed construction activities and additional measures imposed by the Agencies shall be implemented.

No activities which would result in noise levels exceeding 60 hourly average A-weighted decibels (dBA L_{EQ}) within this 500-foot buffer shall be allowed. Ambient background noise shall be excluded from the 60 dBA calculation. If noise-generating construction activities are not completed prior to the breeding season, sensitive bird species are present nesting, and noise levels exceed this threshold, appropriate measures shall be implemented to reduce construction noise levels at occupied habitat to below 60 dBA L_{EQ} (one hour) including, but not be limited to, the following:

- Construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.

- Diesel equipment shall be operated with closed engine doors and equipped with factory-recommended mufflers.

- Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.

- Electrically powered equipment shall be used instead of pneumatic or internal- combustion powered equipment, where feasible.

- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) shall be prohibited.

- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

- No project-related public address or music system shall be audible at any adjacent sensitive receptor.

- Temporary sound barriers or sound blankets shall be installed between construction operations and adjacent noise-sensitive habitat. The project Contractor shall construct a temporary noise barrier at least 6 feet in height meeting the specifications listed below (or of a Sound Transmission Class [STC] 19 rating or better) to attenuate noise.

- All barriers shall be solid and constructed of wood, plastic, fiberglass, steel, masonry, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove or close butted seams and must be at least 3⁄4-inch thick or have a surface density of at least 3.5 pounds per square-foot. Sheet metal of 18-gauge (minimum) may be used if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Noise blankets, hoods, or covers also may be used, provided they are appropriately implemented to provide the required sound attenuation.

Implementation of mitigation measure NOI-1 would ensure that ambient noise levels in the project vicinity would not be in excess of thresholds. Impacts would be less than significant.

4.2.5 Significance of Impacts After Mitigation

Impacts would be less than significant with mitigation measure NOI-1.

4.3 ISSUE 2: EXCESSIVE GROUND-BORNE VIBRATION

4.3.1 Impact Analysis

Construction activities known to generate excessive ground-borne vibration, such as pile driving or blasting, would not be conducted during project construction. Furthermore, the nearest vibration-sensitive land use, the single-family residences, are approximately 150 feet from the project. Therefore, given the intervening distance and lack of vibratory equipment, impacts associated with vibration at the nearest vibration sensitive land uses would be less than significant.

4.3.2 Mitigation Measures

Because impacts related to Issue 2 would be less than significant, no mitigation is required.

4.3.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.4 ISSUE 3: AIRPORT NOISE EXPOSURE

Would the project expose people residing or working in the project area to excessive noise from a nearby public use airport or private airstrip?

4.4.1 Airport Noise

The project is not located near an active airport. The nearest airport is the Marine Corps Air Station Miramar, located approximately 9 miles to the southeast. At this distance, no effects related to airport noise would occur at the project site, and impacts would not occur.

5.0 LIST OF PREPARERS

Brendan Sullivan	Noise Analyst
Jason Runyan	Noise Analyst, Quality Assurance Reviewer

6.0 REFERENCES

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Appendix A

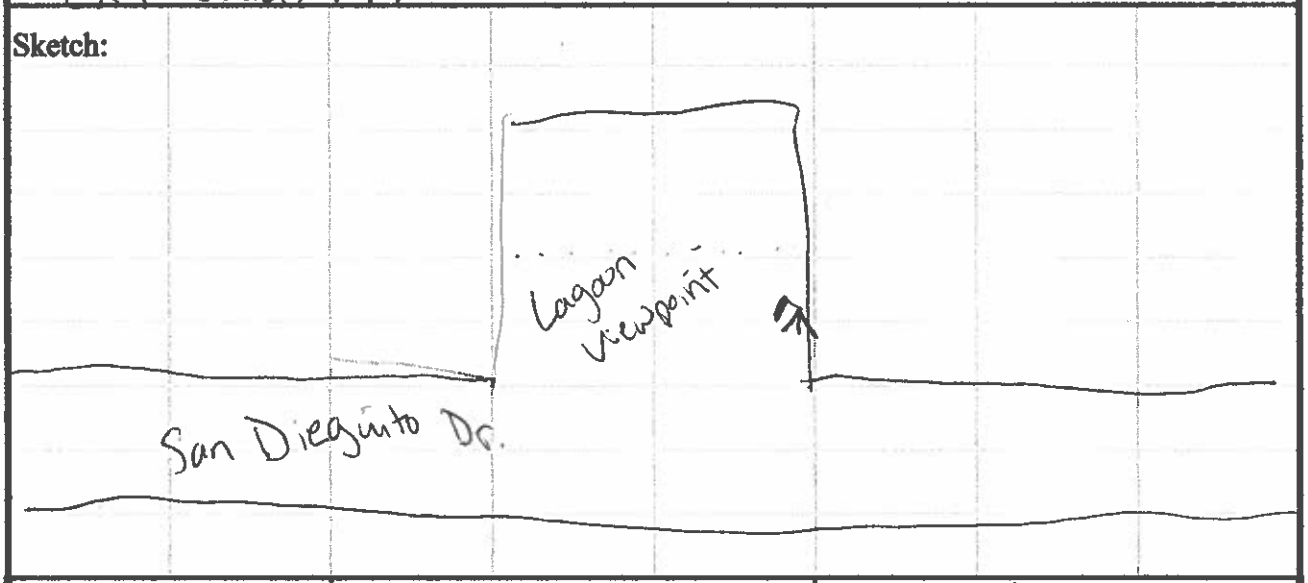
On-site Noise Measurement Sheets

Site Survey

Job # CDM-02.03	Project Name: Del Mar River Path		
Date: 12/18/20	Site #: 1 (north)	Engineer: Kristen Garcia	
Address: San Dieguito Dr., Del Mar, CA 92014			
Meter: LXT	Serial #: 1741	Calibrator: CA250	Serial #: 1544

Notes: Sunny, clear skies. Traffic noise from I-5.
Occasional car on San Dieguito Dr. Ambient nature sounds.
LxT-Data.176

Sketch:



Temp: 61°F	Wind Spd: 10 mph	Humidity: 63 %	
Start of Measurement: 12:~~00~~23 pm	End of Measurement: 12:33 pm	51.2 dBA L_{EQ}	

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

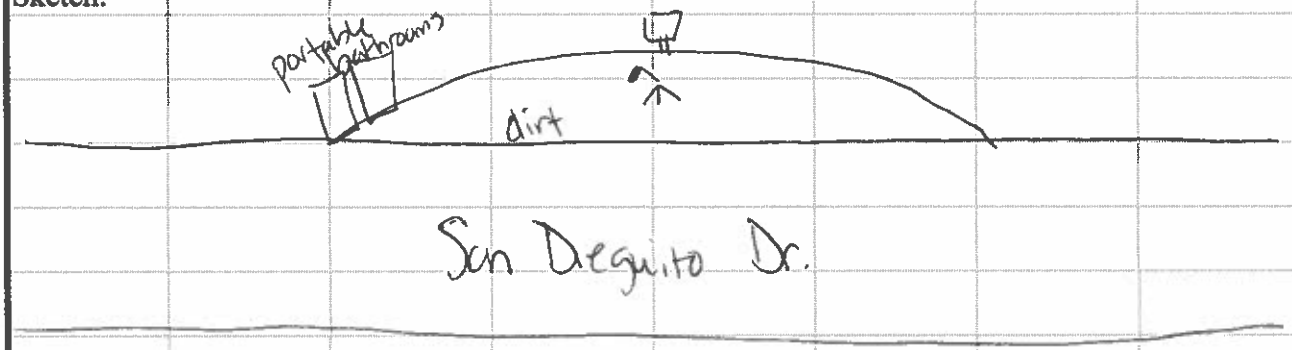
No Calibration Analysis Will Be Provided

Site Survey

Job # CDM-02.03	Project Name: Del Mar Bike Path		
Date: 12/18/20	Site #: 2 (central	Engineer: Kristen Garcia	
Address: San Dieguito Dr., Del Mar, CA 92014			
Meter: LXT	Serial #: 1741	Calibrator: CA250	Serial #: 1544

Notes: Sunny, clear skies. Ambient nature sounds. Traffic noise from I-5. Occasional car on San Dieguito Dr.
LXT_Data.177

Sketch:



Temp: 61 °F	Wind Spd: 11 mph	Humidity: 63 %
Start of Measurement: 12:43 pm	End of Measurement: 12:53 pm	54.8 dBA L_{EQ}

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

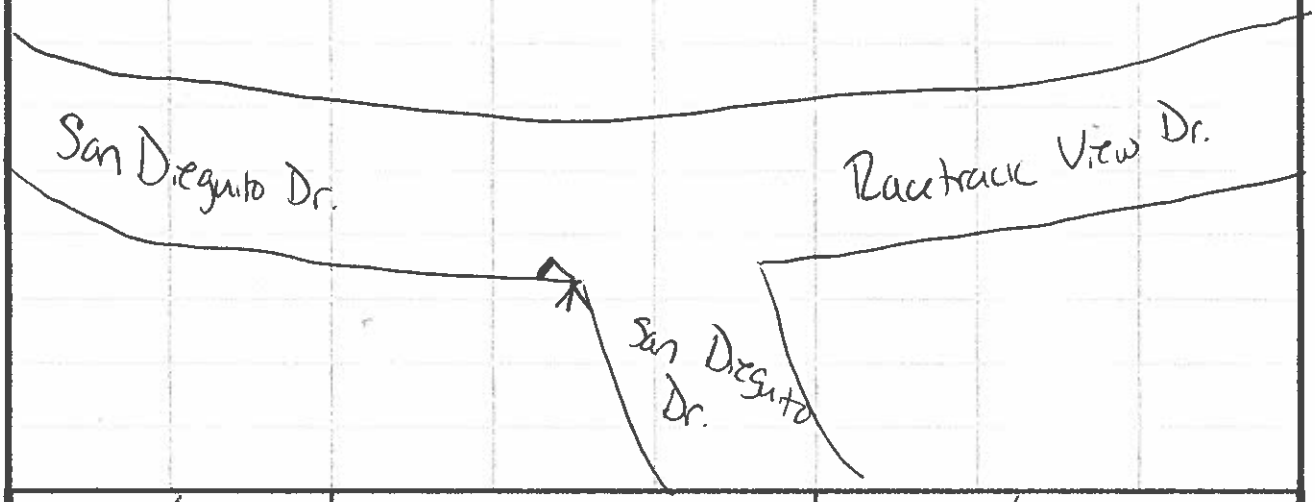
No Calibration Analysis Will Be Provided

Site Survey

Job # CDM-02.03	Project Name: Del Mar Bike Path		
Date: 12/18/20	Site #: 3 (South)	Engineer: Kristen Garcia	
Address: San Dieguito Dr, Del Mar, CA 92014			
Meter: LXT	Serial #: 1741	Calibrator: CA250	Serial #: 1544

Notes: Sunny, clear skies. Ambient nature sounds. Traffic noise from I-5. Occasional car on San Dieguito Dr.
LXT - Data. 178

Sketch:



Temp: 61 °F	Wind Spd: 11	mph	Humidity: 67	%	
Start of Measurement: 1:00 pm	End of Measurement: 1:10 pm		52.1	dBA L_{EQ}	

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)
Noise Measurement for Information Only		
No Through Roadways		
No Calibration Analysis Will Be Provided		

Appendix B

Construction Noise Model Outputs

Habitat Base

Equipment	dBA L_{MAX}	Percentage	Use Per Day	Ordinance Hour Day	L_{EQ} dBA (Daily)		Distance	L_{EQ} dBA (Daily)		Distance To:	Distance
Noise Sum	85.0	N/A	N/A	N/A	89.4	#	50.0	89.4	#	60	1472.1
Grader	85.0	40%	1	1	81.0	#	50.0	81.0	#	60	562.3
Loader	79.1	40%	1	1	75.1	#	50.0	75.1	#	60	285.1
Backhoe	77.6	40%	1	1	73.6	#	50.0	73.6	#	60	239.9
Bulldozer	81.7	40%	1	1	77.7	#	50.0	77.7	#	60	384.6
Generator	80.6	40%	1	1	76.6	#	50.0	76.6	#	60	338.8
Compactor	66.6	40%	1	1	62.6	#	50.0	62.6	#	60	67.6

Habitat with 6-foot wall Base

Equipment	dBA L_{MAX}	Percentage	Use Per Day	Ordinance Hour Day	L_{EQ} dBA (Daily)		Distance	L_{EQ} dBA (Daily)		Distance To:	Distance
Noise Sum	85.0	N/A	N/A	N/A	84.6	#	50.0	84.6	#	67.5	358.4
Grader	85.0	40%	1	1	81.0	#	50.0	81.0	#	67.5	237.1
Loader	79.1	40%	1	1	75.1	#	50.0	75.1	#	67.5	120.2
Backhoe	77.6	40%	1	1	73.6	#	50.0	73.6	#	67.5	101.2
Bulldozer	81.7	40%	1	1	77.7	#	50.0	77.7	#	67.5	162.2
Generator	80.6	40%	1	1	76.6	#	50.0	76.6	#	67.5	142.9
Compactor	66.6	40%	1	1	62.6	#	50.0	62.6	#	67.5	28.5