Draft Initial Study/
Mitigated Negative Declaration

# San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project

**MARCH 2026**

*Prepared for:*

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# Acronyms and Abbreviations

| Acronym/Abbreviation | Definition |
|---|---|
| AB | Assembly Bill |
| Adaptation Plan | Sea Level Rise Adaptation Plan |
| APE | area of potential effects |
| BMP | best management practices |
| CAAQS | California Ambient Air Quality Standards |
| CalEEMod | California Emissions Estimator Model |
| CARB | California Air Resources Board |
| CCC | California Coastal Commission |
| CCR | California Code of Regulations |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| City | City of San Diego |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| $CO_2e$ | carbon dioxide equivalent |
| County | County of San Diego |
| CY | cubic yard |
| ESHA | Environmentally Sensitive Habitat Areas |
| FEMA | Federal Emergency Management Agency |
| FHSZ | Fire Hazards Severity Zone |
| GHG | greenhouse gas |
| GWP | global warming potential |
| HMMP | habitat mitigation and monitoring plan |
| I | interstate |
| IS | initial study |
| JPA | Joint Powers Authority |
| LCP | Local Coastal Program |
| MHPA | Multiple Habitat Planning Area |
| MM | Mitigation Measure |
| MND | mitigated negative declaration |
| MSCP | Multiple Species Conservation Program |
| MT | metric ton |
| NAAQS | National Ambient Air Quality Standards |
| NAHC | Native American Heritage Commission |
| NAVD88 | North American Vertical Datum of 1988 |
| NCTD | North County Transit District |
| $NO_2$ | nitrogen dioxide |
| NOAA | National Oceanic Atmospheric Administration |
| $NO_x$ | oxides of nitrogen |

| Acronym/Abbreviation | Definition |
|---|---|
| NPDES | National Pollutant Discharge Elimination System |
| $O_3$ | ozone |
| $PM_{10}$ | particulate matter less than or equal to 10 microns in diameter |
| $PM_{2.5}$ | particulate matter less than or equal to 2.5 microns in diameter |
| ppv | peak particle velocity |
| PRC | Public Resources Code |
| Project or proposed Project | San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project |
| RAQS | Regional Air Quality Strategy |
| River | San Dieguito River |
| ROW | right-of-Way |
| RWQCB | Regional Water Quality Control Board |
| SANDAG | San Diego Association of Governments |
| SDAB | San Diego Air Basin |
| SDAPCD | San Diego Air Pollution Control District |
| SIP | State Implementation Plan |
| SLR | sea level rise |
| $SO_x$ | sulfur oxide |
| SWPPP | stormwater pollution prevention plan |
| TAC | toxic air contaminant |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |
| VMT | vehicle miles traveled |
| VOC | volatile organic compound |

# 1 Introduction

The City of Del Mar (City) has prepared this mitigated negative declaration (MND) to assess and disclose the potential impacts on the environment of the San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project (Project or proposed Project) pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.). This section of the MND provides information on Project background, explains the Project's purpose and need, and describes the City's obligations under CEQA associated with approving and implementing the Project.

## 1.1 Project Overview

The purpose of the Project is to minimize the risk of future flooding along both sides of the San Dieguito River (River) between the San Dieguito Railway Bridge and the Jimmy Durante Boulevard Bridge through nature-based adaptation improvements that achieve increased flood protection in compliance with the Federal Emergency Management Agency (FEMA) No Rise standard, increase native vegetation and habitat, and improve public trail access and recreational amenities along the riverbank slopes. This would be accomplished by (1) remediation of slopes on the northern and southern banks of the River to maximize flood protection by constructing a series of vegetated earthen berms or levees and floodwalls in strategic locations along portions of the riverbank and adjacent areas located outside of the floodway, (2) replacing existing revetments at the toe of the riverbank slopes, and (3) removing/relocating various existing structures out of the floodway. The Project's ecological enhancements would be provided along the riverbank slopes to enhance and increase existing salt marsh and native vegetation and create space for habitat to migrate and adapt to changing environmental conditions (i.e., projected sea level rise [SLR]). In addition, new public access trail and recreational amenity enhancements would be provided, including a new public trail access along the North Riverbank and improved public access along the southern riverbank, which would provide for public access connections to the Del Mar Riverpath Trail and Coast to Crest Trail segments located east of Jimmy Durante Boulevard. The Project would also improve access and flood protection between 28th Street and the existing trail along the south riverbank west of the existing railroad bridge.

The Project description splits the Project area into three different reaches, the North Riverbank, the Southeast Riverbank, and the Southwest Riverbank, to facilitate the description and consideration of proposed Project improvements for each reach.

A detailed description of the Project and its potential impacts are presented in Chapter 2, Project Description.

## 1.2 California Environmental Quality Act Compliance

The City is the CEQA lead agency responsible for review and approval of the Project. Based on the findings of the Initial Study (IS), the City determined that an MND is the appropriate environmental document to prepare in compliance with CEQA (14 California Code of Regulations [CCR] 15000 et seq.). As stated in CEQA Guidelines, Section 21064.5, an MND may be prepared for a Project subject to CEQA when an IS has identified no potentially significant effects on the environment.

This MND was prepared for the City and complies with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of the MND and the IS checklist is to determine any potentially significant impacts associated with the Project and to incorporate mitigation measures into the Project design to reduce or eliminate significant or potentially significant effects of the Project.

The Project is being undertaken as a joint partnership between the City and the San Dieguito River Park Joint Powers Authority (JPA). Grant funding from the California Department of Parks and Recreation covers completion of the necessary environmental, engineering, permitting, and planning as well as a portion of the construction. The common construction element for both agencies is the new public access trail on the North Riverbank within the California Coastal Commission (CCC) imposed easement for public access. As such, the San Dieguito River Park JPA is a Responsible Agency under CEQA Guidelines Section15381.

## 1.3 Public Review Process

The City is making the MND available for public review and comment pursuant to Section 15073 of the CEQA Guidelines (14 CCR 15000 et seq.). A copy of the MND and related documents are available for review on the City's website (https://www.delmar.ca.us/Archive.aspx?AMID=57 ). The City has identified a 30-day review and comment period for the MND commencing March 18, 2026, and terminating April 17, 2026.

Comments on the MND must be submitted to the City in writing before the end of the public review period, only to the email address or mail address and addressee listed herein. In reviewing and commenting on the MND, interested public agencies and members of the public should focus on the adequacy of the document in identifying and analyzing the Project's potential impacts on the environment. Written comments on the IS/MND will be accepted in hardcopy or email format and should be received at the following street address or email address by 5:00 p.m., April 17, 2026:

City of Del Mar
1050 Camino del Mar
Del Mar, California 92014
Contact: Amanda Lee, Principal Planner
Email: LeveeTrailCIP@delmar.ca.us

Following the close of the public comment period, City staff will review all comments and may revise the MND if necessary to clarify the document's content. City staff will then prepare a final version of the MND that includes all comment letters received during the public review period and will send the MND to the Del Mar City Council for adoption and consideration in their decision to approve the Project.

# 2 Project Description

The San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project (Project) is a nature-based flood adaptation, ecological enhancement, and public trail project that seeks to minimize the effects of river flooding along the riverbanks of the River within the City west of the Jimmy Durante Boulevard Bridge between the Del Mar Fairgrounds and the City's Public Works Facility. Project improvements would maximize flood protection that achieves FEMA's No Rise certification standard, supports ecological enhancements along the riverbanks, and improves coastal trail access and recreational amenities.

The Project site, located within the 100-year floodplain, is downstream of the Lake Hodges Reservoir, about 1,400 feet east of the San Dieguito inlet, and extends between the San Dieguito River Railway Bridge from the west to the Jimmy Durante Boulevard Bridge to the east. Improvements are proposed on the northern and southern riverbanks in three distinct Project reaches.

The Project involves multiple Project proponents and property ownership stakeholders. The City and the San Dieguito River Park JPA are coordinating a joint effort as Project proponents who respectively obtained state grant funding administered by the California Department of Parks and Recreation. Property ownership in the Project area includes the City, California 22nd District Agricultural Association, North County Transit District, and privately owned lots adjacent to the southwest Project area.

The shoreline reach along the northern side of the channel (North Riverbank) consists of the Del Mar Fairgrounds, which is owned and operated by the California 22nd District Agricultural Association, a state institution. An existing 100-foot-wide easement on the North Riverbank between Jimmy Durante Boulevard and railroad tracks is reserved for shoreline and trail improvements.

The shoreline reaches along the south side of the channel (Southeast Riverbank and Southwest Riverbank) consist of land owned by the City, including the City's Public Works Facility (on the Southeast Riverbank directly across the River from the Del Mar Fairgrounds). The Southwest Riverbank also includes land adjacent to the San Dieguito Railway Bridge owned and managed by the North County Transit District and used by north–south railway traffic and associated operations, including the North County Transit District's COASTER, Amtrak's Pacific Surfliner, and Burlington Northern Santa Fe freight trains. Privately owned property in the North Beach neighborhood is located adjacent to this property in the area southwest of the San Dieguito Railway Bridge.

## 2.1 Project Location and Environmental Setting

The City of Del Mar is a small coastal city, covering approximately 2.2 square miles, in the San Diego region. The City is south of the City of Solana Beach and generally west of properties in the City of San Diego and County of San Diego (County). Regional access to the City is provided from Interstate 5 (I-5), located east of the City boundary, and Camino del Mar, which runs north–south along the coastline to the west, perpendicular to the River, approximately 0.7 miles to the east of the Project site.

The Pacific Ocean runs along the entire length of the City's westerly boundary, and the San Dieguito River Watershed intersects with the ocean in the northern portion of the City. The watershed provides a large floodplain that is significant to the environmental setting of the City and is the location of the Project.

The Project site includes three reaches of the shoreline along the northern (North Riverbank) and southern (Southeast Riverbank and Southwest Riverbank) banks of the River, located within the City (see Figure 1, Project Site). The state-owned Del Mar Fairgrounds property makes up one-third of the City's land area and is located north of the River. Current land uses within and immediately surrounding the Project site include the Del Mar Fairgrounds to the north; Jimmy Durante Boulevard Bridge to the east; the City's Public Works Facility and pedestrian trails to the south; and the railway, pedestrian trails, public rights-of-way, residential and commercial development, and the Pacific Ocean to the west. The River bisects the Project site. The Del Mar Fairgrounds is a regional attraction that hosts the annual San Diego County Fair, large-scale expositions, events, and concerts, and includes a horse park that is home to major horse races. The beaches, River, and Coast to Crest Trail are also major attractions for local and regional residents as well as visitors from throughout the state, country, and world. The railway is part of the Los Angeles–San Diego–San Luis Obispo (LOSSAN) corridor regional rail infrastructure providing for passenger rail transit and freight rail services with the line extending through the City and north to south along the coast.

The Project site is located approximately 0.2 miles inland of the Pacific Ocean, near where the mouth of the River empties into the Pacific Ocean. The Project site is within the San Dieguito River Park, which includes more than 65 miles of trails that are open to the public year-round. A portion of the Coast to Crest Trail (maintained by the San Dieguito River Park JPA) runs through the Southeast and Southwest Riverbanks. One southern reach of the Project site (Southwest Riverbank) is adjacent to the San Dieguito Railway Bridge, which extends north–south across the River. The other southern reach of the Project site (Southeast Riverbank) includes a portion of the City's Public Works Facility, overlapping the main structure. The North Riverbank reach of the Project site extends along the Del Mar Fairgrounds property on the northern side of the River, westward from Jimmy Durante Boulevard toward (but not up to) the San Dieguito Railway Bridge.

## 2.2 Project Characteristics

The City and JPA are proposing public trail improvements, and the City is proposing nature-based shoreline protection, including living levee vegetated berms and related shoreline treatments with ecological enhancements as well as riprap replacement and infrastructure setback, along distinct reaches of the River shoreline. The Project involves three reaches of the shoreline: North Riverbank, Southeast Riverbank, and Southwest Riverbank (Figure 1). A considerable amount of the Project would be undertaken within the floodway regulated by FEMA (Figure 2, Regulatory Floodway). The Project would involve incorporation of living levee design concepts to improve resilience to SLR, provide flood protection, meet FEMA's No Rise certification standard for the floodplain, improve local water quality, increase public access, and enhance biodiversity. Additionally, the Project includes removal of an existing Public Works Facility structure from the FEMA floodway and flood protection walls. A new Public Works Facility structure (i.e., prefabricated, mobile structure) would be located on the southwestern side of the existing Public Works Facility property, beyond the limits of the floodway, in compliance with FEMA's floodplain standards.

### 2.2.1 Project Components

#### North Riverbank

The North Riverbank living levee design utilizes the entire 100-foot-wide easement defined by CCC, resulting in a substantial encroachment onto the existing Del Mar Fairgrounds property. An approximately 50-foot-wide levee would be established along this approximately 1,500-foot-long reach, at the back edge of the easement, with a crest elevation of 10 feet NAVD88 (North American Vertical Datum of 1988) (Figure 3, North Riverbank Site Plan).

The crest would be about 15 feet wide in order to support a new pedestrian trail on top of it. The Project would include a new 15-foot-wide pedestrian path within the existing 100-foot-wide easement and would provide a new westerly trail connection between the Del Mar Fairgrounds and Coast to Crest Trail.

A gradual transitional slope of 7:1 (horizontal:vertical) would lead down for about 25 feet before shifting to a very gentle foreshore slope of between 50:1 and 30:1 until it reaches the living levee toe along the River at about 5.13 feet (NAVD88) (Figure 4, North Riverbank Cross Section). The width of the living levee front slope may vary based on the available upland space alongside the shoreline. It is anticipated that the very gradual transitional and foreshore slopes would be capable of supporting marsh and/or riverine habitat (Figure 5, North Riverbank Cross Section with Habitat Zones). Additionally, it is likely that these transition zones would allow the marsh type to change with SLR (from high marsh to mid marsh and ultimately to low marsh), thereby increasing the habitat's SLR resiliency. This reach would require approximately 8,200 cubic yards (CY) of cut and 4,520 CY of fill. These volume estimates are based on the cross sections taken during the no rise study (Appendix A, No Rise Analysis Report) and should be considered as a conservative representation of the magnitude of work rather than exact volume of material. Approximately 111,540 square feet of asphalt would be removed, and approximately 38,000 square feet of existing landscaping or vegetation would be cleared and grubbed. Approximately 3.2 acres of high marsh and upland transitional habitat vegetation planting would be included in this reach. The design parameters for the North Riverbank are presented in Table 1.

**Table 1. North Riverbank Design Parameters**

| Design Parameters | |
|---|---|
| Width (feet) | 110 |
| Front habitat transitional slope (H:V) | 7:1 |
| Foreshore slope (H:V) | 50:1–30:1 |
| Pedestrian trail width (feet) | 15 |

**Note:** H = horizontal; V = vertical.

### Southeast Riverbank

This reach is approximately 1,030 feet long. A combination of trail realignment, a levee that would promote vegetation propagation, and a cantilever floodwall is proposed. The cantilever floodwall would have a crest elevation of 14 feet (NAVD88) alongside the existing Public Works Facility boundaries and parking lot to provide flood protection along the western side of the Southeast Riverbank reach (Figure 6, Southeast Riverbank Site Plan). Where the floodway extends into the Public Works Facility's remaining structure, the floodwall would follow the limits of this flood zone for approximately 820 feet. The primary Public Works Facility structure would be demolished and relocated outside of the flood zone to the southwestern portion of the Public Works Facility property. The existing trail would be realigned to setback from the shoreline, taking advantage of the additional space made available with the relocation of the Public Works Facility structure. High marsh, upland transitional, and upland habitat vegetation planting would be included over approximately 0.8 acres of this reach.

Directly in front of the trail along the west side of this reach, a varying transitional slope between 2:1 and 4:1 would lead down for about 12 to 20 feet until it reaches the foreshore toe along the River at about 5.13 feet (NAVD88) (Figure 7, Westside of Southeast Riverbank Cross Section). Unlike the North Riverbank, an enhancement to the existing revetment along the foreshore would be implemented to prevent damage during storm events. This

shoreline is unlikely to support significant marsh and/or riverine habitat (Figure 8, Southeast Riverbank Cross Section with Habitat Zones).

Along the eastern side of the Southeast Riverbank, the northern end of the existing public park would be excavated to cut a front transitional slope ranging from 5:1 to 13:1, varying in width from 20 to 50 feet at elevations ranging from about 8 feet to 5.13 feet (NAVD88) (Figure 6). Along the southern end of the public park, the existing public access trail would be elevated in place to 14 feet high (NAVD88) on top of a 40-foot-wide berm with side slopes of 3:1 (Figure 9, Eastside of Southeast Riverbank Cross Section). The crest of this berm would be about 10 feet wide to support an improved trail. This would be integrated into the end of the cantilevered floodwall near the parking lot to create a contiguous flood protection feature for the Public Works Facility. This reach would require approximately 2,200 CY of cut and 1,300 CY of fill. In addition, approximately 7,850 square feet of asphalt would be removed, and an approximately 3,740-square-foot structure would be demolished. These estimates are based on the cross sections taken during the No Rise Study and should be considered as representative of the magnitude of work rather than the exact volume of material for this Project. The revetment on top of this foreshore zone would also be improved, likely preventing marsh and/or riverine habitat (Figure 10, Eastside of Southeast Riverbank Cross Section with Habitat Zones). Although the shoreline treatment of this area would alter the existing public park area, the current design increases the picnic area up to 4,600 square feet, offering more formal space for public recreation. Details about specific amenities, layout, and design of the public park area would be refined at a later stage. The design parameters for the Southeast Riverbank are presented in Table 2.

**Table 2. Southeast Riverbank Design Parameters**

| Design Parameters | | |
|---|---|---|
| | **West Subsegment** | **East Subsegment** |
| Width (feet) | Foreshore: 30 | Foreshore: 40<br>Berm: 40 |
| Front transitional slope (H:V) | Foreshore: 2:1–13:1 | Foreshore: 7:1–5:1<br>Berm: 3:1 |
| Pedestrian trail width (feet) | Existing: 5–12 | Existing: 10 |

**Note:** H = horizontal; V = vertical.

### Southwest Riverbank

The Southwest Riverbank consists of installation of a sheet pile floodwall adjacent to the North Beach neighborhood parking lot and extending a total of approximately 438 feet east to the limits of proposed railroad doubletracking (Figure 11, Southwest Riverbank Site Plan). The sheet pile floodwall would have a crest elevation of 14 feet (NAVD88) and would be driven to a depth of approximately 24 feet (−10 feet NAVD88) (Figure 12, Southwest Riverbank Cross Section). To maintain pedestrian and vehicular access from the 28th Street access path, approximately 50 CY of fill would be used to establish a berm structure with a crest elevation of 14 feet (NAVD88) through the middle section of the sheet pile wall. The southern side of this berm would extend across 52 feet with a 20:1 slope to reach this crest elevation. The northern side of this berm would come down from this crest at a 10:1 slope across about 27 feet to meet the existing trail elevation. No other modifications would be made to this existing trail due to the limited amount of space available in this narrow segment. A passive tide gate would be needed for the existing culvert, bisecting the alignment of the proposed sheet pile floodwall, to prevent elevated tidal water levels from backing up into the existing drainage swale and causing flooding behind the floodwall structure. During normal tidal conditions, the tide gate would allow for regular drainage operations. A small area,

approximately 310 square feet, of existing concrete would be removed, and approximately 3,300 square feet of vegetation would be cleared and grubbed. A small area, approximately 300 square feet, would be planted with upland transitional habitat vegetation.

## 2.3 Project Construction

Construction would occur sequentially on the northern and southern reaches for a total of approximately 18 months. Alternatively, construction may occur concurrently to reduce total duration to approximately 1 year. Modeling herein has conservatively used the concurrent construction scenario. Construction activities would occur 6 days a week in accordance with the City Noise Regulations (Monday–Friday between 7:00 a.m. and 7:00 p.m., and Saturdays between 9:00 a.m. and 7:00 p.m.).

### North Riverbank

The North Riverbank component would take approximately 8 months to complete and would involve pavement demolition, clearing and grubbing, establishment of erosion control, mass grading, trail construction, revegetation, and asphalt/concrete paving. Construction would be conducted from the shore and would use the adjacent parking area for staging. Equipment necessary would include a dozer, backhoe, excavator, tractor, loader, dump truck, and flatbed trucks.

### Southeast and Southwest Riverbank

The Southeast and Southwest Riverbank components would be completed concurrently, taking approximately 11 months to complete, and would involve removal of existing cement water main, construction and connection of new water main, pavement demolition, clearing and grubbing, establishment of erosion control, construction of new Public Works Facility structure, mass grading, revetment, recreation (trail) construction, revegetation, and asphalt/concrete paving. Construction would be conducted from the shore and would use the adjacent public works yard area for staging. Equipment necessary would include a small crane, dozers, grader, backhoe, excavator, pile installer, cement mixer, tractor, loader, dump trucks, and flatbed trucks.

## 2.4 Project Approvals

Project approvals may include, but are not necessarily limited to, the following:

- Consolidated Coastal Development Permit (issued by the CCC)
- §404 Nationwide Permit 27 (issued by the U.S. Army Corps of Engineers [USACE])
- §7 Consultation (concurrent with the U.S. Fish and Wildlife Service and National Oceanic Atmospheric Administration National Marine Fisheries Service)
- §1602 Streambed Alteration Agreement (issued by the California Department of Fish and Wildlife [CDFW])
- §401 Water Quality Certification (issued by the San Diego Regional Water Quality Control Board [RWQCB])
- National Pollutant Discharge Elimination System Permit (issued by RWQCB)
- Habitat mitigation and monitoring plan (USACE, U.S. Fish and Wildlife Service, RWQCB, CDFW, and CCC)
- Lease Agreement (new or amended) for Public Agency Use (issued by the California State Lands Commission to allow temporary access onto state lands during construction)

- Approval for implementation of North Riverbank on Fairgrounds property (22nd District Agricultural Association)

USACE, CDFW, RWQCB, and CCC (collectively, the Resource Agencies) 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. USACE, CDFW, RWQCB, and CCC would have permitting authority over the Project because the construction of earthen berms or levees and floodwalls would occur in areas associated with the River considered potential federal wetlands, waters of the United States, waters of the state, State of California streambed or riparian habitat, or coastal wetlands. Final requirements for regulatory permits would be determined in consultation with the Resource Agencies.

# 3 Initial Study Checklist

1. **Project title:**

   San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project

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

   City of Del Mar
   1050 Camino del Mar
   Del Mar, California 92014

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

   Amanda Lee, Principal Planner 858.704.3645

4. **Project location:**

   Along portions of the shoreline of the San Dieguito River (see Figure 1), City of Del Mar, County of San Diego

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

   Same as the lead agency

6. **General plan designation:**

   **North Riverbank:** Floodway and Fairgrounds-Racetrack
   **Southeast Riverbank:** Floodway and North Commercial
   **Southwest Riverbank:** Railroad Right-of-Way (ROW)

7. **Zoning:**

   **North Riverbank:** FR (Fairgrounds-Racetrack Zone), FW (Floodway), Floodplain Overlay Zone, and Lagoon Overlay Zone
   **Southeast Riverbank: FW** (Floodway), NC (North Commercial), Floodplain Overlay Zone, and Lagoon Overlay Zone
   **Southwest Riverbank:** RR (Railroad ROW) and Lagoon Overlay Zone

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

   Refer to Chapter 2 of this MND.

9. **Surrounding land uses and setting: Briefly describe the Project's surroundings:**

   Refer to Section 2.1, Project Location and Environmental Setting, of this MND.

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

Refer to Section 2.5, Project Approvals, of this MND.

**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.?**

Notices in accordance with the requirements of Assembly Bill (AB) 52 were sent via certified mail on December 18, 2025, to 22 nearby tribes, giving 30 days for the tribes to reply by January 23, 2026. Two responses were received, one from the Rincon Band of Luiseño Indians and one from the Barona Group of the Capitan Grande Band of Mission Indians, as of January 23, 2026. The response letters indicated that although neither tribe requested formal consultation, they are interested in reviewing the Draft MND once public, and/or they wish to be notified when/if any resource is discovered during construction. In addition, letters were sent to tribes provided on the Native American Heritage Commission (NAHC) contact list to solicit additional information relating to Native American resources that may be impacted by the Project. Native American representatives were requested to define a general area where known resources intersect the Project area of potential effects (APE). Three responses have been received to date. The Pauma Band of Mission Indians responded on January 30, 2026, requesting that their office be immediately notified of any inadvertent discoveries and recommending a tribal monitor be present during all ground-disturbing activities. The Iipay Nation of Santa Ysabel responded on January 30, 2026, requesting that a tribal monitor be present during all ground-disturbing activities. The Rincon Band of Luiseño Indians responded on January 30, 2026, recommending tribal monitoring and working closely with the Kumeyaay Nation, as they may have more information to provide.

## 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 |

## Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

Signature

3/4/2026
Date

## Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to Projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on Project-specific factors as well as general standards (e.g., the Project would not expose sensitive receptors to pollutants, based on a Project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. 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. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
6. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.
7. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
8. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
9. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a Project's environmental effects in whatever format is selected.
10. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance

# 3.1 Aesthetics

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

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

Less-than-Significant Impact. Scenic vistas generally refer to views of expansive open space areas or other natural features, such as mountains, undeveloped hillsides, large natural water bodies, or coastlines. Certain urban settings or features, such as a striking or renowned skyline, may also represent a scenic vista. Scenic vistas are generally accessible from public vantage points, such as public roadways and parks. Section 30251, Scenic and Visual Qualities, of the California Coastal Act states that "the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance." Further, permitted development "shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas and where feasible, to restore and enhance visual quality in visually degraded areas" (PRC Division 20, Chapter 3, Article 6, Section 30251). Views of the River are available from all components of the Project. Views beyond the River include the Del Mar Fairgrounds to the north and I-5 to the east. Due to topography and intervening development and landscaping, background views to the south and west are mostly unavailable.

The City Community Plan (General Plan) describes the Pacific Ocean, nearby lagoons, canyons, and the community and its landscapes and urban forest character as scenic views in the City. The Transportation Element of the Community Plan designated six scenic roadways in the City, including Camino del Mar,

located approximately 0.1 miles to the west of the Southwest Riverbank. The Community Plan describes that both northbound and southbound travelers on Camino del Mar have an opportunity to view the ocean and the coastline at numerous localities. Roadway vistas are also designated at multiple points in proximity to the Project along Camino del Mar and Jimmy Durante Boulevard (City of Del Mar 2025a). The Project site is in proximity to the River and the Pacific Ocean. Additionally, the City's Local Coastal Program (LCP) Land Use Plan contains goals and policies that ensure the protection and provision of visual access to the coastline and other scenic vistas, as well as preservation of the significant natural features of the City, including policies that aim to preserve scenic views of the Pacific Ocean and the River (Policy IV-24 and Policy IV-26) (City of Del Mar 2025b).

At the North Riverbank, Project activities would involve the construction of an approximately 50-foot-wide levee with a crest elevation approximately 2–3 feet above the existing grade. The levee would not obstruct views of the River and would include a new trail along the River, thereby enhancing public access and viewing potential.

At the Southeast Riverbank, Project activities would involve the construction of a floodwall with a crest elevation of approximately 4 feet above the existing grade, alongside the existing Public Works Facility boundaries and parking lot, and construction of an up to 40-foot-wide berm with a crest elevation approximately 3 feet above the existing grade along the south end of the public park and adjacent to the existing road. The proposed floodwall would be between the Public Works Facility structure and the existing trail. The existing Public Works Facility structure would be replaced and relocated further from the shore. Therefore, public views of the River would not be obstructed.

At the Southwest Riverbank, Project activities would involve the construction of a sheet pile floodwall with a crest elevation of 14 feet, approximately 2 feet above the existing grade. An approximately 50 CY of fill would be used to establish a berm with a crest elevation of 14 feet (NAVD88) through the middle section of the sheet pile floodwall to maintain access. The proposed berm and floodwall would be outside of the existing trail and would not obstruct public views of the River.

The Project aims to improve resilience to SLR, increase access, and enhance biodiversity. The Project would not involve large or prominent vertical visual elements, nor would it block or obstruct views of the River or the Pacific Ocean. Therefore, the Project would not result in substantial adverse effects on a scenic vista, and impacts would be less than significant.

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

Less-than-Significant Impact. There are no designated State Scenic Highways in the vicinity of the Project site. The nearest eligible scenic highway is I-5, located approximately 0.7 miles to the east of the Project site (Caltrans 2025) and obscured by intervening development. The Transportation Element of the Community Plan designated six scenic roadways in the City, including Camino del Mar, located approximately 0.1 miles to the west of the Southwest Riverbank. The Community Plan describes that both northbound and southbound travelers on Camino del Mar have an opportunity to view the ocean and the coastline at numerous localities (City of Del Mar 2025a). Roadway vistas are also designated at multiple points in proximity to the Project along Camino del Mar and Jimmy Durante Boulevard.

As described in Section 3.1(a), the Project would improve resilience to SLR and would result in enhancement of biodiversity at the Project site. Although some vegetation would be cleared in order to complete the Project, revegetation opportunities would be enhanced, and the overall views toward the site from roadways would be opened up with the relocation of the Public Works Facility structure and gradient changes of the River shore/banks. Although vegetation, including potentially landscaped trees, would be removed, the revegetation and relocation of structures further from the River would realize an overall aesthetic improvement due to the Project. Therefore, the Project would not substantially damage scenic resources within a State Scenic Highway, and impacts would be less than significant.

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

Less-than-Significant Impact. Per PRC Section 21071, an "urbanized area" is defined as follows:

(a) An incorporated city that meets either of the following criteria:

(1) Has a population of at least 100,000 persons.

(2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons.

The Project site is located in the City. According to the U.S. Census Bureau, the City has a population of 3,954 (U.S. Census Bureau 2025a). When combined with its two contiguous incorporated cities, Solana Beach (12,941) and Encinitas (62,007), the total is about 78,902, which is below the 100,000 threshold (U.S. Census Bureau 2025b, 2025c). Thus, the Project would be considered to be in a nonurbanized area; an analysis regarding the Project's effect on visual character is provided below.

The existing visual character of the Project area can be characterized as coastal and is dominated by the River. The Project site includes portions of the shoreline of the River and a portion of the Public Works Facility structure. Project implementation would result in the addition of earthen berms, levees, and floodwalls. The Project components would be consistent with the existing visual character of the site and would result in improvements such as revegetation, relocation of a Public Works Facility structure away from the shore, trail enhancements, and shoreline treatments. Although components such as the floodwalls would be new visual elements to the area, they would be adjacent to existing development and designed as low-profile structures to protect the facilities from flooding during more frequent storm events and would not substantially interrupt existing views. As a result, the proposed improvements would not substantially degrade the existing visual character or quality of the site, and impacts would be less than significant.

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

Less-than-Significant Impact. The Project involves shoreline protection, including the construction of trails, earthen berms, levees, and floodwalls, which would not include new sources of light or glare. Any construction activities during low-light times, if necessary, could include temporary lighting to ensure safe construction practices. During such events, all light would be directed to work areas and would avoid light spill onto adjacent waters, public ROWs, or private properties. The Project also includes relocation of an

existing Public Works Facility structure to outside the effective FEMA floodway. This relocation would not introduce new sources of light or glare because the structure would remain within the existing property, where such sources are already present. As such, the Project would not introduce a new source of light to the Project area. Therefore, any impact related to light or glare would be less than significant.

## 3.2 Agriculture and Forestry Resources

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

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

No Impact. According to the California Important Farmland Finder database, the Project site and immediate surroundings are classified as "Urban and Built-Up Land" and "Other Land" (DOC 2025a). As such, there is no potential for the Project to result in the conversion of farmland resources to a nonagricultural use. No impact would occur.

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

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

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

No Impact. The Project site does not contain land zoned as forest land or timberland. The Project would not conflict with existing zoning for forest land or timberland. No impact would occur.

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

No Impact. As discussed in Section 3.2(c), the Project site does not contain forest land. As such, the Project would not result in the loss of forest land or conversion of forest land to other uses. No impact would occur.

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

No Impact. No agricultural land uses, forest land, or timberland exists in the vicinity of the Project. The Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to nonagricultural use or forest land to nonforest use. No impact would occur.

# 3.3 Air Quality

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

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

Less-than-Significant Impact. The San Diego Air Pollution Control District (SDAPCD) is responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the San Diego Air Basin (SDAB), specifically, the State Implementation Plan (SIP) and Regional Air Quality Strategy (RAQS).[1] The San Diego Association of Governments (SANDAG) is responsible for developing forecasts and data that are used by SDAPCD in preparing the SIP and RAQS. In November 2020, SDAPCD adopted the Air Quality Management Plan for attaining the federal 8-hour 75 parts per billion and 70 parts per billion ozone ($O_3$) standards, which is the air basin's input to the SIP and is required to demonstrate how SDAPCD proposes to attain the federal $O_3$ standards. The plan anticipates attainment of the 2008 and 2015 National Ambient Air Quality Standards (NAAQS) standards by 2026 and 2032, respectively. The 2020 Air Quality Management Plan includes planning requirements for attaining the $O_3$ NAAQS, including on-road motor vehicle emissions budgets for transportation conformity, a vehicle miles traveled (VMT) offset demonstration, Reasonably Available Control Measures, Reasonable Further Progress, an Attainment Demonstration, and contingency measures in the event of a failure to meet a milestone or to attain by the predicted attainment date (SDAPCD 2020).

The 2022 RAQS was finalized in 2023 and addresses California planning requirements to meet California Ambient Air Quality Standards (CAAQS). The 2022 RAQS contains strategies to continue directly reducing emissions of $O_3$ precursors in the County and assist in reducing particulate matter and greenhouse gases

[1] For this discussion, the relevant federal air quality plan is the 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County (SDAPCD 2020). The 2022 Regional Air Quality Strategy is the applicable plan for purposes of state air quality planning. Both plans reflect growth Projections in the basin.

(GHGs) as a co-benefit. Consistent with SDAPCD's recent reorganization pursuant to AB 423 (Gloria, 2019), the 2022 RAQS also proposes to expand SDAPCD's involvement as a regional agency within their regulatory authority, by including commitments to support research and innovation opportunities, developing new partnerships with public and private entities, convening more opportunities for engagement and education with interested parties, and integrating environmental justice and equity into all SDAPCD's actions (SDAPCD 2022aa).

The SIP and RAQS rely on information from the California Air Resources Board (CARB) and SANDAG, including mobile- and area-source emissions as well as information regarding projected growth in the County as a whole and the in cities in the County, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile-source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their General Plans.

Although SDAPCD and the City do not provide guidance regarding the analysis of impacts associated with air quality plan conformance, the County's Guidelines for Determining Significance and Report and Format and Content Requirements – Air Quality does discuss conformance with the RAQS (County of San Diego 2007). The guidance indicates that if a project, in conjunction with other projects, contributes to growth projections that would not exceed SANDAG's growth projections for the City, the project would not be in conflict with the RAQS (County of San Diego 2007). If a project includes development greater than that anticipated in the local plan and SANDAG's growth projections, the project might conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality (County of San Diego 2007).

As discussed in Section 2.2, the Project would consist of the development of shoreline protection and the removal and replacement of an existing Public Works Facility structure. The Project is consistent with the underlying land use and zoning for the Project site. Therefore, the Project source emissions are not anticipated to result in air quality impacts that were not previously envisioned in the growth projections and RAQS, and implementation of the Project would not result in development beyond that anticipated in local plans or increases beyond those contemplated by SANDAG. Because the proposed land use is anticipated in local air quality plans, the Project would be consistent at a regional level with the underlying growth forecasts in the RAQS. Accordingly, the Project would not conflict with and would not obstruct implementation of applicable local and regional air quality plans; impacts would be less than significant.

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

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

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

## Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and volatile organic compound [VOC] off-gassing from architectural coatings and asphalt pavement application) and off-site sources (i.e., on-road haul trucks, delivery trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Therefore, such emissions levels can only be estimated, with a corresponding uncertainty in precise ambient air quality impacts.

Criteria air pollutant emissions associated with construction activity were quantified using the California Emissions Estimator Model (CalEEMod) (CAPCOA 2022). Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2026–2027). Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the applicant and are intended to represent a reasonable scenario based on the best information available. Oxides of nitrogen ($NO_x$) and carbon monoxide (CO) emissions would primarily result from the use of construction equipment and motor vehicles.

Fugitive dust ($PM_{10}$ and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. The Project would be required to comply with SDAPCD Rule 55, Fugitive Dust Control. This rule requires that the Project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit fugitive dust ($PM_{10}$ and $PM_{2.5}$) generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the Project would ensure that active sites be watered at least two times daily. The application of architectural coatings, such as exterior/interior paint and other finishes, would produce VOC emissions. The contractor would be required to comply with the requirements of SDAPCD Rule 67.7, Cutback and Emulsified Asphalt, which would limit VOC emissions from asphalt off-gassing.

Table 3 presents the estimated maximum daily construction emissions generated during construction of the Project. Details of the emission calculations are provided in Appendix B, Air Quality/Greenhouse Gas Emissions/Energy Model Results.

**Table 3. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions**

| Year/Season | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | Pounds Per Day | | | | | |
| **Summer** | | | | | | |
| 2026 | 3.38 | 29.37 | 35.73 | 0.06 | 14.17 | 7.26 |
| **Winter** | | | | | | |
| 2026 | 3.38 | 29.41 | 35.46 | 0.06 | 14.17 | 7.26 |
| 2027 | 0.55 | 4.33 | 6.02 | 0.01 | 0.35 | 0.20 |
| **Maximum Daily Emissions** | **3.38** | **29.41** | **35.73** | **0.06** | **14.17** | **7.26** |
| *Threshold* | *75* | *250* | *550* | *250* | *100* | *55* |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** | **No** | **No** |

**Source:** Appendix B, Air Quality/Greenhouse Gas Emissions/Energy Model Results.
**Notes:** VOC = volatile organic compound; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxide; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter.
Thresholds are established by the San Diego Air Pollution Control District.

As shown in Table 3, maximum daily construction emissions would not exceed the SDAPCD significance thresholds for VOCs, $NO_x$, CO, sulfur oxide ($SO_x$), $PM_{10}$, or $PM_{2.5}$ during construction; short-term construction air quality impacts would be less than significant.

## Conclusion

The SDAB has been designated as a federal nonattainment area for $O_3$ and a state nonattainment area for $O_3$, $PM_{10}$, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SDAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the Project would generate VOC and $NO_x$ emissions (which are precursors to $O_3$) and emissions of $PM_{10}$ and $PM_{2.5}$. However, as indicated in Table 3, Project-generated construction emissions would not exceed the emission-based significance thresholds for VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, or $PM_{2.5}$.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the Project area are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative. However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed applied thresholds. Criteria air pollutant emissions associated with the construction activity of future projects would be reduced through implementation of control measures required by SDAPCD. For example, cumulative $PM_{10}$ and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SDAPCD Rule 55 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SDAB. In addition, cumulative VOC emissions would be subject to SDAPCD Rule 67.0.1 (Architectural Coatings).

Based on the Project-generated construction emissions of CO, $SO_x$, VOC, $NO_x$, $PM_{10}$, and $PM_{2.5}$, the Project would not result in a cumulatively considerable net increase in emissions of nonattainment pollutants. Therefore, the Project's cumulative air quality impact would be less than significant.

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

Less-than-Significant Impact. Air quality varies as a direct function of the quantity of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts on those persons termed "sensitive receptors" are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by CARB, include children, older adults, and people with cardiovascular and chronic respiratory diseases. According to SDAPCD, sensitive receptors are those who are especially susceptible to adverse health effects from exposure to toxic air contaminants (TACs), such as children, the elderly, and the ill. Sensitive receptors include residences, schools (grades Kindergarten through 12), libraries, day care centers, nursing homes, retirement homes, health clinics, and hospitals within 2 kilometers of the facility (SDAPCD 2022b).

The nearest sensitive receptors are the residences located approximately 20 feet west of the Project site's western boundary (Southwest Riverbank).

## Carbon Monoxide Hotspot

Mobile-source impacts occur on two scales of motion. Regionally, Project-related travel would add to regional trip generation and increase the VMT within the local airshed and the SDAB. Locally, Project-generated traffic would be added to the roadway system near the Project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of many vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-Project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SDAB is steadily decreasing.

CO transport is extremely limited, and CO disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors such as residents, school children, hospital patients, and the elderly. Typically, high CO concentrations are associated with urban roadways or intersections operating at an unacceptable level of service. Projects contributing to adverse traffic impacts may result in the formation of CO hotspots.

To verify that the Project would not cause or contribute to a violation of the CO standards, a screening evaluation of the potential for CO hotspots was conducted using the County screening threshold of 3,000 peak trips (County of San Diego 2007). The Project would not result in 3,000 daily trips during construction, as shown in Appendix B, and the Project would not result in an increase in operational trips. Therefore, the Project would not result in a CO hotspot and would result in a less-than-significant impact.

## Toxic Air Contaminants

In addition to impacts from criteria pollutants, Project impacts may include emissions of pollutants identified by the state and federal government as TACs or hazardous air pollutants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the

risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) noncancer health effects. A toxic substance released into the air is considered a TAC. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

TACs that would potentially be emitted during construction activities would be diesel particulate matter emitted from construction equipment and trucks. Construction equipment and diesel trucks are subject to CARB Air Toxic Control Measures to reduce diesel particulate matter emissions. The Office of Environmental Health Hazard Assessment has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure but has not identified health effects due to short-term exposure to diesel exhaust. According to the Office of Environmental Health Hazard Assessment, health risk assessments should be based on a 30-year exposure duration based on typical residency period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA 2015).

The duration of proposed construction activities would constitute only a small percentage of the total long-term exposure period and would not result in exposure of proximate sensitive receptors to substantial TACs. After proposed construction is completed, there would be no long-term source of TAC emissions during operation. In addition, the Project would not require the extensive operation of diesel construction equipment, which is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate matter emissions, and would not involve extensive use of diesel trucks, which are also subject to a CARB Airborne Toxics Control Measure. Furthermore, as shown in Table 3, maximum daily particulate matter (i.e., $PM_{10}$ or $PM_{2.5}$) emissions generated by construction equipment operation and haul-truck trips during construction (exhaust particulate matter or diesel particulate matter), combined with fugitive dust generated by equipment operation and vehicle travel, would be minimal.

The closest sensitive receptors to the Project are single-family residences to the west of the Project. Emissions during construction would not be concentrated in one area of the site but would be spread over the entirety of the site. Emissions would not be continuous and would cease once construction is complete. Therefore, the Project would not expose sensitive receptors to substantial quantities of TACs during construction. Impacts would be less than significant.

Operation of the Project would not result in any nonpermitted direct emissions (e.g., those from a point source such as diesel generators) that could be a TAC source and, as discussed previously, the Project is anticipated to result in irregular and minimal operational activity, including diesel vehicle travel. Therefore, the Project would not result in exposure of sensitive receptors in the vicinity of the Project site to substantial TAC concentrations due to either construction or operation, and impacts would be less than significant.

### Health Effects of Criteria Air Pollutants

As determined in Section 3.3(b) of this MND, Project construction and operation would not exceed significance thresholds for VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, or $PM_{2.5}$. VOCs and $NO_x$ are precursors to $O_3$, for which the SDAB is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with $O_3$ are generally associated with reduced lung function. The contribution of VOCs and $NO_x$ to regional ambient $O_3$ concentrations is the result of complex photochemistry. The increases in $O_3$ concentrations in the SDAB due to $O_3$ precursor emissions tend to be found downwind from the source location, which allows time for the photochemical reactions to occur. However, the potential for exacerbating excessive $O_3$ concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the $O_3$ CAAQS/NAAQS tend to occur between April and October, when solar radiation is highest. The holistic effect of a single Project's emissions of $O_3$ precursors is speculative due to the lack of reliable and meaningful quantitative methods to assess this impact. The Project would not exceed the significance thresholds for VOC or $NO_x$; therefore, implementation of the Project would contribute minimally to regional $O_3$ concentrations and the associated health effects.

In addition to $O_3$, $NO_x$ emissions contribute to potential exceedances of the NAAQS and CAAQS for nitrogen dioxide ($NO_2$) (because $NO_2$ is a constituent of $NO_x$). Health effects that result from $NO_2$ and $NO_x$ include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, Project construction would be relatively short term, and off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. In addition, as shown in Appendix B, CARB air quality monitoring shows existing $NO_2$ concentrations in the area are well below the NAAQS and CAAQS. Because Project-generated $NO_x$ emissions would not exceed the significance threshold, the Project would not result in potential health effects associated with $NO_2$ and $NO_x$.

CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was discussed previously and was determined to be a less-than-significant impact. Furthermore, the SDAPCD Annual Air Quality Monitoring Network Report for 2022 shows that CO concentrations have decreased in the San Diego region over the last 20 years and are well below the NAAQS and CAAQS standards (SDAPCD 2023). Thus, the Project's CO emissions would not contribute to significant health effects associated with this pollutant.

Construction and operation of the Project would also not exceed thresholds for $PM_{10}$ or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or obstruct the SDAB from coming into attainment for these pollutants. Additionally, the Project would implement dust control strategies and be required to comply with SDAPCD Rule 55, Fugitive Dust Control, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, the Project is not anticipated to result in health effects associated with $PM_{10}$ or $PM_{2.5}$.

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

Less-than-Significant Impact. Construction of the Project would result in various emissions. Criteria air pollutants, fugitive dust, and TACs are addressed under Sections 3.3(b) and 3.3(c) above, and as such, this impact analysis is focused on the potential for an odor impact to occur. The occurrence and severity of

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

Odors would be generated from vehicles and/or equipment exhaust emissions during construction of the Project. Odors produced during construction would be attributed to concentrations of unburned hydrocarbons from the tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the Project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be considered less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project does not propose and would not engage in any of these activities or other potential activities that would generate operational odors. As such, the Project would not create any new sources of substantial odors during operation. Therefore, impacts related to odors are determined to be less than significant.

## 3.4 Biological Resources

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **IV. BIOLOGICAL RESOURCES** – Would the Project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and 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 U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☒ | ☐ | ☐ |

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 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? | ☐ | ☒ | ☐ | ☐ |
| 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 resources technical report was prepared by Dudek to document the existing biological resources within the Project study area (the 6.78-acre area of Project disturbance, 47.2-acre overall Project site, plus a 500-foot-wide survey buffer, for a total 79.04-acre study area) and evaluate the potential for Project impacts. The conclusions of the survey and report are summarized below, and the report is included as Appendix C, Biological Resources Technical Report, to this IS/MND.

***a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and 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

### Direct Impacts

Four special-status plants (San Diego marsh-elder [*Iva hayesiana*], California seablite [*Suaeda californica*], estuary seablite [*Suaeda esteroa*], and woolly seablite [*Suaeda taxifolia*]) present in the Project area of disturbance would be temporally directly impacted from installation of the high marsh and upland transitional habitat plantings. San Diego marsh-elder is present in the permanent impact footprint and would be directly impacted from construction on the Southeast Riverbank. San Diego marsh-elder is a San Diego County Multiple Species Conservation Program (MSCP) sensitive plant and California Rare Plant Rank 2B.2 species (Figure 9, Impacts to Biological Resources, of Appendix C). An exact count of special-status plant species was not recorded during the biological reconnaissance surveys. Vegetation communities that support special-status plants in the Project area of disturbance are considered to be CCC Environmentally Sensitive Habitat Area (ESHA) habitat. There is also a moderate to high potential for a total of 29 additional

rare plants to occur in the study area (Appendix B, Species Compendium, to Appendix C). Special-status plants are expected to benefit from improved wetland function and habitat restoration through installation of the upland transitional and high marsh habitat plantings proposed for the North Riverbank and Southeast Riverbank living levees.

The Project would result in permanent direct impacts to one special-status plant species, San Diego marsh-elder, in the Project area of disturbance due to construction. Permanent direct impacts to a special-status plant would be considered potentially significant, and the habitat it occupies would be considered ESHA habitat, regulated by the CCC. Temporal impacts to three additional special-status plant species would occur from installation of the high marsh habitat plantings in the Southeast Riverbank and North Riverbank. Further, impacts to special-status plant species with a moderate potential to occur cannot be discounted and, if present, direct impacts to those species would be potentially significant absent mitigation.

As such, Mitigation Measure (MM) BIO-2 (Focused Botanical Surveys) would be implemented within the Project area of disturbance prior to the start of construction activities during the blooming period for the 10 rare species incidentally observed within the study area and those with a moderate to high potential to occur to determine their presence/absence and quantify populations of special-status plants that are present. MM-BIO-1 (On-Site Habitat Restoration) would be implemented for any special-status plants detected within the Project area of disturbance. San Diego marsh-elder, California seablite, estuary seablite, and woolly seablite individuals as well as populations of any other special-status plants identified within the Project area of disturbance would be flagged prior to the start of Project activities and removed for salvage, maintenance, and replanting, as feasible. Those that cannot be salvaged would be revegetated via on-site habitat restoration from seed and/or container stock. To ensure that the Project results in no net loss of these species, the on-site habitat restoration would include replacement of the removed individuals at a 1:1 ratio. With implementation of MM-BIO-1 and MM-BIO-2 (Focused Botanical Surveys), direct permanent Project impacts to special-status plants would be avoided.

For temporary direct impacts to special-status plants (San Diego marsh-elder, California seablite, woolly seablite, and estuary seablite), MM-BIO-1 would be implemented through planting replacement species at a 1:1 reestablishment ratio within in-kind habitat in the high marsh planting areas of the North and Southeast Riverbanks. As such, implementation of MM-BIO-1 and MM-BIO-2 would reduce potential direct impacts to special-status plants to less than significant.

### Indirect Impacts

Potential indirect impacts to special-status plant species present within the Project site boundary but outside the Project area of disturbance would be similar to those previously described for vegetation communities (increased human presence, dust, etc.). Therefore, short-term indirect impacts to adjacent special-status plants would be avoided through implementation of best management practices (BMPs) and a stormwater pollution prevention plan (SWPPP). Indirect impacts to special-status plants would be less than significant.

## Wildlife Species

### Direct Impacts

Potential direct impacts to special-status wildlife species that may occur as a result of construction of the Project include wildlife entrapment, killed or injured wildlife, nest failure, and unauthorized grading or vegetation removal. There are 3 special-status wildlife species present on the study area: osprey (*Pandion haliaetus*), double-breasted cormorant (*Nannopterum auritum*), and wandering skipper (*Panoquina errans*). Additionally, osprey nesting activity was detected within the study area buffer. Further, a total of 21 special-status wildlife species (federal, state, or local status) were determined to have a moderate or high potential to occur within the study area. No special-status wildlife were identified within the areas of Project disturbance during the biological reconnaissance surveys. However, no special-status aquatic or terrestrial wildlife surveys were conducted for the Project. Osprey and double-breasted cormorant do not forage or nest in any of the vegetation communities directly impacted by the Project. Double breasted cormorant nesting colonies are considered special status; if nesting colonies of this species are adversely impacted by Project implementation, impacts would be potentially significant. No nesting activity for double-breasted cormorant was detected within the areas of Project disturbance. However, osprey nesting activity is considered sensitive, and osprey nesting activity was detected in the study area buffer during the biological reconnaissance. The wandering skipper is a Covered Species under the San Diego MSCP and is also not known to occur in the southern coastal bluff scrub habitat proposed for impact; therefore, direct impacts to this species are not anticipated. No direct impacts to marine mammals are expected to occur due to Project avoidance of in-water impacts to the River. In addition, the lack of California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*) within the coastal scrubs in the area of Project disturbance reduces the habitat suitability for coastal California gnatcatcher (*Polioptila californica californica*) in the area of Project disturbance.

Compliance with the Migratory Bird Treaty Act (16 United States Code 703–712) and California Fish and Game Code (Sections 3503 and 3503.5) is a standard permit condition and required as part of the Project. This measure would ensure that direct impacts to nesting birds would be avoided.

Direct impacts to the disturbed southern coastal bluff scrub habitat and coastal salt marsh in the Project area of disturbance could result in direct impacts to special-status species that were determined to have a moderate potential to occur in that habitat, including Southern California legless lizard (*Anniella stebbinsi*), orange-throated whiptail (*Aspidoscelis hyperythra*), San Diego desert woodrat (*Neotoma lepida intermedia*), and Crotch's bumble bee (*Bombus crotchii*). Direct permanent impacts to special-status wildlife would be potentially significant absent mitigation.

Direct impacts to special-status wildlife species would be reduced through implementation of MM-BIO-3 (Pre-Construction Special-Status Wildlife Survey). In addition, the potential for direct impacts to nesting Crotch's bumble bee is considered a potentially significant impact that would be reduced through implementation of MM-BIO-4 (Crotch's Bumble Bee Pre-Construction Survey). As such, implementation of MM-BIO-3 and MM-BIO-4 would reduce potential direct impacts to special-status wildlife to less than significant.

### Indirect Impacts

Most of the indirect impacts to vegetation communities previously described can also affect special-status wildlife. Wildlife may also be indirectly affected in the short term by construction-related noise, which can disrupt normal activities and subject wildlife to higher predation risks. Adverse edge effects can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be significantly affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities.

The Project consists of the installation of living levees and would not produce lighting, noise, or discharge that would result in adverse indirect effects to special-status wildlife. The surrounding Project site supports multiple native sensitive vegetation communities that may provide suitable habitat for bird nesting. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15). Special-status species whose breeding/nesting have potential to be affected by noise include all raptor species (regardless of location relative to San Diego Multiple Habitat Planning Area [MHPA] lands) and coastal California gnatcatcher (within MHPA lands only). The Project site occurs entirely outside MHPA lands. Indirect impacts to most species would be reduced to less than significant through compliance with standard permit conditions. However, nesting raptors (specifically nesting osprey) were detected in the Project site boundary and have the potential to be significantly indirectly impacted from construction activities if conducted during the breeding season. Indirect impacts would be potentially significant absent mitigation.

To address potentially significant indirect impacts to nesting birds (including osprey), MM-BIO-5 (Avoidance of Osprey Take) and MM-BIO-6 (Noise Reduction) would be implemented. As such, implementation of MM-BIO-5 and MM-BIO-6 would reduce potential indirect impacts to special-status wildlife to less than significant.

## Mitigation Measures

MM-BIO-1 On-Site Habitat Restoration. To compensate for the permanent loss of 0.06 acres of disturbed southern coastal bluff scrub, less than 0.01 acre of coastal salt marsh, and San Diego marsh-elder (*Iva hayesiana*) individuals inside the Project impact footprint, mitigation shall be provided at a 3.5:1 ratio, totaling 0.21 acres, accomplished through on-site habitat restoration via reestablishment and enhancement of the existing native vegetation communities within the areas of Project disturbance proposed for upland transitional habitat plantings and high marsh habitat plantings. Preparation and implementation of a wetlands habitat mitigation and monitoring plan (HMMP) shall provide the planting layout. The planting layout of vegetation shall be based on appropriate elevation gradients and distance to open water. In addition, to compensate for the temporal loss of 1.48 acres of native wetland and upland sensitive vegetation communities in the areas of Project disturbance from installation of the upland transitional and high marsh habitats, on-site habitat restoration to reestablish wetland/riparian habitats and sensitive vegetation communities shall be incorporated at varying ratios (3:1–4:1) per the mitigation ratios outlined in Appendix C, Table 6 of the 2010 San Diego Multiple Species Conservation Program, totaling 5.02 acres. The combined habitat restoration through reestablishment and enhancement provide an overall on-site mitigation acreage of 5.02

acres. Existing native vegetation communities and special-status plants within the areas of Project disturbance that overlap the upland and high marsh habitat plantings shall be salvaged to the maximum extent feasible for use as upland and high marsh habitat plantings for the living levees, with a minimum 1:1 reestablishment. Special-status plants that cannot be salvaged are proposed to be offset by replacing those individuals through in-kind planting of container stock and/or seeding on site with locally harvested seed from the River. A wetlands HMMP shall be prepared and implemented to specify the methods of habitat restoration and monitoring success criteria for the on-site habitat restoration. Upon approval, a 5-year maintenance and monitoring effort shall follow, including topographic reconstruction, weed control, seeding, replanting of salvaged individuals, container plantings, irrigation, invasive species control, and a program of monitoring and reporting. No non-native species shall be used in the on-site habitat restoration effort. It is acknowledged that type conversions of habitat may occur, but that the wetlands HMMP and upland transitional and high marsh habitat plantings design are optimized to balance the ecological benefits and sustainability of the Project.

The wetlands HMMP shall be prepared by persons with expertise in Southern California ecosystems and native plant revegetation techniques. The plan shall include, at a minimum (1) a description of the mitigation site; (2) the plant species to be used, container sizes, and seeding rates; (3) a schematic depicting the mitigation area; (4) a planting schedule; (5) a description of the irrigation methodology; (6) measures to control exotic vegetation on site; (7) specific success criteria; (8) a detailed monitoring program; (9) contingency measures should the success criteria not be met; and (10) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

MM-BIO-2 Focused Botanical Surveys. Prior to initiation of construction activities, a focused botanical survey shall be conducted during the appropriate blooming period for target species, including those known to occur in the Project area of disturbance (San Diego marsh-elder [*Iva hayesiana*], estuary seablite [*Suaeda esteroa*], California seablite [*Suaeda californica*], and woolly seablite [*Suaeda taxifolia*]) and those determined to have a moderate potential to occur on the Project site (Appendix B, Special-Status Plant Species Potential to Occur, to Appendix C, Biological Technical Report). Any observed individuals or populations shall be flagged for salvage and replanting for on-site habitat restoration (MM-BIO-1) to the greatest extent feasible.

MM-BIO-3 Pre-Construction Special-Status Wildlife Survey. Prior to initiation of construction activities, the area of Project disturbance shall be surveyed by a qualified biologist with experience conducting pre-construction surveys to ensure special-status wildlife species are absent from the area. If any special-status wildlife species are present, the qualified biologist shall safely relocate the species outside the Project area of disturbance. If the species cannot be moved, an avoidance buffer around the species shall be flagged by the qualified biologist (avoidance buffers vary based on the species), and construction activities shall not commence inside the avoidance buffer until the species has left the Project area of disturbance.

MM-BIO-4 Crotch's Bumble Bee Pre-Construction Survey. Prior to the Notice to Proceed for any construction permits, including but not limited to the first grading permit, demolition plans/permits, and building plans/permits, the City of Del Mar (City) shall verify the following Project requirements regarding the Crotch's bumble bee (*Bombus crotchii*) are shown on the construction plans:

A. To avoid impacts to Crotch's bumble bee, removal of habitat in the proposed area of disturbance must occur outside of the colony active period from April 1 through August 31. If removal of habitat in the proposed area of disturbance must occur during the colony active period, a qualified biologist shall conduct a pre-construction survey to determine the presence or absence of Crotch's bumble bee nesting within the proposed area of disturbance and follow the methodology developed consistent with the 2023 CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species.

B. A qualified biologist shall demonstrate the following qualifications: at least 40 hours of experience surveying for bee or other co-occurring aerial invertebrate species (such as Quino checkerspot butterfly) and who have completed a Crotch's bumble bee detection/identification training by an expert Crotch's bumble bee entomologist; or the biologist must have at least 20 hours of experience directly observing Crotch's bumble bee.

C. The pre-construction survey shall be conducted by the qualified biologist within 30 calendar days prior to the start of construction activities (including removal of vegetation) and shall include a minimum of three visits, a minimum of 1 week apart.

D. The qualified biologist/owner/permittee shall submit the results of the pre-construction survey to the City Development Services Department (Mitigation Monitoring and Coordination), City Planning Department (MSCP) staff, and CDFW for review and written approval prior to initiating any construction activities.

E. If Crotch's bumble bees are determined to be present, then a photographic survey following CDFW guidance (i.e., CDFW Survey Considerations for CESA Candidate Bumble Bee Species) shall be required. If additional activities (e.g., capture or handling) are deemed necessary based on photographic surveys, then the qualified biologist shall obtain required authorization via a Memorandum of Understanding or Scientific Collecting Permit pursuant to CDFW Survey Considerations for CESA Candidate Bumble Bee Species. Survey methods that involve lethal take of species are not acceptable.

F. If pre-construction surveys identify active Crotch's bumble bee nest colonies, the qualified biologist shall notify CDFW in writing and establish, monitor, and maintain no-work buffers around the nest(s) and any associated floral resources. The size and configuration of the no-work buffer shall be based on best professional judgment of the qualified biologist in consultation with CDFW. At a minimum, the buffer shall provide at least 50 feet of clearance from construction activities around any nest entrances and maintain disturbance-free airspace between the nest and nearby floral resources. Construction activities shall not occur within the no-work buffers until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for three

consecutive days), indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony.

MM-BIO-5[2] Avoidance of Osprey Take. Prior to the issuance of a grading permit, the City of Del Mar shall verify that the requirements regarding the osprey (*Pandion haliaetus*), as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur during the breeding season (February 1 through September 15) until the following requirements have been met to the satisfaction of the City of Del Mar:

A qualified biologist with experience conducting nesting bird surveys shall survey those habitat areas for nesting osprey. If nesting osprey are present, a 500-foot avoidance buffer shall be implemented around the nest until the nest has fledged. Areas restricted from construction activities shall be staked or fenced under the supervision of a qualified biologist. Construction activities shall not encroach within the buffer until the nest has fledged and the qualified biologist has determined the nest is no longer active.

MM-BIO-6 Noise Reduction. Construction-related activities that are excessively noisy (e.g., clearing, grading, or grubbing) adjacent to breeding/nesting areas shall incorporate noise reduction measures (described below) or be curtailed during the breeding/nesting season of sensitive bird species.

- Trucks and other engine-powered equipment shall be equipped with noise reduction features, such as mufflers and engine shrouds, which are no less effective than those originally installed by the manufacturer.
- Trucks and other engine-powered equipment shall be operated in accordance with posted speed limits and limited engine idling requirements.
- Usage of truck engine exhaust compression braking systems shall be limited to emergencies.
- Backup beepers for all construction equipment and vehicles shall be adjusted to the lowest noise levels possible, provided that Occupational Safety and Health Administration and the California Occupational Safety and Health Administration safety requirements are not violated. These settings shall be retained for the duration of construction activities.
- Vehicle horns shall be used only when absolutely necessary, as specified in the contractor's specifications.
- Radios and other noise-generating personal equipment shall be prohibited.
- If construction-related activities that are excessively noisy (e.g., clearing, grading, grubbing, or blasting) occur during the period of January 15 through September 15, a qualified biologist shall conduct a pre-construction nesting bird survey to determine

[2] Mitigation measure numbering in Appendix C (Biological Resources Technical Report) may differ from the numbering used in this MND. The Project's Mitigation Monitoring and Reporting Program will use the mitigation measure numbering presented in the MND.

the location of any active nests in the area of Project disturbance and provide either work modifications to reduce hourly average noise levels or other sound attenuation options.

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

Less than Significant with Mitigation Incorporated. The vegetation communities and land cover types recorded in the study area are presented in Table 4.

**Table 4. Vegetation Communities and Land Cover Types in the Study Area**

| Vegetation Community or Land Cover Type | Area of Project Disturbance (acres) | Project Site (acres) | 500-Foot Study Area Buffer (acres) | Total (acres) |
|---|---|---|---|---|
| **Riparian Scrubs** | | | | |
| Arrowweed (*Pluchea sericea*) scrub[1] | 0.04 | 0.00 | 0.00 | 0.04 |
| Southern willow scrub[1] | 0.00 | 0.03 | 0.17 | 0.20 |
| Non-native riparian | 0.00 | 0.58 | 0.10 | 0.68 |
| **Native Grasslands** | | | | |
| Eelgrass grassland[1] | 0.03 | 0.42 | 0.19 | 0.63 |
| **Bogs and Marshes** | | | | |
| Southern coastal salt marsh[1] | 0.25 | 0.59 | 1.40 | 2.25 |
| Disturbed southern coastal salt marsh[1] | 0.01 | 0.82 | 0.45 | 1.28 |
| Emergent wetland[1] | 0.00 | 0.07 | 0.20 | 0.27 |
| **Unvegetated Riparian and Bottomland Habitats** | | | | |
| Saltpan/mudflats | 0.00 | 0.43 | 0.86 | 1.29 |
| Disturbed saltpan/mudflats | 0.00 | 0.50 | 0.09 | 0.59 |
| Open water | 0.34 | 10.14 | 4.24 | 14.73 |
| **Coastal Scrubs** | | | | |
| Coastal sage scrub[1] | 0.00 | 0.01 | 0.00 | 0.01 |
| Disturbed coastal sage scrub[1] | 0.00 | 0.60 | 0.29 | 0.89 |
| Diegan coastal sage scrub: coastal form[1] | 0.00 | 0.09 | 0.06 | 0.14 |
| Disturbed Diegan coastal sage scrub: *Baccharis*-dominated | 0.05 | <0.01 | 0.00 | 0.05 |
| Southern coastal bluff scrub[1] | 0.00 | 0.12 | 0.00 | 0.12 |
| Disturbed southern coastal bluff scrub[1] | 0.77 | 0.11 | 0.00 | 0.88 |
| Maritime succulent scrub[1] | 0.00 | 0.16 | 0.00 | 0.16 |
| Disturbed maritime succulent scrub[1] | 0.00 | 0.10 | <0.01 | 0.10 |

## Table 4. Vegetation Communities and Land Cover Types in the Study Area

| Vegetation Community or Land Cover Type | Area of Project Disturbance (acres) | Project Site (acres) | 500-Foot Study Area Buffer (acres) | Total (acres) |
|---|---|---|---|---|
| **Woodlands and Forests** | | | | |
| Torrey pine forest[1] | 0.00 | 0.40 | 0.13 | 0.53 |
| Non-native woodland | 0.07 | 0.00 | 0.00 | 0.07 |
| **Disturbed or Developed Areas** | | | | |
| Non-native vegetation | 0.69 | 1.85 | 0.87 | 3.41 |
| Disturbed habitat | 0.88 | 2.42 | 0.50 | 3.79 |
| Developed land | 3.65 | 27.74 | 15.50 | 46.89 |
| **Total[2]** | **6.78** | **47.20** | **25.06** | **79.04** |

**Notes:**
1 Considered a sensitive vegetation community by the California Department of Fish and Wildlife (CDFW 2025a; NOAA 2025).
2 Totals may not sum exactly due to rounding.

### Direct Impacts

The area of Project disturbance consists of nine vegetation communities and/or land cover types, of which three are considered sensitive by CDFW. Arrowweed scrub, southern coastal salt marsh, and open water are considered riparian/wetland habitats that are anticipated to be regulated by USACE, RWQCB, CDFW, and/or CCC (Table 4). Of the nine vegetation communities and land cover types encompassing the area of Project disturbance, implementation of the Project would result in direct permanent impacts to a total of six vegetation communities and/or land cover types (Figure 9 of Appendix C). Direct temporary impacts would occur to all nine vegetation communities and land cover types due to restoration activities, including grading and the installation of upland transitional and high marsh habitat plantings for the living levees. Table 5 provides the acreages of direct permanent impacts within the Project area of disturbance, categorized by riverbank. Direct impacts to sensitive natural vegetation communities would be considered significant absent mitigation.

## Table 5. Direct Impacts to Vegetation Communities and Land Cover Types in the Area of Project Disturbance

| Vegetation Community or Land Cover Type | North Riverbank Impacts (acres) | | Southwest Riverbank Impacts (acres) | | Southeast Riverbank Impacts (acres) | |
|---|---|---|---|---|---|---|
| | Perm | Temp | Perm | Temp | Perm | Temp |
| **Native Vegetation Communities** | | | | | | |
| Disturbed Diegan coastal sage scrub: *Baccharis*-dominated | 0 | 0.05 | 0 | 0 | 0 | 0 |
| Disturbed southern coastal bluff scrub[1] | 0 | 0.12 | 0 | 0 | 0.06 | 0.65 |
| *Subtotal Native Upland Vegetation Communities* | *0* | *0.17* | *0* | *0* | *0.05* | *0.65* |

**Table 5. Direct Impacts to Vegetation Communities and Land Cover Types in the Area of Project Disturbance**

| Vegetation Community or Land Cover Type | North Riverbank Impacts (acres) | | Southwest Riverbank Impacts (acres) | | Southeast Riverbank Impacts (acres) | |
|---|---|---|---|---|---|---|
| | Perm | Temp | Perm | Temp | Perm | Temp |
| **Native Wetland Vegetation Communities** | | | | | | |
| Arrowweed scrub[1] | 0 | 0.04 | 0 | 0 | 0 | 0 |
| Southern coastal salt marsh[1] | 0 | 0.22 | <0.01 | <0.01 | 0 | 0.03 |
| Disturbed Southern Coastal Salt Marsh[1] | 0 | <0.01 | 0 | 0 | 0 | 0 |
| Open Water | 0 | 0.22 | 0 | 0 | 0 | 0.13 |
| Eelgrass Grassland[1] | 0 | 0.02 | 0 | 0 | 0 | <0.01 |
| *Subtotal Native Wetland Vegetation Communities* | *0* | *0.50* | *<0.01* | *<0.01* | *0* | *0.16* |
| **Non-Native Vegetation Communities/Land Covers** | | | | | | |
| Developed | 0.54 | 3.24 | <0.01 | 0.02 | 0.08 | 0.38 |
| Disturbed habitat | 0 | 0.36 | 0.02 | 0.09 | 0.07 | 0.42 |
| Non-native woodland | 0 | 0 | 0 | 0 | 0.02 | 0.07 |
| Non-native vegetation | 0 | 0.25 | 0.03 | 0.09 | 0.06 | 0.35 |
| *Subtotal Non-Native Vegetation Communities/Land Covers* | *0.54* | *3.85* | *0.05* | *0.20* | *0.17* | *1.22* |
| **Total[2]** | **0.54** | **4.53** | **0.05** | **0.20** | **0.29** | **2.05** |

**Notes:**
[1] Considered a CDFW vegetation community.
[2] Totals may not sum exactly due to rounding.

### Direct Impacts to CCC ESHA

The Project area of disturbance supports native habitats regulated as ESHA by the CCC, including eelgrass, disturbed southern coastal bluff scrub, southern coastal salt marsh, disturbed Diegan coastal sage scrub: *Baccharis*-dominated, and arrowweed scrub. Open water and eelgrass in the area of project disturbance would also be regulated by the CCC as wetlands. In addition, four rare plants (San Diego marsh-elder, California seablite, estuary seablite, and woolly seablite) are present within the Project area of disturbance. Sensitive vegetation communities and vegetation communities supporting rare plants are considered CCC ESHA. The purpose of the Project is to improve bank erosion stability along the shoreline of the River, resulting in functional uplift of the riverine resource by increasing bank stability, improving fluvial action, and reducing bank sediment erosion into the River. Any native vegetation communities within the remaining area of Project disturbance would be salvaged to the greatest extent feasible, maintained, and replanted as part of the upland transitional and high marsh habitat plantings (methodology outlined in an HMMP). A total of 0.06 acres of permanent direct impacts to disturbed coastal bluff scrub and less than 0.01 acre of coastal salt marsh from construction of the Southeast Riverbank and Southwest Riverbank would be considered significant absent mitigation and would be regulated by the CCC.

The Project would result in direct permanent impacts (i.e., removal/loss) to two sensitive vegetation communities within the area of Project disturbance: disturbed southern coastal bluff scrub and coastal

saltmarsh. CDFW sensitive vegetation communities are considered ESHA under the jurisdiction of the CCC. Proposed mitigation ratios for permanent impacts to sensitive vegetation communities are in accordance with the City of San Diego Biology Guidelines (City of San Diego 2018). Table 6 outlines the mitigation requirements for permanent impacts to coastal bluff scrub within the Project impact footprint.

Direct temporal impacts to arrowweed scrub, coastal salt marsh, disturbed Diegan coastal sage scrub: *Baccharis*-dominated, disturbed southern coastal bluff scrub, eelgrass, and open water from restoration activities would be restored to pre-Project conditions or better per the HMMP. Additionally, the Project proposes on-site compensatory mitigation at a 3:1 ratio to mitigate for the temporal loss of sensitive vegetation communities and ESHA through the construction of the upland transitional and high marsh habitat plantings within the area of Project disturbance, which would be reduced to a less-than-significant level through compensatory mitigation via on-site habitat restoration of a total of 3.5 acres at varying mitigation ratios (per MM-BIO-1). Table 6 below outlines the mitigation ratios and total mitigation acreage for the vegetation communities directly impacted by Project implementation.

## Table 6. Mitigation for Direct Impacts to Vegetation Communities and Land Cover Types in the Area of Project Disturbance

| Vegetation Community or Land Cover Type | North Riverbank (acres) | Southwest Riverbank (acres) | Southeast Riverbank (acres) | Total (acres) | Mitigation Ratio[1] | Total Mitigation Acreage |
|---|---|---|---|---|---|---|
| **Native Vegetation Communities** | | | | | | |
| Arrowweed scrub[2] | 0.04 | 0.00 | 0.00 | 0.04 | 3:1 | 0.12 |
| Southern coastal salt marsh[2] | 0.22 | <0.01 | 0.03 | 0.25 | 4:1 | 1.00 |
| Disturbed Diegan coastal sage scrub: *Baccharis*-dominated | 0.05 | 0.00 | 0.00 | 0.05 | 3:1 | 0.15 |
| Disturbed southern coastal bluff scrub[2] | 0.12 | 0.00 | 0.65 | 0.77 | 3.5:1 | 2.70 |
| Open water | 0.22 | 0.00 | 0.13 | 0.35 | 3:1 | 1.05 |
| *Subtotal* | *0.65* | *<0.01* | *0.81* | *1.46* | — | *5.02* |
| **Non-Native Vegetation Communities/Land Covers** | | | | | | |
| Non-native woodland | 0.00 | 0.00 | 0.05 | 0.05 | 0:1 | — |
| Non-native vegetation | 0.24 | 0.04 | 0.28 | 0.56 | 0:1 | — |
| Disturbed habitat | 0.34 | 0.07 | 0.35 | 0.77 | 0:1 | — |
| Urban/developed land | 2.64 | 0.02 | 0.29 | 2.95 | 0:1 | — |
| *Subtotal* | *3.22* | *0.13* | *0.97* | *4.33* | *0:1* | — |
| **Total** | **3.87** | **0.13** | **1.78** | **5.79** | — | **5.02** |

**Notes:**

1 Mitigation ratios according to the San Diego Multiple Species Conservation Program (MSCP) (County of San Diego 2010). To adequately address impacts to Environmentally Sensitive Habitat Areas (ESHA), a total mitigation ratio of 3.5:1 for southern coastal bluff scrub is proposed rather than the 3:1 ratio outlined in the San Diego MSCP. Actual mitigation ratios for coastal sage scrub may vary from 1:1 to 3:1 depending on habitat value for long-term conservation.

2 Considered a sensitive vegetation community by the California Department of Fish and Wildlife and ESHA by the California Coastal Commission.

Impacts to sensitive vegetation communities would be reduced to less than significant through on-site restoration and enhancement of the impacted native vegetation community. With implementation of MM- BIO-1, direct impacts to sensitive vegetation communities are reduced to a less-than-significant level.

### Indirect Impacts

A total of seven native vegetation communities were mapped within the Project site boundary, outside the area of Project disturbance (Table 4): arrowweed scrub, coastal salt marsh (including disturbed), Diegan coastal sage scrub: *Baccharis*-dominated (disturbed), coastal bluff scrub (including disturbed), open water, and eelgrass. Indirect impacts to non-native vegetation communities within the Project site boundary are not considered significant. Short-term indirect impacts that may affect adjacent native vegetation communities include dust, erosion, invasive plant species, temporary access impacts, and increased human presence. These short-term indirect impacts would be reduced to less than significant through implementation of BMPs and a SWPPP. Indirect impacts to sensitive vegetation communities would be less than significant.

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

Less than Significant with Mitigation Incorporated. The following discussion includes an evaluation of potential Project-related impacts on state or federally protected wetlands.

### Direct Impacts

Direct impacts to potentially jurisdictional aquatic resources are based on an overlay of the area of Project disturbance (Figure 10 of Appendix C). Project implementation would result in direct temporary impacts to potentially jurisdictional aquatic resources within all three Impact Areas. Table 7 summarizes the direct temporary impacts to potentially jurisdictional aquatic resources within each area.

**Table 7. Direct Temporary Impacts to Potentially Jurisdictional Aquatic Resources in the Area of Project Disturbance**

| Feature ID | Aquatic Resource Type | Jurisdiction (USACE/RWQCB/ CDFW/CCC) | North Riverbank (acres) | Southwest Riverbank (acres) | Southeast Riverbank (acres) | Total Impacts (acres) |
|---|---|---|---|---|---|---|
| **Non-Wetland Waters** | | | | | | |
| **Non-Tidal** | | | | | | |
| NWW-01 (below OHWM) | Ditch/canal | USACE/RWQCB/ CDFW/CCC | 0 | <0.01 | 0 | 0 |
| **Below High Tide Line** | | | | | | |
| NWW-02 (River) | Channel – natural, perennial | USACE/RWQCB/CCC | 0.18 | 0 | 0.13 | 0.31 |

## Table 7. Direct Temporary Impacts to Potentially Jurisdictional Aquatic Resources in the Area of Project Disturbance

| Feature ID | Aquatic Resource Type | Jurisdiction (USACE/RWQCB/ CDFW/CCC) | North Riverbank (acres) | Southwest Riverbank (acres) | Southeast Riverbank (acres) | Total Impacts (acres) |
|---|---|---|---|---|---|---|
| **Below Mean High Water Mark** | | | | | | |
| NWW-02 (River) | Channel – natural, perennial | USACE/RWQCB/CCC | 0.20 | 0 | <0.01 | 0.21 |
| **Below Top of Bank** | | | | | | |
| NWW-02 (River) | Channel – natural, perennial | CDFW/CCC | 0.01 | 0 | <0.01 | 0.02 |
| | | *Non-Wetland Waters Subtotal* | *0.39* | *0* | *0.14* | *0.53* |
| **Wetlands** | | | | | | |
| WET-04 | Salt Marsh | USACE/RWQCB/CCC | 0.06 | 0 | 0.03 | 0.06 |
| | | CDFW/CCC | 0 | <0.01 | 0 | <0.01 |
| WET-05 | Disturbed Salt Marsh | USACE/RWQCB/CCC | 0.01 | 0 | 0 | 0.01 |
| | | *Wetlands Subtotal* | *0.07* | *<0.01* | *0.03* | *0.10* |
| **Riparian** | | | | | | |
| RIP-03 | Riparian | CDFW/CCC | 0.04 | 0 | 0 | 0.04 |
| | | *Riparian Subtotal* | *0.04* | *0* | *0* | *0.04* |
| | | **Grand Total** | **0.51** | **<0.01** | **0.17** | **0.68** |

**Notes:** Totals may not sum exactly due to rounding.
USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife; CCC = California Coastal Commission; NWW = Non-wetland water; OHWM = ordinary high water mark; TOB =top of bank.

The Project would directly impact potentially jurisdictional aquatic resources anticipated to be regulated by USACE, RWQCB, CDFW, and/or CCC. Specifically, Project implementation would result in temporary impacts to non-tidal streambed associated with the River and adjacent wetland and riparian areas. The Project would not result in direct permanent impacts to potentially jurisdictional aquatic resources. Direct temporary impacts to potentially jurisdictional aquatic resources would be considered significant absent mitigation.

Temporary impacts to potentially jurisdictional aquatic resources include grading and replanting during the creation of gradual slopes that would support upland, transitional, and wetland habitat along the River. The Project is anticipated to result in a net increase in functions and values within and adjacent the River. Temporary impacts to wetland and riparian vegetation communities within potentially jurisdictional aquatic resources would be restored in place at a ratio of 1:1, with additional on-site compensatory mitigation provided at a 3:1 ratio in accordance with a wetlands mitigation and monitoring plan that would be prepared for the Project. Therefore, additional off-site mitigation for impacts to potentially aquatic resources are not anticipated to be required. With regulatory agency permitting and proposed on-site restoration of temporary impacts to potentially jurisdictional aquatic resources and on-site compensatory mitigation (MM-BIO-7

[Regulatory Permitting]), as well as implementation of BMPs and a SWPPP, direct temporary impacts to jurisdictional resources would be reduced to a less-than-significant level.

## Indirect Impacts

The Project site boundary contains a portion of the River, which is regulated by USACE, RWQCB, CDFW, and/or CCC. Additional areas of wetland and riparian habitat above the high tide line would be regulated by CDFW and CCC.

Potentially jurisdictional aquatic resources may be indirectly affected in the short term by dust, invasive plant species, and increased human presence, and in the long term by minor changes in the velocity of runoff during and following construction, which could adversely affect the integrity of downstream resources, causing erosion and sedimentation. Long-term or permanent indirect impacts could result from the proximity of the development to jurisdictional aquatic resources after construction. Permanent indirect impacts that could affect these resources include the introduction of non-native invasive species and increased human activity. These indirect impacts to adjacent aquatic resources would be reduced to less than significant through implementation of BMPs and a SWPPP, as well as restoration of non-developed areas with native vegetation communities.

The purpose of the Project is shoreline protection of the River, and long-term indirect impacts to potentially jurisdictional aquatic resources are anticipated to be functionally beneficial due to the bank erosion stabilization created by the living levees. Additionally, the majority of the Project site would be revegetated with appropriate native salt marsh and transitional plant species. With implementation of BMPs and a SWPPP, implementation of the Project would have a less-than-significant long-term indirect impact to potentially jurisdictional aquatic resources.

## Mitigation Measures

MM-BIO-7 Regulatory Permitting. In-water marine surveys are recommended to be conducted to assess potential Project impacts to eelgrass within the Impact Area footprints. The marine surveys shall map eelgrass beds and compile an aquatic species list. The results of the marine survey shall be intersected with the Project impact footprint to quantify impacts and mitigation needs prior to impacts occurring to U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and California Coastal Commission (CCC) (collectively, the Resource Agencies) jurisdictional aquatic resources, as a necessary step to obtain permits from the Resource Agencies. Temporary impacts to aquatic resources would occur with activities within the disturbance limits, as shown in this report, and project impacts would need to be quantified prior to permitting based on the methods and means of construction. If impacts are anticipated, an eelgrass mitigation and monitoring plan (Mitigation Plan) shall be prepared in consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service and CDFW to describe the approach for compensatory mitigation for loss of eelgrass. Preference in the Mitigation Plan shall be given to in-kind replacement of the eelgrass habitat. Such mitigation shall be implemented in accordance with the 2014 NOAA California Eelgrass Mitigation Policy and Implementing Guidance, including site

selection; initial and long-term habitat area replacement ratios; methods for and timing of transplantation activities; and monitoring, performance, and reporting requirements.

The Project applicant or its designee shall obtain the following permits from the Resource Agencies prior to impacts occurring to aquatic resources: USACE Section 404 Clean Water Act permit, RWQCB Section 401 Water Quality Certification, and CDFW Fish and Game Code Section 1600 Streambed Alteration Agreement. Mitigation requirements shall follow City of San Diego Biology Guidelines but may be revised during discussions with the agencies. There shall be no net loss of wetlands, and any impacts to wetlands shall be mitigated at a minimum ratio of 3:1 (this shall include a minimum 1:1 creation component, while restoration/enhancement of existing wetlands may be used to make up the remaining requirements for a total 3:1 ratio). On-site habitat restoration is proposed for compensatory mitigation to offset impacts to potentially jurisdictional aquatic resources through functional uplift of the San Dieguito River shoreline along the areas of Project disturbance.

Compensatory mitigation for potentially jurisdictional aquatic resources may include on-site or off-site improvement or enhancement of water resources. Wetland mitigation shall include a minimum 1:1 reestablishment component, while restoration/enhancement through native planting and invasive species control for existing wetlands may be used to make up the remaining requirements for a total 3:1 ratio. For mitigation to occur within the Project site, a wetlands mitigation and monitoring plan shall be prepared. Prior to issuance of land development permits, including clearing, grubbing, and grading permits for activities that would impact jurisdictional aquatic resources, the Project applicant shall prepare a wetlands mitigation and monitoring plan to the satisfaction of USACE, RWQCB, CDFW, and CCC. The conceptual wetlands mitigation and monitoring plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. Removal of any non-native vegetation within the existing riparian/wetland vegetation communities shall be incorporated to enhance habitat quality. This can be developed in concert with the habitat mitigation and monitoring plan per MM BIO-1.

***d) Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

Less-than-Significant Impact. Short-term, construction-related, or temporary indirect impacts to wildlife movement would primarily result from construction activities**.** These indirect impacts are similar to those discussed for special-status wildlife and include generation of fugitive dust, construction-related noise, introduction of chemical pollutants, increased human activity, and the potential to attract predators and non-native species. Potential long-term or permanent indirect impacts to wildlife movement include increases in non-native, invasive plant and animal species; increased human activity; and lighting.

The Project purpose is shoreline protection along the River. Installation of the living levees along the northern and southern banks of the River channel in the Project area of disturbance are not anticipated to

reduce the width of the River channel or its overall function as a wildlife corridor. Furthermore, implementation of the Project would avoid direct impacts to the main flow channel of the River channel. Implementation of the Project would not alter the function of the Project site as a wildlife movement corridor (San Diego MSCP biological core) or constrain movement of wildlife from the Project east toward mapped San Diego MSCP MHPA lands. No direct or indirect impacts to wildfire corridors and habitat connectivity are anticipated from Project implementation. Impacts would be less than significant.

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

Less than Significant with Mitigation Incorporated. 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 considered 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. 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 much as possible. As described in Section 3.4(c), the Project would not result in direct permanent impacts to potentially jurisdictional aquatic resources. Temporary impacts to potentially jurisdictional aquatic resources include grading and replanting during the creation of gradual slopes that would support upland, transitional, and wetland habitat along the River, which would conflict with the permitted activities within the City's Lagoon Overlay Zone, in which development in wetland habitat is prohibited. Direct temporary impacts to potentially jurisdictional aquatic resources would be less than significant with implementation of MM-BIO-7.

The City's Municipal Code also includes a tree preservation/protection ordinance. This ordinance protects Torrey pines (*Pinus torreyana*), Monterey Cypress (*Cupressus macrocarpa*), and trees of any species that are located in the public ROW. As shown in Figure 5-1, Biological Resources, of Appendix C, there is one Torrey pine within the study area. However, the Torrey pine is not within the Impact Areas for the Project and would not be impacted through implementation of the Project.

With regulatory agency permitting and proposed on-site restoration of temporary impacts to potentially jurisdictional aquatic resources and on-site compensatory mitigation (MM-BIO-7), impacts associated with policy and ordinance compliance would be less than significant.

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

Less-than-Significant Impact. The Project is not in conflict with the requirements of the San Diego MSCP and City of Del Mar Subarea Plan. The Project is mapped entirely within a San Diego MSCP biological core (River) and is adjacent to MSCP MHPA lands (River) (CDFW 2025b; SanGIS 2025). The Project's purpose is shoreline protection, and it is not expected to result in land use that would negatively affect the adjacent San Diego MSCP MHPA lands. Shoreline protection of the River within the Project site would not adversely impact its overall function as a San Diego MSCP biological core because it would retain use as a wildlife corridor and not alter the land use. No direct or indirect impacts to regional resource planning would result from Project implementation. Impacts would be less than significant.

# 3.5 Cultural Resources

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **V. CULTURAL RESOURCES** – Would the Project: | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? | ☐ | ☐ | | ☒ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | ☐ | ☒ | ☐ | ☐ |
| c) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☐ | ☒ | ☐ |

The following discussion is based on the Confidential Cultural Resources Assessment Report (Confidential Appendix D) prepared for the Project by Dudek in February 2026.

The Confidential Cultural Resources Assessment Report prepared for the Project includes the results of a records search, Sacred Lands File search, Native American outreach, a review of historical aerial photographs and maps, and pedestrian survey of the Project site. An Area pf Potential Effect (APE) was established to consider direct and indirect effects from construction activities that may potentially impact cultural resources, should any be present. The Project APE encompassed the construction footprint wherein all ground-disturbing activities would occur, as well as a portion of the southwestern end of the Del Mar Fairgrounds.

## Archival Research

A records search was conducted by Dudek staff at the South Coastal Information Center on January 7, 2026, for the Project APE and a 1.0-mile search radius outside the Project APE. The South Coastal Information Center records search results did not identify any previously recorded cultural resources within the Project APE. However, 31 previously recorded cultural resources were identified within the 1.0-mile search radius outside the Project APE, and one previously recorded historic-age resource, P-37-034956 (San Dieguito River Railway Bridge) is located immediately adjacent to the Project APE. P-37-034956 was recommended not eligible for listing in the National Register of Historic Places (ASM Affiliates Inc. 2009). Additionally, Dudek requested an NAHC search of its Sacred Lands File on December 30, 2025. The NAHC responded on January 14, 2026, stating the results were negative.

Historical aerial photographs were examined to provide historical land use information about the Project APE and general vicinity over time. Approximately 85% of the Project APE has been disturbed by the River and the previous development of residential properties and urban development since 1953.

## Cultural Resources Survey

Dudek archaeologist Makayla Murillo, accompanied by Red Tail Environmental Kumeyaay Native American Monitor Justin Linton, conducted an intensive-level pedestrian survey of the Project APE on January 16, 2026. No archaeological resources were identified as a result of this survey.

Dudek architectural historian Katie Ahmanson, MHC, conducted an intensive-level survey of the Project APE for historic-era built environment resources. Six historic-age built environment properties were recorded within the APE:

- **Map ID 1:** Public Works Structure
- **Map ID 2A:** Exhibit Hall
- **Map ID 2B:** Bing Crosby Hall
- **Map ID 2C:** Maintenance Building South
- **Map ID 2D:** Maintenance Building
- **Map ID 2E:** Warehouse

Of the six, five resources at the Del Mar Fairgrounds (Map IDs 2A-2E) were previously evaluated and recommended ineligible for the National Register of Historic Places, California Register of Historical Resources, and local designation as individual resources and as contributing elements to any potential historic district. These five Del Mar Fairgrounds buildings and the Public Works Structure (Map ID 1) were evaluated for the current Project in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code and found not to be historical resources for the purposes of CEQA.

*a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?*

No Impact. As defined by the CEQA Guidelines (14 CCR 15000 et seq.), a "historical resource" is considered to be a resource that is listed in or eligible for listing in the National Register of Historic Places or California Register of Historical Resources, has been identified as significant in a historical resource survey, or is listed on a local register of historical resources. Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of a historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the California Register of Historical Resources, included in a local register of historic resources, or identified as significant in a historical survey (meeting the requirements of PRC Section 5024.1[q]), it is a historical resource and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

As discussed above, the Project APE contains six historic-age buildings situated directly adjacent to the Project footprint, where construction activities could potentially cause adverse visual, vibratory, auditory, or atmospheric effects on historic properties and historical resources. Dudek reevaluated these properties under National Register of Historic Places and California Register of Historical Resources criteria and concurred with the previous ineligibility findings for the Del Mar Fairgrounds Exhibition Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building South (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse Building (Map ID 2E). These five resources were found to be ineligible under all applicable historic significance criteria. Dudek prepared a Department of Parks and Recreation update form that included all five resources. Dudek also inventoried and evaluated the newly recorded property, the Public Works Facility structure, and recommended it as not eligible due to a lack of significant associations and architectural merit (Confidential Appendix D). Because no historic properties or historical resources have been identified within the APE, the Project would have no impact on historical resources.

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

Less-than-Significant Impact with Mitigation Incorporated. As described above and in the Confidential Cultural Resources Assessment Report (Confidential Appendix D), the South Coastal Information Center records search results did not identify any previously recorded cultural resources within the Project APE. The pedestrian survey was negative; however, ground visibility of the Project APE was poor to fair (0%–50%), obscured by dense vegetation and steep bluffs (Confidential Appendix D).

The presence of a water source throughout the Project APE would have been an attractive location for prehistoric camps or habitation sites. Reoccurring alluvial action and flooding serve to support the development and presence of cultural deposits in the area. Because there are alluvial soils present throughout a majority of the Project APE, there is a moderate potential for encountering subsurface cultural resources during Project implementation.

Based on available information and in consideration of the topography and presence of cultural resources within the Project vicinity, Project construction would have the potential to result in a significant impact to an archaeological resource. An archaeological and cultural resources mitigation program would be implemented during Project-related ground-disturbing activities within the APE as MM-CUL-1. Cultural resources monitoring efforts should be determined by a qualified archaeologist meeting the Secretary of the Interior's Standards and Guidelines: Professional Qualifications Standards. With the implementation of MM-CUL-1, impacts would be reduced to less than significant.

MM-CUL-1. Cultural Monitoring. 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 resource 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 any inadvertent discoveries, cultural resources, sacred sites, or potential ancestral remains are encountered at any time during Project activities, the City of Del Mar (City) shall immediately notify the Pauma Band of Luiseño Mission Indians, along with other consulting tribes. 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 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 the 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) Would the Project disturb any human remains, including those interred outside of formal cemeteries?*

Less-than-Significant Impact. There are no known human remains within the Project sites. Additionally, due to the constant movement of sand on the shoreline of the River, there is a low potential to encounter human remains. 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 PRC 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. With the permission of the landowner or his/her authorized representative, the most likely descendant may inspect the site of the discovery and shall complete the inspection within 48 hours of being granted access to the site. The most likely descendant would have the opportunity to make recommendations to the NAHC on the disposition of the remains. Accordingly, impacts would be less than significant.

# 3.6 Energy

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **VI. Energy** – Would the Project: | | | | |
| a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | ☐ | ☐ | ☒ | ☐ |

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

Less-than-Significant Impact. The Project would result in an increase in energy consumption during construction only.

## Construction

Temporary electric power for as-necessary lighting and electronic equipment, such as computers inside temporary construction trailers, would be provided by San Diego Gas and Electric. The electricity used for such activities would be temporary and would have a negligible contribution to the Project's overall energy consumption.

Natural gas is not expected to be required during Project construction. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the following subsection, Petroleum Usage. Any minor amounts of natural gas that may be consumed because of Project

construction would be temporary and negligible and would not have an adverse effect; therefore, impacts would be less than significant.

### Petroleum Usage

Petroleum would be consumed throughout construction of the Project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and haul trucks involved in relocating dirt around the Project site are assumed to use diesel fuel. Construction workers would travel to and from the Project site throughout the duration of construction (approximately 18 months). It is assumed that construction workers would travel to and from the Project site in gasoline-powered vehicles.

Heavy-duty construction equipment of several types would be used during Project construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix B. The estimated diesel fuel usage from construction equipment, haul trucks, and vendor trucks is estimated at 35,150 gallons of diesel fuel. The total fuel usage associated with worker vehicles is estimated at 5,000 gallons of gasoline. Project construction would represent a "single-event" petroleum demand and would not require ongoing or permanent commitment of petroleum resources for this purpose. The Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy efficient than that found at comparable construction sites in the region or state. Therefore, the impacts would be less than significant.

### Operation

Operation of the shoreline protection would be limited to periodic inspections and maintenance activities, similar to those currently necessary. Vehicular use by public works employees would not be impacted by the Project. The relocated Public Works Facility structure would consume energy in the form of electricity but would be constructed to the latest building codes, which are considerably more energy efficient than those in place during construction of the existing structure, and would not involve an increase in building size. Thus, operational energy consumption would be expected to be reduced compared to existing conditions.

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

Less-than-Significant Impact. The Project would be subject to and would comply with, at a minimum, the California Building Energy Efficiency Standards (24 CCR, Part 6). Part 6 of Title 24 establishes energy efficiency standards for residential and nonresidential buildings constructed in California to reduce energy demand and consumption. The Project would also be subject to Part 11 of Title 24, also known as the CALGreen building standards. The Project would be built and operated in accordance with all existing applicable regulations at the time of construction. For the reasons stated, the Project would result in a less-than-significant impact associated with the potential to conflict with energy standards and regulations.

# 3.7 Geology and Soils

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **VII. GEOLOGY AND SOILS** – Would the Project: | | | | |
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☒ | ☐ |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ |
| iv) Landslides? | ☐ | ☐ | ☒ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☐ | ☐ | ☒ | ☐ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | ☐ | ☐ | ☐ | ☒ |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☒ | ☐ |

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

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

Less-than-Significant Impact. The Project is located within seismically active Southern California, an area where several faults and fault zones are considered active by the California Division of Mines and Geology. 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 Project site is not listed in an Alquist-Priolo Earthquake Fault Zone. The closest earthquake zone of required investigation to the Project is the Newport-Inglewood-Rose Canyon Fault Zone, located approximately 8 miles south of the Project site (DOC 2025b). The Project would not expose people or property to fault rupture hazards because no new permanent development is proposed. The Public Works Facility structure would be relocated as a prefabricated, mobile structure placed on an existing developed surface and subject to the latest building code requirements. Due to the absence of active faults at or near the Project site, the potential for ground rupture is very low, and impacts are considered to be less than significant.

*ii) Strong seismic ground shaking?*

Less-than-Significant Impact. As described under response 3.7(a-i), there are active faults in the region, and they could create seismic ground shaking at the Project site. The Project would be built in compliance with California Building Code Title 24, which outlines building requirements and safety standards to address potential seismic activity. Compliance with applicable seismic design requirements would reduce the potential risk to both people and structures with respect to strong seismic ground shaking. Therefore, impacts would be less than significant.

*iii) Seismic-related ground failure, including liquefaction?*

Less-than-Significant Impact. Seismic activity associated with the Rose Canyon Fault or other nearby faults may lead to liquefaction. According to the Community Plan, the Project site is mapped within an area with liquefaction potential (City of Del Mar 2025a). Standard design and construction techniques would be incorporated per Title 24 requirements, minimizing hazards due to liquefaction. Therefore, the Project would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Seismic-related impacts during construction and operation of the Project would be less than significant.

*iv) Landslides?*

Less-than-Significant Impact. Landslides typically occur on moderate to steep slopes that are affected by such physical factors as slope height, slope steepness, shear strength, and the orientation of weak layers in the underlying geologic units. According to the U.S. Landslide Inventory and Susceptibility Map, the Project site is mapped as an area with low to no landslide potential (USGS 2025). The Project would

construct levees with gradual slopes, which are reduced compared to existing gradients, and engineered cantilevered or sheet pile floodwalls. Further, the slopes and walls would be engineered to provide protection from SLR and would not result in landslide potential. Impacts would be less than significant.

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

Less-than-Significant Impact. During construction, temporary erosion impacts could occur due to grading and earth-moving activities. These short-term impacts would be addressed through compliance with applicable regulations as specified by the RWQCB, including compliance with the National Pollutant Discharge Elimination System and the adoption and implementation of a stormwater quality management plan. The stormwater quality management plan would incorporate BMPs related to sediment control, erosion control, and other preventative measures. Due to the proximity to nearby wetlands and the River, the use of sediment controls to prevent off-site sediment transport would be employed, which may include silt fence around the Project perimeter, fiber rolls along open slopes, the covering of material stockpiles, gravel bags around storm drain inlets, and many others. Additionally, the Public Works Facility structure would be relocated to developed and currently paved land. As such, proper implementation of construction BMPs and adherence to the requirements of the Construction General Permit would ensure that impacts during construction are less than significant.

The Project would not result in long-term, operational impacts associated with soil erosion or loss of topsoil. The Project would include incorporation of natural materials, such as grasses, shrubs, and trees to help stabilize the soil, reduce erosion, absorb water, and provide habitat for wildlife. Engineering design elements would accommodate the runoff that flows to the toe of the levee, and drainage features would be incorporated to route flows to the River without causing negative impacts like ponding or erosion. As such, construction and operational impacts related to soil erosion or the loss of topsoil would be less than significant.

*c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less-than-Significant Impact. As previously discussed, the Project site is mapped within an area with liquefaction potential (City of Del Mar 2025a). Full Project design would include geotechnical investigations to inform final design and construction of the Project relative to minimization of potential geotechnical risks, including soil stability, per applicable Title 24 requirements. 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. Additionally, proposed incorporation of natural materials, such as grasses, shrubs, and trees (vegetation) would help stabilize the soil. As such, impacts would be less than significant.

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

Less-than-Significant Impact. According to the San Diego County Soil Survey Area U.S. Department of Agriculture Web Soil Survey (USDA 2025), six soil types are mapped within the study area: made land, terrace escarpments, Tujunga sand (0%–5% slopes), Loamy alluvial land-Huerhuero complex (9%–50% slopes, severely eroded), tidal flats, and lagoon water (Appendix C). Expansive soils are clay based and tend

to increase in volume due to water absorption and decrease in water volume due to drying. The majority of the Project site consists of sandy soils, with low expansive potential. If such conditions are encountered, the Project would employ standard engineering protocols to limit the potential impacts associated with expansive soils. Therefore, impacts would be less than significant.

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

No Impact. The existing Public Works Facility structure is connected to the public sewer system, and the relocated structure would also be connected to the public sewer. No septic tanks or alternative wastewater disposal systems are proposed; therefore, no impacts would occur.

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

Less-than-Significant Impact. Construction of the Project would involve some ground disturbance, including grading and excavation. However, these activities are expected to occur primarily within previously disturbed soils and artificial fill along the shoreline of the River. Areas of artificial fill are not considered paleontologically sensitive, and the Project does not involve extensive grading or deep excavation in areas not previously developed, such that the risk of encountering unique paleontological resources or geologic features is low. Standard construction practices and compliance with applicable regulations would further minimize potential impacts. As such, the Project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, and impacts would be less than significant.

# 3.8 Greenhouse Gas Emissions

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

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

Less-than-Significant Impact. GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the

greenhouse effect. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide ($CO_2$) methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also 14 CCR 15364.5). If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extremely hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of $CO_2$. Thus, GHG emissions are typically measured in terms of pounds or tons of carbon dioxide equivalent ($CO_2e$). The $CO_2e$ for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons (MT) of $CO_2e$ = (MT of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for methane is 25, which means that emissions of 1 MT of methane are equivalent to emissions of 25 MT of $CO_2$, and the GWP for nitrous oxide is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

Construction of the Project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road haul and vendor trucks, and worker vehicles. The South Coast Air Quality Management District Draft Guidance Document – Interim CEQA GHG Significance Threshold (SCAQMD 2008) recommends that "construction emissions be amortized over a 30-year Project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated and amortized over 30 years.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.3, Air Quality. Construction of the Project is anticipated to require 12-18 months to complete. On-site sources of GHG emissions include off-road equipment, and off-site sources include haul trucks, vendor trucks, and worker vehicles. Table 8 presents construction GHG emissions for the Project from on-site and off-site emission sources.

## Table 8. Estimated Annual Construction Greenhouse Gas Emissions

| Year | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|
| | Metric Tons per Year | | | |
| 2026 | 540.22 | 0.03 | 0.01 | 544.23 |
| 2027 | 16.83 | <0.01 | <0.01 | 17.00 |
| | | | **Total** | **561.23** |
| | | | **Amortized Emissions (over 30 years)** | **18.71** |

**Source:** Appendix B, Air Quality/Greenhouse Gas Emissions/Energy Model Results.
**Note:** $CO_2$ = carbon dioxide; $CH_4$ = methane; $N_2O$ = nitrous oxide; $CO_2e$ = carbon dioxide equivalent.

As shown in Table 8, the estimated total GHG emissions during construction of the Project would be approximately 561 $MTCO_2e$. Estimated Project-generated construction emissions amortized over 30 years would be approximately 19 $MTCO_2e$ per year. As with Project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the Project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. As shown in Table 8, the Project's emissions would not exceed the 900 $MTCO_2e$ screening threshold. Therefore, construction impacts from GHG emissions would be less than significant.

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

Less-than-Significant Impact. The Project would replace an existing Public Works Facility structure, construct realigned and new trails, and install living levee and hard engineered shoreline protection. As discussed in Section 3.14, the Project would not result in population or employment growth or require the existing land use designations and zoning to be updated. Furthermore, the Project would not be a long-term source of GHG emissions during operation because existing maintenance activities related to the Public Works Facility structure would not increase relative to existing conditions as a result of more stringent current building efficiency standards. Therefore, the Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHGs. Impacts would be less than significant.

# 3.9 Hazards and Hazardous Materials

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **IX. HAZARDS AND HAZARDOUS MATERIALS** – Would the Project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☒ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☒ |
| d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☒ | ☐ |

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area? | ☐ | ☐ | ☐ | ☒ |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? | ☐ | ☐ | ☒ | ☐ |

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

Less-than-Significant Impact. During the temporary, short-term construction period, there is the possibility of accidental release of hazardous substances, such as the spilling of hydraulic fluid or diesel fuel associated with construction equipment maintenance. The Southeast Bank does include removal of a concrete water main that may include asbestos given its age and, as such, removal and disposal of the water main would be conducted in accordance with all applicable regulations. Similarly, if any materials are identified as hazardous in the existing Public Works Facility structure, demolition and disposal procedures would follow requirements. 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 the continued use of trails along the shoreline of the River and continued use of the Public Works Facility. No routine transport, use, or disposal of hazardous materials would occur that differs from existing conditions at the Public Works Facility, and impacts would be less than significant.

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

Less-than-Significant Impact. As discussed above in Section 3.9(a), the 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 be similar to existing conditions. 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) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

No Impact. There are no schools within 0.25 miles of the Project, and the closest school, St. James Academy, is located approximately 0.8 miles north of the Project site. Impacts related to the handling of acutely hazardous materials are not anticipated, and no impact would occur.

*d) Would the Project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less-than-Significant Impact. Pursuant to Government Code Section 65962.5 (Cortese List) requirements, the State Water Resources Control Board's GeoTracker database (SWRCB 2025) and the California Department of Toxic Substances Control's EnviroStor database (DTSC 2025) were searched for hazardous materials sites within 0.25 miles of the Project area. According to the GeoTracker database, no open assessment sites are located within or adjacent to the Project site. The nearest identified closed sites are John C. Read Construction Company (T0607300566) and T0608149274), a closed Leaking Underground Storage Tank Cleanup Site and closed Cleanup Program Site, located approximately 0.5 miles to the south of the Project site; and San Dieguito Wetlands Restoration (T10000004144), a closed Cleanup Program Site, located approximately 0.1 miles to the east of the Project site (SWRCB 2025). According to the EnviroStor database, no sites or facilities are located within or adjacent to the Project site. The nearest identified sites are two military evaluation sites with an inactive – needs evaluation status: Camp C.J. Miller (80000974), located approximately 0.30 miles to the north of the Project site; and Navy Dirigible (80000918), located approximately 0.6 miles to the southeast of the Project site (DTSC 2025). These hazardous materials sites are located at adequate distances from the Project site(s) such that they not present a hazard for construction crews.

Based on the review of these databases, there were no open sites identified within the Project area and a 0.25-mile buffer. 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 influence area or within 2 miles of a public or public use airport and is not subject to the requirements of any airport land use compatibility plan. The closest public airport is McClellan-Palomar Airport, which is located approximately 11 miles northeast of the Project site. The nearest private, or nonpublic, airport is Marine Corps Air Station Miramar, located approximately 10 miles to the southeast. Therefore, the Project would not result in a safety hazard for people residing or working in the Project area. No impact would occur.

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

No Impact. The County Emergency Operations Plan, Annex Q: Evacuation, was last updated in September 2022 and identifies the primary evacuation routes within the County as the major interstates, highways, and prime arterials, including I-5 (County of San Diego 2022). Construction would be limited to areas along the shoreline of the River and would not impact major interstates, highways, or prime arterials. Construction equipment activities and storage and laydown areas would not occur on local roadways or block streets. Therefore, the Project would not interfere with an adopted emergency response plan or emergency evacuation plan, and no impact would occur.

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

Less-than-Significant Impact. The Project site is located along the shoreline of the River and generally consists of developed or disturbed areas with minimal flammable vegetation. The Project site is not mapped within a Fire Hazard Severity Zone (FHSZ) except for the eastern half of the Southeast Riverbank, which is mapped in a Moderate FHSZ. The nearest Very High FHSZ is located approximately 0.05 miles from the Southeast Riverbank (CAL FIRE 2026).

The Project would involve construction of shoreline protection features such as earthen berms, levees, and floodwalls, as well as relocation of an existing Public Works Facility structure. The Project would not create conditions that would exacerbate wildfire risk. Given the Project's location and design and that the only new habitable structure would be a relocated Public Works Facility structure that would be constructed to the latest building standards, the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be less than significant.

## 3.10 Hydrology and Water Quality

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **X. HYDROLOGY AND WATER QUALITY** – Would the Project: | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | ☐ | ☐ | ☒ | ☐ |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin? | ☐ | ☐ | ☐ | ☒ |

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | | | | |
| i) result in substantial erosion or siltation on- or off-site; | ☐ | ☐ | ☒ | ☐ |
| ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | ☐ | ☐ | ☐ | ☒ |
| iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | ☐ | ☐ | ☒ | ☐ |
| iv) impede or redirect flood flows? | ☐ | ☐ | ☒ | ☐ |
| d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation? | ☐ | ☐ | ☒ | ☐ |
| e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | ☐ | ☐ | ☐ | ☒ |

This section is based on technical analysis conducted by Dudek, included as Appendix E, Hydrology and Water Quality Technical Memorandum.

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

Less-than-Significant Impact. The Project site is located within the RWQCB San Diego Region Basin Plan. Under Section 402 of the Clean Water Act, the RWQCB issues National Pollutant Discharge Elimination System 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

This Project would involve construction activities that have potential to discharge pollutants into waterways and is therefore subject to regulatory requirements at the federal, state, and local level. In California, the

requirements of the Clean Water Act the and administration of the National Pollutant Discharge Elimination System Permit are delegated to the California State Water Resources Control Board, which, via the Construction General Permit, requires that Projects disturbing 1 or more acre of land prepare a SWPPP and meet requirements related to sediment control, erosion control, and other preventative measures to manage stormwater and potential pollutants during construction. The Project, in total, would disturb more than 1 acre, and a SWPPP would therefore be required.

The purpose of a SWPPP is to identify potential sources of pollution and outline how a site would prevent and minimize the discharge of pollutants into stormwater runoff. The SWPPP would include calculations to determine site priority, inspection and monitoring requirements, details for BMPs, and other instructions for the contractor to follow before and during rain events to ensure that stormwater pollution is reduced or eliminated.

The Project would implement construction BMPs in accordance with the Construction General Permit. Details for BMP requirements are published by the California Stormwater Quality Association via the BMP Design Manual for Construction. These include but are not limited to silt fence around the Project perimeter, fiber rolls along open slopes, the covering of material stockpiles, gravel bags around storm drain inlets, and many others. Water quality parameters, including dissolved oxygen, PH, salinity, temperature, and turbidity, would be recorded daily during construction activities. Monitoring sites would be placed upstream and downstream of construction areas.

Proper implementation of construction BMPs and adherence to the requirements of the Construction General Permit ensure that impacts during construction would be less than significant.

### Operation

A City Standard Project Stormwater Management Plan would be prepared for the Project, and source control and site design BMPs would be implemented. Source control BMPs are the minimum BMP standards and the first line of defense against stormwater pollution. The BMPs are implements to eliminate or minimize contact between pollutant sources and stormwater runoff. Site design BMPs are elements of a design that minimize the impact of development on stormwater runoff. Examples include routing runoff from hard surfaces to pervious areas, collecting and storing runoff at the source, and preserving natural drainage pathways.

Proper implementation of source control and site design BMPs and adherence to the requirements of the City's standard project stormwater plan would ensure that impacts after construction would be less than significant.

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

No Impact. Implementation of the Project would not require the use of groundwater. The proposed improvements would be constructed of pervious materials, and no new or replaced impervious areas are proposed. Therefore, no impact would occur.

*c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

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

Less-than-Significant Impact. The Project would involve the construction of earthen berms, levees, and floodwalls to protect the existing developments along the shoreline from flooding due to major storm events. The Project would also include regrading portions of the riverbank and redesigning the alignment and elevation of the existing trail network along the banks of the River. The proposed improvements would impact the existing surface drainage courses; however, BMPs required per the Construction General Permit and City BMP Manual would minimize on- and off-site erosion through temporary sediment control measures. Engineering design elements would be required to accommodate the runoff that flows to the toe of the levee, and drainage features would need to be incorporated to route flows to the River without causing negative impacts like ponding or erosion. If flow is concentrated, attenuation may be required to maintain the existing condition flow rates, and measures may be needed to prevent erosion at the discharge point.

Conformance with required BMPs would reduce potential impacts related to erosion and siltation during construction to less than significant.

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

No Impact. The purpose of the Project is to reduce future river flooding along the River through the construction of earthen berms, levees, and floodwalls in strategic locations along portions of the riverbank. These improvements are designed to enhance flood protection without increasing surface runoff. All proposed features would be constructed using pervious materials, and no new or replaced impervious surfaces are proposed. As such, the Project would not substantially increase the rate or amount of surface runoff. No impact would occur.

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

Less-than-Significant Impact. As described in Section 3.10(c-ii), the proposed improvements would be constructed using pervious materials designed to enhance flood protection without increasing surface runoff. As such, the Project would not generate additional runoff that could exceed the capacity of existing or planned stormwater drainage systems. Furthermore, the Project would implement BMPs in accordance with the Construction General Permit and the City Standard Project Stormwater Management Plan prepared for the Project. Post-construction, source control, and site design BMPs would be incorporated to prevent pollutants from entering the stormwater system.

Therefore, the Project would not create or contribute runoff water that would exceed drainage system capacity or result in substantial additional sources of polluted runoff. Impacts would be less than significant.

*iv) Impede or redirect flood flows?*

Less-than-Significant Impact. The Project site is mapped within FEMA Flood Zone AE, which indicates a 1% annual chance of flooding with established Base Flood Elevations (Appendix A). Portions of the Project would extend into the effective FEMA-designated floodway. As such, the Project is subject to FEMA's No Rise criteria, which require a hydraulic analysis to demonstrate that the Project would not result in any increase in flood levels during a base flood event. A base flood event refers to a flood event that has a 1% annual chance of exceedance.

According to the Project's No Rise Analysis Report (Appendix A), the proposed improvements result in a net reduction of material (net cut) within the Project area, thereby increasing effective flow area within the River. Hydraulic modeling demonstrates that the Project would not increase water surface elevations within the River during a base flood event. Additionally, the improvements would not increase floodway water surface elevations or require modifications to the existing floodway boundaries.

The Project is designed to maintain existing drainage patterns. Final design considerations would ensure that surface runoff is not impeded or trapped behind the proposed levees or floodwalls. Therefore, the Project would not impede or redirect flood flows, and impacts would be less than significant.

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

Less-than-Significant Impact. As described in Section 3.10(c-iv), The Project site is mapped within FEMA Flood Zone AE, which indicates a 1% annual chance of flooding (Appendix A). Additionally, the Project is located within a Tsunami Hazard Area (DOC 2025c). However, the Project is specifically designed to reduce flood risk through the construction of flood protection features such as levees, berms, and floodwalls. The Project would not involve the introduction of pollutants or contribute to the release of pollutants. Construction BMPs would be implemented to prevent the release of pollutants during temporary construction-related inundation scenarios. Therefore, impacts would be less than significant.

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

No 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 2021) identifies the Project site as within the Rancho Santa Fe hydrologic subarea of the Solana Beach hydrologic area of the San Dieguito hydrologic unit (905.11) (RWQCB 2025). The Project would not increase levels of pollutants outside of potential effects associated with temporary construction activities. Conformance with the San Diego Region 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 San Diego Region Basin Plan. In addition, the Project would not adversely impact a groundwater management plan because the Project would not impede groundwater replenishment. Therefore, Project implementation would not have the potential to result in significant adverse impacts to surface water and groundwater quality or otherwise conflict with the San Diego Region Basin Plan. No impact would occur.

# 3.11 Land Use and Planning

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

***a) Would the Project physically divide an established community?***

No Impact. The Project is located along the shoreline of the River. Construction activities may result in temporary disruption to the existing trails; however, upon completion, the Project would provide additional trails as well as realignment and improvements to existing public trails along the shoreline. The Project would include a new pedestrian path on top of the levee on the North Riverbank, which would connect the Del Mar Fairgrounds and the Coast to Crest Trail. Overall, the Project would enhance the connectivity of the area and would not physically divide an established community. No impact would occur.

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

Less-than-Significant Impact. City land use plans, policies, and regulations relevant to the Project include the City's Community Plan, Sea Level Rise Adaptation Plan (Adaptation Plan), MSCP, and LCP. Project consistency with these plans is described below.

## Del Mar Community Plan (General Plan)

The City of Del Mar Community Plan (City of Del Mar 1976, and as subsequently amended) is the City's General Plan, which sets forth the comprehensive long-term plan for the physical development of the City and provides a foundation for land use decisions within the City. The City's Community Plan designates the North Riverbank as Floodway and Fairgrounds-Racetrack, the Southeast Riverbank as Floodway and North Commercial, and the Southwest Riverbank as Railroad ROW (City of Del Mar 2025a).

The Floodway designation is intended for uses such as aviaries, open crops, aquaculture, and open recreational uses. Both the North Riverbank and Southeast Riverbank Project boundaries would maintain public trail access and recreational uses, consistent with this designation.

The Fairgrounds-Racetrack designation is regulated by the California 22nd District Agricultural Association and CCC. Although the North Riverbank component would encroach onto Del Mar Fairgrounds property, the

Project design remains within the 100-foot-wide easement established by the CCC. The Project incorporates flood protection, shoreline treatments, public trail access and recreation, and habitat enhancement within this easement, aligning with Coastal Act resource protection policies and the purpose of the easement.

The North Commercial designation is a mixed-use zone that accommodates multi-unit residential development and a range of commercial and light industrial uses such as repair shops, blueprinting, manufacturing, restaurants, art and technical studios, offices, and warehouses. The City's Public Works Facility property is located in the Floodway designation on the Southeast Riverbank and has developable areas in the flood fringe located alongside the North Commercial designation. The existing facility was developed within the FEMA floodway prior to City incorporation in 1959. The Project would relocate the existing Public Works Facility structure outside of the floodway to accommodate flood protection improvements along the FEMA floodway boundary to minimize potential flood impacts, in compliance with FEMA standards. The Project would remain consistent with existing site uses, including relocating the Public Works Facility structure outside the FEMA floodway boundary and realigning the existing trail. The Project is low-intensity use and compatible with the existing and planned adjacent uses in North Commercial.

The Railroad ROW designation is intended for railroad facilities and related structures. The Southwest Riverbank component would not alter existing railroad uses or introduce incompatible features.

As such, the Project would involve shoreline protection, consistent with the existing uses, and would not conflict with the Community Plan.

### Sea Level Rise Adaptation Plan

The City adopted the Adaptation Plan in May 2018 (ESA 2018). In March 2019, the Adaptation Plan was incorporated explicitly by reference into the Safety Element component of the Community Plan described above. The Adaptation Plan addresses coastal risks related to projected SLR that were identified in the Del Mar Coastal Hazards, Vulnerability, and Risk Assessment (2016) and Addendum (2018). The Adaptation Plan includes multiple adaptation strategies, including the construction of living levees and the relocation of public facilities and infrastructure away from hazards. Specifically, the Adaptation Plan calls for beginning a process to relocate the Public Works Facility to a location that is not flood-prone or to incorporate flood-proofing measures on its current site. Relocating or reconfiguring the Public Works Facility structure provides the opportunity to construct a portion of a new levee system south of the River to reduce flood risk in combination with habitat enhancement on this City-owned property (ESA 2018). The Project would be consistent with the Adaptation Plan strategy for the South Riverbank by relocating the Public Works Facility structure out of the floodway to a location on site in the flood fringe, where this type of facility is an allowed use, and facilitating construction of shoreline treatments and levee improvements consistent with FEMA standards to improve resilience to flooding, including from SLR. Therefore, the Project would be consistent with the recommendations in the Adaptation Plan.

### Multiple Species Conservation Program

Project consistency with the MSCP is detailed in Section 3.4(f) of this IS/MND. The Project would not impact land identified in the MSCP for conservation, conflict with the goals of the MSCP, or prevent or hinder implementation of the MSCP.

### San Dieguito River Park Concept Plan

The San Dieguito River Park Concept Plan was prepared to establish the vision and goals for the future use of the San Dieguito River Valley. The Plan endorses the proposal to restore the River and its associated wetlands ecosystem. The Plan requires that construction activity within the San Dieguito Focused Planning Area be designed so as to preserve sensitive resources and retain the largely open, rural character of the Focused Planning Area (JPA 2002). As described in Section 3.4, the Project would implement MM-BIO-1 through MM-BIO-7 to ensure preservation of sensitive resources. Although the Project would result in temporary impacts to the River, such impacts would be reduced to less than significant through implementation of mitigation measures, and the Project would be consistent with the vision and major goals of the San Dieguito River Park Concept Plan.

### Del Mar Local Coastal Program

The City has a certified LCP (City of Del Mar 2001), which identifies sensitive coastal resources within its jurisdiction and is the primary planning document when considering coastal development in the City. The current LCP Implementation Plan includes regulations in portions of the City Municipal Code Title 30, Zoning. The North Riverbank is zoned as FR (Fairgrounds-Racetrack Zone), FW (Floodway), Floodplain Overlay Zone, and Lagoon Overlay Zone; the Southeast Riverbank is zoned as FW (Floodway), NC (North Commercial), Floodplain Overlay Zone, and Lagoon Overlay Zone; and the Southwest Riverbank is zoned RR (Railroad ROW) and Lagoon Overlay Zone (City of Del Mar 2022).

### City Municipal Code

***Lagoon Overlay Zone (Chapter 30.53).*** The Project is within the Lagoon Overlay Zone; the purpose of this Lagoon Overlay Zone is to protect the wetland resources of these lagoon areas and their sensitive upland habitats by requiring that all development activities taking place in the zone are designed and implemented in a manner that is consistent with wetland habitat protection and enhancement. 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" and "wetland restoration Projects where the primary function is restoration of wetland habitat and function." Project impacts to wetlands, including CCC jurisdictional waters, have been evaluated in the biological resources technical report prepared for the Project (Appendix C), as described in Section 3.4(c). The Project would not result in direct permanent impacts to potentially jurisdictional aquatic resources. Temporary impacts to potentially jurisdictional aquatic resources include grading and replanting during the creation of gradual slopes that would support upland, transitional, and wetland habitat along the River, which would conflict with the permitted activities within the City's Lagoon Overlay Zone, as development in wetland habitat is prohibited. Direct temporary impacts to potentially jurisdictional aquatic resources would be less than significant with implementation of MM-BIO-7.

Additionally, the Project includes additional trails as well as realignment and improvements to existing public trails. The Project improves pedestrian access opportunities by providing a connection between the Del Mar Fairgrounds and the Coast to Crest Trail. The Project includes uses allowed within the 100-foot lagoon buffer area pursuant to LCP Implementing Ordinance Section 30.53.090, Lagoon Overlay Zone, including passive recreational access paths and viewpoints, the formalization of existing accessways/ viewpoints, and improvements that enhance adjacent wetland areas.

A significant environmental impact on the River would not occur with the implementation of MM-BIO-7. Therefore, the Project is a passive recreational use and restoration of wetland project that would not result in unmitigated adverse impacts to the natural ecosystem.

***Floodplain Overlay Zone (Chapter 30.56).*** Portions of the North Riverbank and Southeast Riverbank are within the Floodplain Overlay Zone. The Project is intended to improve resilience to SLR flood risk protection within the FEMA floodway. The Project has been designed and would be constructed in compliance with applicable City requirements for development within the floodplain. The Project would involve the relocation of an existing Public Works Facility structure to outside of the effective FEMA floodway, consistent with the Floodplain Overlay Zone, which is intended to ensure that development is appropriately sited so as to avoid hazards to those who would occupy the development. The Project's No Rise Analysis Report (Appendix A) demonstrates that the proposed improvements also do not increase the floodway water surface elevations or necessitate changes to the floodway extents, consistent with the Floodplain Overlay Zone and FEMA standards required for FEMA No Rise certification for the Project.

***Public Access (Chapter 30.61).*** The intent of the public access provisions is to "ensure that physical access is provided to coastal recreation areas for the general public without creating a public safety concern, overburdening the City's public improvements, degrading the City's natural resources, or causing substantial adverse impacts to adjacent private properties." As described above, the Project would improve pedestrian access by providing additional trails as well as realignment and improvements to existing public trails along the shoreline. As such, the Project would be consistent with regulations related to public access.

***Coastal Development Permits (Chapter 30.75).*** The Project would be required to obtain a coastal development permit issued by the City and CCC. The permit process requires evaluation of Project consistency with the City's certified LCP, including the Public Access and Overlay Zone provisions of the Implementing Ordinance, as well as Public View protection policies IV-22 through IV-27 of the LCP Land Use Plan.

The Project is also consistent with several policies of the LCP Land Use Plan (City of Del Mar. 2025b), including:

Chapter IV – Coastal Access

- Policy IV-4 requires cooperation with public ownership entities in the River to restrict uses to those consistent with public rights.
- Policy IV-5 requires improvements along the River 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 requires new accessways to minimize the alteration of natural landforms, conform to existing contours, minimize erosion, and prevent misuse of environmentally sensitive areas.
- Policy IV -7 requires access ways to allow for flexibility of design and changing landforms; the dedicated easements within which improved pathways are to be constructed shall be a minimum of 10 feet in width.

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

Chapter VI - Sensitive Lands

- Policy VI-3 requires that all development activities in the Lagoon Overlay Zone conform to the wetland preservation regulations of the Sensitive Lands Chapter of the Land Use Plan.
- Policy VI-6 requires the viewsheds of the San Dieguito and Los Peñasquitos Lagoons to be preserved and protected through compatibility of design with the existing and desired character of the surrounding area; recognition of views, climate, and the nature of outside activities in the design of exterior spaces; design of buildings as subservient to the natural terrain; and consideration of views from the lagoon and the surrounding roadways in the landscape and structure design.

### Conclusion

The Project would be consistent with the City's applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Project implementation would also satisfy several City policies related to access and protection of environmentally sensitive areas by improving public access along the River waterfront, enhancing habitat, and providing flood protection to public facilities along the River. The Project would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant.

## 3.12 Mineral Resources

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

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

No Impact. The Project site is located in an area designated as Mineral Resource Zone (MRZ)-1 and MRZ- 3, which include areas where little likelihood exists for the presence of significant mineral resources and areas where mineral resource significance is undetermined, respectively (Busch and Miller 2017). No

existing or planned future mining operations occur within the Project site or surrounding area, nor is it zoned or planned for such uses. Therefore, implementation of the Project would not result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the state. No impact would occur.

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

No Impact. As described in Section 3.12(a), no existing or planned mining operations occur within the Project site or surrounding area. Therefore, implementation of the Project would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

# 3.13 Noise

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

## Environmental Setting

Noise impacts from the proposed construction activities would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

The Project site is located along portions of the shoreline of the River, which is surrounded by the Del Mar Fairgrounds to the north; the River, which bisects the Project site; the railway; pedestrian trails; public rights-of-way; residential and commercial development; and the Pacific Ocean to the west. The closest sensitive receptors near the Project site are residential communities located immediately west of the Southwest Riverbank component.

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

Less-than-Significant Impact with Mitigation Incorporated. The Project would consist of the development of shoreline and flood protection, new trails and existing trail enhancements, and the removal and replacement of an existing Public Works Facility structure, which would generate a temporary increase in noise during demolition, grading, and construction. Project construction activities would comply with the City's Noise Regulations (Chapter 9.20 of the City's Municipal Code), which limit construction activities to daytime hours (7:00 a.m. to 7:00 p.m. Monday through Friday, or from 9:00 a.m. to 7:00 p.m. on Saturday). Although the Project's construction is proposed to occur within the hours allowed by the City Noise Regulations, there may be instances where due to the specific conditions (such as the tide, weather events, critical construction stage completion, etc.) or unforeseen circumstances, activities could occur outside of those hours and near sensitive receptors. Specifically, the Southwest Riverbank component closest to residences could include pile driving activities to install the sheet pile floodwall. Furthermore, due to the multiple equipment items involved in construction, the construction noise levels could exceed the 75-decibel hourly average sound level at those residences. As such, temporary noise impacts would be significant. MM-NOI-1 (Construction Noise Management Plan) would be implemented to reduce construction (temporary) noise levels to under levels established by the City (see also MM-BIO-6).

MM-NOI-1. Construction Noise Management Plan. Prior to the initiation of construction activities, a construction noise management plan shall be prepared that identifies measures to comply with the following:

1. The construction contractor shall be required to work in such a manner so as not to exceed a 1-hour average sound level of 75 A-weighted decibels at any noise-sensitive land use (residential). Sound levels may be reduced by sound control devices, limiting the number of equipment operating at once, or installation of temporary noise barriers between the construction site and sensitive receptors.
2. Construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise reduction devices to minimize construction-generated noise.
3. Stationary construction noise sources such as generators or pumps shall be located at least 100 feet from noise-sensitive land uses.
4. Laydown and construction vehicle staging areas shall be located as far from noise-sensitive land uses as feasible.
5. The construction contractor shall notify nearby residents at least 48 hours in advance of construction activities known to occur outside of the accepted hours and shall limit such occurrences.
6. Vibrator or "silent pile driver" equipment shall be used (i.e., not impact hammers).

Upon completion, the Project site would operate similarly to existing conditions. The continued operation of the public trails and Public Works Facility structure would not result in a permanent increase in ambient noise levels. Therefore, impacts would be less than significant with mitigation incorporated.

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

Less-than-Significant Impact with Mitigation Incorporated. The primary sources of vibration during construction would be grading equipment that would be moving constantly, reducing potential for localized excessive groundborne vibration from such equipment. The Project would not involve blasting. However, pile driving, which is known to generate excessive groundborne vibration, would be necessary to install the sheet pile floodwall along the Southwest Riverbank closest to existing residences. Using the California Department of Transportation (Caltrans) default attenuation rate of 1.1, which assumes hard soils through which vibration travels more easily, the vibration exposure at 110 feet or less may be higher than 0.1 inches per second peak particle velocity (ppv). As such, temporary groundborne vibration or groundborne noise impacts would be significant. MM NOI-2 shall be implemented to reduce construction (temporary) groundborne vibration/noise levels to below acceptable levels (0.1 inch per second PPV [Caltrans 2020]). Additionally, construction would comply with the City's Noise Regulations (Municipal Code Chapter 9.20). Therefore, vibration impacts would be less than significant with mitigation incorporated.

MM-NOI-2 Vibratory Pile Driver Vibration Monitoring and Reduction**.** If a vibratory pile driver is used within 110 feet of residential dwellings, vibration monitoring shall be conducted at the residential locations. If the measured vibration level exceeds the California Department of Transportation (Caltrans) strongly perceptible annoyance potential criteria for steady state sources of 0.1 inch per second peak particle velocity (ppv), the power level of the pile driver shall be reduced or vibration shielding shall be implemented via a trench or alternative method to reduce vibration levels below the 0.1 inch per second PPV level. Alternative available technology, including "silent pile drivers,"[3] which reduce noise and vibration generation, shall be used if available and monitored to verify acceptable limits at residential locations.

*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 site is not located within 2 miles of a public airport or a public use airport. The closest public airport is McClellan-Palomar Airport, approximately 11 miles northeast of the Project site. The nearest private or nonpublic airport is Marine Corps Air Station Miramar, located approximately 10 miles to the southeast. At this distance, no impacts related to airport noise would occur at the Project site.

[3] Such as Giken Silent Piler, information available at: https://blueironllc.com/giken-silent-piler/.

# 3.14 Population and Housing

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

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

No Impact. The Project would not result in the construction of new homes or businesses or the extension of infrastructure such as a roadway or utilities; therefore, the Project would not directly or indirectly induce population growth. No impact would occur.

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

No Impact. The Project site does not contain any existing housing or provide other means of housing people. The Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur.

# 3.15 Public Services

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XV. PUBLIC SERVICES** – Would the Project: | | | | |
| a) 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: | | | | |

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Fire protection? | ☐ | ☐ | ☐ | ☒ |
| Police protection? | ☐ | ☐ | ☐ | ☒ |
| Schools? | ☐ | ☐ | ☐ | ☒ |
| Parks? | ☐ | ☐ | ☐ | ☒ |
| Other public facilities? | ☐ | ☐ | ☐ | ☒ |

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

***Fire protection?***

No Impact. Physical impacts on public services are usually associated with population growth, which increases the demand for public services and facilities. As discussed in Section 3.14, Population and Housing, the Project would not induce population growth and therefore would not result in a permanent or temporary increase in demands on fire protection services. The Project would involve the relocation of a Public Works Facility structure, but the structure would remain within the existing Public Works Facility property served by existing fire protection services and would be constructed in accordance with the latest building code standards. Therefore, no impact would occur.

***Police protection?***

No Impact. 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. The construction and operation of the Project would not have an impact on or result in a need for new or altered police protection services. The Project would not include expanded habitable structures or induce population growth or result in the addition of housing, schools, or other community facilities that might require police protection. Therefore, no impact would occur.

***Schools, parks, or other public facilities?***

No Impact. The Project would not result in adverse impacts on schools, parks, or 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 Project would not increase the local population. Although additional employees are anticipated during construction, they are not expected to increase the use of existing public facilities, such as schools or parks. Therefore, no impact would occur.

# 3.16 Recreation

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

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

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. As discussed in Section 3.14, Population and Housing, the Project would not induce population growth that could increase demand on existing parks or recreational facilities. The Project includes improvements to existing trails, intended to benefit current users and promote enhanced access along the shore. Existing trails may be subject to temporary closure or interruption during construction of the Project. Therefore, impacts to recreational facilities 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 includes improvements to existing trails, intended to benefit current users and promote enhanced access along the shore. Impacts from the development of these trails are considered throughout the analysis herein as an inherent component of the Project. The Project would not induce population growth such that the expansion of existing recreational facilities is required. Therefore, impacts associated with the construction or expansion of recreational facilities resulting from construction of the Project beyond those otherwise described herein would be less than significant (please see Sections 3.4, Biological Resources; 3.5, Cultural Resources; 3.13, Noise; and 3.18, Tribal Cultural Resources).

# 3.17 Transportation

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

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

Less-than-Significant Impact. An impact on the circulation system, including transit, roadway, bicycle, and pedestrian facilities would occur if the Project would conflict with a program, plan, ordinance, or policy addressing these facilities. The Project would result in expanded trail access, consistent with the public access trails depicted in Figure IV-A, Public Access Trails, of the City's LCP. The Project would be consistent with the City's LCP Goal IV-18 by improving pedestrian trails along the River (City of Del Mar 2025b). The Project would be consistent with the relevant goals, objectives, and policies in the City's Community Plan (General Plan) because the Project would emphasize a more pedestrian-oriented environment (Goal 2).

Project construction would occur along the River. Temporary closures of public roadways would not occur, as staging areas and construction would be limited to the areas adjacent to the River. However, the public trails along the River would be temporarily closed or rerouted during construction. Once the Project is constructed, there would be access to additional trails as well as realignment and improvements to public trails along the shoreline. The Project would include a new section of trail connecting the Del Mar Fairgrounds and the Coast to Crest Trail. Completion of the Project would result in expanded trail access; impacts from these trails are considered throughout the analysis herein as an inherent component of the Project. 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)?***

No Impact. CEQA Guidelines Section 15064.3 (b) provides criteria to evaluate a project's potential impact on transportation and traffic depending on the type of project. Section 15064.3(b) establishes Vehicle Miles Traveled (VMT) as the appropriate measure for transportation impacts and eliminates automobile delay as

appropriate for the determination of potentially significant transportation and traffic impacts. VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. For transportation projects that reduce or have no impact on VMT (meaning there is no increase in demand for additional trips to be generated), CEQA Guidelines Section 15064.3 suggests that these projects be concluded to cause a less-than-significant impact. According to the City's Guidelines for Transportation Impact Analysis, updated June 1, 2020, roadway and mobility projects included in the Del Mar Community Plan (General Plan) are "screened out" with no VMT analysis required because they are presumed to cause a less-than-significant impact on the environment associated with potentially significant levels of VMT (City of Del Mar 2020).

The Project is included in the Del Mar Community Plan (General Plan), which identifies goals and policies associated with ensuring public safety within the River floodplain and emphasizing a more pedestrian-oriented environment. The Project would ensure public safety within the River floodplain by relocating a Public Works Facility structure outside of the floodplain and by providing shoreline protection measures. The Project would emphasize a more pedestrian-oriented environment through the addition of a new section of trail connecting the Del Mar Fairgrounds and the Coast to Crest Trail and through realignment and improvement of existing trails. During Project construction, worker commutes and equipment hauling vehicles would be traveling to and from the Project site, causing an incremental increase in localized traffic; however, this would be temporary and would cease once construction is complete. No additional traffic trips are anticipated to result upon Project implementation. Based on these considerations, no impacts related to conflicts or inconsistencies with CEQA Guidelines Section 15064.3 (b) would occur.

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

Less-than-Significant Impact. The Project would include new realignment and improvements to public trails along the shoreline of the River. The Project would include a new 15-foot-wide pedestrian path on top of the North Riverbank living levee to provide a new westerly trail connection between the Del Mar Fairgrounds and the Coast to Crest Trail. This trail would not introduce sharp curves or abrupt grade changes. At the Southeast Riverbank, the Project would relocate an existing section of the Del Mar Riverpath to a 10-foot-wide pedestrian path on top of the living levee. This relocated path would maintain gradual slopes and follow the existing riverbank geometry. Both trails would be located on top of levees with widths of approximately 10–15 feet and engineered slopes designed for safe pedestrian use.

No changes to the local roadway network are proposed, and the Project would not introduce incompatible uses on the pedestrian paths. The Project design avoids hazardous features and complies with applicable safety standards for trail construction. Therefore, the Project would not substantially increase hazards due to geometric design features or incompatible uses, and impacts would be less than significant.

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

No Impact. Construction would be limited to areas along the shoreline of the River and would not impact major interstates, highways, or prime arterials. Construction equipment activities and storage and laydown areas would not occur on local roadways or block streets. Therefore, the Project would not result in inadequate emergency access, and no impact would occur.

# 3.18 Tribal Cultural Resources

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XVIII. TRIBAL CULTURAL RESOURCES** | | | | |
| Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | | | | |
| a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or | ☐ | ☒ | ☐ | ☐ |
| b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☐ | ☒ | ☐ | ☐ |

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

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

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

a) and b): Less-than-Significant Impact with Mitigation Incorporated. The Project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to Tribal Cultural Resources as part of the CEQA process and requires the CEQA lead agency to notify any groups who are traditionally or culturally affiliated with the geographic area of the Project, and who have requested notification, of the Project.

Dudek contacted the NAHC on December 30, 2025, for a Sacred Lands File search and list of Native American contacts for the Project APE. The NAHC responded on January 14, 2026, that results were negative and provided a list of Native American tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in this area.

Dudek sent out outreach letters on January 16, 2026, to all Native American group representatives included on the NAHC contact list (Appendix C to Confidential Appendix D). These letters attempted to solicit additional information relating to Native American resources that may be impacted by the Project. Native American representatives were requested to define a general area where known resources intersect the Project APE. Three responses have been received to date. The Pauma Band of Mission Indians responded on January 30, 2026, requesting that their office be immediately notified of any inadvertent discoveries and recommending a tribal monitor be present during all ground-disturbing activities. The Iipay Nation of Santa Ysabel responded on January 30, 2026, and requested a tribal monitor be present during all ground-disturbing activities. The Rincon Band of Luiseño Indians responded on January 30, 2026, and recommended tribal monitoring and working closely with the Kumeyaay Nation, as they may have more information to provide. The NAHC tribal correspondence is included in Appendix C of Confidential Appendix D.

Notices in accordance with the requirements of AB 52 were sent via certified mail on December 18, 2025, to 22 nearby tribes, giving 30 days for the tribes to reply by January 23, 2026. Two responses were received, one each from the Rincon Band of Luiseño Indians and the Barona Group of the Capitan Grande Band of Mission Indians, as of January 23, 2026. The response letters indicated that although neither tribe requested formal consultation, they are interested in reviewing the Draft MND once made public and/or wish to be notified when/if any resource is discovered during construction.

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

## 3.19 Utilities and Service Systems

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XIX. UTILITIES AND SERVICE SYSTEMS** – Would the Project: | | | | |
| a) Require or result in the relocation or construction of new or expanded water, waste water treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☐ | ☐ | ☒ | ☐ |

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 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 waste water treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☐ | ☒ |
| d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | ☐ | ☐ | ☒ | ☐ |
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | ☐ | ☐ | ☒ | ☐ |

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

Less-than-Significant Impact. The Project would involve construction of flood protection features such as levees, berms, and floodwalls, which would not affect utilities and service systems; existing utilities in the area would remain generally as they are under existing conditions. Relocation of the Public Works Facility structure would require connecting the new structure to existing utility infrastructure and includes modest realignment of a waterline. Because utilities are already present at the site, this connection would not result in significant environmental impacts. Therefore, impacts related to utility relocation would be less than significant.

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

Less-than-Significant Impact. Project construction would temporarily require a minor amount of water, primarily associated with site watering to prevent or reduce fugitive dust emissions from construction activities. Once construction is complete, there would not be a change in water demand. Therefore, impacts would be less than significant.

*c) Would the Project result in a determination by the waste water 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 relocated Public Works Facility structure would result in the same amount of wastewater as existing conditions. The Project would not generate new wastewater or require the need for additional wastewater services or treatment. Therefore, the Project would not result in inadequate capacity for the existing wastewater treatment provider, and no impact would occur.

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

Less-than-Significant Impact. Project construction and demolition activities would generate solid waste. As described in Appendix A, the Project would involve net cut conditions by excavating the existing shoreline adjacent to the floodwall to expand floodplain storage within the River. Additionally, demolition of the existing Public Works Facility structure would result in solid waste. The construction contractor would be responsible for removal of demolition and construction materials from the site, and would be required to comply with federal, state, and local statutes and regulations related to solid waste reduction, including waste management, reduction, and recycling of demolition and construction debris and waste. Such waste would be source separated on site for reuse, recycling, or proper disposal. For construction waste that cannot be diverted or recycled, such as material packaging and food-related trash generated by employees, landfills in the region would have adequate capacity to fulfill the Project's solid waste generation needs. The Project would comply with City Municipal Code Chapter 11.20, Management of Solid Waste, which provides guidance for the disposal of solid waste and recycling. Furthermore, current landfill capacities within the San Diego region would be able to accommodate debris generated during demolition and construction activities. Therefore, impacts would be less than significant.

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

Less-than-Significant Impact. As described above in Section 3.19(d), the Project would not generate excessive solid waste and would comply with all waste management and reduction statutes and regulations. Solid waste generated by the Project would be collected and transported to an appropriate recycling, disposal, or processing facility that is properly equipped and capable of handling solid waste materials as required by City standards. Therefore, impacts related to compliance with applicable solid waste regulations would be less than significant.

# 3.20 Wildfire

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XX. WILDFIRE** – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project: | | | | |
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |
| b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | ☐ | ☐ | ☒ | ☐ |
| c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | ☐ | ☐ | ☐ | ☒ |
| d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | ☐ | ☐ | ☒ | ☐ |

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

No Impact. The County Emergency Operations Plan, Annex Q: Evacuation, was last updated in September 2022 and identifies the primary evacuation routes within the County as the major interstates, highways, and prime arterials, including I-5 (County of San Diego 2022). Construction would be limited to areas along the shoreline of the River and would not impact major interstates, highways, or prime arterials. Construction equipment activities and storage and laydown areas would not occur on local roadways or block streets. Therefore, the Project would not interfere with an adopted emergency response plan or emergency evacuation plan, and no impact would occur.

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

Less-than-Significant Impact. Wildland fire safety concerns generally exist in locations with the presence of relatively large expanses of native and exotic vegetation in proximity to residences and other developed

areas. Shoreline protection, such as the creation of levees, would not create a highly susceptible risk for fire ignition due to the adjacent rocky shoreline conditions, with minimal flammable vegetation or material.

The Project site is not mapped within an FHSZ, except for the eastern half of the Southeast Riverbank, which is mapped in a Moderate FHSZ. The nearest Very High FHSZ is located approximately 0.05 miles from the Southeast Riverbank. The Southeast Riverbank would include demolition of the existing Public Works Facility structure and relocation of a new structure further from the River within the Public Works Facility's existing yard. The new structure would be constructed to the latest building codes, including all fire-related standards. The Project site is located adjacent to the River and would not exacerbate wildfire risk or exposure. Therefore, the Project would not expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant.

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

No Impact. The Project would involve the construction of earthen berms, levees, floodwalls, and trails, and the relocation of a Public Works Facility structure. The Project would not require the installation or maintenance of new roads, fuel breaks, emergency water sources, power lines, or other utilities that may exacerbate fire risk or impact the environment. No impact would occur.

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

Less-than-Significant Impact. As described in Sections 3.20(a) through 3.20(c), the Project would not pose a substantial risk for wildfire. The Project site is not mapped within a FHSZ, except for the eastern half of the Southeast Riverbank, which is mapped in a Moderate FHSZ. The Project aims to improve flood risk protection, including SLR resilience, and would generally maintain the existing drainage patterns. As such, implementation of the Project would not expose people or structures to significant risks from post-fire slope instability or drainage changes. Impacts would be less than significant.

# 3.21 Mandatory Findings of Significance

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XXI. MANDATORY FINDINGS OF SIGNIFICANCE** | | | | |
| a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☒ | ☐ | ☐ |
| b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.) | ☐ | ☐ | ☒ | ☐ |
| c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ |

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

Less-than-Significant Impact with Mitigation Incorporated. Potential impacts related to sensitive and special-status habitat, wildlife species, and plant species are discussed in Section 3.4, Biological Resources. As discussed in Section 3.4, all potentially significant impacts to biological resources would be reduced to a level below significance with the incorporation of mitigation measures. As discussed in Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources, potential impacts to cultural resources and Tribal Cultural Resources would be reduced to a level below significance with the incorporation of mitigation measures. The Project would not eliminate important examples of the major periods of California history or prehistory. Overall, impacts would be less than significant with the incorporation of mitigation measures.

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

Less-than-Significant Impact. As revealed in the analysis presented throughout Chapter 3, Initial Study Checklist, of this MND, the Project would not result in significant impacts in any issue area that cannot be mitigated. Mitigation measures for biological resources, cultural resources, noise, and Tribal Cultural Resources would reduce impacts to below a level of significance.

Due to the relatively small footprint, linear nature, construction duration, and location of the Project, the potential for considerable contribution of construction impacts due to overlapping construction of other projects would be reduced, including activities associated with the California 22nd District Agricultural Association's Fairgrounds 2050 Project, which is in the planning phase, and the SANDAG/North County Transit District Camino Del Mar Bridge Replacement Project, for which timing is uncertain at this time. The potential for construction activities overlapping with those of the Camino del Mar Bridge Replacement Project is possible; however, similar mitigation measures and compliance requirements would be adhered to. The Project, as with potential cumulative Projects, would incorporate mitigation measures to reduce impacts, as applicable. Upon completion of construction, the Project would have no potential to contribute to a cumulative impact. Therefore, Project impacts 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 with Mitigation Incorporated. The potential for adverse direct or indirect impacts to human beings was considered throughout Chapter 3 of this MND. Based on this evaluation, construction or operation of the Project with the incorporation of mitigation measures, specifically for potential noise impacts (Section 3.13), would not result in a substantial adverse effect on human beings. Impacts would be less than significant with the incorporation of mitigation measures.

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## 4.2 List of Preparers

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Monte Kim, Architectural Historian
Makayla Murillo, Archaeologist
Chris Oesch, Biologist
Anna Touchstone, Biologist
Andrea Dransfield Kraus, Biologist
Kimberley Narel, Biologist
Olivia Koziel, Biologist
Andrea Dumovich Heywood, Architectural Historian

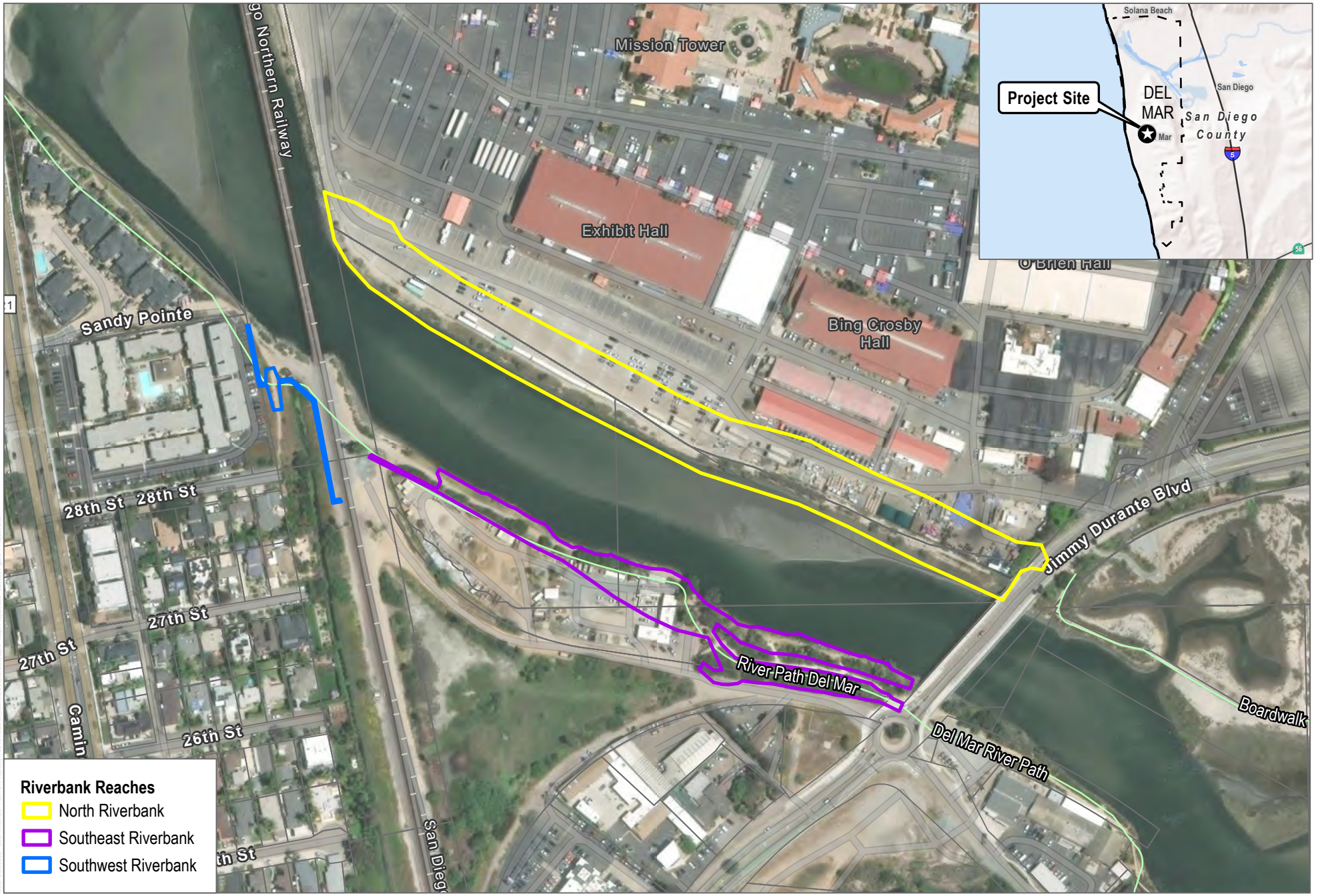
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Matt McGuirk, Engineer
Kyle Holmes, Geographic Information Systems Analyst

### GHD (Appendix A – No Rise Analysis Report)

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Zachary Urabe, Coastal Engineer
Brian Leslie, Coastal Scientist
James Evans, Coastal Engineer

Additional appreciation is expressed to Dustin Fuller at the California 22nd District Agricultural Association for support materials and access during preparation.

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SOURCE: ESRI Imagery; SANGIS, 2026

DUDEK

0 120 240 Feet

**FIGURE 1**

Project Site

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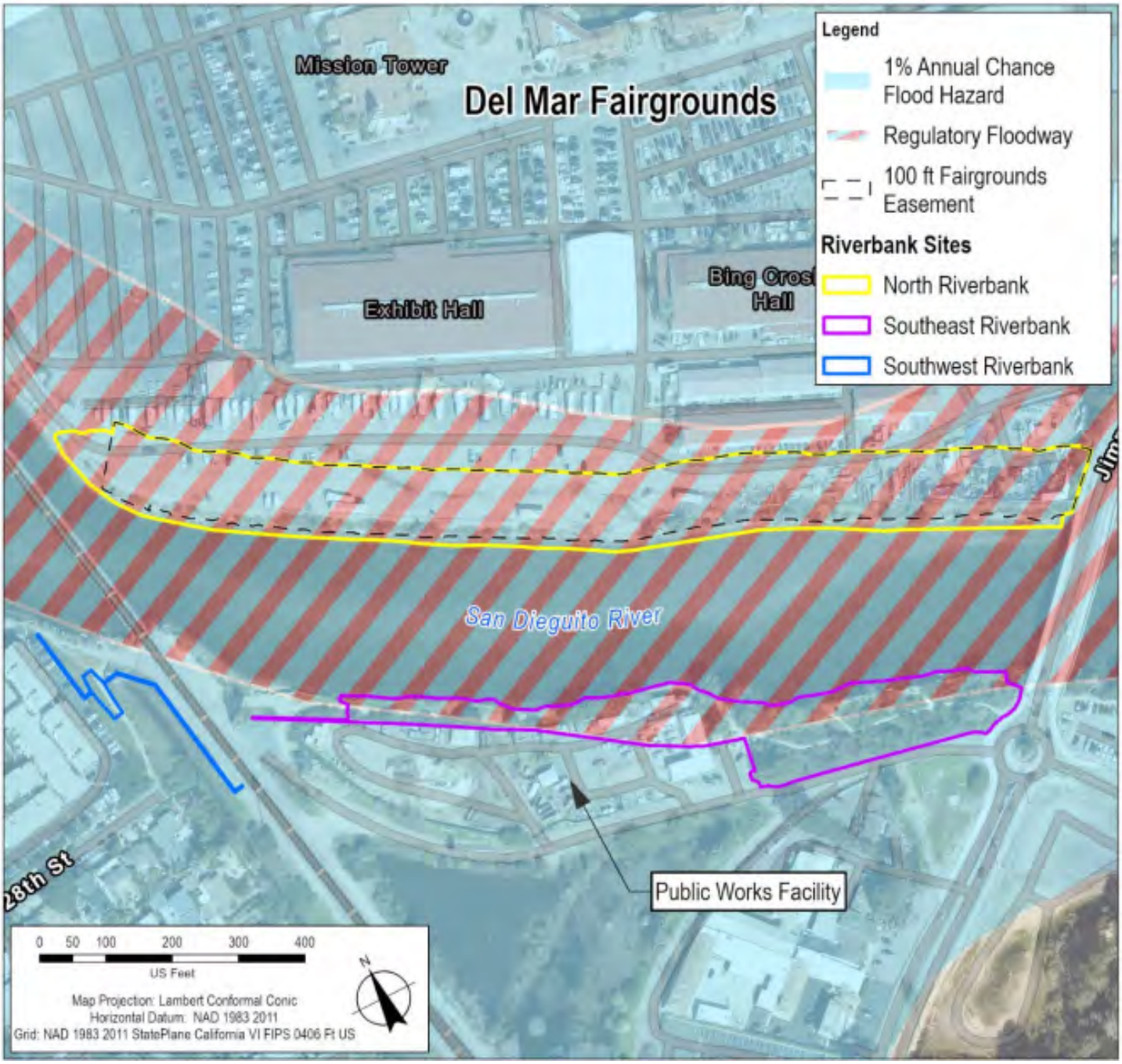



**FIGURE 2**

Regulatory Floodway

SDL Shoreline Protection Project

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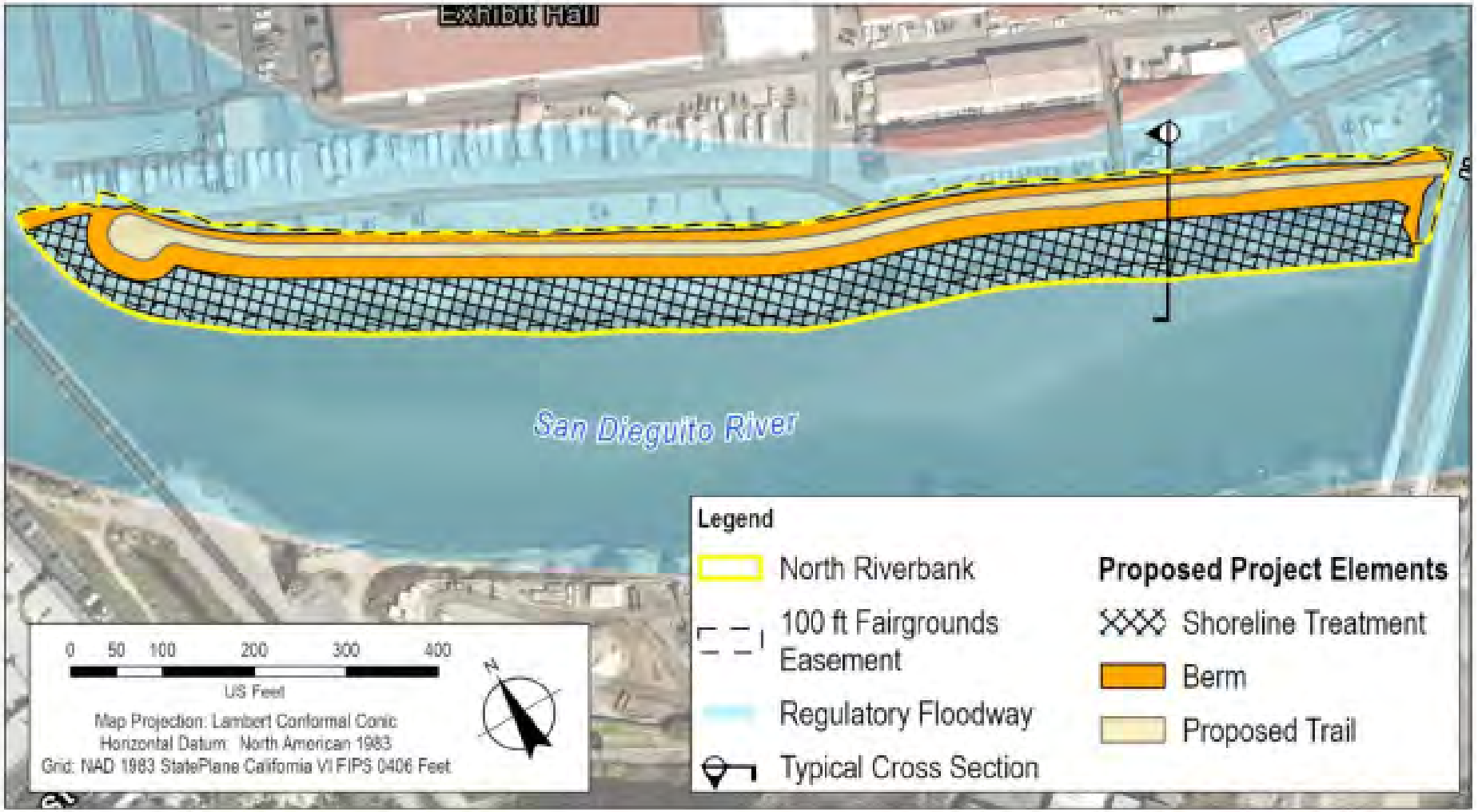



**FIGURE 3**

North Riverbank Site Plan

SDL Shoreline Protection Project

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**SECTION A - NORTH RIVERBANK**

1" = 10'

**FIGURE 4**

North Riverbank Cross Section

SDL Shoreline Protection Project

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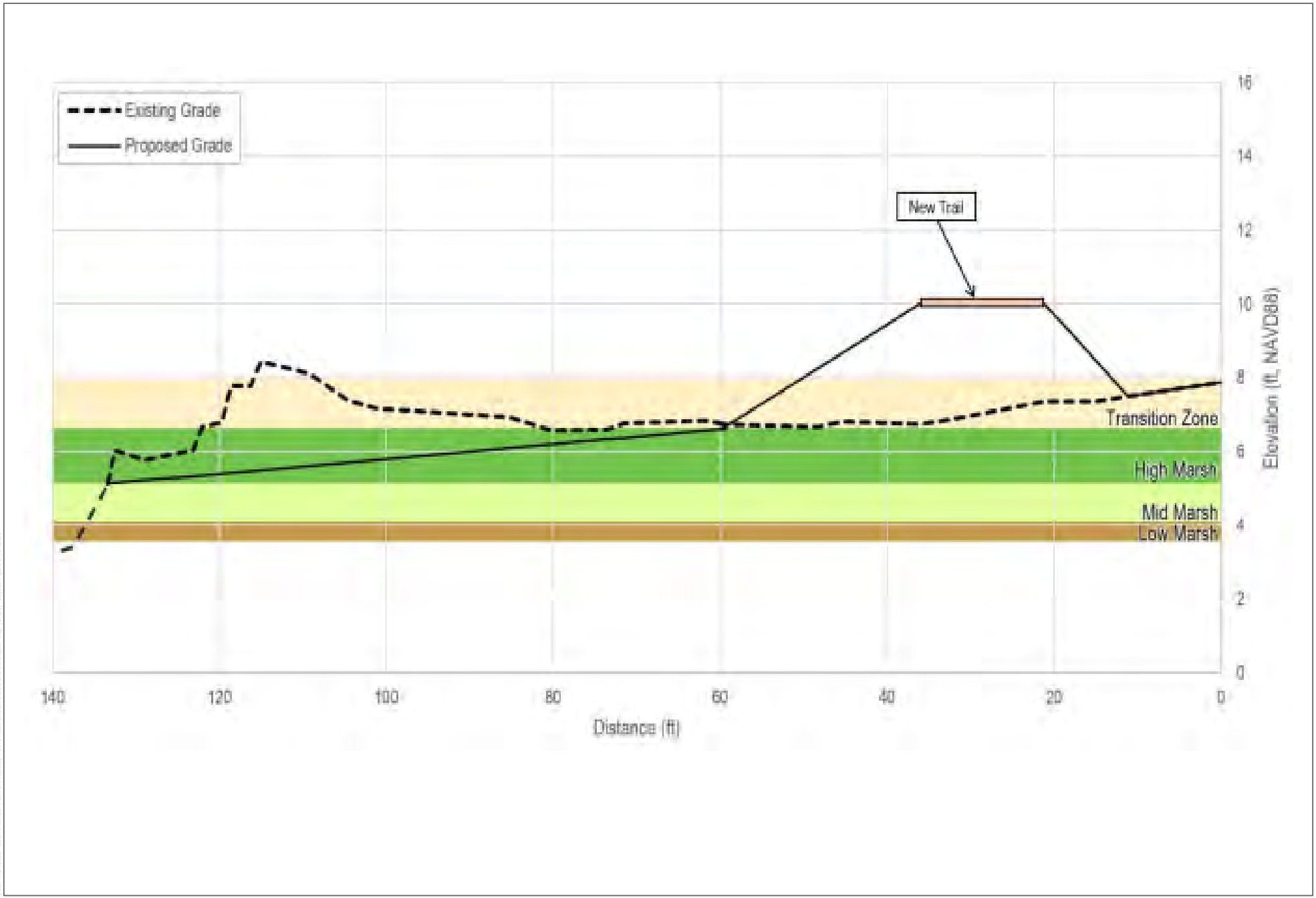



**FIGURE 5**

North Riverbank Cross Section w/ Habitat Zones

SDL Shoreline Protection Project

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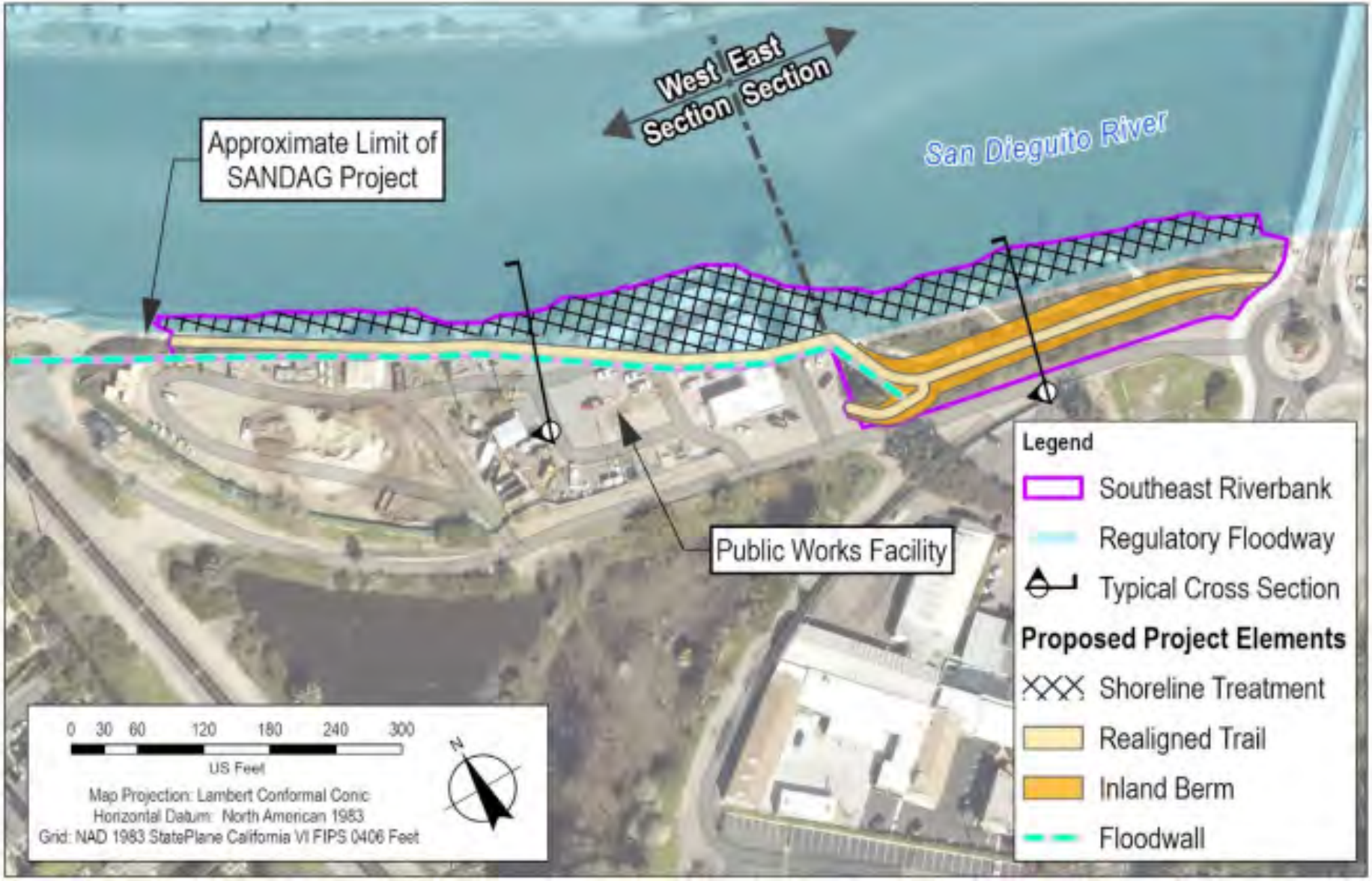


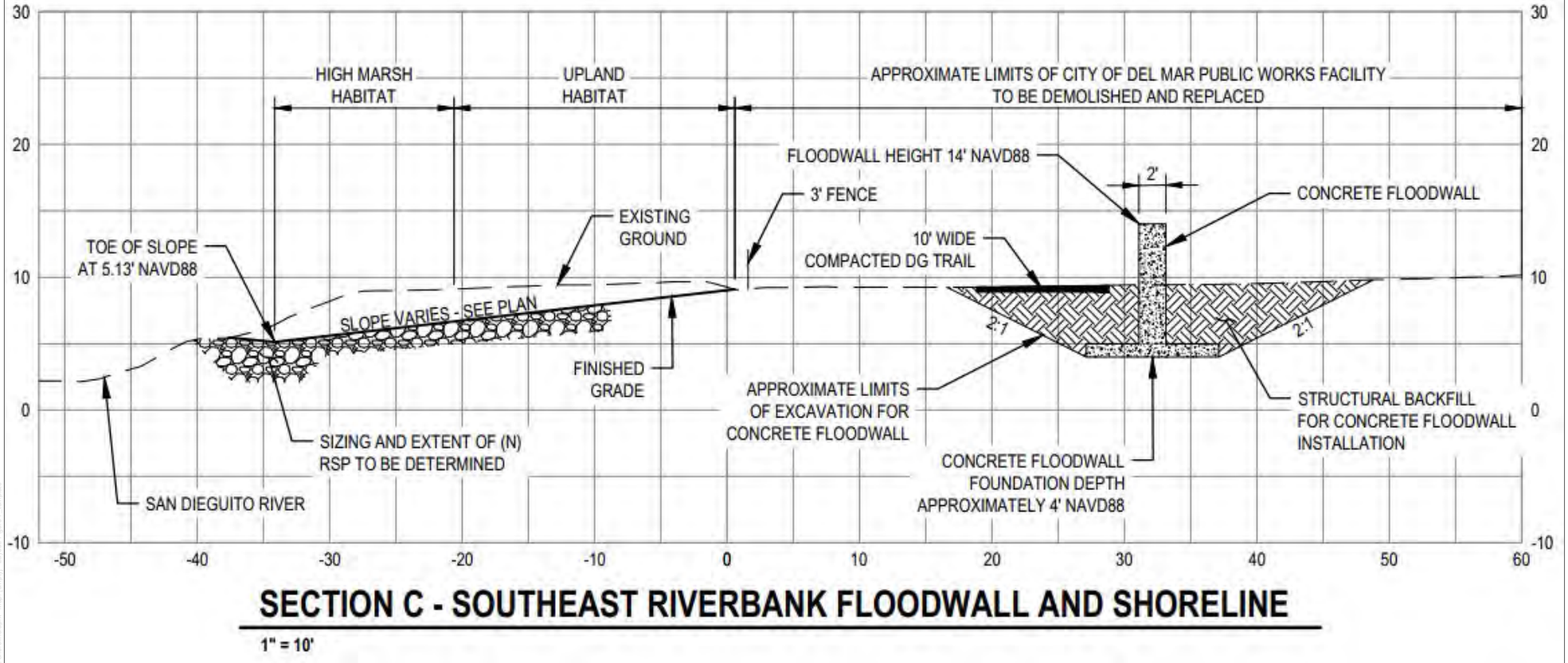

**FIGURE 6**

Southeast Riverbank Site Plan

SDL Shoreline Protection Project

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## SECTION C - SOUTHEAST RIVERBANK FLOODWALL AND SHORELINE

1" = 10'

**FIGURE 7**

Westside of Southeast Riverbank Cross Section

SDL Shoreline Protection Project

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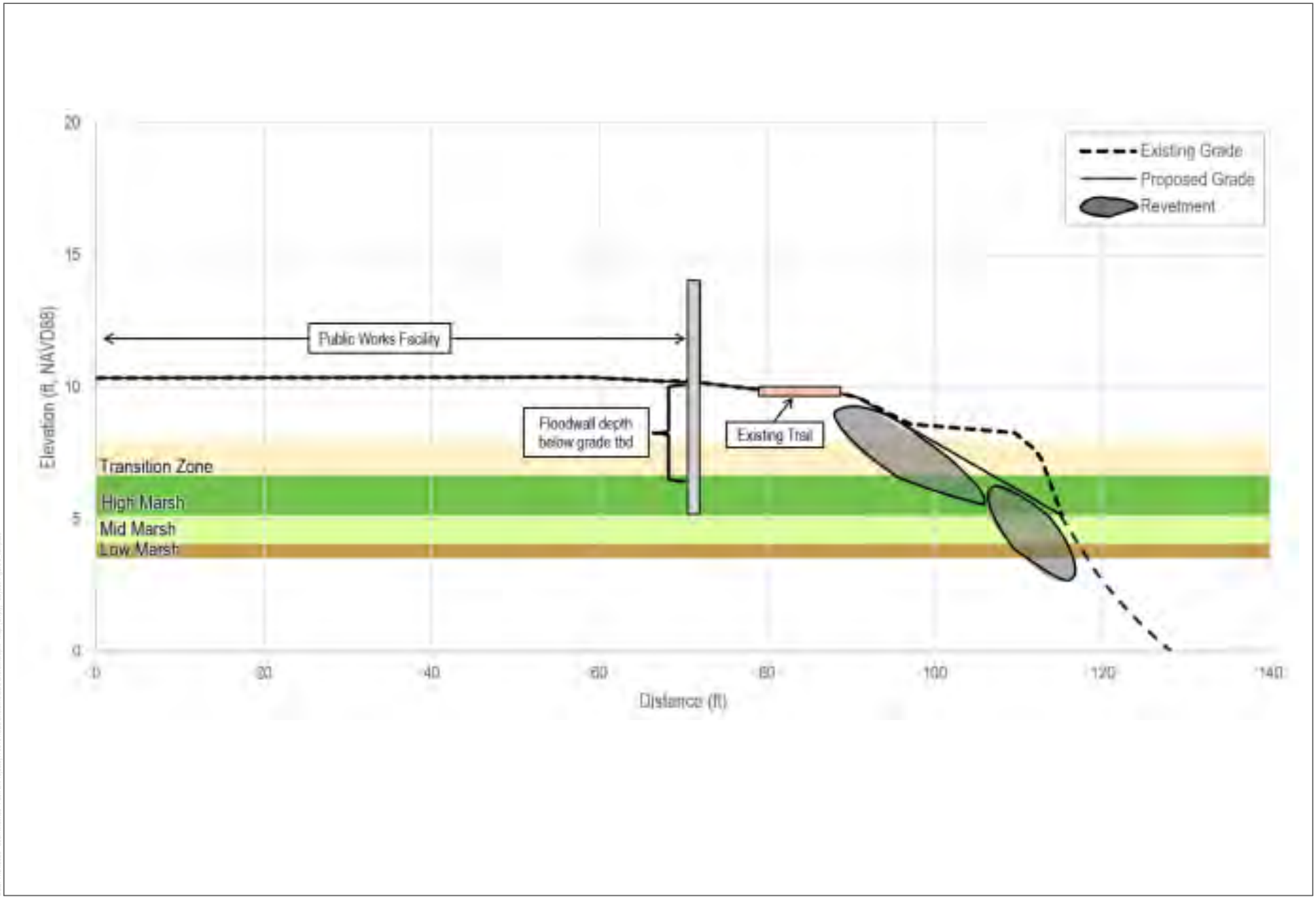


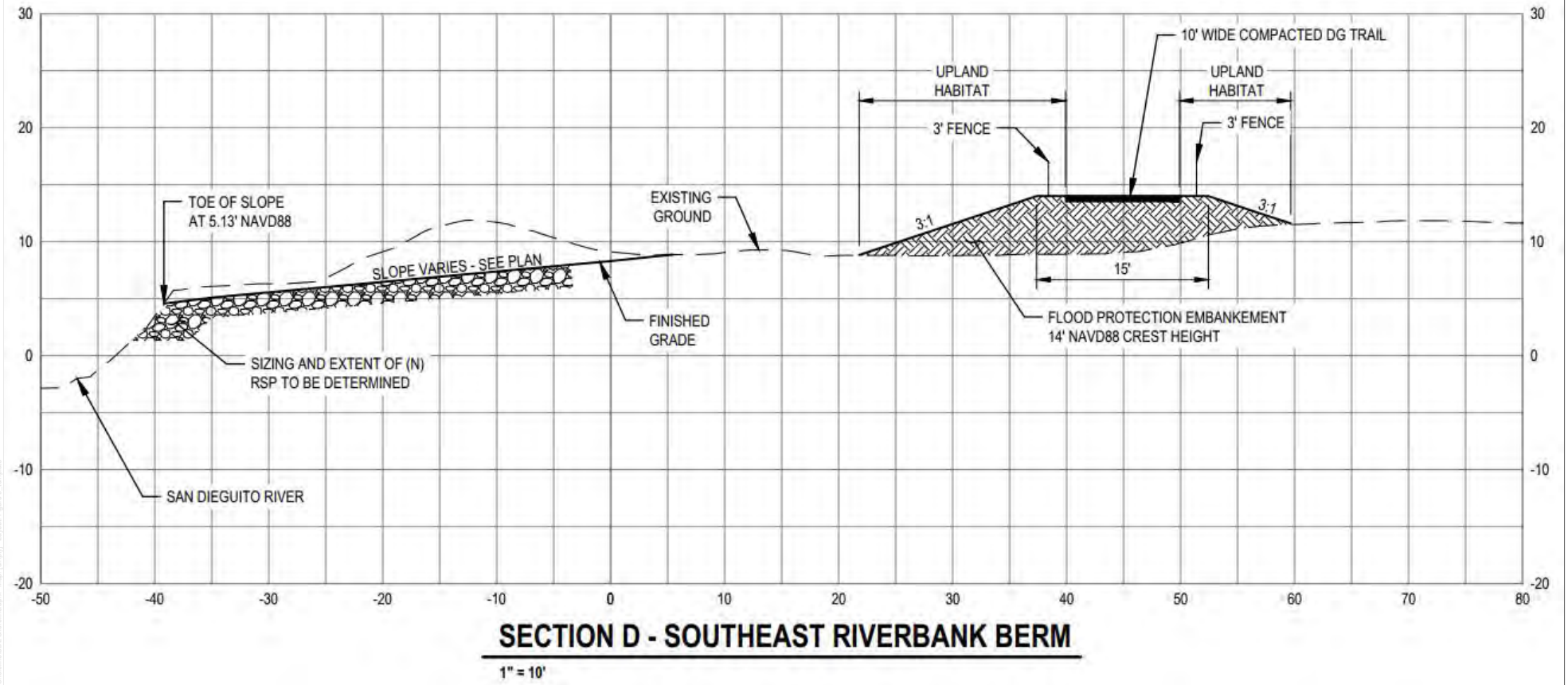

**FIGURE 8**

Westside of Southeast Riverbank Cross Section w/ Habitat Zones

SDL Shoreline Protection Project

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## SECTION D - SOUTHEAST RIVERBANK BERM

1" = 10'

**FIGURE 9**

Eastside of Southeast Riverbank Cross Section

SDL Shoreline Protection Project

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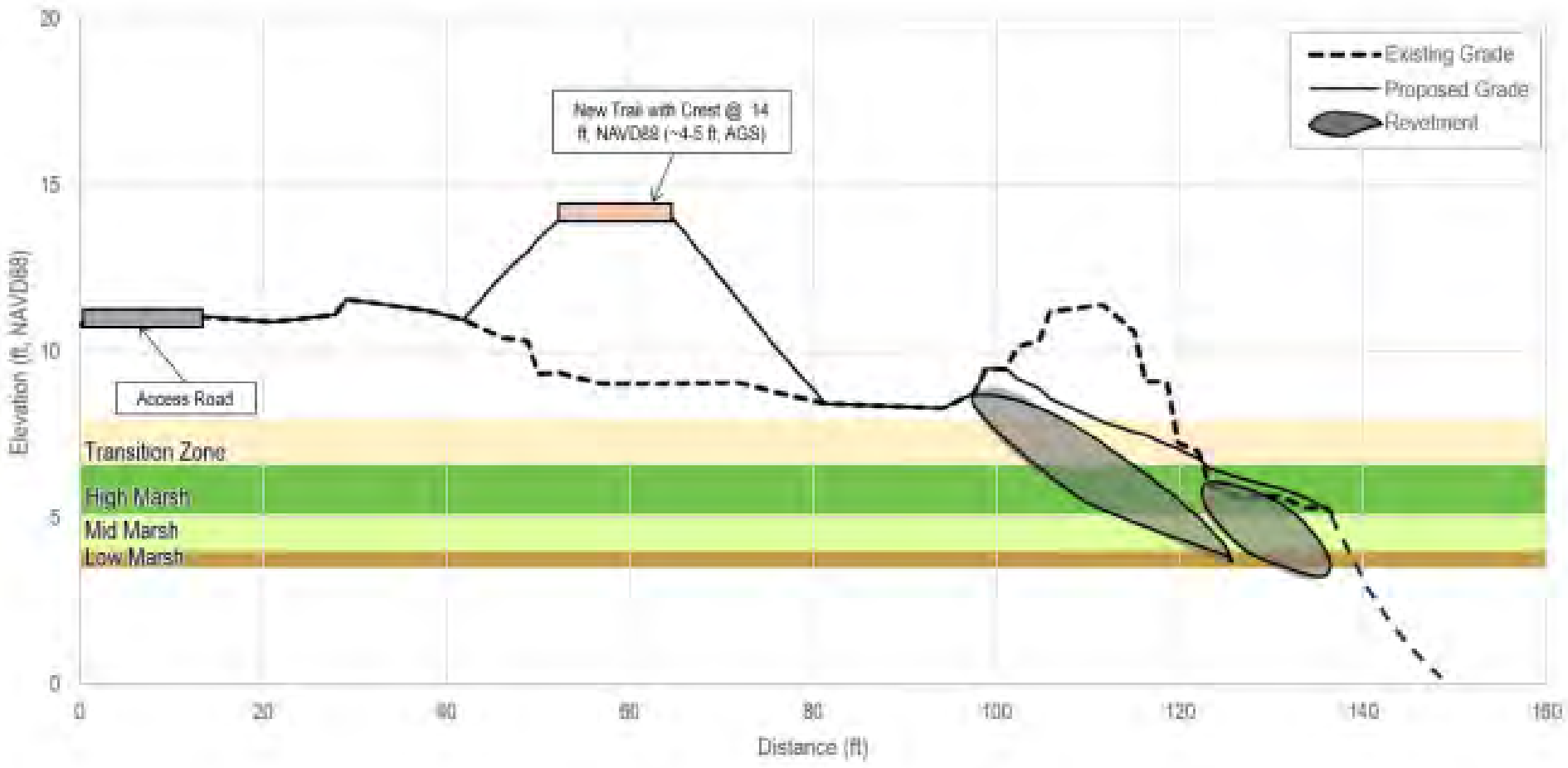



**FIGURE 10**

Eastside of Southeast Riverbank Cross Section w/ Habitat Zones

SDL Shoreline Protection Project

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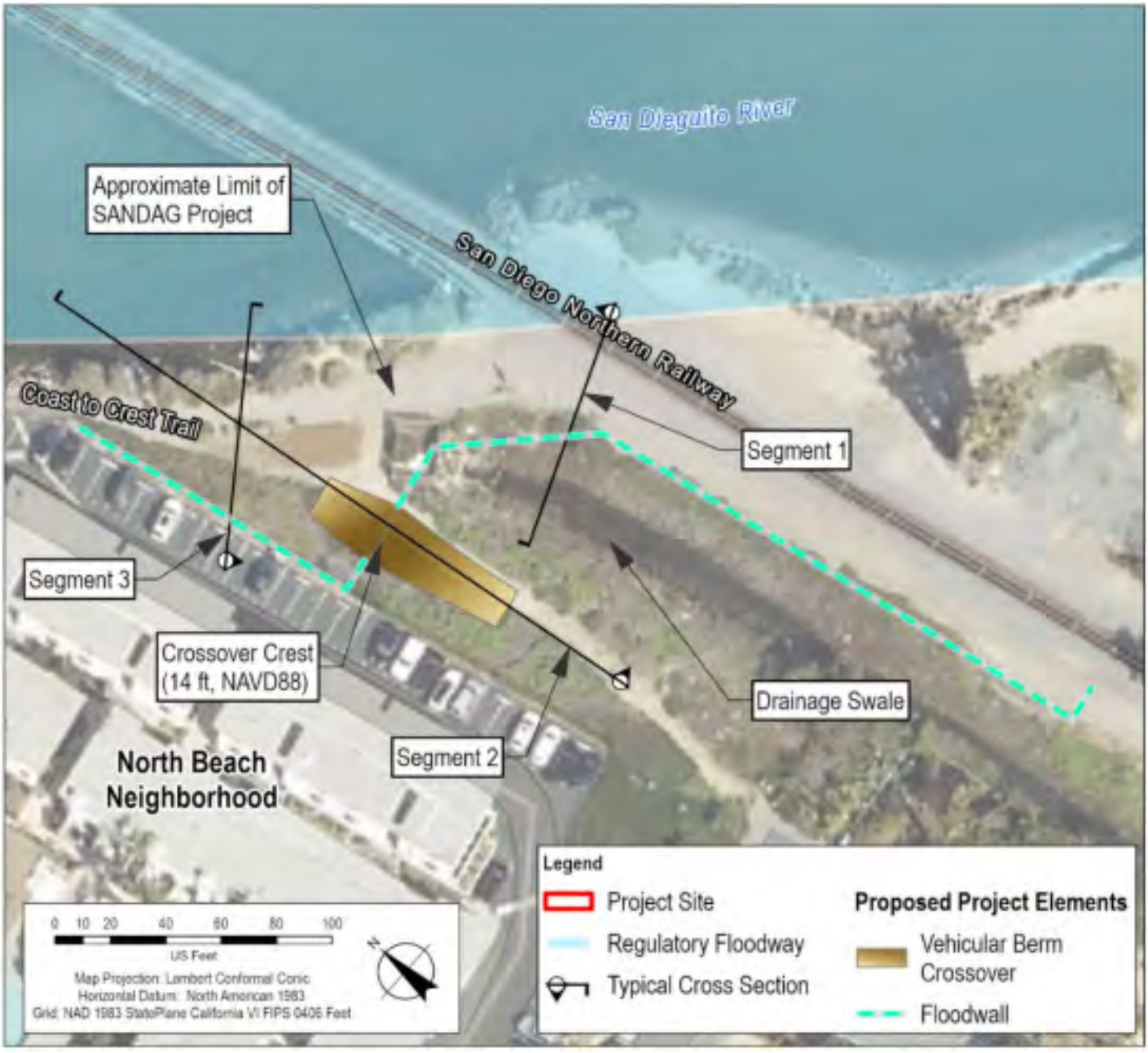


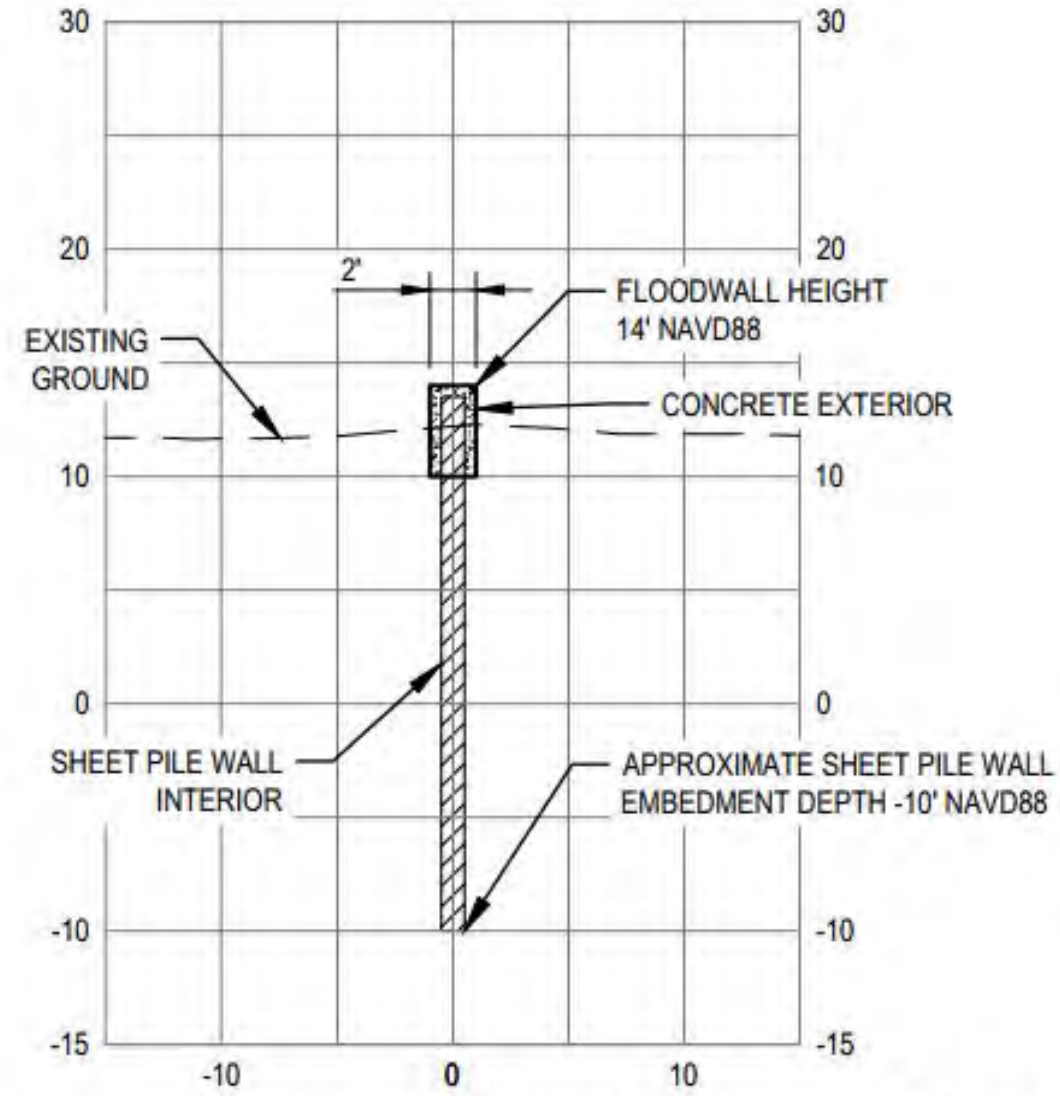

**FIGURE 11**

Southwest Riverbank Site Plan

SDL Shoreline Protection Project

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## SECTION B - SOUTHWEST RIVERBANK FLOODWALL

1" = 10'

**FIGURE 12**

Southwest Riverbank Cross Section

SDL Shoreline Protection Project

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# Appendix A

No Rise Analysis Report

# No Rise Analysis Report

**October 03, 2025**

| | | | |
|---|---|---|---|
| **To** | Amanda Lee | **Contact No.** | +1 415 296-2056 |
| **Copy to** | Karen Falk, Nestor Machado | **Email** | madeline.howell@ghd.com |
| **From** | Madeline Howell, PE | **Project No.** | 12661343 |
| **Project Name** | Dudek - City of Del Mar Engineering SDL Shoreline Protection | | |
| **Subject** | No Rise Analysis Report | | |

## 1. Introduction

This report documents a hydraulic analysis used to evaluate the impacts of proposed shoreline protection along the San Dieguito River in Del Mar, California. The shoreline improvements are located on the north and south banks of the river, between Jimmy Durante Blvd. and the San Dieguito River Railway Bridge. Please refer to **Figure 1** for a vicinity map.

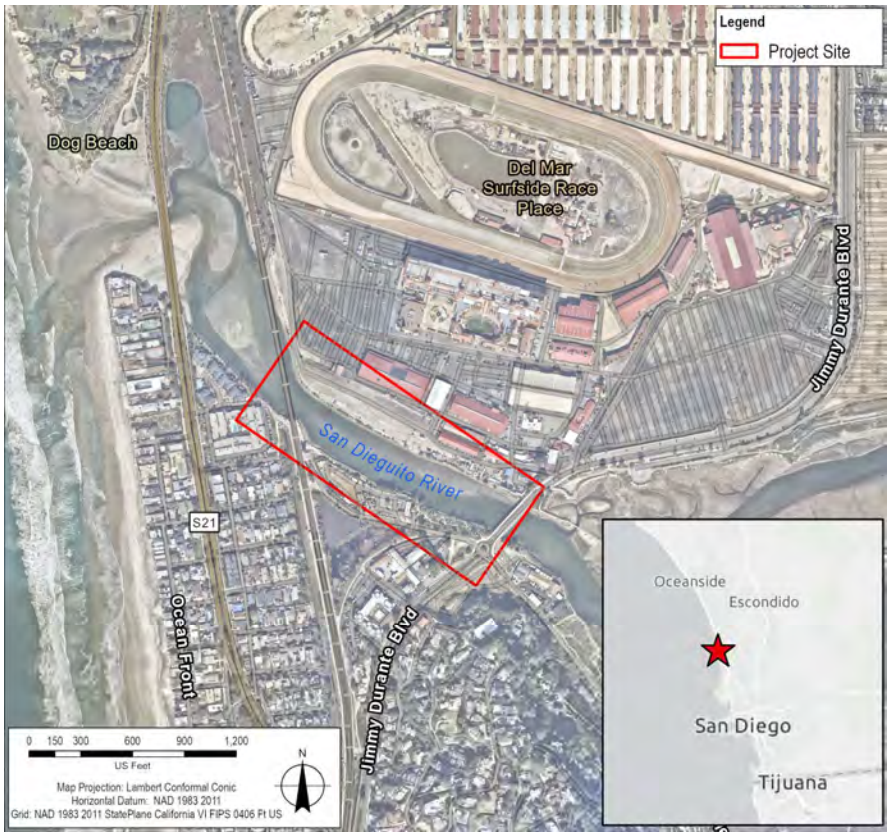



*Figure 1 Vicinity Map*

The proposed project includes trail improvements, shoreline treatments, berms, floodwalls, and habitat areas adjacent to Del Mar Fairgrounds and the Del Mar Public Works facilities. The purpose of the proposed project is to improve public access along the San Dieguito River the waterfront, enhance habitat, and provide some flood protection to local, regional, and state public facilities along the river. The objectives of the project are discussed in more detail in GHD's 2025 *San Dieguito Lagoon Shoreline Protection Feasibility Study (Draft)*. As discussed in the Feasibility Study, flood protection facilities are expected to provide flood protection for the City's Public Works Yard and the Fairgrounds site during flood events with recurrence intervals of up to 36 years and 13 years, respectively. These facilities do not provide flood protection during the 100-year storm event. **Figure 2** shows the proposed project site. The focus of this no-rise analysis is the phase of the project that includes development along the north riverbank and southeast riverbank.

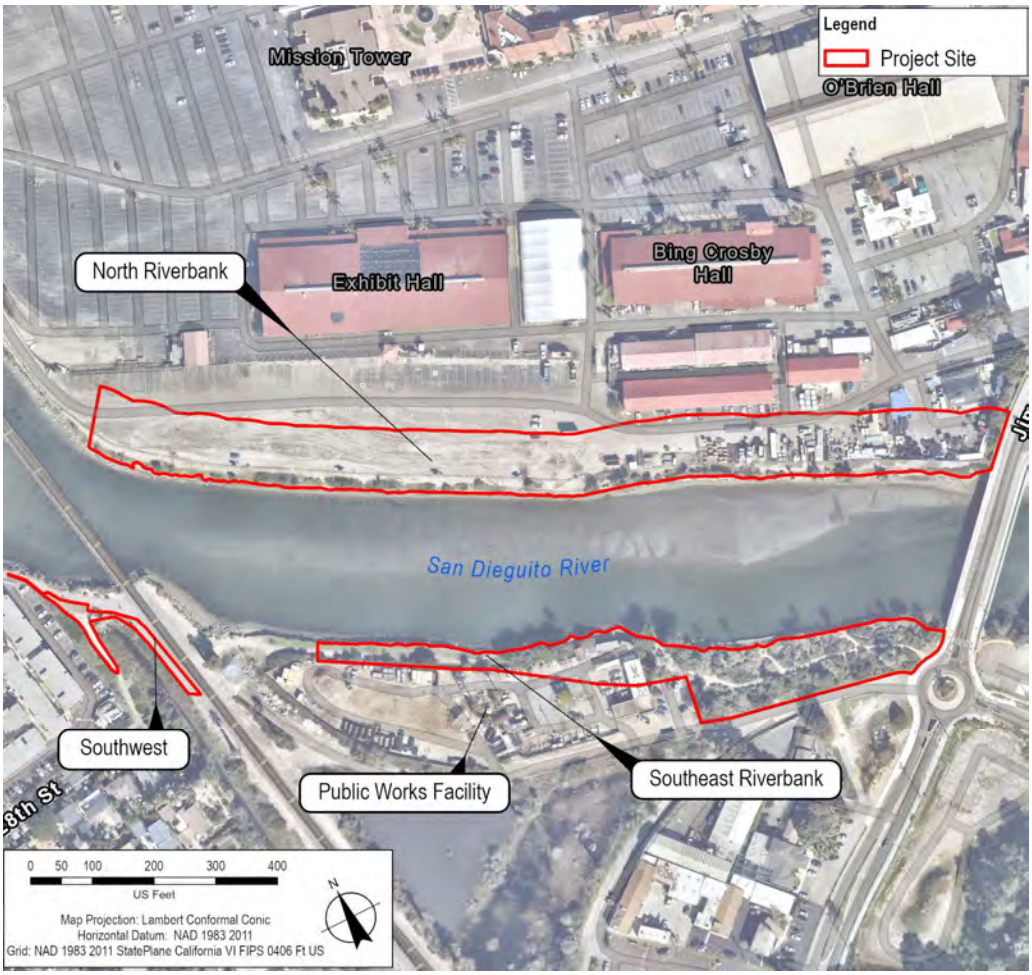



***Figure 2 Proposed project site.***

The proposed project is located within FEMA Flood Insurance Rate Map (FIRM) Panel 06073C1307H effective December 20, 2019 (see **Appendix A**). The project site is mapped within FEMA Flood Zone AE, which indicates a 1% annual chance of flooding with established Base Flood Elevations (BFEs). The proposed shoreline protection improvements extend into the effective FEMA floodway, so the project must meet FEMA's no-rise criteria. The no-rise criteria require a hydraulic analysis to demonstrate the proposed project does not result in any increase in flood levels within the community during the base flood event. The base flood event refers to the flood event that has a 1% annual chance of exceedance. Please refer to **Figure 3** for the proposed project site alongside the FEMA regulatory floodway.

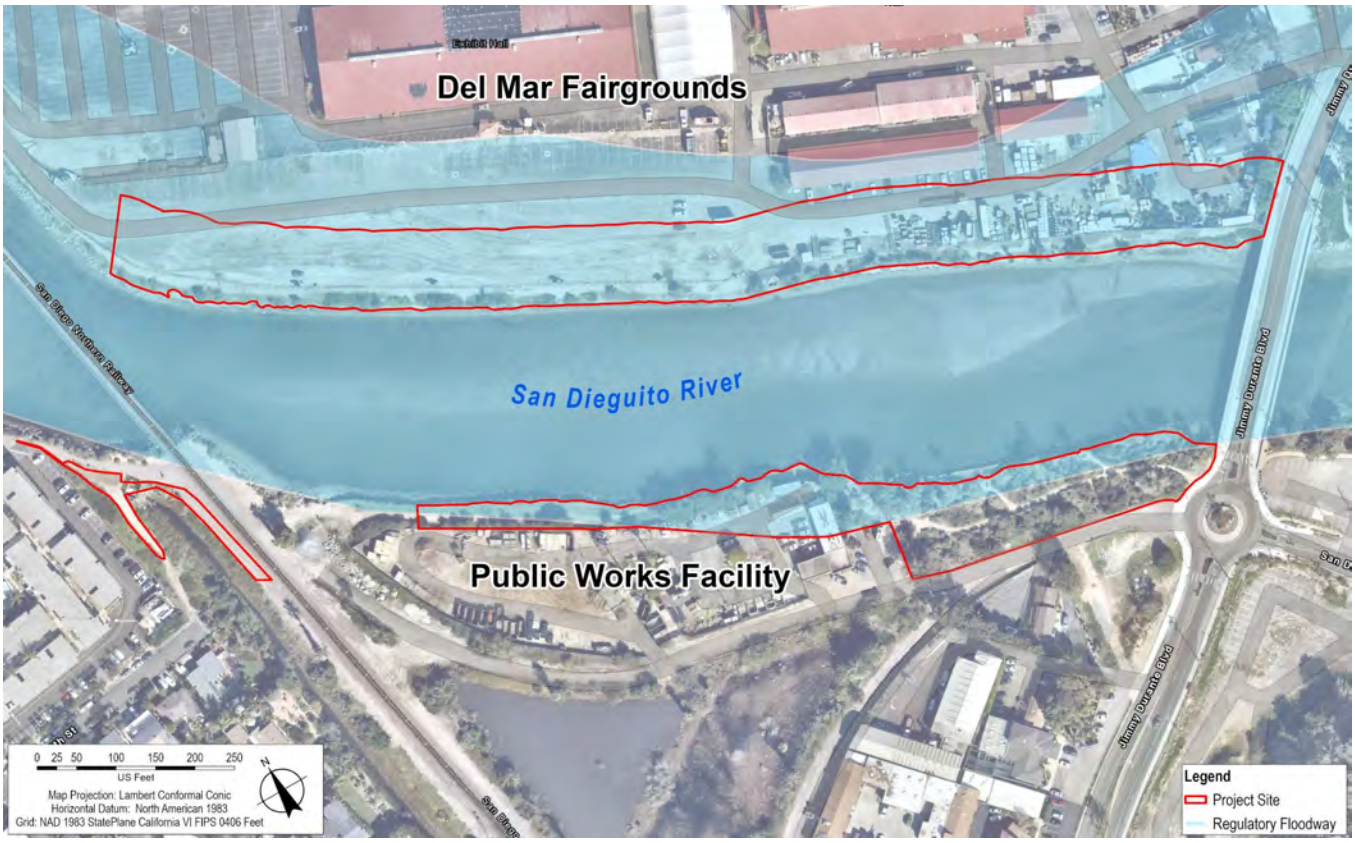



*Figure 3 Project site and regulatory floodway*

## 1.1 Purpose of this report

The purpose of this report is to document the no-rise analysis for the proposed shoreline improvements between the San Dieguito River Railway Bridge and the Jimmy Durante Blvd Bridge. This report introduces the proposed improvements, documents the cut/fill analysis, describes the existing and proposed hydraulic model builds, and discusses the results of the no-rise analysis.

## 1.2 Limitations

**Report**

*This report has been prepared by GHD for Dudek and may only be used and relied on by Dudek and the City of Del Mar for the purpose agreed between GHD and Dudek.*

*GHD otherwise disclaims responsibility to any person other than Dudek and the City of Del Mar arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.*

**Model**

*GHD has prepared the HEC-RAS Model of the San Dieguito River ("Model") for, and for the benefit and sole use of, Dudek and the City of Del Mar to support shoreline protection no-rise analysis and must not be used for any other purpose or by any other person.*

*The Model is a representation only and does not reflect reality in every aspect. The Model contains simplified assumptions to derive a modelled outcome. The actual variables will inevitably be different to those used to prepare the Model. Accordingly, the outputs of the Model cannot be relied upon to represent actual conditions without due consideration of the inherent and expected inaccuracies. Such considerations are beyond GHD's scope.*

*The information, data and assumptions ("Inputs") used as inputs into the Model are from publicly available sources or provided by or on behalf of the Dudek and the City of Del Mar. GHD has not independently verified or checked Inputs beyond its agreed scope of work. GHD's scope of work does not include review or update of the Model as further Inputs becomes available.*

*The Model is limited by the mathematical rules and assumptions that are set out in the Report or included in the Model and by the software environment in which the Model is developed.*

*The Model is a customized model and not intended to be amended in any form or extracted to other software for amending. Any change made to the Model, other than by GHD, is undertaken on the express understanding that GHD is not responsible, and has no liability, for the changed Model including any outputs.*

**Accessibility of documents**

*If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.*

# 2. Project Description

## 2.1 Overview

The proposed project includes shoreline treatments, berms, floodwalls, trails, and habitat enhancements along the north and south banks of the San Dieguito River between the Jimmy Durante Blvd Bridge and the San Dieguito River Railway Bridge. The following section summarizes the proposed project. Please refer to GHD's *San Dieguito Lagoon Shoreline Protection Feasibility Study (Draft)* for more detail regarding the proposed project (GHD, 2025).

Along the north bank of the river, the proposed improvements occur within a 100 ft easement of the Del Mar Fairground's (22nd District Agricultural Association) property that is located entirely within FEMA's mapped regulatory floodway. These proposed improvements include an elevated trail, shoreline treatment, a berm that provides flood protection, and a habitat enhancement area. These improvements extend to the mean higher high water (MHHW) elevation of 5.13 ft, with 7:1 and 4:1 side slopes along the trail and a shallow (±2%) slope along the habitat enhancement area. The berm provides flood protection during storm events with recurrence intervals of up to approximately 13 years (GHD, 2025). **Figure 4** shows the extent of the north bank improvements. A typical section is included in **Figure 5**, which shows the 15-ft wide elevated trail at approximately 2 to 3 ft above the existing ground surface (10 ft NAVD88) and the habitat enhancement area.

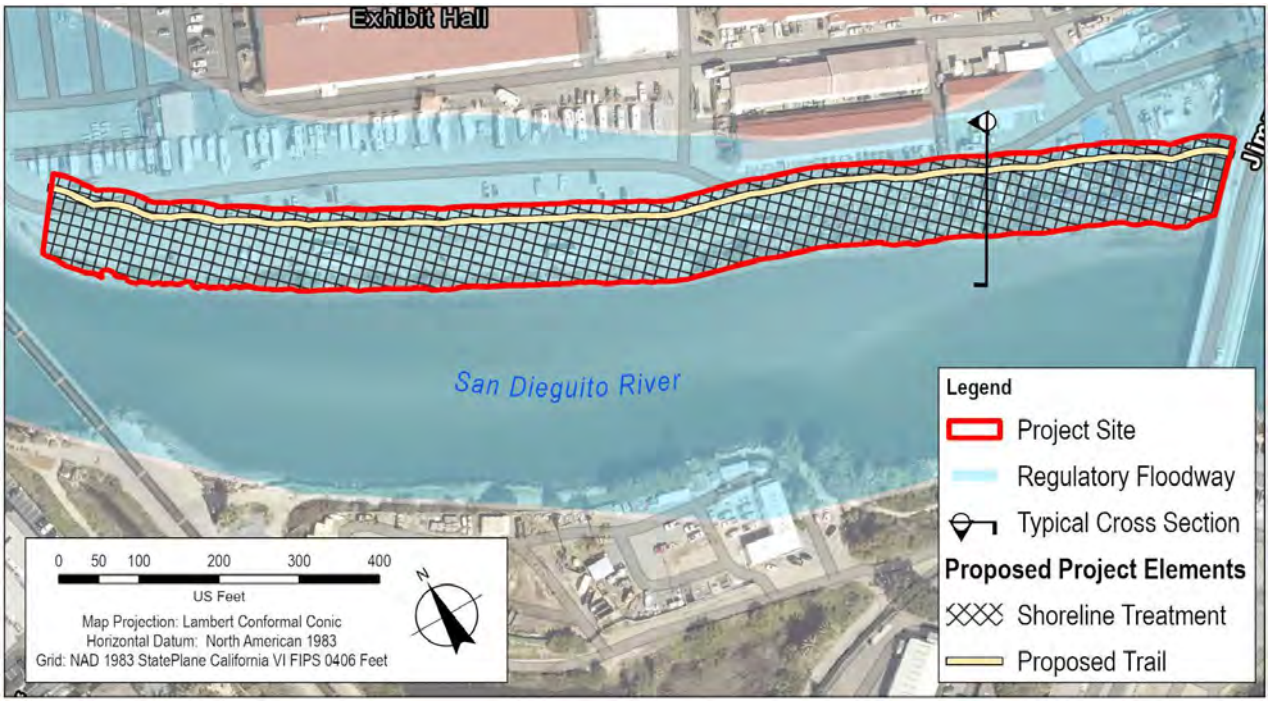



*Figure 4* *Proposed north bank improvements*

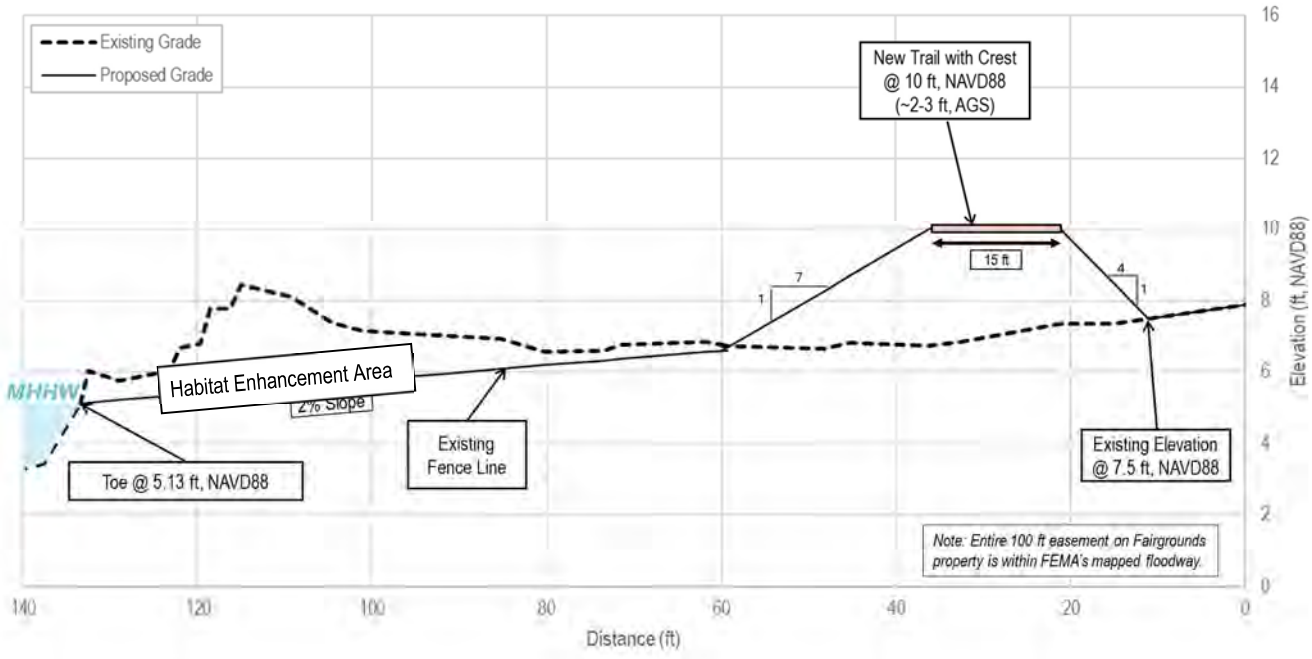



*Figure 5* *North bank segment for cross section shown on Figure 4.*

The proposed improvements along the south bank include a floodwall, a berm, and realignment of portions of the City's Public Works Facility to facilitate relocation of existing structures from the regulatory floodway. The proposed

berm and floodwall are expected to provide flood protection for up to the 36-year storm event (GHD, 2025). East of the Public Works Yard, a proposed berm would be situated along San Dieguito Dr. from Jimmy Durante Blvd to the proposed floodwall at the Public Works Yard. The proposed berm is situated outside of the effective FEMA floodway to reduce hydraulic impacts, but it is still within the base floodplain. The proposed berm features a 2 ft top width. The top of the berm is approximately 3 ft above existing ground surface (AGS), with an elevation of 14 ft NAV88. The proposed improvements also include cut along the existing south bank to offset the fill of the proposed berm. Please refer to **Figure 6** for a plan view of the proposed southeast bank improvements and **Figure 7** for a typical section east of the Public Works Yard.

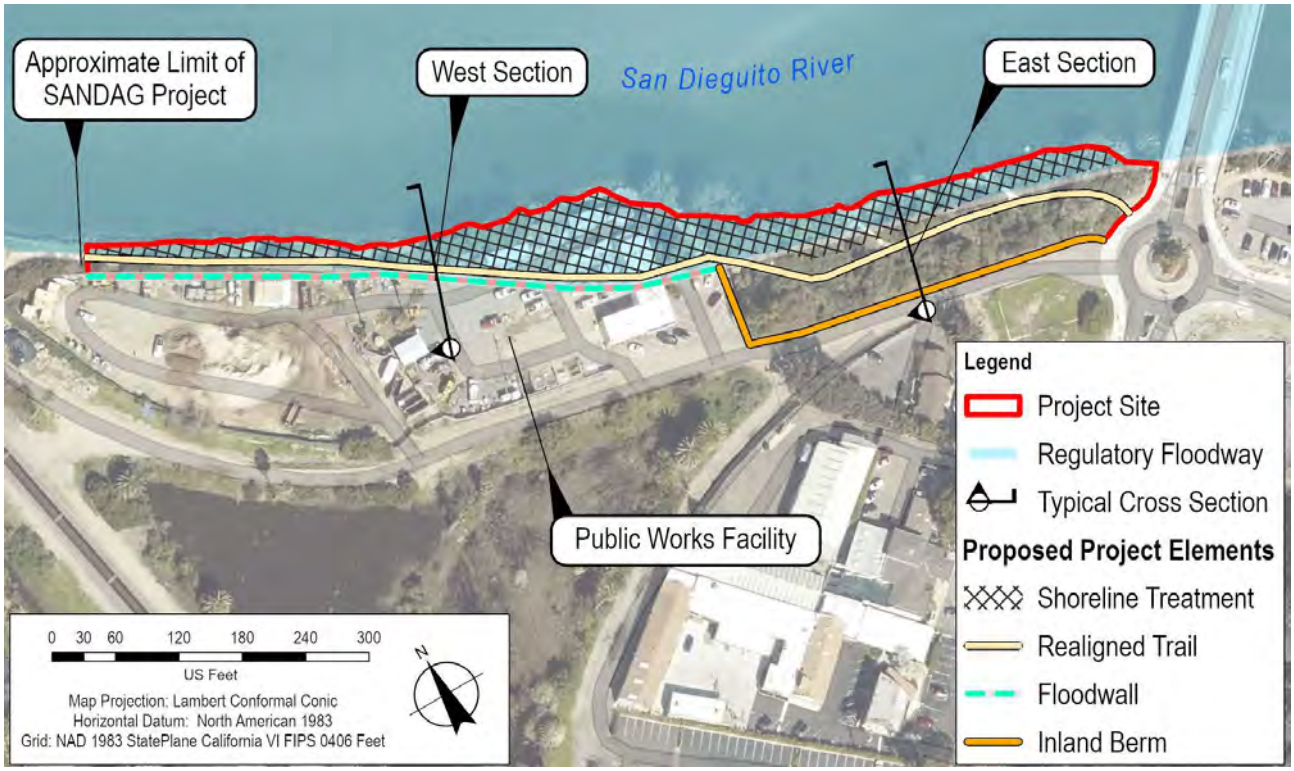



*Figure 6* *Proposed southeast bank improvements*

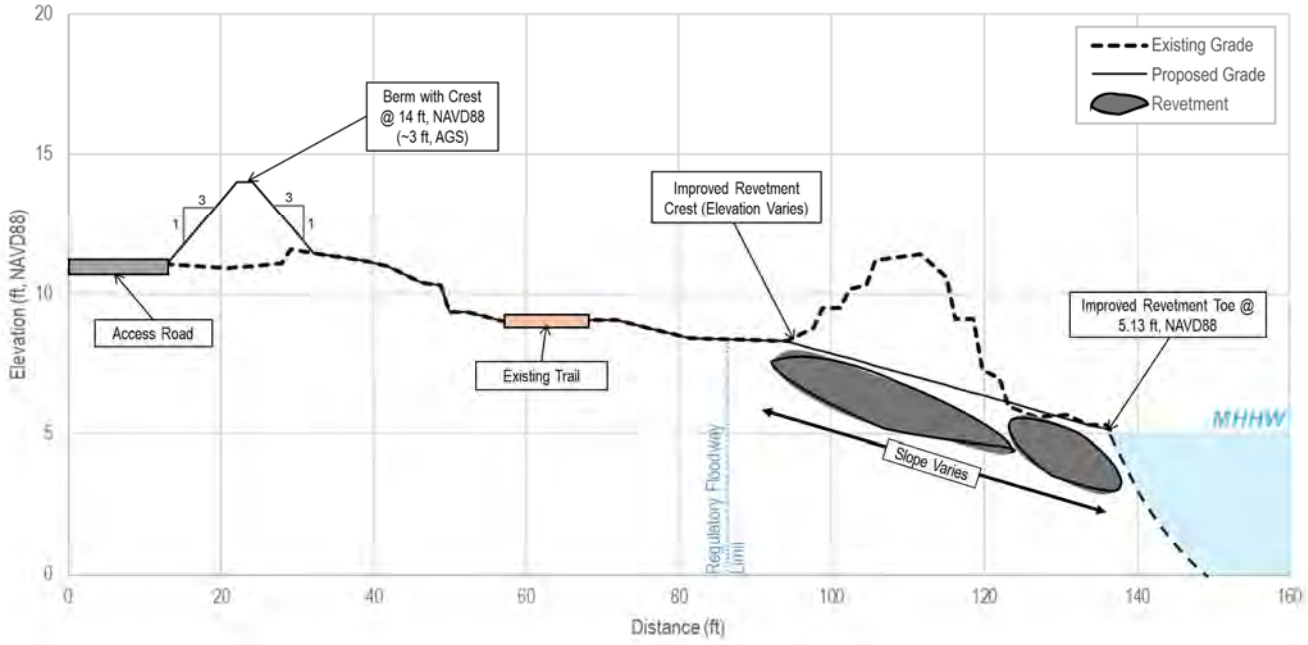



*Figure 7 Southeast bank segment for east cross section shown on Figure 6.*

Proposed improvements within the Public Works Facilities are shown in **Figure 6** and include a floodwall, shoreline protection, and cut to the existing south bank. The existing Public Works Facility building will also be relocated outside of the effective FEMA floodway. Relocating this building outside of the floodway will ensure that future improvements to the building will not require a no-rise analysis. The proposed floodwall features an elevation of 14 ft, which is approximately 3 ft above the existing ground surface. The proposed floodwall is located at the edge of the floodway boundary from where it ties into the proposed berm until it intersects the existing fence line, approximately 330 ft west of the berm. From there, the floodwall extends east along the existing fence line to the limits of an adjacent proposed project San Dieguito River Railroad Bridge improvement project by SANDAG. The location of the floodwall can help reduce flood risk for future development located east of the floodwall, within the 100-year floodplain. Construction of a floodwall instead of a berm reduces the fill within the floodplain, which lowers the project's impact on 100-year water surface elevations. The proposed improvements also include cut to the existing shore adjacent to the floodwall to increase effective flow area within the San Dieguito River. Please refer to **Figure 8** for a typical cross-section of the proposed southeast bank improvements within the Public Works Yard.

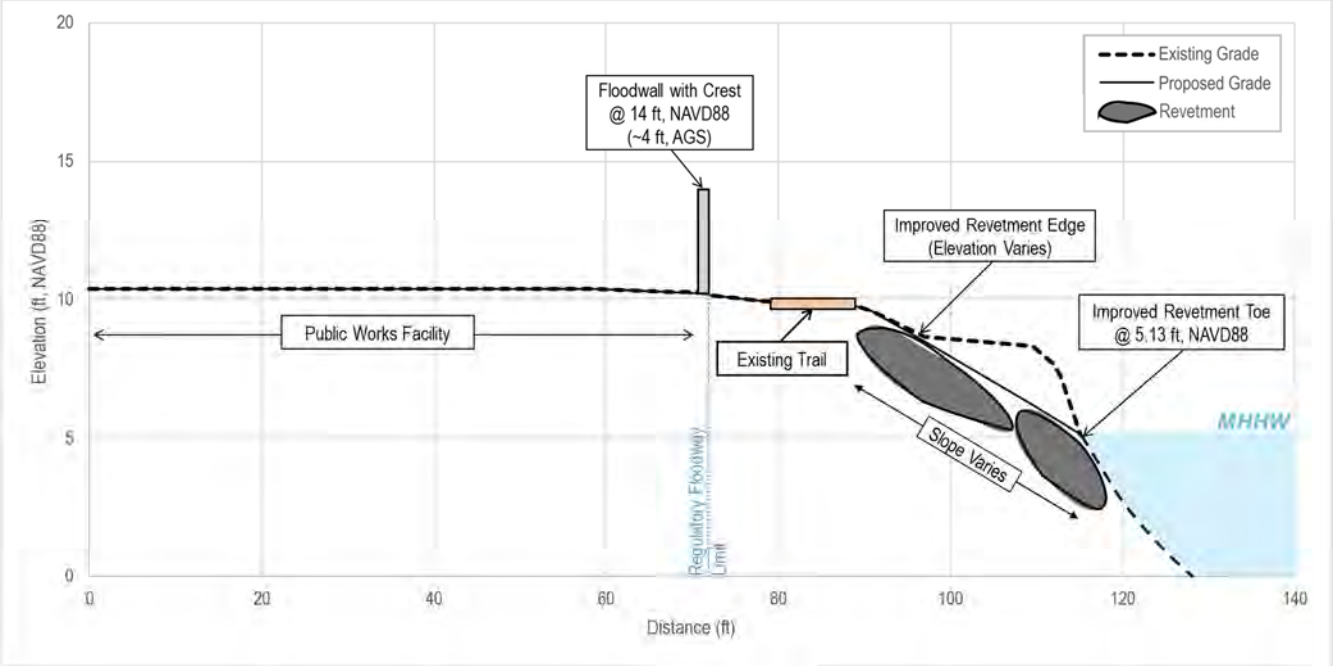



*Figure 8 Southeast bank segment for west cross section shown in Figure 6.*

## 2.2 Cut and Fill Analysis

A cut and fill analysis was completed to ensure the proposed improvements do not result in net-fill conditions, which would reduce the effective area for flood conveyance. The cut/fill was analyzed at each cross-section in the hydraulic model (see **Section 3.2.2**), and the results are shown in **Table 1**. The results of the cut/fill analysis indicate that the proposed improvements balance cut and fill or result in net cut conditions at each modeled cross-section. Please refer to **Appendix B** for cut/fill calculations.

*Table 1 Cut/fill analysis results*

| Cross-Section | North Bank Net Fill ($ft^2$) | South Bank Net Fill ($ft^2$) | Overall Net Fill ($ft^2$) |
|---|---|---|---|
| 2607 | -46 | 0 | -46 |
| 2824 | -59 | -59 | -118 |
| 3084 | 14 | -19 | -5 |
| 3321 | 53 | -53 | 0 |
| 3572 | 15 | -38 | -23 |

*Notes:*

1. *Positive values indicate fill while negative values indicate cut.*

# 3. Hydraulic Model Development

## 3.1 Duplicate Effective Model

The effective model of the San Dieguito River is a HEC-2 model dating back to 1985. This created challenges that required GHD to create a model that accounts for existing conditions in order to more accurately analyze hydraulics for this no-rise analysis, as described in more detail below.

GHD received PDF and electronic versions of the HEC-2 model from FEMA. The PDF version of the HEC-2 model appeared to match the BFEs shown on the effective FIRM. Note that the effective model is in NGVD29, and FEMA converted the effective BFEs to NAVD88 using a shift of 2.1 ft (FEMA, 2016). The PDF version of the HEC-2 model is included in **Appendix C**.

GHD imported the electronic version of the HEC-2 model into HEC-RAS version 6.7 beta to serve as the duplicate effective model. For the model to run, the bridge widths needed to be reduced by 2 ft to allow the binding cross-sections to be a minimum of 1 ft away from the bridge. The results of this model are significantly different from the PDF of HEC-2 model, with differences in water surface elevations of up to 0.9 ft. It is unclear whether these differences are caused by differences in bridge modeling approach between HEC-2 and HEC-RAS, or if the electronic version of the HEC-2 model was not the most recent version. Additionally, the cross-section widths of the imported HEC-2 model do not match the lettered cross-sections on the effective FIRM. The imported HEC-2 model also does not provide a good hydraulic representation of existing conditions, since flow is not contained within the cross-sections and the bridge geometry does not reflect the record drawings. Due to HEC-2 limitations, the imported bridges only contain one pier, whereas record drawings and photos of the bridges show many piers. The results of this electronic duplicate effective model are included in **Appendix D**.

Since the electronic duplicate effective model does not accurately duplicate the effective model, does not accurately represent the hydraulics of the San Dieguito River, and is not georeferenced, it was not used as the basis of the no-rise analysis. Instead, an existing conditions model was developed that more accurately analyzes the hydraulics within the study reach.

## 3.2 Existing Conditions Model

### 3.2.1 Overview

GHD developed a steady-state existing conditions HEC-RAS model to provide the basis of the no-rise analysis. The model was developed using US Army Corps of Engineers (USACE) HEC-RAS version 6.7 beta. The model was run using the subcritical flow regime, consistent with FEMA guidance. Model inputs are described in the following sections.

### 3.2.2 Cross-Sections

Cross-sections were cut from topographic data described in 3.2.3. Cross-sections were placed along the alignments of effective FEMA cross-sections A, B, C, and E, as shown in the Hydraulic Workmap in **Appendix E**. The cross-section at effective FEMA cross-section A was extended to contain flow. Cross-sections were cut between these lettered cross-sections, using the cross-section spacing of the HEC-2 model as a guide. The cross-sections contain several ineffective flow areas, including within the San Dieguito Lagoon, upstream and downstream of bridges, and surrounding elevated areas in the terrain that constrict flow.

### 3.2.3 Topographic Data

The HEC-RAS model geometry is based on two data sources: (1) United States Geological Survey (USGS) 2014 LiDAR data for San Diego County, and (2) USACE National Coastal Mapping Program (NCMP) topobathymetric LiDAR data for California. The USGS LiDAR data was used as the primary terrain data source and features a 3 ft resolution. The USGS LiDAR data, however, does not resolve the invert of the San Dieguito River. The USACE LiDAR data was used to resolve the channel geometry for cross-sections 1119 to 4672. This USACE LiDAR data features 1 ft grid cell size. The USACE LiDAR data does not extend to cross-sections 5117 to 6268, so the channel is not well-resolved in these cross-sections. These cross-sections are upstream of Jimmy Durante Blvd Bridge and are therefore outside of the project extents.

### 3.2.4 Manning's Roughness

Manning's roughness within the channel was set to 0.03, consistent with the FEMA effective model. Overbank roughness ranges from 0.035 to 0.100, depending on the land use. Manning's roughness was set to 0.035 to 0.040 for

undeveloped or primarily paved overbanks, similar to the overbank roughness values in the effective model. Manning's roughness was set to 0.08 to 0.10 for developed areas, with 0.10 used for higher-density areas, including on the left overbank south of the San Dieguito River Railway Bridge.

### 3.2.5 Boundary Conditions

Model flow rates were obtained from the PDF of the effective HEC-2 model provided by FEMA and are summarized in Table 2. Please refer to **Appendix C** for the PDF of the effective HEC-2 model

*Table 2 Hydraulic Model Flow Rates*

| HEC-RAS Cross-Section | Location | 100-year Flow Rate (cfs) | |
|---|---|---|---|
| | | Floodplain | Floodway |
| 6268 | Upstream end of model, approximately 2,300 ft upstream of the Jimmy Durante Blvd Bridge | 42,400 | 42,400 |
| 3926 | Jimmy Durante Blvd Bridge | 40,800 | 41,800 |
| 2374 | San Dieguito River Railway Bridge | 41,800 | 41,800 |

The downstream boundary condition was set to a known water surface elevation of 12 ft, which is the closest mapped BFE to the downstream boundary. The effective HEC-2 model results indicate that the water surface elevations in the floodplain and floodway runs are the same near the downstream end of the model. Therefore, the known water surface elevation of 12 ft was applied to both the floodplain and floodway profiles in this study.

### 3.2.6 Bridges

The HEC-RAS model includes three bridges: (1) the Jimmy Durante Blvd Bridge, (2) the San Dieguito River Railway Bridge, and (3) the Camino Del Mar Bridge. The bridge geometry for the Jimmy Durante Blvd and Camino Del Mar Bridges was obtained from record drawings received from the City of Del Mar. Record drawings were not available for the San Dieguito River Railway Bridge. Bridge geometry for the NCTD bridge was obtained from a previous model developed by Chang Consultants (Chang Consultants, 2020).

### 3.2.7 Floodway

Encroachments were used to model the effective floodway limits with the existing model geometry. Refinements were made to the existing model, including the placement of ineffective flow areas, to ensure that the effective floodway resulted in surcharge between 0.0 ft and 1.0 ft in the existing conditions.

## 3.3 Proposed Conditions Model

The proposed conditions model was developed by modifying the existing conditions model to include the proposed improvements. Cross-sections were modified to reflect the proposed conditions, which includes the proposed berms, shoreline treatments, proposed floodwalls, relocation of the Public Works Facility, and proposed cut areas for habitat enhancement. The proposed conditions model features the same cross-section locations, Manning's roughness, boundary conditions, and bridge geometry as the existing conditions. Along the north bank, bank stations were moved to the MHHW, to account for the higher Manning's roughness associated with the habitat enhancement area. The proposed conditions model contains the same ineffective flow areas as the existing model, other than an additional ineffective flow area at cross-section 3321, which accounts for the adjacent proposed berm. The proposed cross-sections are shown in the Hydraulic Workmap in **Appendix E**

# 4. Hydraulic Model Results

## 4.1 Overview

Hydraulic model results for the existing and proposed conditions are included in **Appendix F** and **Appendix G**, respectively. Consistent with effective FEMA mapping, the results of the hydraulic models indicate a wide base floodplain at the project site, with floodplain widths on the order of 4,000 ft. Model results indicate overtopping of the existing San Dieguito River Railway Bridge, immediately downstream of the project site. Additionally, water surface profiles indicated backwater conditions caused by the bridges, particularly the Camino Del Mar Bridge and the Jimmy Durante Blvd Bridge. Hydraulics within the study reach are therefore highly influenced by these bridges.

## 4.2 Proposed vs. Existing

A comparison of the proposed conditions water surface elevations (WSEs) to existing conditions water surface elevations is provided in **Table 3**. The results of the hydraulic analysis indicate that the proposed improvements do not increase water surface elevations at any of the studied cross-sections in the base flood event. The proposed improvements also do not increase the floodway water surface elevations anywhere in the model. Please refer to **Appendix F** and **Appendix G** for model results.

*Table 3 Comparison of proposed to existing water surface elevations*

| HEC-RAS Cross-Section | 100-year Floodplain WSE (ft) | | | Floodway WSE (ft) | | |
|---|---|---|---|---|---|---|
| | Existing | Proposed | Difference | Existing | Proposed | Difference |
| 6268 | 20.60 | 20.60 | 0.00 | 21.51 | 21.51 | 0.00 |
| 5978 | 20.51 | 20.51 | 0.00 | 21.47 | 21.47 | 0.00 |
| 5647 | 20.47 | 20.47 | 0.00 | 21.44 | 21.43 | -0.01 |
| 5117 | 20.50 | 20.50 | 0.00 | 21.44 | 21.43 | -0.01 |
| 4672 | 20.48 | 20.48 | 0.00 | 21.42 | 21.41 | -0.01 |
| 4307 | 20.30 | 20.30 | 0.00 | 21.27 | 21.26 | -0.01 |
| 4039 | 19.99 | 19.99 | 0.00 | 20.89 | 20.88 | -0.01 |
| 3926 | 19.35 | 19.35 | 0.00 | 20.22 | 20.21 | -0.01 |
| 3900 | Jimmy Durante Blvd Bridge | | | | | |
| 3857 | 15.95 | 15.90 | -0.05 | 16.89 | 16.84 | -0.05 |
| 3572 | 15.69 | 15.66 | -0.03 | 16.49 | 16.49 | -0.00 |
| 3321 | 15.43 | 15.38 | -0.05 | 16.05 | 16.00 | -0.05 |
| 3084 | 15.43 | 15.40 | -0.03 | 15.89 | 15.84 | -0.05 |
| 2824 | 15.34 | 15.32 | -0.02 | 15.54 | 15.52 | -0.02 |
| 2607 | 15.34 | 15.34 | 0.00 | 15.53 | 15.51 | -0.02 |
| 2446 | 15.32 | 15.32 | 0.00 | 15.71 | 15.71 | 0.00 |
| 2374 | 15.38 | 15.38 | 0.00 | 15.88 | 15.88 | 0.00 |
| 2360 | San Dieguito River Railway Bridge | | | | | |
| 2340 | 15.20 | 15.20 | 0.00 | 15.76 | 15.76 | 0.00 |
| 2016 | 15.22 | 15.22 | 0.00 | 15.78 | 15.78 | 0.00 |
| 1577 | 15.15 | 15.15 | 0.00 | 15.69 | 15.69 | 0.00 |
| 1362 | 14.82 | 14.82 | 0.00 | 14.95 | 14.95 | 0.00 |

| HEC-RAS Cross-Section | 100-year Floodplain WSE (ft) | | | Floodway WSE (ft) | | |
|---|---|---|---|---|---|---|
| | Existing | Proposed | Difference | Existing | Proposed | Difference |
| 1292 | 14.25 | 14.25 | 0.00 | 14.91 | 14.91 | 0.00 |
| 1250 | Camino Del Mar Bridge | | | | | |
| 1205 | 11.98 | 11.98 | 0.00 | 12.07 | 12.07 | 0.00 |
| 1119 | 12.00 | 12.00 | 0.00 | 12.00 | 12.00 | 0.00 |

## 4.3 Floodway

A comparison of the proposed floodway water surface elevations to proposed based floodplain water surface elevations are provided in **Table 4**. These results indicate that the effective floodway is valid in the proposed conditions, with surcharge between 0 ft and 1.0 ft.

*Table 4 Proposed floodway results*

| HEC-RAS Cross-Section | Water Surface Elevation (ft) | | |
|---|---|---|---|
| | Floodplain | Floodway | Difference |
| 6268 | 20.6 | 21.5 | 0.9 |
| 5978 | 20.5 | 21.5 | 1.0 |
| 5647 | 20.5 | 21.4 | 1.0 |
| 5117 | 20.5 | 21.4 | 0.9 |
| 4672 | 20.5 | 21.4 | 0.9 |
| 4307 | 20.3 | 21.3 | 1.0 |
| 4039 | 20.0 | 20.9 | 0.9 |
| 3926 | 19.4 | 20.2 | 0.9 |
| 3900 | Jimmy Durante Blvd Bridge | | |
| 3857 | 15.9 | 16.8 | 0.9 |
| 3572 | 15.7 | 16.5 | 0.8 |
| 3321 | 15.4 | 16.0 | 0.6 |
| 3084 | 15.4 | 15.8 | 0.4 |
| 2824 | 15.3 | 15.5 | 0.2 |
| 2607 | 15.3 | 15.5 | 0.2 |
| 2446 | 15.3 | 15.7 | 0.4 |
| 2374 | 15.4 | 15.9 | 0.5 |
| 2360 | San Dieguito River Railway Bridge | | |
| 2340 | 15.2 | 15.8 | 0.6 |
| 2016 | 15.2 | 15.8 | 0.6 |
| 1577 | 15.2 | 15.7 | 0.5 |
| 1362 | 14.8 | 15.0 | 0.1 |
| 1292 | 14.3 | 14.9 | 0.7 |
| 1250 | Camino Del Mar Bridge | | |
| 1205 | 12.0 | 12.1 | 0.1 |

| HEC-RAS Cross-Section | Water Surface Elevation (ft) | | |
|---|---|---|---|
| | Floodplain | Floodway | Difference |
| 1119 | 12.0 | 12.0 | 0.0 |

# 5. Conclusion

This report documents the no-rise analysis completed for the proposed shoreline improvements along the San Dieguito River's north and south banks between the Jimmy Durante Blvd Bridge and the San Dieguito River Railway Bridge. Proposed improvements include an elevated trail, shoreline treatments, a floodwall, a berm, habitat enhancement, and relocation of the Public Works Facility building. These improvements are discussed in further detail in GHD's 2025 *San Dieguito Lagoon Shoreline Protection Feasibility Study (Draft).* As discussed in the Feasibility Study, berms and floodwall are expected to mitigate San Dieguito River flood hazards at the City's Public Work Yard and the Fairgrounds site for storm events with recurrence intervals of up to approximately 36 years and 13 years, respectively (GHD, 2025).

This study demonstrates that the proposed improvements result in net cut conditions, increasing effective flow area within the San Dieguito River. Additionally, hydraulic modeling demonstrates that the proposed improvements do not increase water surface elevations within the San Dieguito River in the base flood event. The proposed improvements also do not increase the floodway water surface elevations or necessitate changes to the floodway extents. Please refer to **Appendix H** for a no-rise certification.

# 6. References


Chang Consultants. (2020). *Hydraulic and Sediment Transport Analysis for the Camino Del Mar Bridge Replacement Alternatives 1.1, 2.1, and 9.2.* Rancho Santa Fe, CA.

Federal Emergency Management Agency (FEMA). (2016). *Flood Insurance Study, San Diego County, California.*

Federal Emergency Management Agency (FEMA). (2022). *Flood Insurance Study: San Diego County, California.*

GHD. (2025). *San Dieguito Lagoon Shoreline Protection Feasibility Study (Draft).*


# 7. List of Appendices

Appendix A: Effective FIRM

Appendix B: Cut/Fill Analysis

Appendix C: Effective HEC-2 Model PDF

Appendix D: Duplicate Effective Model Results

Appendix E: Hydraulic Workmap

Appendix F: Existing Conditions Model Results

Appendix G: Proposed Conditions Model Results

Appendix H: No-Rise Certification

| Project name | | Dudek - City of Del Mar Engineering SDL Shoreline Protection | | | | | |
|---|---|---|---|---|---|---|---|
| Document title | | No Rise Analysis Report | | | | | |
| Project number | | 12661343 | | | | | |
| File name | | 20250917_NoRiseReport.docx | | | | | |
| Status Code | Revision | Author | Reviewer | | Approved for issue | | |
| | | | Name | Signature | Name | Signature | Date |
| S4 | 0 | Madeline Howell | Greg Garrison | Greg Garrison | | | |
| S4 | 1 | Madeline Howell | Greg Garrison | Greg Garrison | Nick Sadrpour | Nick Sadrpour | 10/03/2025 |

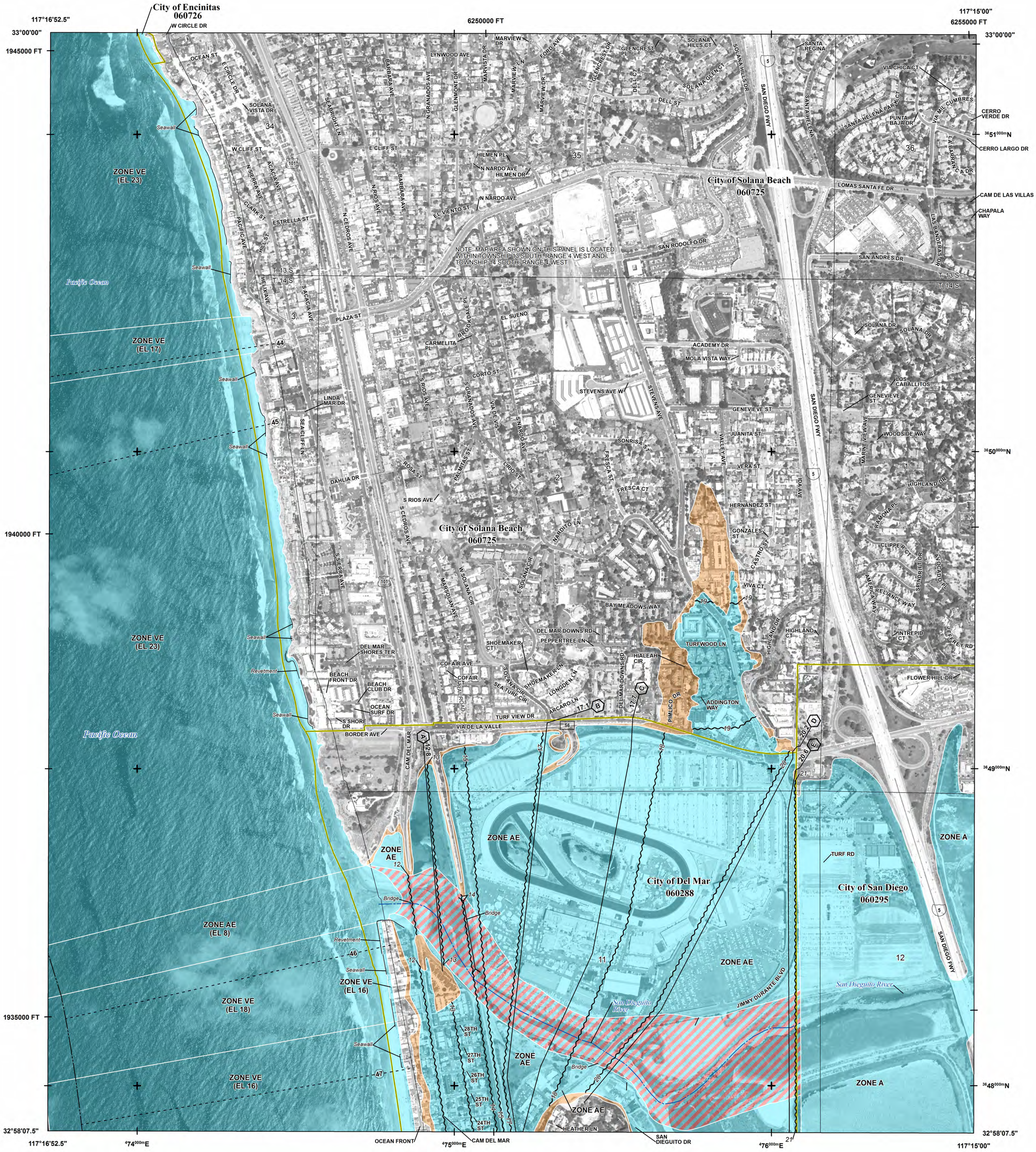
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# Appendices

# Appendix A

## Effective FIRM




## 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

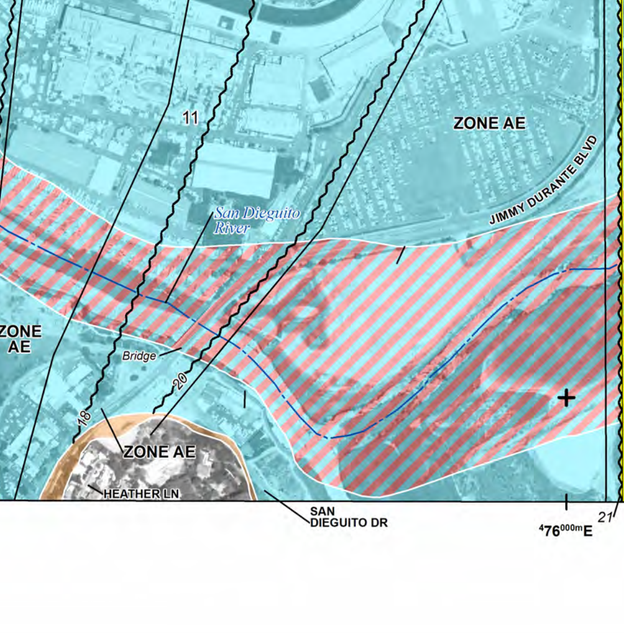
Map Projection:
Universal Transverse Mercator Zone 11N; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 250 500 750 1,000 2,000 feet

0 125 250 500 meters

## PANEL LOCATOR




FEMA

National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM**

FLOOD INSURANCE RATE MAP

**SAN DIEGO COUNTY, CALIFORNIA**

and Incorporated Areas

PANEL 1307 OF 2375

Panel Contains:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| DEL MAR, CITY OF | 060288 | 1307 | H |
| ENCINITAS, CITY OF | 060726 | 1307 | H |
| SAN DIEGO, CITY OF | 060295 | 1307 | H |
| SOLANA BEACH, CITY OF | 060725 | 1307 | H |

VERSION NUMBER
2.3.3.3

MAP NUMBER
06073C1307H

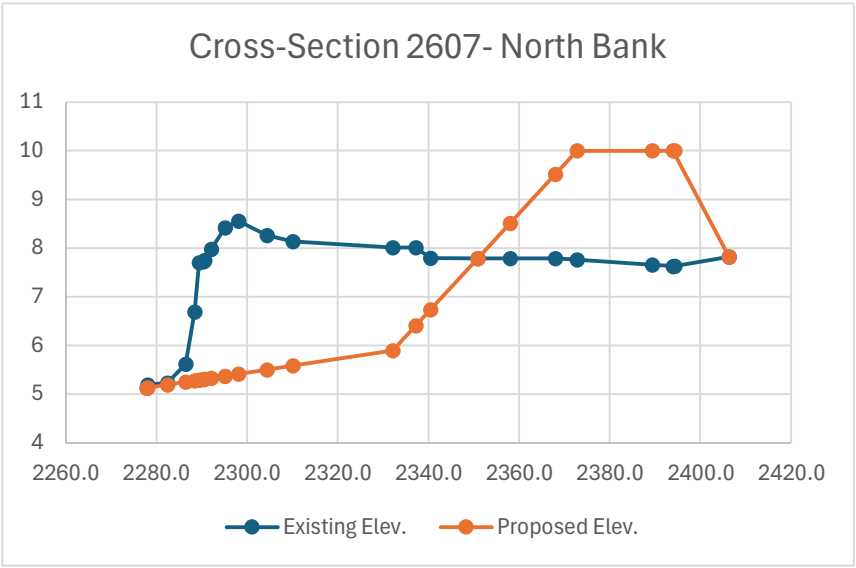
MAP REVISED
DECEMBER 20, 2019

# Appendix B

## Cut/Fill Analysis

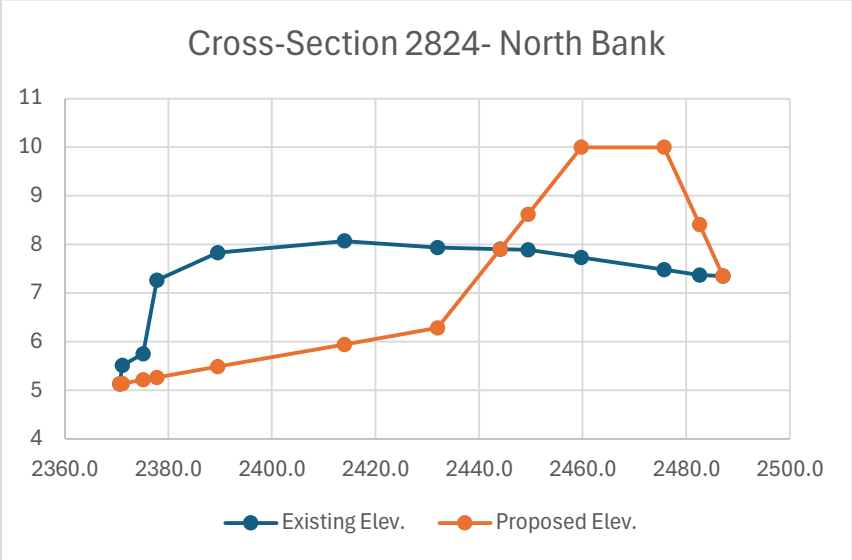
| Cross-Section 2607- North Bank | | |
|---|---|---|
| **Cut** | -134.43 | sq. ft |
| **Fill** | 88.50 | sq. ft |
| **Net Cut/Fill** | -45.92 | sq. ft |

| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 2277.9 | 5.13 | 5.13 | 0.00 | |
| 2278.0 | 5.19 | 5.13 | -0.06 | 0.00 |
| 2282.4 | 5.23 | 5.19 | -0.04 | -0.21 |
| 2286.4 | 5.62 | 5.25 | -0.37 | -0.81 |
| 2288.4 | 6.69 | 5.28 | -1.41 | -1.78 |
| 2289.4 | 7.7 | 5.29 | -2.41 | -1.91 |
| 2290.4 | 7.72 | 5.31 | -2.41 | -2.41 |
| 2290.6 | 7.75 | 5.31 | -2.44 | -0.49 |
| 2292.1 | 7.98 | 5.33 | -2.65 | -3.82 |
| 2295.1 | 8.42 | 5.37 | -3.05 | -8.54 |
| 2298.1 | 8.56 | 5.42 | -3.14 | -9.29 |
| 2304.4 | 8.26 | 5.50 | -2.76 | -18.58 |
| 2310.1 | 8.14 | 5.59 | -2.55 | -15.13 |
| 2332.1 | 8.01 | 5.90 | -2.11 | -51.46 |
| 2337.2 | 8.01 | 6.41 | -1.60 | -9.38 |
| 2340.4 | 7.79 | 6.73 | -1.06 | -4.31 |
| 2350.9 | 7.79 | 7.79 | 0.00 | -5.53 |
| 2358.0 | 7.79 | 8.51 | 0.72 | 2.57 |
| 2368.0 | 7.79 | 9.52 | 1.73 | 12.21 |
| 2372.8 | 7.76 | 10.00 | 2.24 | 9.45 |
| 2389.4 | 7.66 | 10 | 2.34 | 38.09 |
| 2394.3 | 7.63 | 10 | 2.37 | 11.54 |
| 2394.0 | 7.62 | 10 | 2.38 | -0.76 |
| 2406.3 | 7.82 | 7.82 | 0.00 | 14.64 |



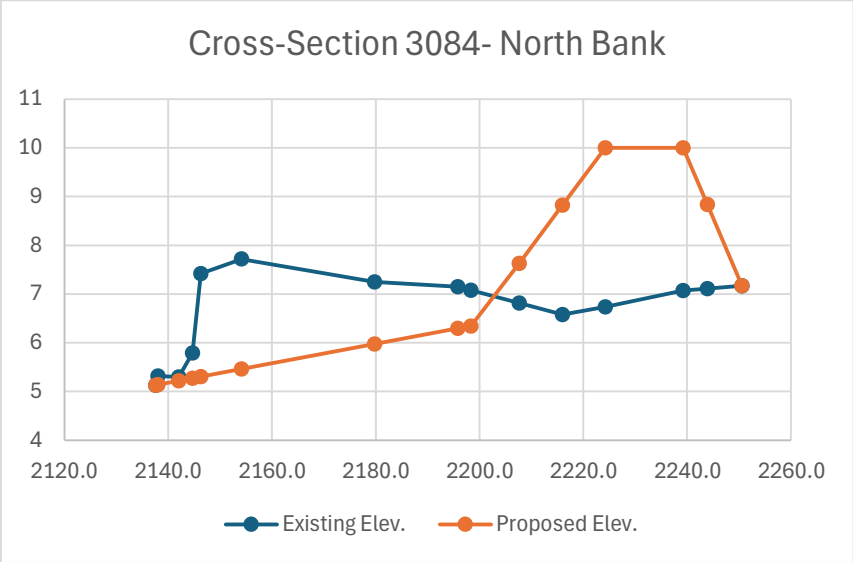
| Cross-Section 2824- North Bank | | |
|---|---|---|
| **Cut** | -129.56 | sq. ft |
| **Fill** | 70.29 | sq. ft |
| **Net Cut/Fill** | -59.27 | sq. ft |

| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 2370.6 | 5.13 | 5.13 | 0.00 | |
| 2371.1 | 5.51 | 5.14 | -0.37 | -0.09 |
| 2375.1 | 5.75 | 5.21 | -0.54 | -1.81 |
| 2377.8 | 7.26 | 5.26 | -2.00 | -3.42 |
| 2389.5 | 7.83 | 5.48 | -2.35 | -25.40 |
| 2414.0 | 8.07 | 5.94 | -2.13 | -54.80 |
| 2432.0 | 7.94 | 6.28 | -1.66 | -33.98 |
| 2444.1 | 7.90 | 7.90 | 0.00 | -10.06 |
| 2449.5 | 7.89 | 8.62 | 0.73 | 1.95 |
| 2459.8 | 7.73 | 10.00 | 2.27 | 15.48 |
| 2475.8 | 7.48 | 10.00 | 2.52 | 38.40 |
| 2482.6 | 7.37 | 8.41 | 1.04 | 12.12 |
| 2487.1 | 7.35 | 7.35 | 0.00 | 2.34 |



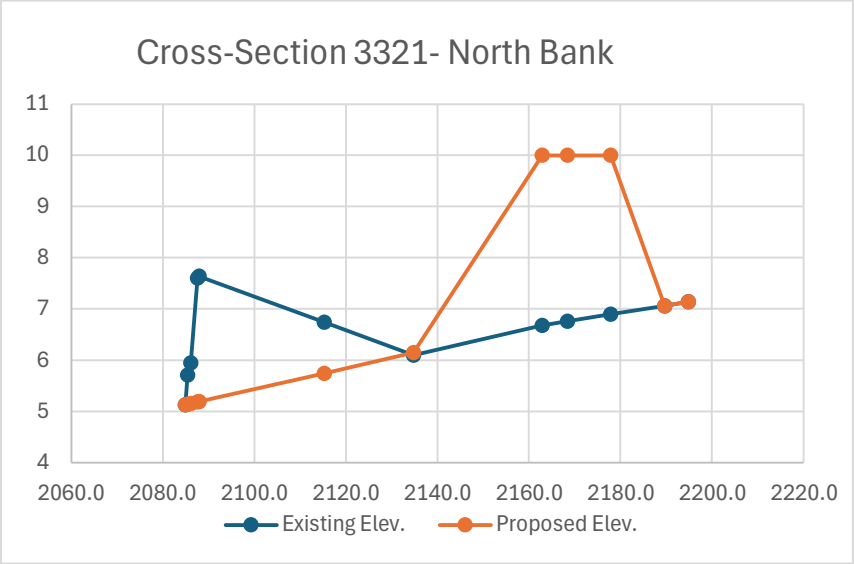
| Cross-Section 3084- North Bank | | |
|---|---|---|
| **Cut** | -84.94 | sq. ft |
| **Fill** | 98.88 | sq. ft |
| **Net Cut/Fill** | 13.94 | sq. ft |

| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 2137.6 | 5.13 | 5.13 | 0.00 | |
| 2138.0 | 5.32 | 5.14 | -0.18 | -0.04 |
| 2142.0 | 5.3 | 5.22 | -0.08 | -0.53 |
| 2144.7 | 5.79 | 5.27 | -0.52 | -0.81 |
| 2146.3 | 7.42 | 5.30 | -2.12 | -2.11 |
| 2154.1 | 7.72 | 5.46 | -2.26 | -17.10 |
| 2179.8 | 7.25 | 5.97 | -1.27 | -45.35 |
| 2195.8 | 7.15 | 6.29 | -0.86 | -17.02 |
| 2198.3 | 7.08 | 6.34 | -0.73 | -2.00 |
| 2207.7 | 6.81 | 7.63 | 0.82 | 0.39 |
| 2216.0 | 6.58 | 8.82 | 2.24 | 12.73 |
| 2224.3 | 6.74 | 10.00 | 3.26 | 22.71 |
| 2239.3 | 7.07 | 10.00 | 2.93 | 46.46 |
| 2243.9 | 7.11 | 8.84 | 1.73 | 10.83 |
| 2250.6 | 7.17 | 7.17 | 0.00 | 5.76 |



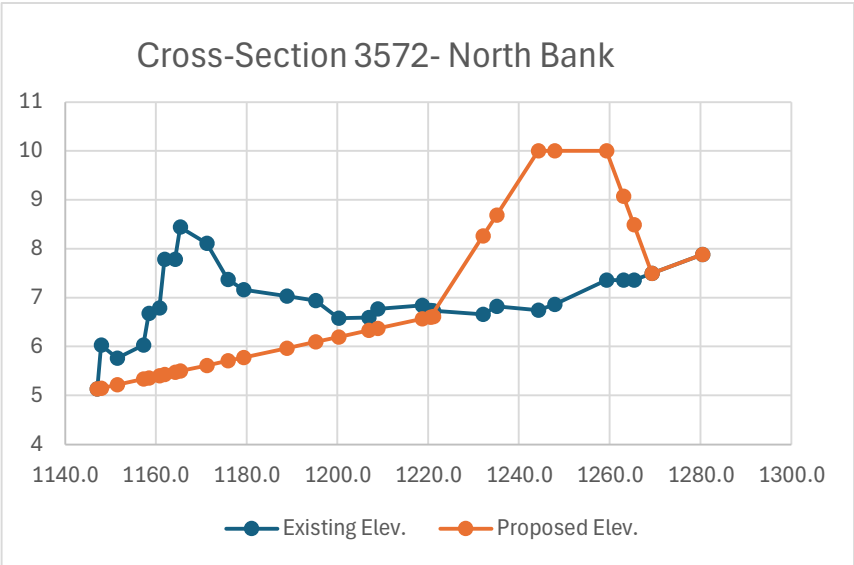
| Cross-Section 3321- North Bank | | |
|---|---|---|
| **Cut** | -60.35 | sq. ft |
| **Fill** | 113.75 | sq. ft |
| **Net Cut/Fill** | 53.41 | sq. ft |

| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 2084.9 | 5.13 | 5.13 | 0.00 | |
| 2085.4 | 5.71 | 5.14 | -0.57 | -0.15 |
| 2086.1 | 5.95 | 5.15 | -0.80 | -0.48 |
| 2087.6 | 7.6 | 5.18 | -2.42 | -2.41 |
| 2087.9 | 7.64 | 5.19 | -2.45 | -0.78 |
| 2115.3 | 6.74 | 5.74 | -1.00 | -47.25 |
| 2134.8 | 6.1 | 6.15 | 0.05 | -9.28 |
| 2162.9 | 6.68 | 10.00 | 3.32 | 47.33 |
| 2168.4 | 6.76 | 10.00 | 3.24 | 18.04 |
| 2177.9 | 6.90 | 10.00 | 3.10 | 30.13 |
| 2189.7 | 7.06 | 7.06 | 0.00 | 18.25 |
| 2194.9 | 7.14 | 7.14 | 0.00 | 0.00 |



| Cross-Section 3572- North Bank | | |
|---|---|---|
| **Cut** | -80.08 | sq. ft |
| **Fill** | 95.43 | sq. ft |
| **Net Cut/Fill** | 15.35 | sq. ft |

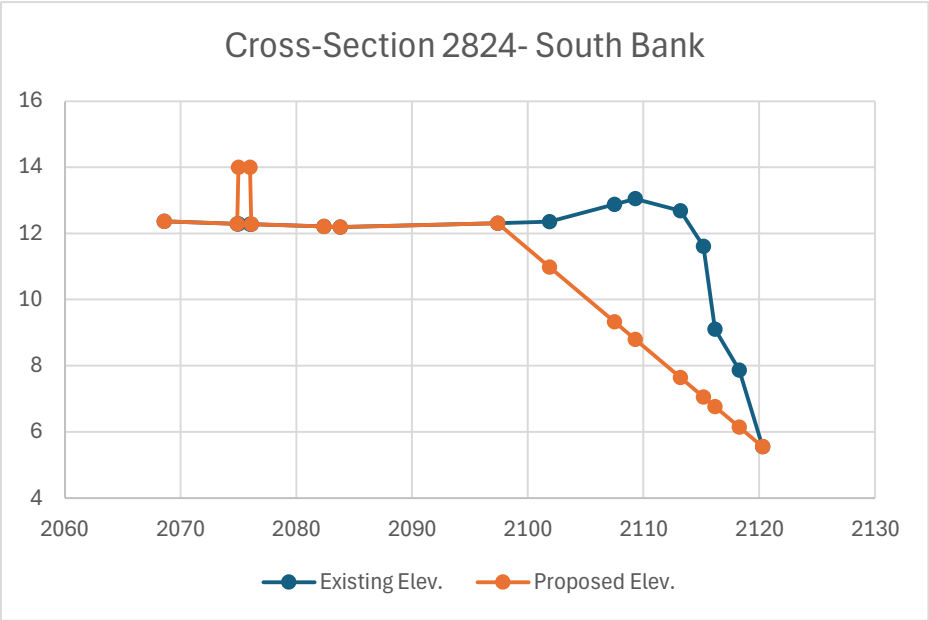
| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 1147.0 | 5.13 | 5.13 | | |
| 1147.9 | 6.03 | 5.15 | -0.88 | -0.79 |
| 1151.4 | 5.76 | 5.22 | -0.54 | -2.49 |
| 1157.2 | 6.03 | 5.33 | -0.70 | -3.60 |
| 1158.4 | 6.68 | 5.36 | -1.32 | -1.17 |
| 1160.7 | 6.79 | 5.40 | -1.39 | -3.16 |
| 1161.9 | 7.78 | 5.43 | -2.35 | -2.17 |
| 1164.2 | 7.78 | 5.47 | -2.31 | -5.43 |
| 1165.4 | 8.44 | 5.50 | -2.94 | -3.04 |
| 1171.2 | 8.11 | 5.61 | -2.50 | -15.80 |
| 1175.8 | 7.37 | 5.71 | -1.66 | -9.67 |
| 1179.3 | 7.16 | 5.78 | -1.38 | -5.30 |
| 1188.8 | 7.03 | 5.97 | -1.06 | -11.64 |
| 1195.2 | 6.94 | 6.09 | -0.85 | -6.02 |
| 1200.3 | 6.58 | 6.19 | -0.39 | -3.15 |
| 1206.9 | 6.59 | 6.33 | -0.26 | -2.16 |
| 1208.9 | 6.77 | 6.37 | -0.40 | -0.66 |
| 1218.7 | 6.84 | 6.56 | -0.28 | -3.33 |
| 1221.2 | 6.73 | 6.61 | -0.12 | -0.49 |
| 1220.5 | 6.73 | 6.60 | -0.14 | 0.09 |
| 1232.1 | 6.66 | 8.26 | 1.60 | 8.49 |
| 1235.1 | 6.82 | 8.69 | 1.87 | 5.21 |
| 1244.3 | 6.74 | 10 | 3.26 | 23.55 |
| 1247.9 | 6.86 | 10.00 | 3.14 | 11.53 |
| 1259.3 | 7.36 | 10 | 2.64 | 32.94 |
| 1263.0 | 7.36 | 9.07 | 1.71 | 8.08 |
| 1265.3 | 7.36 | 8.49 | 1.13 | 3.30 |
| 1269.3 | 7.50 | 7.50 | 0.00 | 2.25 |
| 1280.4 | 7.88 | 7.88 | 0.00 | 0.00 |



**Cross-Section 2824- South Bank**

| | | |
|---|---|---|
| **Cut** | -61.02 | sq. ft |
| **Fill** | 1.89 | sq. ft |
| **Net Cut/Fill** | -59.13 | sq. ft |

| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 2068.6 | 12.36 | 12.36 | 0.00 | |
| 2074.90 | 12.29 | 12.29 | 0.00 | 0.00 |
| 2075.00 | 12.29 | 14.00 | 1.71 | 0.09 |
| 2076 | 12.28 | 14.00 | 1.72 | 1.72 |
| 2076.1 | 12.28 | 12.28 | 0.00 | 0.09 |
| 2082.4 | 12.21 | 12.21 | 0.00 | 0.00 |
| 2083.8 | 12.19 | 12.19 | 0.00 | 0.00 |
| 2097.4 | 12.31 | 12.31 | 0.00 | 0.00 |
| 2101.9 | 12.35 | 10.98 | -1.37 | -3.08 |
| 2107.5 | 12.88 | 9.33 | -3.55 | -13.77 |
| 2109.3 | 13.05 | 8.80 | -4.25 | -7.02 |
| 2113.2 | 12.68 | 7.65 | -5.03 | -18.11 |
| 2115.2 | 11.61 | 7.06 | -4.55 | -9.59 |
| 2116.2 | 9.1 | 6.76 | -2.34 | -3.45 |
| 2118.3 | 7.87 | 6.14 | -1.73 | -4.27 |
| 2120.3 | 5.55 | 5.55 | 0.00 | -1.73 |

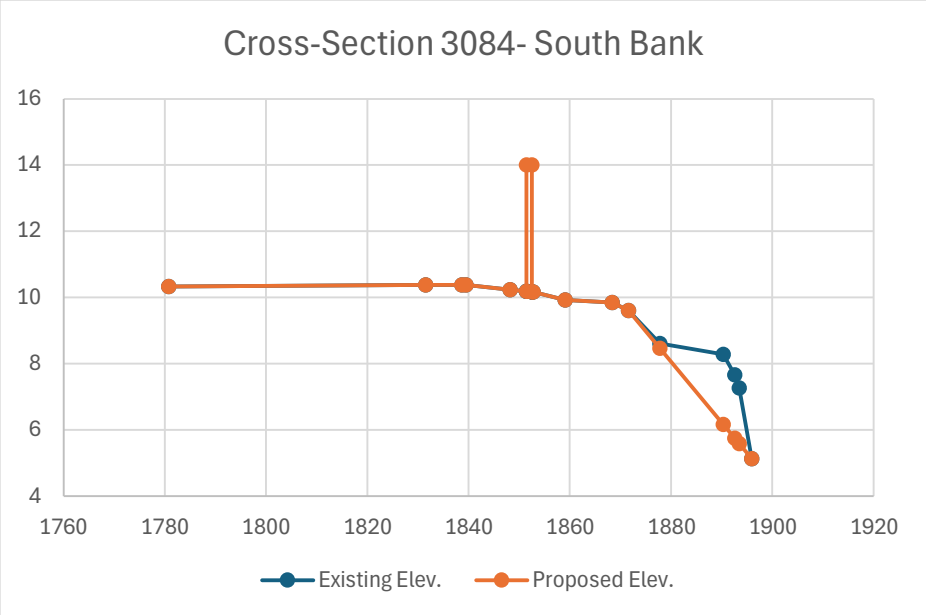



2075

**Cross-Section 3084- South Bank**

| | | |
|---|---|---|
| **Cut** | -22.91 | sq. ft |
| **Fill** | 4.25 | sq. ft |
| **Net Cut/Fill** | -18.66 | sq. ft |

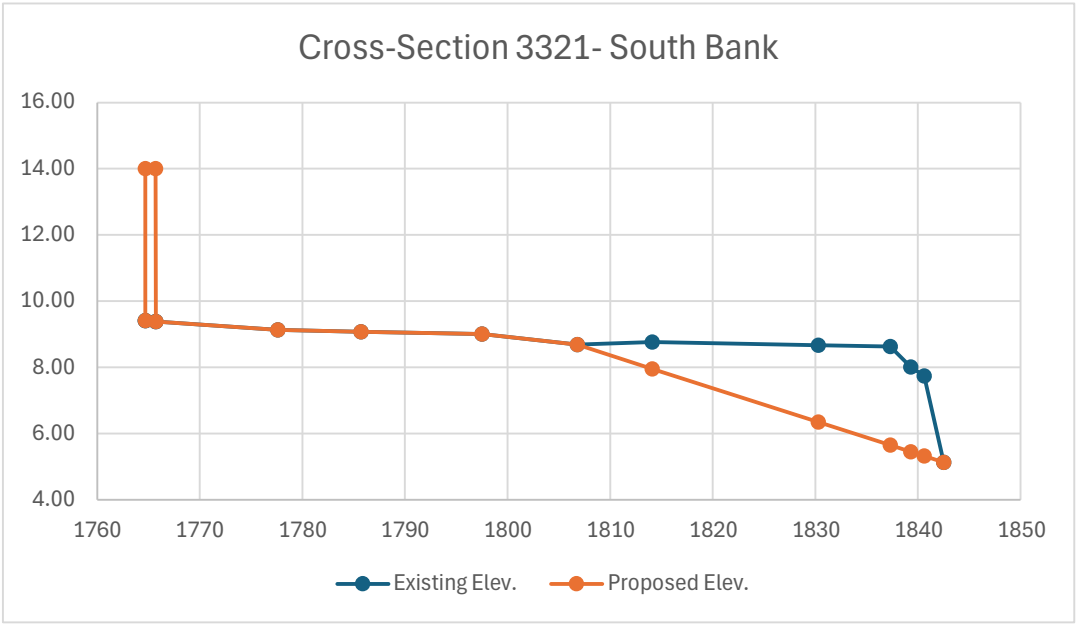
| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 1780.8 | 10.33 | 10.33 | 0.00 | |
| 1831.56 | 10.37 | 10.37 | 0.00 | 0.00 |
| 1838.7 | 10.38 | 10.38 | 0.00 | 0.00 |
| 1839.50 | 10.38 | 10.38 | 0.00 | 0.00 |
| 1848.23 | 10.23 | 10.23 | 0.00 | 0.00 |
| 1851.42 | 10.18 | 10.18 | 0.00 | 0.00 |
| 1851.43 | 10.18 | 14.00 | 3.82 | 0.02 |
| 1852.53 | 10.16 | 14.00 | 3.84 | 4.21 |
| 1852.54 | 10.16 | 10.16 | 0.00 | 0.02 |
| 1852.8 | 10.16 | 10.16 | 0.00 | 0.00 |
| 1859.1 | 9.92 | 9.92 | 0.00 | 0.00 |
| 1868.4 | 9.84 | 9.84 | 0.00 | 0.00 |
| 1871.6 | 9.6 | 9.60 | 0.00 | 0.00 |
| 1877.8 | 8.61 | 8.46 | -0.15 | -0.46 |
| 1890.3 | 8.28 | 6.17 | -2.11 | -14.14 |
| 1892.6 | 7.66 | 5.74 | -1.92 | -4.64 |
| 1893.5 | 7.26 | 5.58 | -1.68 | -1.62 |
| 1895.94 | 5.13 | 5.13 | 0.00 | -2.05 |



**Cross-Section 3321- South Bank**

| | | |
|---|---|---|
| **Cut** | -57.97 | sq. ft |
| **Fill** | 4.65 | sq. ft |
| **Net Cut/Fill** | -53.32 | sq. ft |

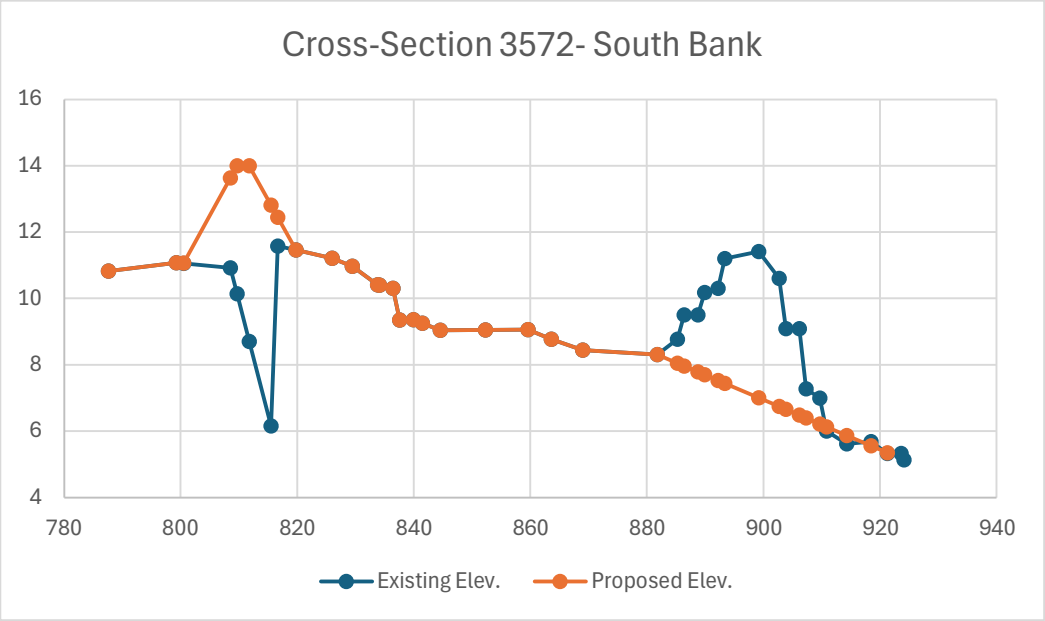
| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 1764.69 | 9.41 | 9.41 | 0.00 | |
| 1764.7 | 9.41 | 14.00 | 4.60 | 0.02 |
| 1765.7 | 9.38 | 14.00 | 4.62 | 4.61 |
| 1765.71 | 9.38 | 9.38 | 0.00 | 0.02 |
| 1777.6 | 9.13 | 9.13 | 0.00 | 0.00 |
| 1785.71 | 9.07 | 9.07 | 0.00 | 0.00 |
| 1797.50 | 9.00 | 9.00 | 0.00 | 0.00 |
| 1806.80 | 8.68 | 8.68 | 0.00 | 0.00 |
| 1814.1 | 8.76 | 7.95 | -0.81 | -2.94 |
| 1830.3 | 8.67 | 6.34 | -2.33 | -25.36 |
| 1837.3 | 8.63 | 5.65 | -2.98 | -18.58 |
| 1839.3 | 8.01 | 5.45 | -2.56 | -5.54 |
| 1840.6 | 7.74 | 5.32 | -2.42 | -3.24 |
| 1842.51 | 5.13 | 5.13 | 0.00 | -2.31 |



**Cross-Section 3572- South Bank**

| | | |
|---|---|---|
| **Cut** | -71.06 | sq. ft |
| **Fill** | 53.35 | sq. ft |
| **Net Cut/Fil** | -17.71 | sq. ft |

| Station | Existing Elev. | Proposed Elev. | Prop-Exist | Cut/Fill Area |
|---|---|---|---|---|
| 787.63 | 10.83 | 10.83 | 0.00 | |
| 799.25 | 11.08 | 11.08 | 0.00 | 0.00 |
| 800.52 | 11.06 | 11.07 | 0.01 | 0.01 |
| 808.55 | 10.92 | 13.64 | 2.72 | 10.95 |
| 809.69 | 10.14 | 14 | 3.86 | 3.75 |
| 811.79 | 8.71 | 14 | 5.29 | 9.61 |
| 815.53 | 6.15 | 12.82 | 6.67 | 22.36 |
| 816.69 | 11.58 | 12.45 | 0.87 | 4.37 |
| 819.81 | 11.46 | 11.46 | 0.00 | 1.35 |
| 825.99 | 11.21 | 11.21 | 0.00 | 0.00 |
| 829.47 | 10.97 | 10.97 | 0.00 | 0.00 |
| 833.83 | 10.41 | 10.41 | 0.00 | 0.00 |
| 834.12 | 10.40 | 10.40 | 0.00 | 0.00 |
| 836.45 | 10.30 | 10.30 | 0.00 | 0.00 |
| 837.61 | 9.35 | 9.35 | 0.00 | 0.00 |
| 839.94 | 9.36 | 9.36 | 0.00 | 0.00 |
| 841.52 | 9.25 | 9.25 | 0.00 | 0.00 |
| 844.58 | 9.04 | 9.04 | 0.00 | 0.00 |
| 852.33 | 9.05 | 9.05 | 0.00 | 0.00 |
| 859.64 | 9.06 | 9.06 | 0.00 | 0.00 |
| 863.60 | 8.77 | 8.77 | 0.00 | 0.00 |
| 868.99 | 8.44 | 8.44 | 0.00 | 0.00 |
| 881.78 | 8.31 | 8.31 | 0.00 | 0.00 |
| 885.26 | 8.77 | 8.05 | -0.72 | -1.26 |
| 886.43 | 9.50 | 7.96 | -1.54 | -1.32 |
| 888.75 | 9.5 | 7.79 | -1.71 | -3.77 |
| 889.91 | 10.18 | 7.70 | -2.48 | -2.43 |
| 892.24 | 10.3 | 7.52 | -2.78 | -6.12 |
| 893.4 | 11.20 | 7.44 | -3.76 | -3.79 |
| 899.21 | 11.41 | 7.00 | -4.41 | -23.74 |
| 902.7 | 10.6 | 6.74 | -3.86 | -14.43 |
| 903.86 | 9.09 | 6.65 | -2.44 | -3.65 |
| 906.19 | 9.09 | 6.48 | -2.61 | -5.88 |
| 907.35 | 7.27 | 6.39 | -0.88 | -2.03 |
| 909.67 | 6.99 | 6.22 | -0.77 | -1.92 |
| 910.83 | 6 | 6.13 | 0.13 | -0.37 |
| 914.32 | 5.61 | 5.87 | 0.26 | 0.67 |
| 918.5 | 5.68 | 5.55 | -0.13 | 0.27 |
| 921.3 | 5.32 | 5.34 | 0.02 | -0.15 |
| 923.62 | 5.32 | 5.17 | -0.15 | -0.15 |
| 924.13 | 5.13 | 5.13 | 0.00 | -0.04 |


Cross-Section 3572- South Bank
16
14
12
10
8
6
4
780
800
820
840
860
880
900
920
940
Existing Elev.
Proposed Elev.

# Appendix C

## Effective HEC-2 Model PDF

```
**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG 1981
  ERROR CORR - 01,02,03,04
  MODIFICATION - 50,51,52,53,54
**************************************************
```

City of Del Mar and City of San Diego

SAN DIEGUITO RIVER

500, 100, 50-YR

RECEIVED
FEB 25 1985
DAMES & MOORE

```
C
T1      C-DOVES COUNTY OF SAN DIEGO, ZONE 1 AND CITY OF DEL MAR
T2      GEORGE S. NOLTE AND ASSOCIATES
T3      SAN DIEGUITO RIVER, 500-YR RUN

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
        0.        2.         0.         0.  0.0             0.0        0.0         0.       2.820      0.0

J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE
      1.000      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT
    160.000      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0

QT      5.000  90000.000  41800.000  31400.000   5700.000  41800.000        0.0        0.0        0.0        0.0
NC      0.035      0.030      0.030      0.200      0.400        0.0        0.0        0.0        0.0        0.0
ET        0.0      7.100      9.100      9.100        0.0        0.0   4850.000   5480.000   4900.000   5435.000

        CENTER OF CHANNEL AT STA. 5065.

X1     50.000     16.000   4900.000   5435.000        0.0        0.0        0.0        0.0        0.0        0.0
X5      1.000        0.0        0.0        0.0      2.820        0.0        0.0        0.0        0.0        0.0
GR      9.300   4056.300      8.000   4216.500      8.300   4422.398      7.500   4667.000      6.600   4778.898
GR      4.900   4857.098      4.500   4900.000     -4.000   5000.000     -4.000   5247.500        0.0   5386.199
GR      7.000   5435.000     21.000   5532.098     37.900   5571.000     39.400   5619.199     60.200   5666.598
GR     81.400   5712.297        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
NC        0.0      0.035        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
ET        0.0      7.100      9.100      9.100        0.0        0.0   4700.000   5315.000   4740.000   5250.000

        CENTER OF CHANNEL AT STA. 4935.

X1     52.000     18.000   4742.297   5250.000    150.000    183.000    157.000        0.0        0.0        0.0
X5      1.000        0.0        0.0        0.0      3.810        0.0        0.0        0.0        0.0        0.0
GR     12.600   4434.000     13.400   4494.500     12.400   4622.797     11.700   4742.297      7.000   4799.699
GR      5.500   4814.500     -2.500   4884.898     -2.500   5000.000     -2.500   5092.500     -2.500   5148.797
GR      6.000   5250.000      7.100   5293.000      6.600   5505.398      7.800   5612.398     23.600   5710.000
GR     43.700   5775.699     62.500   5830.398     81.100   5867.898        0.0        0.0        0.0        0.0
NC      0.045        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
ET        0.0      7.100      9.100      9.100        0.0        0.0   4560.000   5212.000   4647.598   5142.699
```

CENTER OF CHANNEL AT STA. 4830.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 54.000 | 25.000 | 4647.598 | 5142.699 | 120.000 | 110.000 | 115.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 4.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 11.000 | 3989.700 | 10.300 | 4151.297 | 11.200 | 4264.797 | 12.100 | 4405.500 | 11.500 | 4508.797 |
| GR | 11.100 | 4597.699 | 6.300 | 4620.598 | 6.800 | 4635.699 | 10.500 | 4647.598 | 6.200 | 4666.898 |
| GR | -1.000 | 4771.199 | -1.000 | 4845.598 | -1.000 | 4922.898 | -1.000 | 5000.000 | 3.200 | 5058.500 |
| GR | 5.500 | 5093.598 | 7.600 | 5142.699 | 6.300 | 5369.199 | 7.500 | 5478.598 | 9.000 | 5562.500 |
| GR | 15.700 | 5584.797 | 16.200 | 5625.699 | 19.100 | 5701.797 | 43.500 | 5775.000 | 57.700 | 5845.500 |
| NC | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4430.000 | 5140.000 | 4539.297 | 5100.000 |

CENTER OF CHANNEL AT STA. 4780.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 56.000 | 20.000 | 4539.297 | 5063.000 | 85.000 | 87.000 | 82.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 4.370 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 10.600 | 3977.000 | 10.700 | 4111.699 | 11.900 | 4274.699 | 13.300 | 4425.297 | 13.500 | 4468.199 |
| GR | 11.600 | 4499.398 | 5.700 | 4539.297 | -0.700 | 4577.598 | -0.700 | 4717.398 | -0.700 | 4881.898 |
| GR | -0.700 | 4955.297 | -0.700 | 5000.000 | 4.000 | 5044.500 | 5.900 | 5063.000 | 7.500 | 5082.199 |
| GR | 7.400 | 5182.797 | 9.400 | 5330.000 | 9.500 | 5474.699 | 11.200 | 5618.598 | 16.200 | 5709.398 |
| NC | 0.0 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.110 | 9.110 | 9.100 | 0.0 | 0.0 | 4240.000 | 5095.000 | 4387.598 | 5068.000 |
| SB | 1.080 | 1.627 | 2.600 | 0.0 | 608.000 | 42.800 | 5746.000 | 0.0 | -0.700 | -0.700 |

CAMINO DEL MAR BRIDGE, CENTER OF CHANNEL AT STA. 4725.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 60.000 | 23.000 | 4387.598 | 5068.000 | 110.000 | 104.000 | 104.300 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 11.600 | 17.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 4.380 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 23.000 | 3851.200 | 9.000 | 9.000 | 4000.900 | 11.000 | 11.000 | 4166.398 | 12.000 | 12.000 |
| BT | 4319.898 | 14.300 | 14.300 | 4387.598 | 14.600 | 14.600 | 4387.699 | 17.600 | 8.400 | 4427.699 |
| BT | 17.700 | 8.500 | 4452.898 | 17.800 | 8.630 | 4729.199 | 19.900 | 10.700 | 4815.199 | 20.100 |
| BT | 10.900 | 4894.898 | 20.200 | 11.000 | 4946.598 | 20.400 | 11.200 | 5000.000 | 20.600 | 11.400 |
| BT | 5042.898 | 20.800 | 11.600 | 5067.898 | 20.800 | 11.600 | 5068.000 | 17.800 | 17.800 | 5168.500 |
| BT | 18.200 | 18.200 | 5287.398 | 18.600 | 18.600 | 5463.898 | 19.500 | 19.500 | 5595.797 | 20.400 |
| BT | 20.400 | 5707.699 | 23.300 | 23.300 | 5710.898 | 23.400 | 23.400 | 5825.500 | 27.800 | 27.800 |
| GR | 9.000 | 3851.200 | 11.000 | 4000.900 | 12.000 | 4166.398 | 14.300 | 4319.898 | 14.600 | 4387.598 |
| GR | 14.600 | 4387.699 | -0.700 | 4427.699 | -0.700 | 4452.898 | 1.700 | 4729.199 | 1.900 | 4815.199 |
| GR | 2.000 | 4894.898 | 2.200 | 4946.598 | 2.400 | 5000.000 | 2.600 | 5042.898 | 11.300 | 5067.898 |
| GR | 17.800 | 5068.000 | 18.200 | 5168.500 | 18.600 | 5287.398 | 19.500 | 5463.898 | 20.400 | 5595.797 |
| GR | 23.300 | 5707.699 | 23.400 | 5710.898 | 27.800 | 5825.500 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4150.000 | 5070.000 | 4300.000 | 5060.000 |

CENTER OF CHANNEL AT STA. 4685.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 61.000 | 23.000 | 4330.000 | 5000.000 | 50.000 | 50.000 | 50.000 | 0.940 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 4.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 13.200 | 3786.600 | 13.600 | 3871.000 | 15.400 | 3977.800 | 15.600 | 4042.700 | 11.000 | 4058.000 |
| GR | 10.600 | 4130.797 | 2.500 | 4155.699 | 2.200 | 4330.000 | 1.900 | 4701.098 | 1.700 | 4905.297 |
| GR | 1.800 | 5000.000 | 1.900 | 5160.500 | 5.100 | 5168.199 | 4.300 | 5234.500 | 3.700 | 5696.500 |
| GR | 5.200 | 5774.500 | 5.000 | 5972.098 | 6.300 | 6057.598 | 18.600 | 6139.598 | 54.300 | 6218.500 |
| GR | 55.000 | 6305.500 | 56.000 | 6392.000 | 57.500 | 6485.098 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.045 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4010.000 | 5070.000 | 4150.000 | 5070.000 |

CENTER OF CHANNEL AT STA. 4660.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 62.000 | 23.000 | 4250.000 | 4920.000 | 170.000 | 135.000 | 134.000 | 0.770 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 4.510 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 13.200 | 3706.600 | 13.600 | 3791.000 | 15.400 | 3897.800 | 15.600 | 3962.700 | 11.000 | 3978.000 |
| GR | 10.600 | 4050.800 | 2.500 | 4075.700 | 2.200 | 4250.000 | 1.900 | 4621.098 | 1.700 | 4825.297 |
| GR | 1.800 | 4920.000 | 1.900 | 5080.500 | 5.100 | 5088.199 | 4.300 | 5154.500 | 3.700 | 5616.500 |
| GR | 5.200 | 5694.500 | 5.000 | 5892.098 | 6.300 | 5977.598 | 18.600 | 6059.598 | 54.300 | 6138.500 |
| GR | 55.000 | 6225.500 | 56.000 | 6312.000 | 57.500 | 6405.098 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4800.000 | 5820.000 | 4860.000 | 5830.000 |

CENTER OF CHANNEL AT STA. 5050.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 64.000 | 20.000 | 4905.500 | 5490.598 | 200.000 | 452.000 | 480.000 | 0.800 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 5.470 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 12.100 | 4635.598 | 12.100 | 4708.699 | 13.300 | 4798.598 | 14.000 | 4884.898 | 9.600 | 4905.500 |
| GR | 2.100 | 4926.199 | 2.000 | 5000.000 | 1.800 | 5130.098 | 1.800 | 5355.199 | 4.400 | 5366.500 |
| GR | 5.400 | 5490.598 | 4.800 | 5546.797 | 3.900 | 5558.297 | 4.000 | 5727.398 | 6.100 | 5747.398 |
| GR | 7.300 | 5888.500 | 7.100 | 6048.797 | 6.900 | 6283.500 | 11.300 | 6453.598 | 14.700 | 6536.898 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4700.000 | 5900.000 | 4719.898 | 5919.398 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 66.000 | 19.000 | 4864.598 | 5616.098 | 363.000 | 200.000 | 286.000 | 0.710 | -0.100 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 5.990 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 6.000 | 4422.898 | 6.900 | 4556.797 | 8.400 | 4719.898 | 8.300 | 4830.398 | 9.300 | 4864.598 |
| GR | 2.800 | 4886.398 | 2.700 | 5000.000 | 2.500 | 5194.297 | 3.700 | 5394.297 | 3.200 | 5562.598 |
| GR | 5.300 | 5616.098 | 5.200 | 5696.000 | 3.300 | 5713.199 | 3.500 | 5810.199 | 6.100 | 5896.500 |
| GR | 9.600 | 5919.398 | 9.000 | 6015.500 | 9.600 | 6197.000 | 11.100 | 6334.000 | 0.0 | 0.0 |
| NC | 0.040 | 0.040 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4600.000 | 5920.000 | 4740.000 | 5880.000 |

GR POINTS FROM SECTION 70

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 68.000 | 32.000 | 4842.398 | 5416.000 | 171.000 | 150.000 | 100.000 | 0.710 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 5.780 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 11.000 | 4226.699 | 10.700 | 4287.098 | 10.700 | 4351.199 | 11.100 | 4470.699 | 12.200 | 4563.598 |
| GR | 12.000 | 4624.797 | 11.600 | 4750.598 | 11.800 | 4803.297 | 11.900 | 4842.398 | 8.700 | 4842.500 |
| GR | 2.000 | 4871.398 | 2.200 | 5119.898 | 11.300 | 5120.000 | 12.400 | 5303.199 | 3.500 | 5303.297 |
| GR | 7.800 | 5415.898 | 7.900 | 5416.000 | 8.400 | 5532.500 | 8.400 | 5548.000 | 8.800 | 5716.797 |
| GR | 10.000 | 5836.598 | 19.500 | 5836.699 | 21.000 | 5965.500 | 22.400 | 6104.898 | 24.600 | 6316.098 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GR | 26.400 | 6497.500 | 27.300 | 6572.797 | 29.600 | 6804.098 | 31.400 | 6987.000 | 33.300 | 7154.898 |
| GR | 35.600 | 7358.898 | 37.100 | 7522.598 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.110 | 9.110 | 9.110 | 0.0 | 0.0 | 4550.000 | 5950.000 | 4710.000 | 5870.000 |
| | | | | | | | | | | |
| X1 | 69.000 | 32.000 | 4842.398 | 5416.000 | 5.000 | 5.000 | 5.000 | 0.710 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 0.0 | 17.600 | 11.900 | 0.0 | 0.0 | 0.0 | 0.710 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 6.220 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 32.000 | 4226.699 | 11.000 | 11.000 | 4287.098 | 10.700 | 10.700 | 4351.199 | 10.700 | 10.700 |
| BT | 4470.699 | 11.100 | 11.100 | 4563.598 | 12.200 | 12.200 | 4624.797 | 12.000 | 12.000 | 4750.598 |
| BT | 11.500 | 11.500 | 4803.297 | 11.800 | 11.800 | 4842.398 | 11.900 | 11.900 | 4842.500 | 11.900 |
| BT | 9.900 | 4871.398 | 12.000 | 10.000 | 5119.898 | 13.300 | 11.300 | 5120.000 | 13.300 | 11.300 |
| BT | 5303.199 | 14.400 | 12.400 | 5303.297 | 14.400 | 12.400 | 5415.898 | 15.400 | 13.400 | 5416.000 |
| BT | 15.400 | 13.400 | 5532.500 | 16.600 | 14.600 | 5548.000 | 16.700 | 14.700 | 5716.797 | 18.500 |
| BT | 16.500 | 5836.598 | 19.500 | 17.500 | 5836.699 | 19.500 | 19.500 | 5965.500 | 21.000 | 21.000 |
| BT | 6104.898 | 22.400 | 22.400 | 6316.098 | 24.600 | 24.600 | 6497.500 | 26.400 | 26.400 | 6572.797 |
| BT | 27.300 | 27.300 | 6804.098 | 29.600 | 29.600 | 6987.000 | 31.400 | 31.400 | 7154.898 | 33.300 |
| BT | 33.300 | 7358.898 | 35.600 | 35.600 | 7522.598 | 37.100 | 37.100 | 0.0 | 0.0 | 0.0 |
| GR | 11.000 | 4226.699 | 10.700 | 4287.098 | 10.700 | 4351.199 | 11.100 | 4470.699 | 12.200 | 4563.598 |
| GR | 12.000 | 4624.797 | 11.500 | 4750.598 | 11.800 | 4803.297 | 11.900 | 4842.398 | 8.700 | 4842.500 |
| GR | 2.000 | 4871.398 | 2.200 | 5119.898 | 11.300 | 5120.000 | 12.400 | 5303.199 | 3.500 | 5303.297 |
| GR | 7.800 | 5415.898 | 7.900 | 5416.000 | 8.400 | 5532.500 | 8.400 | 5548.000 | 8.800 | 5716.797 |
| GR | 10.000 | 5836.598 | 19.500 | 5836.699 | 21.000 | 5965.500 | 22.400 | 6104.898 | 24.600 | 6316.098 |
| GR | 26.400 | 6497.500 | 27.300 | 6572.797 | 29.600 | 6804.098 | 31.400 | 6987.000 | 33.300 | 7154.898 |
| GR | 35.600 | 7358.898 | 37.100 | 7522.598 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.110 | 9.110 | 9.110 | 0.0 | 0.0 | 4550.000 | 5950.000 | 4710.000 | 5870.000 |

DISCHARGES FROM LEEDSHILL STUDY

A/T AND SANTA FE RAILROAD BRIDGE, RE-ENTRY OF FLOW FROM SECTION 90

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 70.000 | 32.000 | 4842.398 | 5416.000 | 20.000 | 20.000 | 20.000 | 0.710 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 0.0 | 17.600 | 11.900 | 0.0 | 0.0 | 0.0 | 0.710 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 6.220 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 32.000 | 4226.699 | 11.000 | 11.000 | 4287.098 | 10.700 | 10.700 | 4351.199 | 10.700 | 10.700 |
| BT | 4470.699 | 11.100 | 11.100 | 4563.598 | 12.200 | 12.200 | 4624.797 | 12.000 | 12.000 | 4750.598 |
| BT | 11.500 | 11.500 | 4803.297 | 11.800 | 11.800 | 4842.398 | 11.900 | 11.900 | 4842.500 | 11.900 |
| BT | 9.900 | 4871.398 | 12.000 | 10.000 | 5119.898 | 13.300 | 11.300 | 5120.000 | 13.300 | 11.300 |
| BT | 5303.199 | 14.400 | 12.400 | 5303.297 | 14.400 | 12.400 | 5415.898 | 15.400 | 13.400 | 5416.000 |
| BT | 15.400 | 13.400 | 5532.500 | 16.600 | 14.600 | 5548.000 | 16.700 | 14.700 | 5716.797 | 18.500 |
| BT | 16.500 | 5836.598 | 19.500 | 17.500 | 5836.699 | 19.500 | 19.500 | 5965.500 | 21.000 | 21.000 |
| BT | 6104.898 | 22.400 | 22.400 | 6316.098 | 24.600 | 24.600 | 6497.500 | 26.400 | 26.400 | 6572.797 |
| BT | 27.300 | 27.300 | 6804.098 | 29.600 | 29.600 | 6987.000 | 31.400 | 31.400 | 7154.898 | 33.300 |
| BT | 33.300 | 7358.898 | 35.600 | 35.600 | 7522.598 | 37.100 | 37.100 | 0.0 | 0.0 | 0.0 |
| GR | 11.000 | 4226.699 | 10.700 | 4287.098 | 10.700 | 4351.199 | 11.100 | 4470.699 | 12.200 | 4563.598 |
| GR | 12.000 | 4624.797 | 11.500 | 4750.598 | 11.800 | 4803.297 | 11.900 | 4842.398 | 8.700 | 4842.500 |
| GR | 2.000 | 4871.398 | 2.200 | 5119.898 | 11.300 | 5120.000 | 12.400 | 5303.199 | 3.500 | 5303.297 |
| GR | 7.800 | 5415.898 | 7.900 | 5416.000 | 8.400 | 5532.500 | 8.400 | 5548.000 | 8.800 | 5716.797 |
| GR | 10.000 | 5836.598 | 19.500 | 5836.699 | 21.000 | 5965.500 | 22.400 | 6104.898 | 24.600 | 6316.098 |
| GR | 26.400 | 6497.500 | 27.300 | 6572.797 | 29.600 | 6804.098 | 31.400 | 6987.000 | 33.300 | 7154.898 |
| GR | 35.600 | 7358.898 | 37.100 | 7522.598 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.045 | 0.035 | 0.030 | 0.200 | 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 40880.000 | 30710.000 | 5700.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4610.000 | 5955.000 | 4760.000 | 5475.000 |
| X1 | 72.000 | 36.000 | 4844.797 | 5153.000 | 150.000 | 330.000 | 243.100 | 0.770 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 7.250 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 9.900 | 4417.898 | 4.400 | 4501.500 | 4.500 | 4594.898 | 9.900 | 4638.000 | 8.500 | 4685.598 |
| GR | 12.400 | 4803.797 | 12.900 | 4844.797 | 7.700 | 4859.297 | 2.000 | 4867.398 | 1.900 | 5000.000 |
| GR | 1.700 | 5140.098 | 7.900 | 5153.000 | 4.400 | 5166.598 | 4.700 | 5346.699 | 6.000 | 5609.098 |
| GR | 5.400 | 5890.199 | 7.500 | 6105.598 | 7.100 | 6227.500 | 5.700 | 6238.199 | 11.100 | 6263.699 |
| GR | 10.100 | 6421.098 | 9.700 | 6500.199 | 5.300 | 6540.898 | 5.000 | 6781.598 | 10.000 | 6884.898 |
| GR | 11.500 | 6955.297 | 6.800 | 7098.699 | 7.100 | 7294.098 | 7.400 | 7454.500 | 9.300 | 7526.398 |
| GR | 5.400 | 7550.898 | 8.800 | 7658.297 | 24.100 | 7726.797 | 52.300 | 7809.898 | 77.000 | 7850.398 |
| GR | 76.700 | 7896.098 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 40880.000 | 30710.000 | 5700.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4623.000 | 5940.000 | 4775.000 | 5322.797 |
| X1 | 74.000 | 42.000 | 4858.098 | 5153.797 | 135.000 | 216.000 | 141.800 | 0.940 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 7.360 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 10.500 | 4171.797 | 4.200 | 4260.598 | 3.800 | 4373.098 | 4.000 | 4604.699 | 8.800 | 4641.500 |
| GR | 10.500 | 4767.699 | 11.000 | 4837.598 | 16.100 | 4858.098 | 9.000 | 4873.898 | 2.000 | 4883.098 |
| GR | 1.900 | 5000.000 | 1.700 | 5139.500 | 7.100 | 5153.797 | 4.300 | 5185.398 | 6.300 | 5345.098 |
| GR | 20.000 | 5345.199 | 20.000 | 5540.000 | 7.400 | 5540.098 | 7.500 | 5816.797 | 5.500 | 6048.098 |
| GR | 13.300 | 6086.797 | 8.200 | 6258.797 | 10.200 | 6409.297 | 5.000 | 6457.598 | 4.700 | 6659.797 |
| GR | 8.900 | 6716.098 | 9.600 | 6845.898 | 7.300 | 6958.297 | 6.000 | 7094.398 | 10.200 | 7153.297 |
| GR | 11.900 | 7271.199 | 7.900 | 7291.898 | 6.600 | 7438.199 | 16.300 | 7457.598 | 17.000 | 7488.797 |
| GR | 9.200 | 7516.898 | 17.700 | 7592.898 | 7.200 | 7628.898 | 11.000 | 7810.199 | 15.700 | 7903.297 |
| GR | 58.800 | 7966.000 | 59.800 | 8019.500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4615.000 | 5860.000 | 4760.000 | 5290.000 |
| X1 | 76.000 | 38.000 | 4874.398 | 5134.000 | 232.000 | 317.000 | 286.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 7.520 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 12.900 | 3857.400 | 7.300 | 3997.800 | 5.500 | 4275.398 | 9.800 | 4321.199 | 4.500 | 4422.398 |
| GR | 5.500 | 4635.598 | 9.000 | 4669.199 | 8.200 | 4822.199 | 8.100 | 4874.398 | 2,200 | 4886.297 |
| GR | 2.000 | 5000.000 | 1.800 | 5124.297 | 8.600 | 5134.000 | 5.000 | 5159.898 | 7.500 | 5328.699 |
| GR | 8.400 | 5408.297 | 20.000 | 5408.398 | 20.000 | 5623.699 | 8.100 | 5623.797 | 8.300 | 5876.500 |
| GR | 11.600 | 6022.898 | 12.200 | 6189.098 | 9.900 | 6297.598 | 10.000 | 6370.500 | 8.700 | 6516.500 |
| GR | 6.800 | 6739.297 | 5.200 | 6749.699 | 6.500 | 6964.398 | 8.600 | 6984.398 | 4.700 | 7078.699 |
| GR | 12.300 | 7210.699 | 13.000 | 7294.199 | 6.700 | 7401.398 | 7.700 | 7831.398 | 11.500 | 8002.297 |
| GR | 9.800 | 8091.199 | 42.100 | 8141.297 | 42.600 | 8204.598 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4618.000 | 5825.000 | 4740.898 | 5210.000 |
| X1 | 78.000 | 45.000 | 4878.797 | 5126.398 | 187.000 | 295.000 | 224.200 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 7.680 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 14.000 | 3624.800 | 7.900 | 3734.200 | 10.200 | 3807.800 | 9.700 | 3934.900 | 6.200 | 3961.200 |
| GR | 10.100 | 4011.200 | 12.600 | 4178.398 | 9.600 | 4350.297 | 11.900 | 4466.797 | 7.600 | 4604.898 |
| GR | 6.500 | 4672.297 | 8.200 | 4740.898 | 7.500 | 4878.797 | 2.300 | 4895.098 | 2.200 | 5000.000 |
| GR | 2.000 | 5113.098 | 8.200 | 5126.398 | 4.400 | 5138.297 | 5.600 | 5210.000 | 20.000 | 5210.098 |
| GR | 20.000 | 5386.500 | 20.000 | 5560.000 | 8.600 | 5560.098 | 8.800 | 5622.898 | 11.300 | 5875.598 |
| GR | 10.500 | 6076.797 | 13.700 | 6239.898 | 10.100 | 6313.098 | 8.600 | 6443.500 | 7.400 | 6525.598 |
| GR | 7.200 | 6673.297 | 5.300 | 6694.098 | 5.200 | 6947.098 | 8.600 | 6986.598 | 4.200 | 7090.699 |
| GR | 10.000 | 7174.797 | 10.600 | 7311.000 | 6.700 | 7432.598 | 8.300 | 7804.898 | 7.900 | 8095.797 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GR | 10.700 | 8204.297 | 6.900 | 8236.598 | 15.700 | 8269.500 | 26.500 | 8293.598 | 28.300 | 8337.000 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4605.500 | 5885.000 | 4711.000 | 5210.000 |
| X1 | 80.000 | 41.000 | 4850.898 | 5114.797 | 245.000 | 260.000 | 250.600 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 7.850 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 15.900 | 3915.300 | 15.400 | 4033.500 | 18.100 | 4212.500 | 19.200 | 4367.699 | 16.100 | 4469.098 |
| GR | 14.500 | 4611.898 | 10.100 | 4705.500 | 12.100 | 4776.598 | 7.500 | 4794.398 | 6.600 | 4836.500 |
| GR | 9.800 | 4850.898 | 3.300 | 4889.598 | 3.100 | 5000.000 | 3.000 | 5100.098 | 10.200 | 5114.797 |
| GR | 5.600 | 5130.699 | 7.000 | 5200.000 | 20.000 | 5200.098 | 20.000 | 5520.000 | 10.100 | 5520.098 |
| GR | 20.000 | 5600.000 | 20.000 | 5850.000 | 10.400 | 5850.098 | 11.600 | 6117.199 | 9.900 | 6337.598 |
| GR | 9.700 | 6460.598 | 7.600 | 6645.500 | 5.600 | 6679.297 | 5.200 | 6981.598 | 8.900 | 7019.598 |
| GR | 5.800 | 7141.898 | 10.300 | 7186.898 | 11.400 | 7320.898 | 8.100 | 7374.098 | 7.900 | 7731.098 |
| GR | 8.600 | 7998.699 | 9.300 | 8234.699 | 13.400 | 8255.297 | 6.000 | 8284.098 | 19.700 | 8332.500 |
| GR | 20.500 | 8386.797 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4540.000 | 6045.000 | 4648.000 | 5355.000 |
| X1 | 82.000 | 35.000 | 4860.898 | 5105.598 | 213.000 | 260.000 | 221.700 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 8.230 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 13.400 | 4540.000 | 12.500 | 4695.898 | 11.800 | 4757.098 | 12.000 | 4799.699 | 11.700 | 4833.598 |
| GR | 10.800 | 4860.898 | 3.700 | 4870.000 | 3.000 | 4884.797 | 2.100 | 5000.000 | 1.700 | 5092.500 |
| GR | 7.500 | 5105.598 | 5.600 | 5197.500 | 6.600 | 5278.797 | 9.200 | 5427.297 | 9.000 | 5668.000 |
| GR | 9.100 | 5710.000 | 20.000 | 5710.098 | 20.000 | 5800.000 | 20.000 | 5850.000 | 20.000 | 5950.000 |
| GR | 9.200 | 5950.098 | 9.000 | 6005.598 | 9.000 | 6111.000 | 8.700 | 6349.199 | 8.100 | 6550.500 |
| GR | 10.000 | 6748.297 | 8.700 | 7072.098 | 10.500 | 7231.797 | 9.800 | 7351.297 | 9.100 | 7467.199 |
| GR | 6.900 | 7877.598 | 9.500 | 8170.398 | 8.600 | 8393.098 | 14.800 | 8424.699 | 15.400 | 8480.598 |
| NC | 0.035 | 0.035 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.110 | 9.110 | 9.100 | 0.0 | 0.0 | 4540.000 | 6120.000 | 4640.000 | 5545.000 |
| SB | 1.000 | 1.660 | 2.600 | 0.0 | 260.000 | 10.000 | 2605.000 | 1.730 | -3.400 | -3.400 |

JIMMY DURANTE BRIDGE, RIGHT OVERBANK FLOW SPILL @ 100-YR AND 50-YR

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 90.000 | 38.000 | 4868.699 | 5144.898 | 93.000 | 128.000 | 125.600 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 13.500 | 14.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 8.240 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 38.000 | 2900.000 | 35.000 | 35.000 | 3000.000 | 30.000 | 30.000 | 3100.000 | 25.000 | 25.000 |
| BT | 3210.000 | 20.000 | 20.000 | 4390.000 | 15.000 | 15.000 | 4540.000 | 13.400 | 13.400 | 4706.699 |
| BT | 12.500 | 12.500 | 4822.000 | 12.600 | 12.600 | 4868.699 | 13.100 | 13.100 | 4868.797 | 14.900 |
| BT | 10.900 | 4888.699 | 15.200 | 11.200 | 4905.797 | 15.500 | 11.500 | 5000.000 | 17.500 | 13.500 |
| BT | 5111.797 | 16.400 | 12.400 | 5144.797 | 15.900 | 11.900 | 5144.898 | 14.000 | 14.000 | 5242.000 |
| BT | 13.000 | 13.000 | 5396.898 | 12.000 | 12.000 | 5497.000 | 11.300 | 11.300 | 5554.898 | 10.900 |
| BT | 10.900 | 5632.598 | 9.800 | 9.800 | 5974.000 | 9.400 | 9.400 | 6275.199 | 9.000 | 9.000 |
| BT | 6721.398 | 9.300 | 9.300 | 6790.699 | 9.700 | 9.700 | 7125.898 | 10.000 | 10.000 | 7501.699 |
| BT | 9.900 | 9.900 | 7836.199 | 9.600 | 9.600 | 8014.797 | 10.100 | 10.100 | 8059.500 | 10.300 |
| BT | 10.300 | 8286.000 | 11.300 | 11.300 | 8344.598 | 12.200 | 12.200 | 8376.699 | 12.600 | 12.600 |
| BT | 8679.000 | 15.000 | 15.000 | 8810.000 | 20.000 | 20.000 | 8820.000 | 25.000 | 25.000 | 8827.000 |
| BT | 30.000 | 30.000 | 8838.000 | 35.000 | 35.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 35.000 | 2900.000 | 30.000 | 3000.000 | 25.000 | 3100.000 | 20.000 | 3210.000 | 15.000 | 4390.000 |
| GR | 13.400 | 4540.000 | 12.500 | 4706.699 | 12.600 | 4822.000 | 13.100 | 4868.699 | 10.900 | 4868.797 |
| GR | 5.600 | 4888.699 | 2.500 | 4905.797 | 0.0 | 5000.000 | -3.400 | 5111.797 | 12.500 | 5144.797 |
| GR | 14.000 | 5144.898 | 13.000 | 5242.000 | 12.000 | 5396.898 | 11.300 | 5497.000 | 10.900 | 5554.898 |
| GR | 9.800 | 5632.598 | 9.400 | 5974.000 | 9.000 | 6275.199 | 9.300 | 6721.398 | 9.700 | 6790.699 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GR | 10.000 | 7125.898 | 9.900 | 7501.699 | 9.600 | 7836.199 | 10.100 | 8014.797 | 10.300 | 8059.500 |
| GR | 11.300 | 8286.000 | 12.200 | 8344.598 | 12.600 | 8376.699 | 15.000 | 8679.000 | 20.000 | 8810.000 |
| GR | 25.000 | 8820.000 | 30.000 | 8827.000 | 35.000 | 8838.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 42400.000 | 32100.000 | 5800.000 | 42400.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4560.000 | 6170.000 | 4630.000 | 5600.000 |

FROM PUGH RAW DATA, INFO. SECTION

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 91.000 | 24.000 | 4880.297 | 5122.898 | 145.000 | 100.000 | 130.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 8.360 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 47.400 | 4450.297 | 22.900 | 4518.297 | 13.800 | 4549.297 | 11.800 | 4679.297 | 12.700 | 4787.797 |
| GR | 12.600 | 4865.398 | 5.100 | 4880.297 | 2.800 | 4890.398 | 2.600 | 5000.000 | 2.000 | 5106.699 |
| GR | 7.700 | 5122.898 | 4.400 | 5139.098 | 4.800 | 5306.598 | 6.100 | 5509.500 | 10.900 | 5558.297 |
| GR | 11.000 | 5607.398 | 5.600 | 5630.199 | 7.100 | 5940.500 | 7.200 | 6136.598 | 7.200 | 6462.797 |
| GR | 8.300 | 6759.199 | 7.000 | 7176.000 | 7.600 | 7553.098 | 7.600 | 7739.098 | 0.0 | 0.0 |
| NC | 0.035 | 0.030 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4670.000 | 6310.000 | 4670.000 | 5780.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 92.000 | 33.000 | 4908.797 | 5114.500 | 260.000 | 200.000 | 230.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 8.570 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 11.500 | 4670.000 | 11.500 | 4699.992 | 0.0 | 4700.000 | 40.000 | 4849.988 | 5.100 | 4850.000 |
| GR | 10.200 | 4886.797 | 11.400 | 4908.797 | 1.600 | 4924.199 | 1.000 | 5000.000 | 0.300 | 5096.898 |
| GR | 5.300 | 5114.500 | 6.400 | 5179.000 | 4.400 | 5334.297 | 4.800 | 5575.898 | 5.500 | 5772.598 |
| GR | 10.200 | 5794.000 | 10.300 | 5836.598 | 6.200 | 5861.297 | 7.600 | 6192.699 | 6.600 | 6618.699 |
| GR | 7.100 | 6836.199 | 7.200 | 7019.797 | 6.600 | 7224.898 | 8.300 | 7525.898 | 8.400 | 7732.699 |
| GR | 10.000 | 8370.000 | 15.000 | 8550.000 | 15.000 | 8738.000 | 20.000 | 8869.000 | 25.000 | 8878.000 |
| GR | 30.000 | 8882.000 | 35.000 | 8893.000 | 40.000 | 8990.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4680.000 | 6470.000 | 4680.000 | 6000.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 94.000 | 33.000 | 4777.199 | 5245.500 | 453.300 | 270.000 | 370.000 | 0.770 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 8.760 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 64.500 | 4408.898 | 35.400 | 4453.098 | 9.300 | 4501.000 | 10.600 | 4622.500 | 10.900 | 4743.500 |
| GR | 11.000 | 4777.199 | 2.700 | 4795.898 | 4.100 | 4839.199 | 5.400 | 4879.797 | 1.000 | 4890.098 |
| GR | 0.800 | 5000.000 | 0.500 | 5122.898 | 3.300 | 5154.000 | 5.500 | 5216.797 | 8.100 | 5245.500 |
| GR | 4.800 | 5260.098 | 5.900 | 5484.898 | 5.200 | 5783.398 | 5.300 | 5999.098 | 10.400 | 6020.699 |
| GR | 9.100 | 6064.898 | 6.400 | 6087.297 | 8.300 | 6436.000 | 7.600 | 6783.000 | 7.400 | 6927.199 |
| GR | 6.900 | 7059.500 | 10.000 | 8470.000 | 15.000 | 8705.000 | 15.000 | 8850.000 | 20.000 | 8990.000 |
| GR | 30.000 | 9004.000 | 35.000 | 9019.000 | 40.000 | 9100.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4450.000 | 6230.000 | 4450.000 | 5800.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 96.000 | 40.000 | 4849.398 | 5192.398 | 491.000 | 336.000 | 437.000 | 0.650 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 8.850 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 45.700 | 3921.200 | 20.500 | 3966.100 | 11.300 | 3991.200 | 7.100 | 4074.200 | 9.500 | 4096.898 |
| GR | 9.600 | 4151.797 | 4.500 | 4192.699 | 7.100 | 4261.199 | 1.200 | 4274.898 | 1.900 | 4430.199 |
| GR | 2.300 | 4606.797 | 3.600 | 4796.398 | 5.600 | 4849.398 | 1.900 | 4867.699 | 1.500 | 5000.000 |
| GR | 0.200 | 5138.398 | 6.800 | 5150.398 | 10.100 | 5192.398 | 5.400 | 5218.797 | 5.300 | 5509.598 |
| GR | 6.700 | 5805.297 | 11.250 | 5832.098 | 11.250 | 5866.098 | 8.500 | 5912.297 | 7.500 | 6200.797 |
| GR | 7.500 | 6531.297 | 7.000 | 6773.699 | 8.200 | 7155.098 | 8.100 | 7543.098 | 9.100 | 7963.098 |
| GR | 8.800 | 8141.297 | 12.300 | 8257.598 | 14.600 | 8468.297 | 17.200 | 8575.199 | 20.000 | 8625.000 |
| GR | 25.000 | 8651.000 | 30.000 | 8695.000 | 35.000 | 8730.000 | 40.000 | 8743.000 | 45.000 | 8775.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4210.000 | 5830.000 | 4210.000 | 5490.000 |
| X1 | 98.000 | 39.000 | 4698.098 | 5153.598 | 500.000 | 392.800 | 530.000 | 0.710 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.080 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 35.400 | 3358.000 | 18.300 | 3443.300 | 7.600 | 3479.700 | 3.400 | 3514.700 | 0.800 | 3572.000 |
| GR | 0.900 | 3725.500 | 4.700 | 3743.700 | 4.900 | 3882.800 | 8.600 | 3895.300 | 9.500 | 3925.200 |
| GR | 4.700 | 3939.700 | 3.900 | 4157.000 | 5.000 | 4368.898 | 4.700 | 4569.699 | 4.500 | 4660.699 |
| GR | 11.600 | 4698.098 | 5.200 | 4726.598 | 3.600 | 4824.098 | 4.600 | 4869.598 | 1.400 | 4892.297 |
| GR | 1.500 | 5000.000 | 1.100 | 5103.199 | 5.500 | 5117.098 | 10.600 | 5153.598 | 5.100 | 5226.898 |
| GR | 6.300 | 5469.500 | 12.400 | 5498.398 | 8.500 | 5563.199 | 7.900 | 6000.098 | 6.800 | 6313.297 |
| GR | 7.200 | 6531.598 | 9.300 | 7060.000 | 10.000 | 7728.000 | 15.000 | 8025.000 | 20.000 | 8181.000 |
| GR | 25.000 | 8202.000 | 30.000 | 8240.000 | 35.000 | 8273.000 | 40.000 | 8305.000 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4160.000 | 5660.000 | 4160.000 | 5386.000 |
| X1 | 100.000 | 41.000 | 4838.699 | 5130.699 | 320.000 | 216.000 | 290.000 | 0.910 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.180 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 31.300 | 2681.700 | 7.700 | 2745.600 | 4.600 | 2809.700 | 5.400 | 2958.700 | 2.200 | 2973.600 |
| GR | 1.600 | 3141.600 | 2.000 | 3350.300 | 9.100 | 3529.400 | 7.800 | 3614.800 | 2.300 | 3663.400 |
| GR | 9.500 | 3771.100 | 3.400 | 3871.400 | 6.200 | 4254.699 | 5.900 | 4516.000 | 9.000 | 4547.000 |
| GR | 5.400 | 4568.699 | 6.600 | 4794.398 | 12.200 | 4838.699 | 5.700 | 4858.297 | 5.400 | 4890.797 |
| GR | 2.300 | 4903.000 | 2.700 | 5000.000 | 2.500 | 5088.098 | 4.600 | 5109.699 | 8.300 | 5130.699 |
| GR | 7.400 | 5255.500 | 13.700 | 5386.000 | 12.500 | 5404.699 | 8.000 | 5471.199 | 7.900 | 5817.898 |
| GR | 7.600 | 5925.000 | 6.800 | 6174.797 | 6.600 | 6278.098 | 8.900 | 6450.000 | 10.000 | 7500.000 |
| GR | 15.000 | 7812.000 | 20.000 | 7971.000 | 25.000 | 8000.000 | 30.000 | 8038.000 | 35.000 | 8080.000 |
| GR | 40.000 | 8150.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4180.000 | 5582.000 | 4180.000 | 5400.000 |
| X1 | 102.000 | 38.000 | 4914.098 | 5307.699 | 350.000 | 342.000 | 320.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.410 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 45.900 | 2062.800 | 25.500 | 2225.700 | 2.700 | 2360.600 | 2.500 | 2706.800 | 5.300 | 3052.700 |
| GR | 6.900 | 3274.400 | 6.300 | 3424.600 | 8.400 | 3463.100 | 2.600 | 3564.800 | 9.000 | 3680.800 |
| GR | 8.600 | 3708.100 | 4.900 | 3743.100 | 5.600 | 4198.797 | 9.300 | 4469.199 | 6.400 | 4608.000 |
| GR | 8.100 | 4788.699 | 7.100 | 4914.098 | 1.300 | 4923.797 | 2.100 | 5000.000 | 1.500 | 5096.297 |
| GR | 4.900 | 5142.098 | 13.000 | 5307.699 | 7.200 | 5353.699 | 11.100 | 5544.699 | 11.200 | 5646.797 |
| GR | 7.100 | 5868.898 | 8.100 | 6311.500 | 10.000 | 6624.898 | 8.300 | 7029.898 | 11.000 | 7253.797 |
| GR | 12.900 | 7477.598 | 19.200 | 7745.000 | 19.100 | 7850.297 | 20.000 | 7880.000 | 25.000 | 7917.000 |
| GR | 30.000 | 7960.000 | 35.000 | 8000.000 | 40.000 | 8070.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4190.000 | 5555.000 | 4190.000 | 5410.000 |
| X1 | 104.000 | 37.000 | 4886.500 | 5096.500 | 90.000 | 138.000 | 78.900 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.440 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 43.700 | 1955.400 | 28.500 | 2054.100 | 7.700 | 2128.100 | -0.600 | 2365.800 | 4.900 | 2411.600 |
| GR | 4.800 | 2751.700 | 5.800 | 3130.500 | 6.000 | 3369.700 | 8.700 | 3404.800 | 8.600 | 3669.700 |
| GR | 9.900 | 3746.100 | 5.500 | 3912.500 | 5.500 | 4243.797 | 10.800 | 4438.199 | 5.800 | 4699.699 |
| GR | 6.900 | 4847.199 | 6.900 | 4886.500 | 1.300 | 4903.000 | 1.500 | 5000.000 | 1.400 | 5078.297 |
| GR | 5.500 | 5096.500 | 5.900 | 5178.699 | 13.400 | 5296.598 | 7.000 | 5376.797 | 11.900 | 5484.598 |
| GR | 11.600 | 5836.297 | 12.500 | 5971.297 | 15.000 | 7500.000 | 20.000 | 7520.000 | 25.000 | 7620.000 |
| GR | 25.000 | 7674.000 | 20.000 | 7759.000 | 20.000 | 7870.000 | 25.000 | 7930.000 | 30.000 | 7968.000 |
| GR | 35.000 | 7990.000 | 40.000 | 8020.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 7.100 | 9.100 | 9.100 | 0.0 | 0.0 | 4200.000 | 5535.000 | 4200.000 | 5420.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 106.000 | 39.000 | 4856.598 | 5293.297 | 90.000 | 106.400 | 74.700 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.460 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 35.200 | 1890.700 | 11.000 | 1971.100 | 9.600 | 2194.100 | 9.500 | 2314.200 | 0.400 | 2326.400 |
| GR | 0.200 | 2371.600 | 5.400 | 2426.300 | 4.300 | 2683.900 | 6.800 | 3138.800 | 9.000 | 3389.600 |
| GR | 5.100 | 3507.800 | 9.000 | 3648.200 | 4.600 | 4092.900 | 6.100 | 4449.797 | 13.200 | 4498.199 |
| GR | 6.500 | 4574.199 | 6.800 | 4830.500 | 12.400 | 4856.598 | 8.400 | 4886.898 | 1.600 | 4907.000 |
| GR | 1.800 | 5000.000 | 1.800 | 5074.199 | 4.300 | 5086.898 | 6.900 | 5189.398 | 7.300 | 5198.898 |
| GR | 13.700 | 5293.297 | 7.200 | 5349.797 | 12.800 | 5447.898 | 9.700 | 5805.699 | 9.900 | 6046.000 |
| GR | 10.700 | 6205.797 | 15.000 | 7470.000 | 20.000 | 7490.000 | 25.000 | 7565.000 | 25.000 | 7679.000 |
| GR | 25.000 | 7881.000 | 30.000 | 7918.000 | 35.000 | 7960.000 | 40.000 | 7981.000 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4240.000 | 5350.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 108.000 | 50.000 | 4857.297 | 5259.000 | 595.000 | 487.000 | 550.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.670 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 58.400 | 1442.000 | 54.400 | 1479.200 | 18.300 | 1636.100 | 9.500 | 1735.200 | 0.0 | 1954.300 |
| GR | 11.300 | 1992.300 | 10.100 | 2070.300 | -0.400 | 2117.300 | 0.400 | 2428.800 | 3.900 | 2712.300 |
| GR | 8.500 | 2751.400 | 8.100 | 2861.200 | 0.200 | 2882.000 | 0.900 | 3184.100 | 7.700 | 3232.900 |
| GR | 9.700 | 3440.700 | 8.100 | 3794.900 | 7.500 | 3993.300 | 7.900 | 4275.500 | 7.400 | 4412.500 |
| GR | 13.000 | 4440.000 | 6.900 | 4484.500 | 8.300 | 4820.098 | 13.400 | 4857.297 | 6.500 | 4888.598 |
| GR | 1.900 | 4921.598 | 1.800 | 5000.000 | 1.900 | 5085.297 | 6.000 | 5098.098 | 5.000 | 5215.598 |
| GR | 19.300 | 5259.000 | 6.000 | 5400.297 | 6.200 | 5658.098 | 7.600 | 6013.898 | 9.600 | 6473.500 |
| GR | 9.300 | 6707.598 | 11.300 | 6753.699 | 10.300 | 7050.000 | 11.500 | 7348.598 | 12.100 | 7542.699 |
| GR | 28.500 | 7621.398 | 29.900 | 7671.297 | 30.000 | 7692.000 | 30.000 | 7708.000 | 25.000 | 7754.000 |
| GR | 25.000 | 7792.000 | 30.000 | 7800.000 | 35.000 | 7810.000 | 40.000 | 7820.000 | 45.000 | 7831.000 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4390.000 | 5240.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 110.000 | 39.000 | 4918.898 | 5108.699 | 579.000 | 535.000 | 537.700 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.820 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 43.000 | 1422.000 | 24.400 | 1608.500 | 7.300 | 1823.900 | 5.500 | 2221.500 | 5.900 | 2478.700 |
| GR | -0.400 | 2536.800 | -0.400 | 2729.800 | 7.700 | 2868.800 | 8.100 | 3214.500 | 9.000 | 3593.600 |
| GR | 8.000 | 3907.500 | 8.100 | 4185.199 | 6.700 | 4487.199 | 12.700 | 4501.398 | 7.200 | 4542.699 |
| GR | 8.100 | 4800.000 | 7.200 | 4894.500 | 12.300 | 4918.898 | 0.700 | 4935.797 | 1.000 | 5000.000 |
| GR | 1.800 | 5093.898 | 6.500 | 5108.699 | 5.400 | 5281.699 | 4.200 | 5518.297 | 5.500 | 5824.000 |
| GR | 5.900 | 5988.000 | 11.100 | 6025.699 | 9.700 | 6147.000 | 7.800 | 6341.098 | 11.700 | 6422.098 |
| GR | 10.000 | 6692.297 | 10.400 | 6986.898 | 10.400 | 7288.500 | 9.900 | 7388.199 | 5.800 | 7426.797 |
| GR | 7.100 | 7482.898 | 33.400 | 7570.598 | 36.100 | 7677.898 | 35.800 | 7713.699 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4420.000 | 5130.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 112.000 | 33.000 | 4901.297 | 5086.598 | 292.000 | 296.000 | 298.700 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 9.860 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 39.000 | 1426.000 | 16.400 | 1679.100 | 6.200 | 1833.200 | 5.300 | 2137.700 | 6.200 | 2411.400 |
| GR | 8.500 | 2755.300 | 7.900 | 3020.900 | 8.700 | 3287.200 | 9.300 | 3691.600 | 9.000 | 4081.800 |
| GR | 7.400 | 4447.500 | 14.400 | 4474.199 | 7.700 | 4503.797 | 6.400 | 4748.898 | 7.400 | 4873.898 |
| GR | 13.300 | 4901.297 | 10.800 | 4918.199 | 1.100 | 4938.199 | 0.900 | 5000.000 | 0.800 | 5077.500 |
| GR | 7.200 | 5086.598 | 7.700 | 5195.598 | 6.100 | 5460.297 | 4.700 | 5846.699 | 7.900 | 5902.699 |
| GR | 7.900 | 6062.699 | 9.200 | 6297.699 | 4.600 | 6523.898 | 8.500 | 6694.098 | 17.600 | 6945.297 |
| GR | 23.400 | 7115.098 | 33.200 | 7235.797 | 35.200 | 7366.500 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4460.000 | 5105.000 |

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|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 114.000 | 26.000 | 4899.297 | 5105.000 | 241.000 | 200.000 | 214.700 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 10.050 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 35.000 | 2882.000 | 30.000 | 3450.000 | 25.000 | 3907.000 | 20.000 | 4018.000 | 15.000 | 4178.000 |
| GR | 14.100 | 4195.398 | 10.300 | 4304.297 | 8.900 | 4499.098 | 8.800 | 4699.598 | 9.200 | 4845.098 |
| GR | 9.200 | 4899.297 | 1.500 | 4911.898 | 1.200 | 5000.000 | 0.900 | 5069.000 | 2.500 | 5085.000 |
| GR | 8.200 | 5105.000 | 10.200 | 5242.000 | 9.600 | 5454.199 | 9.900 | 5610.898 | 8.600 | 5765.199 |
| GR | 10.000 | 5947.000 | 15.000 | 6516.000 | 20.000 | 6640.000 | 25.000 | 6793.000 | 30.000 | 6874.000 |
| GR | 35.000 | 6990.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.035 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.110 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4454.098 | 5113.500 |
| SB | 0.900 | 1.590 | 2.600 | 0.0 | 510.000 | 39.000 | 9727.000 | 1.730 | 1.200 | 1.200 |

HIGHWAY 5 BRIDGE (SOUTH-BOUND)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 120.000 | 27.000 | 4454.098 | 5113.500 | 120.000 | 130.000 | 105.000 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 24.000 | 28.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 10.060 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 27.000 | 3151.500 | 57.300 | 57.300 | 3172.400 | 57.200 | 57.200 | 3282.600 | 53.900 | 53.900 |
| BT | 3598.800 | 44.900 | 44.900 | 3974.900 | 33.700 | 33.700 | 4269.699 | 28.100 | 28.100 | 4454.000 |
| BT | 27.000 | 27.000 | 4454.098 | 30.000 | 24.000 | 4514.797 | 29.800 | 23.800 | 4648.598 | 29.500 |
| BT | 23.500 | 4821.797 | 29.000 | 23.000 | 4878.199 | 28.800 | 22.800 | 4878.297 | 28.800 | 22.800 |
| BT | 4881.098 | 28.800 | 22.800 | 5000.000 | 28.500 | 22.800 | 5060.598 | 28.400 | 22.400 | 5078.699 |
| BT | 28.400 | 22.400 | 5113.398 | 28.400 | 22.400 | 5113.500 | 25.400 | 25.400 | 5236.699 | 25.300 |
| BT | 25.300 | 5540.297 | 24.900 | 24.900 | 5852.797 | 23.400 | 23.400 | 6090.699 | 22.800 | 22.800 |
| BT | 6473.000 | 25.000 | 25.000 | 6721.000 | 30.000 | 30.000 | 6899.000 | 35.000 | 35.000 | 7060.000 |
| BT | 40.000 | 40.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 57.300 | 3151.500 | 57.200 | 3172.400 | 53.900 | 3282.600 | 44.900 | 3598.800 | 33.700 | 3974.900 |
| GR | 28.100 | 4269.699 | 27.000 | 4454.000 | 21.000 | 4454.098 | 7.700 | 4514.797 | 8.900 | 4648.598 |
| GR | 8.400 | 4821.797 | 7.500 | 4878.199 | 7.400 | 4878.297 | 2.300 | 4881.098 | 1.600 | 5000.000 |
| GR | 1.200 | 5060.598 | 10.700 | 5078.699 | 24.700 | 5113.398 | 25.400 | 5113.500 | 25.300 | 5236.699 |
| GR | 24.900 | 5540.297 | 23.400 | 5852.797 | 22.800 | 6090.699 | 25.000 | 6473.000 | 30.000 | 6721.000 |
| GR | 35.000 | 6899.000 | 40.000 | 7060.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.110 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4470.000 | 5182.000 |
| SB | 0.900 | 1.590 | 2.600 | 0.0 | 510.000 | 39.000 | 9727.000 | 1.730 | 1.400 | 1.400 |

HIGHWAY 5 BRIDGE (NORTH-BOUND)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 130.000 | 27.000 | 4522.699 | 5182.000 | 130.000 | 130.000 | 110.000 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 23.600 | 28.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 10.070 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 27.000 | 3272.200 | 54.300 | 54.300 | 3497.200 | 47.700 | 47.700 | 3810.400 | 38.300 | 38.300 |
| BT | 4147.500 | 30.200 | 30.200 | 4409.699 | 27.100 | 27.100 | 4522.699 | 26.600 | 26.600 | 4522.797 |
| BT | 29.600 | 23.600 | 4759.297 | 29.100 | 23.100 | 4870.797 | 28.800 | 22.800 | 4870.898 | 28.800 |
| BT | 22.800 | 4885.199 | 28.800 | 22.800 | 4940.898 | 28.900 | 22.900 | 5000.000 | 29.000 | 23.000 |
| BT | 5069.098 | 28.800 | 22.800 | 5085.000 | 28.800 | 22.800 | 5085.098 | 28.800 | 22.800 | 5181.898 |
| BT | 28.700 | 22.700 | 5182.000 | 25.700 | 25.700 | 5357.598 | 25.500 | 25.500 | 5728.297 | 24.000 |
| BT | 24.000 | 5954.398 | 23.500 | 23.500 | 6109.898 | 23.300 | 23.300 | 6126.500 | 23.200 | 23.200 |
| BT | 6450.000 | 25.000 | 25.000 | 6711.000 | 30.000 | 30.000 | 6883.000 | 35.000 | 35.000 | 7064.000 |
| BT | 40.000 | 40.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 54.300 | 3272.200 | 47.700 | 3497.200 | 38.300 | 3810.400 | 30.200 | 4147.500 | 27.100 | 4409.699 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GR | 26.600 | 4522.699 | 9.500 | 4522.797 | 10.200 | 4759.297 | 9.000 | 4870.797 | 8.900 | 4870.898 |
| GR | 2.600 | 4885.199 | 2.300 | 4940.898 | 1.900 | 5000.000 | 1.400 | 5069.098 | 4.300 | 5085.000 |
| GR | 4.400 | 5085.098 | 3.700 | 5179.898 | 25.700 | 5180.000 | 25.500 | 5357.598 | 24.000 | 5728.297 |
| GR | 23.500 | 5954.398 | 23.000 | 6109.898 | 23.200 | 6126.500 | 25.000 | 6450.000 | 30.000 | 6711.000 |
| GR | 35.000 | 6883.000 | 40.000 | 7064.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.030 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 42800.000 | 32500.000 | 5900.000 | 42800.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4300.000 | 5330.000 |
| | | | | | | | | | | |
| X1 | 132.000 | 40.000 | 4922.398 | 5095.500 | 282.000 | 288.000 | 282.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 10.180 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 35.000 | 1610.000 | 30.000 | 1666.000 | 25.000 | 1741.000 | 20.000 | 1811.000 | 15.000 | 2031.000 |
| GR | 7.400 | 2147.000 | 5.800 | 2304.500 | 7.000 | 2575.600 | 7.200 | 2842.500 | 8.500 | 3198.400 |
| GR | 10.000 | 3489.400 | 10.000 | 3787.200 | 9.100 | 4070.000 | 9.700 | 4364.199 | 9.300 | 4636.500 |
| GR | 9.300 | 4815.398 | 10.300 | 4922.398 | 6.900 | 4935.699 | 1.400 | 4939.699 | 1.000 | 5000.000 |
| GR | 1.000 | 5058.297 | 4.400 | 5078.398 | 8.200 | 5095.500 | 8.000 | 5182.398 | 9.400 | 5408.797 |
| GR | 9.300 | 5621.199 | 8.600 | 5898.500 | 7.100 | 6221.598 | 6.300 | 6483.398 | 6.900 | 6743.699 |
| GR | 7.700 | 6936.398 | 9.200 | 7037.500 | 10.000 | 7153.000 | 10.000 | 7256.000 | 15.000 | 7277.000 |
| GR | 20.000 | 7297.000 | 25.000 | 7340.000 | 20.000 | 7370.000 | 33.000 | 7738.000 | 35.000 | 7830.000 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4330.000 | 5700.000 |
| | | | | | | | | | | |
| X1 | 134.000 | 48.000 | 4916.000 | 5201.898 | 374.000 | 350.000 | 345.600 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 10.410 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 45.000 | 1431.000 | 40.000 | 1524.000 | 35.000 | 1548.000 | 30.000 | 1579.000 | 25.000 | 1602.000 |
| GR | 20.000 | 1650.000 | 15.000 | 1850.000 | 10.000 | 2151.000 | 10.000 | 2509.000 | 10.000 | 2680.000 |
| GR | 11.200 | 2681.100 | 7.600 | 2792.700 | 4.700 | 2894.200 | 4.800 | 3153.400 | 7.000 | 3445.200 |
| GR | 7.200 | 3698.800 | 7.700 | 4035.900 | 8.900 | 4378.297 | 9.800 | 4705.398 | 9.400 | 4852.699 |
| GR | 10.400 | 4916.000 | 7.900 | 4951.699 | 1.300 | 4955.398 | 1.500 | 5000.000 | 1.600 | 5044.000 |
| GR | 2.700 | 5079.898 | 0.300 | 5144.500 | 4.700 | 5178.898 | 9.500 | 5201.898 | 9.800 | 5269.199 |
| GR | 10.200 | 5484.898 | 9.500 | 5776.398 | 8.700 | 6113.598 | 7.500 | 6383.500 | 7.700 | 6667.699 |
| GR | 9.000 | 6896.898 | 8.900 | 6957.699 | 21.800 | 6998.699 | 20.000 | 7041.000 | 0.0 | 7505.000 |
| GR | 15.000 | 7630.000 | 10.000 | 7658.000 | 10.000 | 7680.000 | 15.000 | 7696.000 | 20.000 | 7711.000 |
| GR | 25.000 | 7722.000 | 30.000 | 7750.000 | 30.000 | 7831.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.030 | 0.030 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 3760.000 | 5505.699 |
| | | | | | | | | | | |
| X1 | 136.000 | 31.000 | 4938.297 | 5068.398 | 1815.000 | 1815.000 | 1880.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 10.840 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 29.400 | 3053.700 | 26.700 | 3239.900 | 25.000 | 3278.300 | 11.100 | 3339.000 | 11.300 | 3575.000 |
| GR | 12.200 | 3925.600 | 11.700 | 4306.000 | 7.800 | 4427.500 | 10.700 | 4539.797 | 11.900 | 4647.598 |
| GR | 4.700 | 4724.898 | 6.700 | 4762.000 | 5.100 | 4893.297 | 5.700 | 4938.297 | 2.500 | 4948.500 |
| GR | 1.800 | 5000.000 | 1.100 | 5050.898 | 10.900 | 5068.398 | 11.400 | 5197.098 | 12.400 | 5407.699 |
| GR | 14.600 | 5505.699 | 11.900 | 5583.500 | 10.700 | 5798.699 | 11.800 | 5972.098 | 11.500 | 6034.297 |
| GR | 9.500 | 6111.598 | 12.500 | 6307.898 | 20.700 | 6469.297 | 29.000 | 6562.797 | 42.600 | 6597.297 |
| GR | 42.400 | 6620.797 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 9.100 | 9.100 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 4500.000 | 5950.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 138.000 | 28.000 | 4951.297 | 5214.000 | 1280.000 | 1312.000 | 1375.000 | 0.0 | 0.0 | 0.0 |
| X5 | 1.000 | 0.0 | 0.0 | 0.0 | 11.130 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 39.700 | 3525.300 | 38.100 | 3565.400 | 14.000 | 3606.900 | 11.400 | 3713.300 | 13.200 | 3881.900 |
| GR | 12.400 | 4120.500 | 9.100 | 4442.797 | 11.600 | 4681.898 | 11.600 | 4848.898 | 10.800 | 4951.297 |
| GR | 3.900 | 4956.898 | 1.100 | 4964.098 | 1.300 | 5000.000 | 2.100 | 5049.500 | 4.400 | 5054.598 |
| GR | 3.900 | 5110.000 | 7.100 | 5192.797 | 10.500 | 5214.000 | 9.600 | 5320.598 | 8.600 | 5496.098 |
| GR | 9.300 | 5708.000 | 10.600 | 5900.000 | 23.300 | 6089.398 | 35.800 | 6275.199 | 46.900 | 6420.699 |
| GR | 54.500 | 6521.199 | 57.800 | 6537.598 | 56.400 | 6562.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| EJ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**********
HEC2 RELEASE DATED NOV 76 UPDATED AUG 1980
ERROR CORR - 01,02,03,04
MODIFICATION - 50,51,52,53,54
**********

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SAN DIEGUITO RIVER, 500-

SUMMARY PRINTOUT

| | SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 50.000 | 0.0 | 4900.00 | 5435.00 | -4.00 | 90000.00 | 17.33 | 0.0 | 5284.61 | 589.20 | 1.03 | 12.23 | 7.60 |
| * | 50.000 | 0.0 | 4900.00 | 5435.00 | -4.00 | 41800.00 | 13.97 | 0.0 | 2992.17 | 498.82 | 0.0 | 6.53 | 3.50 |
| | 50.000 | 0.0 | 4900.00 | 5435.00 | -4.00 | 31400.00 | 11.81 | 0.0 | 2657.81 | 486.09 | 0.0 | 4.99 | 2.82 |
| * | 52.000 | 157.00 | 4742.30 | 5250.00 | -2.50 | 90000.00 | 17.66 | 19.01 | 5232.98 | 555.86 | 0.0 | 15.09 | 10.32 |
| * | 52.000 | 157.00 | 4742.30 | 5250.00 | -2.50 | 41800.00 | 14.62 | 10.54 | 2859.23 | 433.86 | 0.0 | 9.02 | 5.70 |
| * | 52.000 | 157.00 | 4742.30 | 5250.00 | -2.50 | 31400.00 | 13.56 | 8.96 | 2315.55 | 406.86 | 0.0 | 7.26 | 4.40 |
| * | 54.000 | 115.00 | 4647.60 | 5142.70 | -1.00 | 90000.00 | 17.42 | 33.10 | 5451.34 | 652.00 | 1.18 | 16.11 | 11.55 |
| * | 54.000 | 115.00 | 4647.60 | 5142.70 | -1.00 | 41800.00 | 14.18 | 18.21 | 2947.71 | 476.75 | 0.0 | 10.53 | 7.41 |
| * | 54.000 | 115.00 | 4647.60 | 5142.70 | -1.00 | 31400.00 | 13.24 | 15.15 | 2371.37 | 441.31 | 0.0 | 8.88 | 6.15 |
| | 56.000 | 82.00 | 4539.30 | 5063.00 | -0.70 | 90000.00 | 10.61 | 46.79 | 9020.61 | 710.00 | 1.92 | 16.88 | 15.21 |
| | 56.000 | 82.00 | 4539.30 | 5063.00 | -0.70 | 41800.00 | 7.68 | 26.18 | 5514.08 | 560.70 | 0.0 | 11.16 | 10.25 |
| | 56.000 | 82.00 | 4539.30 | 5063.00 | -0.70 | 31400.00 | 6.78 | 21.79 | 4675.75 | 560.70 | 0.0 | 9.46 | 8.75 |
| | 60.000 | 104.30 | 4387.60 | 5068.00 | -0.70 | 90000.00 | 7.28 | 73.11 | 12896.49 | 855.00 | 2.51 | 20.31 | 19.50 |
| | 60.000 | 104.30 | 4387.60 | 5068.00 | -0.70 | 41800.00 | 7.09 | 39.84 | 5898.05 | 666.80 | 0.0 | 11.21 | 10.43 |
| | 60.000 | 104.30 | 4387.60 | 5068.00 | -0.70 | 31400.00 | 6.44 | 33.22 | 4872.27 | 658.31 | 0.0 | 9.53 | 8.88 |
| | 61.000 | 50.00 | 4297.39 | 4927.20 | 1.70 | 90000.00 | 6.17 | 89.35 | 15412.76 | 864.80 | 16.76 | 20.38 | 19.83 |
| | 61.000 | 50.00 | 4297.39 | 4927.20 | 1.70 | 41800.00 | 6.99 | 46.76 | 6153.85 | 714.40 | 2.77 | 11.28 | 10.55 |
| | 61.000 | 50.00 | 4297.39 | 4927.20 | 1.70 | 31400.00 | 6.41 | 38.90 | 5034.17 | 714.40 | 2.81 | 9.59 | 8.98 |
| | 62.000 | 134.00 | 4125.02 | 4640.91 | 1.70 | 90000.00 | 6.99 | 137.32 | 14179.76 | 816.19 | 13.75 | 20.48 | 19.81 |
| | 62.000 | 134.00 | 4125.02 | 4640.91 | 1.70 | 41800.00 | 7.09 | 66.14 | 6198.04 | 708.40 | 6.65 | 11.43 | 10.70 |
| | 62.000 | 134.00 | 4125.02 | 4640.91 | 1.70 | 31400.00 | 6.45 | 54.80 | 5101.57 | 708.40 | 6.62 | 9.76 | 9.15 |
| | 64.000 | 480.00 | 4851.52 | 5319.59 | 1.80 | 90000.00 | 7.59 | 272.01 | 12628.19 | 816.00 | 1.60 | 20.76 | 19.93 |
| | 64.000 | 480.00 | 4851.52 | 5319.59 | 1.80 | 41800.00 | 7.68 | 128.90 | 5733.86 | 745.64 | 0.01 | 12.06 | 11.21 |
| | 64.000 | 480.00 | 4851.52 | 5319.59 | 1.80 | 31400.00 | 7.20 | 105.97 | 4620.68 | 740.03 | 0.00 | 10.45 | 9.72 |
| | 66.000 | 286.00 | 4736.50 | 5270.07 | 2.40 | 90000.00 | 7.00 | 353.15 | 13728.87 | 852.00 | 5.40 | 20.91 | 20.20 |
| | 66.000 | 286.00 | 4736.50 | 5270.07 | 2.40 | 41800.00 | 6.83 | 166.19 | 6516.18 | 851.64 | 1.98 | 12.41 | 11.73 |
| | 66.000 | 286.00 | 4736.50 | 5270.07 | 2.40 | 31400.00 | 6.32 | 136.06 | 5260.82 | 851.64 | 1.08 | 10.84 | 10.26 |
| | 68.000 | 100.00 | 4663.84 | 5071.10 | 2.00 | 90000.00 | 9.84 | 386.94 | 10441.14 | 907.10 | 9.56 | 21.22 | 19.98 |

Camino del mar

A

| | SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 68.000 | 100.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 12.90 | 179.72 | 3679.05 | 771.16 | 0.25 | 14.59 | 12.34 |
| * | 68.000 | 100.00 | 4663.84 | 5071.10 | 2.00 | 31400.00 | 13.53 | 146.42 | 2696.13 | 575.77 | 0.0 | 13.39 | 10.81 |
| | 69.000 | 5.00 | 4663.84 | 5071.10 | 2.00 | 90000.00 | 10.72 | 388.06 | 9047.87 | 925.23 | 23.28 | 21.44 | 19.69 |
| * | 69.000 | 5.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 13.80 | 180.14 | 3609.89 | 788.26 | 0.30 | 14.85 | 12.30 |
| | 69.000 | 5.00 | 4663.84 | 5071.10 | 2.00 | 31400.00 | 10.83 | 146.77 | 3438.27 | 757.96 | 0.13 | 13.62 | 12.04 |
| A T+SF RR BRIDGE | 70.000 | 20.00 | 4663.84 | 5071.10 | 2.00 | 90000.00 | 10.43 | 392.27 | 9279.41 | 940.36 | 23.52 | 21.60 | 19.94 |
| | 70.000 | 20.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 10.74 | 181.99 | 4463.98 | 799.91 | 1.83 | 15.17 | 13.66 |
| | 70.000 | 20.00 | 4663.84 | 5071.10 | 2.00 | 31400.00 | 10.43 | 148.39 | 3583.30 | 783.57 | 0.27 | 13.72 | 12.26 |
| | 72.000 | 243.10 | 4746.61 | 4983.93 | 1.70 | 90000.00 | 6.82 | 473.32 | 16617.23 | 1035.65 | 7.05 | 22.10 | 21.59 |
| | 72.000 | 243.10 | 4746.61 | 4983.93 | 1.70 | 40880.00 | 8.42 | 213.80 | 5650.09 | 550.55 | 0.90 | 15.83 | 14.93 |
| | 72.000 | 243.10 | 4746.61 | 4983.93 | 1.70 | 30710.00 | 7.20 | 175.26 | 4941.73 | 550.55 | 0.41 | 14.30 | 13.64 |
| B | 74.000 | 141.80 | 4816.92 | 5094.88 | 1.70 | 90000.00 | 7.26 | 542.64 | 16426.30 | 1237.98 | 9.58 | 22.19 | 21.64 |
| | 74.000 | 141.80 | 4816.92 | 5094.88 | 1.70 | 40880.00 | 8.85 | 234.98 | 5262.44 | 508.58 | 1.82 | 16.07 | 15.02 |
| | 74.000 | 141.80 | 4816.92 | 5094.88 | 1.70 | 30710.00 | 7.57 | 193.80 | 4609.17 | 500.98 | 1.19 | 14.50 | 13.72 |
| | 76.000 | 286.00 | 4874.40 | 5134.00 | 1.80 | 90000.00 | 7.57 | 652.08 | 16292.11 | 1245.00 | 15.32 | 22.33 | 21.76 |
| | 76.000 | 286.00 | 4874.40 | 5134.00 | 1.80 | 40880.00 | 8.62 | 271.37 | 5702.78 | 530.00 | 7.49 | 16.40 | 15.45 |
| | 76.000 | 286.00 | 4874.40 | 5134.00 | 1.80 | 30710.00 | 7.43 | 225.62 | 4965.18 | 530.00 | 6.52 | 14.77 | 14.06 |
| C | 78.000 | 224.20 | 4878.80 | 5126.40 | 2.00 | 90000.00 | 9.25 | 736.57 | 13668.99 | 1207.00 | 20.16 | 22.58 | 21.72 |
| | 78.000 | 224.20 | 4878.80 | 5126.40 | 2.00 | 40880.00 | 9.48 | 300.42 | 5166.59 | 469.10 | 11.26 | 16.74 | 15.57 |
| | 78.000 | 224.20 | 4878.80 | 5126.40 | 2.00 | 30710.00 | 8.13 | 250.98 | 4515.04 | 469.10 | 10.02 | 15.05 | 14.18 |
| | 80.000 | 250.60 | 4850.90 | 5114.80 | 3.00 | 90000.00 | 12.24 | 806.02 | 10309.86 | 1279.50 | 17.56 | 23.14 | 21.47 |
| | 80.000 | 250.60 | 4850.90 | 5114.80 | 3.00 | 40880.00 | 9.98 | 329.26 | 4840.83 | 489.07 | 9.79 | 17.13 | 15.82 |
| | 80.000 | 250.60 | 4850.90 | 5114.80 | 3.00 | 30710.00 | 8.72 | 275.93 | 4141.52 | 489.06 | 8.39 | 15.40 | 14.39 |
| | 82.000 | 221.70 | 4860.90 | 5105.60 | 1.70 | 90000.00 | 6.49 | 887.98 | 19676.86 | 1505.00 | 10.68 | 23.52 | 23.12 |
| | 82.000 | 221.70 | 4860.90 | 5105.60 | 1.70 | 40880.00 | 7.38 | 360.77 | 7038.52 | 707.00 | 5.96 | 17.48 | 16.83 |
| | 82.000 | 221.70 | 4860.90 | 5105.60 | 1.70 | 30710.00 | 6.60 | 302.48 | 5862.06 | 707.00 | 3.82 | 15.70 | 15.16 |
| Jimmy Durante Bridge | 90.000 | 125.60 | 4868.70 | 5144.90 | -3.40 | 90000.00 | 5.26 | 946.47 | 22255.25 | 1580.00 | 12.72 | 23.87 | 23.59 |
| | 90.000 | 125.60 | 4868.70 | 5144.90 | -3.40 | 40880.00 | 6.71 | 381.52 | 7827.67 | 905.00 | 8.54 | 18.22 | 17.66 |
| | 90.000 | 125.60 | 4868.70 | 5144.90 | -3.40 | 30710.00 | 7.01 | 318.42 | 5441.92 | 905.00 | 3.88 | 15.70 | 15.02 |
| D | 91.000 | 130.00 | 4880.30 | 5122.90 | 2.00 | 90000.00 | 3.85 | 1010.45 | 26860.98 | 1610.00 | 10.15 | 23.91 | 23.73 |
| | 91.000 | 130.00 | 4880.30 | 5122.90 | 2.00 | 42400.00 | 4.46 | 407.33 | 10989.37 | 970.00 | 8.19 | 18.33 | 18.08 |
| | 91.000 | 130.00 | 4880.30 | 5122.90 | 2.00 | 32100.00 | 4.35 | 337.66 | 8599.75 | 970.00 | 4.95 | 15.85 | 15.62 |
| | 92.000 | 230.00 | 4908.80 | 5114.50 | 0.0 | 90000.00 | 3.75 | 1143.83 | 28003.53 | 1579.16 | 5.02 | 23.94 | 23.77 |
| | 92.000 | 230.00 | 4908.80 | 5114.50 | 0.0 | 42400.00 | 3.65 | 468.11 | 13556.25 | 1028.34 | 5.90 | 18.39 | 18.22 |
| | 92.000 | 230.00 | 4908.80 | 5114.50 | 0.0 | 32100.00 | 3.44 | 386.15 | 11050.23 | 1019.16 | 5.14 | 15.92 | 15.78 |
| | 94.000 | 370.00 | 4692.49 | 5053.08 | 0.50 | 90000.00 | 3.96 | 1329.33 | 25099.45 | 1378.30 | 2.39 | 23.99 | 23.78 |
| | 94.000 | 370.00 | 4692.49 | 5053.08 | 0.50 | 42400.00 | 3.39 | 567.02 | 13677.75 | 1016.40 | 2.18 | 18.43 | 18.27 |
| | 94.000 | 370.00 | 4692.49 | 5053.08 | 0.50 | 32100.00 | 3.17 | 466.83 | 11193.44 | 1016.40 | 1.58 | 15.96 | 15.83 |
| | 96.000 | 437.00 | 4524.53 | 4747.48 | 0.20 | 90000.00 | 4.75 | 1535.30 | 21619.27 | 1157.00 | 23.23 | 24.06 | 23.79 |
| | 96.000 | 437.00 | 4524.53 | 4747.48 | 0.20 | 42400.00 | 3.85 | 686.94 | 12536.55 | 877.50 | 29.69 | 18.49 | 18.31 |

| SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96.000 | 437.00 | 4524.53 | 4747.48 | 0.20 | 32100.00 | 3.54 | 565.81 | 10398.21 | 877.50 | 30.49 | 16.03 | 15.88 |
| 98.000 | 530.00 | 4309.47 | 4632.87 | 1.10 | 90000.00 | 4.88 | 1760.03 | 20974.51 | 1150.19 | 28.05 | 24.15 | 23.85 |
| 98.000 | 530.00 | 4309.47 | 4632.87 | 1.10 | 42400.00 | 3.87 | 823.10 | 12363.89 | 908.79 | 33.17 | 18.57 | 18.38 |
| 98.000 | 530.00 | 4309.47 | 4632.87 | 1.10 | 32100.00 | 3.59 | 678.47 | 10155.75 | 908.79 | 32.99 | 16.11 | 15.95 |
| 100.000 | 290.00 | 4644.57 | 4910.29 | 2.30 | 90000.00 | 4.60 | 1901.22 | 23464.79 | 1365.00 | 42.98 | 24.21 | 23.97 |
| 100.000 | 290.00 | 4644.57 | 4910.29 | 2.30 | 42400.00 | 3.82 | 909.31 | 13560.80 | 1115.65 | 50.51 | 18.63 | 18.46 |
| 100.000 | 290.00 | 4644.57 | 4910.29 | 2.30 | 32100.00 | 3.68 | 748.44 | 10839.18 | 1115.65 | 50.10 | 16.17 | 16.03 |
| 102.000 | 320.00 | 4914.10 | 5307.70 | 1.30 | 90000.00 | 4.46 | 2084.89 | 23611.73 | 1402.00 | 46.80 | 24.26 | 24.02 |
| 102.000 | 320.00 | 4914.10 | 5307.70 | 1.30 | 42400.00 | 3.52 | 1017.95 | 14342.41 | 1220.00 | 50.34 | 18.68 | 18.54 |
| 102.000 | 320.00 | 4914.10 | 5307.70 | 1.30 | 32100.00 | 3.41 | 834.85 | 11375.14 | 1220.00 | 48.64 | 16.24 | 16.11 |
| 104.000 | 78.90 | 4886.50 | 5096.50 | 1.30 | 90000.00 | 5.07 | 2137.28 | 22890.05 | 1365.00 | 44.90 | 24.29 | 24.03 |
| 104.000 | 78.90 | 4886.50 | 5096.50 | 1.30 | 42400.00 | 3.97 | 1048.65 | 14318.11 | 1220.00 | 46.23 | 18.70 | 18.55 |
| 104.000 | 78.90 | 4886.50 | 5096.50 | 1.30 | 32100.00 | 3.90 | 859.07 | 11354.40 | 1220.00 | 44.20 | 16.26 | 16.12 |
| 106.000 | 74.70 | 4856.60 | 5293.30 | 1.60 | 90000.00 | 4.61 | 2183.79 | 22501.38 | 1335.00 | 45.90 | 24.30 | 24.04 |
| 106.000 | 74.70 | 4856.60 | 5293.30 | 1.60 | 42400.00 | 3.37 | 1077.58 | 14476.96 | 1220.00 | 47.83 | 18.72 | 18.58 |
| 106.000 | 74.70 | 4856.60 | 5293.30 | 1.60 | 32100.00 | 3.23 | 881.96 | 11529.96 | 1220.00 | 47.34 | 16.28 | 16.15 |
| 108.000 | 550.00 | 4857.30 | 5259.00 | 1.80 | 90000.00 | 5.77 | 2449.88 | 18378.95 | 1110.00 | 47.73 | 24.48 | 24.08 |
| 108.000 | 550.00 | 4857.30 | 5259.00 | 1.80 | 42400.00 | 4.11 | 1253.23 | 12356.41 | 1101.13 | 45.23 | 18.84 | 18.64 |
| 108.000 | 550.00 | 4857.30 | 5259.00 | 1.80 | 32100.00 | 3.99 | 1021.29 | 9746.80 | 1068.27 | 42.50 | 16.43 | 16.24 |
| 110.000 | 537.70 | 4918.90 | 5108.70 | 0.70 | 90000.00 | 7.44 | 2665.86 | 15211.29 | 850.00 | 49.26 | 24.73 | 24.14 |
| 110.000 | 537.70 | 4918.90 | 5108.70 | 0.70 | 42400.00 | 5.17 | 1400.77 | 10615.48 | 850.00 | 45.04 | 19.00 | 18.72 |
| 110.000 | 537.70 | 4918.90 | 5108.70 | 0.70 | 32100.00 | 4.93 | 1138.97 | 8595.12 | 850.00 | 41.88 | 16.60 | 16.35 |
| 112.000 | 298.70 | 4901.30 | 5086.60 | 0.80 | 90000.00 | 8.85 | 2759.91 | 12618.73 | 710.00 | 55.86 | 24.97 | 24.11 |
| 112.000 | 298.70 | 4901.30 | 5086.60 | 0.80 | 42400.00 | 6.13 | 1466.44 | 8806.61 | 710.00 | 51.89 | 19.15 | 18.74 |
| 112.000 | 298.70 | 4901.30 | 5086.60 | 0.80 | 32100.00 | 5.82 | 1192.17 | 7133.38 | 710.00 | 48.92 | 16.75 | 16.39 |
| 114.000 | 214.70 | 4899.30 | 5105.00 | 0.90 | 90000.00 | 9.81 | 2822.93 | 11219.00 | 645.00 | 50.23 | 25.21 | 24.11 |
| 114.000 | 214.70 | 4899.30 | 5105.00 | 0.90 | 42400.00 | 6.93 | 1510.11 | 7768.68 | 645.00 | 43.34 | 19.30 | 18.76 |
| 114.000 | 214.70 | 4899.30 | 5105.00 | 0.90 | 32100.00 | 6.65 | 1227.35 | 6254.21 | 645.00 | 38.25 | 16.92 | 16.41 |
| 120.000 | 105.00 | 4454.10 | 5113.50 | 1.20 | 90000.00 | 7.69 | 2851.70 | 11702.11 | 659.39 | 0.0 | 26.22 | 25.30 |
| 120.000 | 105.00 | 4454.10 | 5113.50 | 1.20 | 42400.00 | 5.68 | 1529.21 | 7467.81 | 634.64 | 0.0 | 19.30 | 18.80 |
| 120.000 | 105.00 | 4454.10 | 5113.50 | 1.20 | 32100.00 | 5.35 | 1242.68 | 5996.30 | 618.09 | 0.0 | 16.92 | 16.45 |
| 130.000 | 110.00 | 4522.70 | 5182.00 | 1.40 | 90000.00 | 6.79 | 2883.22 | 13262.65 | 681.98 | 0.00 | 27.41 | 26.70 |
| 130.000 | 110.00 | 4522.70 | 5182.00 | 1.40 | 42400.00 | 5.24 | 1548.86 | 8091.97 | 657.22 | 0.0 | 19.30 | 18.84 |
| 130.000 | 110.00 | 4522.70 | 5182.00 | 1.40 | 32100.00 | 4.90 | 1258.51 | 6545.71 | 657.20 | 0.0 | 16.92 | 16.49 |
| 132.000 | 282.00 | 4922.40 | 5095.50 | 1.00 | 90000.00 | 5.39 | 2990.39 | 19750.90 | 1030.00 | 52.83 | 27.56 | 27.23 |
| 132.000 | 282.00 | 4922.40 | 5095.50 | 1.00 | 42800.00 | 4.76 | 1612.36 | 11470.47 | 1030.00 | 46.79 | 19.42 | 19.19 |
| 132.000 | 282.00 | 4922.40 | 5095.50 | 1.00 | 32500.00 | 4.78 | 1309.06 | 9028.03 | 1030.00 | 42.96 | 17.04 | 16.82 |
| 134.000 | 345.60 | 4916.00 | 5201.90 | 0.30 | 90000.00 | 4.00 | 3180.49 | 26230.59 | 1370.00 | 38.24 | 27.63 | 27.44 |
| 134.000 | 345.60 | 4916.00 | 5201.90 | 0.30 | 42800.00 | 3.53 | 1722.25 | 15164.48 | 1370.00 | 34.68 | 19.50 | 19.37 |
| 134.000 | 345.60 | 4916.00 | 5201.90 | 0.30 | 32500.00 | 3.53 | 1395.41 | 11929.57 | 1370.00 | 32.35 | 17.14 | 17.01 |

| SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 136.000 | 1880.00 | 4938.30 | 5068.40 | 1.10 | 90000.00 | 3.61 | 4377.27 | 30848.66 | 1745.69 | 66.89 | 27.80 | 27.66 |
| 136.000 | 1880.00 | 4938.30 | 5068.40 | 1.10 | 42800.00 | 3.51 | 2393.57 | 16813.58 | 1745.69 | 65.68 | 19.73 | 19.62 |
| 136.000 | 1880.00 | 4938.30 | 5068.40 | 1.10 | 32500.00 | 3.68 | 1914.70 | 12786.03 | 1745.69 | 64.68 | 17.43 | 17.31 |
| 138.000 | 1375.00 | 4951.30 | 5214.00 | 1.10 | 90000.00 | 3.87 | 5245.59 | 27043.97 | 1450.00 | 25.11 | 27.92 | 27.74 |
| 138.000 | 1375.00 | 4951.30 | 5214.00 | 1.10 | 42800.00 | 3.45 | 2879.07 | 15490.63 | 1450.00 | 21.13 | 19.90 | 19.77 |
| 138.000 | 1375.00 | 4951.30 | 5214.00 | 1.10 | 32500.00 | 3.45 | 2291.04 | 12220.70 | 1450.00 | 18.69 | 17.64 | 17.51 |

SAN DIEGUITO RIVER, 500-

SUMMARY PRINTOUT

| | SECNO | XLCH | STENCL | SSTA | ENDST | STENCR | .01K | DIFEG | EG | DIFWSX | DIFWSP | DIFKWS | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 50.000 | 0.0 | 4850.00 | 4850.00 | 5439.19 | 5480.00 | 11614.50 | 0.0 | 12.23 | 0.0 | 0.0 | 4.78 | 7.60 |
| * | 50.000 | 0.0 | 4900.00 | 4911.77 | 5410.59 | 5435.00 | 4889.26 | -5.70 | 6.53 | 0.0 | -4.11 | -4.11 | 3.50 |
| | 50.000 | 0.0 | 4900.00 | 4919.76 | 5405.86 | 5435.00 | 4083.08 | -1.54 | 4.99 | 0.0 | -0.68 | -4.78 | 2.82 |
| * | 52.000 | 157.00 | 4700.00 | 4759.14 | 5315.00 | 5315.00 | 11847.74 | 0.0 | 15.09 | 2.72 | 0.0 | 0.0 | 10.32 |
| * | 52.000 | 157.00 | 4740.00 | 4812.54 | 5246.40 | 5250.00 | 4972.46 | -6.07 | 9.02 | 2.20 | -4.62 | -4.62 | 5.70 |
| * | 52.000 | 157.00 | 4740.00 | 4824.14 | 5231.00 | 5250.00 | 3652.32 | -1.76 | 7.26 | 1.58 | -1.29 | -5.92 | 4.40 |
| * | 54.000 | 115.00 | 4560.00 | 4560.00 | 5212.00 | 5212.00 | 11903.82 | 0.0 | 16.11 | 1.23 | 0.0 | 0.0 | 11.55 |
| * | 54.000 | 115.00 | 4647.60 | 4661.47 | 5138.22 | 5142.70 | 4914.52 | -5.58 | 10.53 | 1.71 | -4.14 | -4.14 | 7.41 |
| * | 54.000 | 115.00 | 4647.60 | 4667.57 | 5108.88 | 5142.70 | 3601.11 | -1.65 | 8.88 | 1.75 | -1.25 | -5.39 | 6.15 |
| | 56.000 | 82.00 | 4430.00 | 4430.00 | 5140.00 | 5140.00 | 25824.32 | 0.0 | 16.88 | 3.66 | 0.0 | 0.0 | 15.21 |
| | 56.000 | 82.00 | 4539.30 | 4539.29 | 5100.00 | 5100.00 | 12678.96 | -5.72 | 11.16 | 2.84 | -4.96 | -4.96 | 10.25 |
| | 56.000 | 82.00 | 4539.30 | 4539.29 | 5100.00 | 5100.00 | 9739.58 | -1.70 | 9.46 | 2.60 | -1.50 | -6.46 | 8.75 |
| | 60.000 | 104.30 | 4240.00 | 4240.00 | 5095.00 | 5095.00 | 41173.54 | 0.0 | 20.31 | 4.29 | 0.0 | 0.0 | 19.50 |
| | 60.000 | 104.30 | 4387.60 | 4398.60 | 5065.40 | 5068.00 | 12454.00 | -9.09 | 11.21 | 0.18 | -9.07 | -9.07 | 10.43 |
| | 60.000 | 104.30 | 4387.60 | 4402.64 | 5060.95 | 5068.00 | 9139.93 | -1.68 | 9.53 | 0.13 | -1.55 | -10.62 | 8.88 |
| | 61.000 | 50.00 | 4128.20 | 4128.19 | 4992.99 | 4992.99 | 49457.46 | 0.0 | 20.38 | 0.33 | 0.0 | 0.0 | 19.83 |
| | 61.000 | 50.00 | 4269.20 | 4269.19 | 4983.59 | 4983.59 | 12448.84 | -9.10 | 11.28 | 0.12 | -9.29 | -9.29 | 10.55 |
| | 61.000 | 50.00 | 4269.20 | 4269.19 | 4983.59 | 4983.59 | 8924.89 | -1.68 | 9.59 | 0.10 | -1.57 | -10.85 | 8.98 |
| | 62.000 | 134.00 | 3940.22 | 3940.22 | 4756.41 | 4756.41 | 43636.47 | 0.0 | 20.48 | -0.03 | 0.0 | 0.0 | 19.81 |
| | 62.000 | 134.00 | 4048.02 | 4048.02 | 4756.41 | 4756.41 | 12432.53 | -9.05 | 11.43 | 0.15 | -9.11 | -9.11 | 10.70 |
| | 62.000 | 134.00 | 4048.02 | 4048.02 | 4756.41 | 4756.41 | 9012.57 | -1.67 | 9.76 | 0.17 | -1.55 | -10.66 | 9.15 |
| | 64.000 | 480.00 | 4767.12 | 4767.11 | 5583.11 | 5583.12 | 39110.02 | 0.0 | 20.76 | 0.12 | 0.0 | 0.0 | 19.93 |
| | 64.000 | 480.00 | 4815.12 | 4845.47 | 5591.11 | 5591.12 | 11222.40 | -8.70 | 12.06 | 0.52 | -8.71 | -8.71 | 11.21 |
| | 64.000 | 480.00 | 4815.12 | 4851.08 | 5591.11 | 5591.12 | 7906.64 | -1.61 | 10.45 | 0.57 | -1.50 | -10.21 | 9.72 |
| | 66.000 | 286.00 | 4619.64 | 4619.64 | 5471.64 | 5471.64 | 42282.59 | 0.0 | 20.91 | 0.27 | 0.0 | 0.0 | 20.20 |
| | 66.000 | 286.00 | 4633.77 | 4633.77 | 5485.41 | 5485.41 | 12782.75 | -8.50 | 12.41 | 0.52 | -8.47 | -8.47 | 11.73 |
| | 66.000 | 286.00 | 4633.77 | 4633.77 | 5485.41 | 5485.41 | 9155.74 | -1.57 | 10.84 | 0.54 | -1.47 | -9.94 | 10.26 |
| | 68.000 | 100.00 | 4491.74 | 4491.74 | 5398.84 | 5428.94 | 21672.85 | 0.0 | 21.22 | -0.23 | 0.0 | 0.0 | 19.98 |
| * | 68.000 | 100.00 | 4591.14 | 4591.14 | 5369.74 | 5400.54 | 4562.79 | -6.63 | 14.59 | 0.60 | -7.64 | -7.64 | 12.34 |
| * | 68.000 | 100.00 | 4591.14 | 4663.87 | 5369.73 | 5400.54 | 3593.92 | -1.19 | 13.39 | 0.56 | -1.52 | -9.16 | 10.81 |
| | 69.000 | 5.00 | 4456.24 | 4456.24 | 5381.46 | 5450.24 | 10141.64 | 0.0 | 21.44 | -0.29 | 0.0 | 0.0 | 19.69 |
| * | 69.000 | 5.00 | 4569.84 | 4569.84 | 5369.74 | 5393.44 | 5260.12 | -6.58 | 14.85 | -0.04 | -7.39 | -7.39 | 12.30 |
| | 69.000 | 5.00 | 4569.84 | 4569.84 | 5369.74 | 5393.44 | 4942.17 | -1.23 | 13.62 | 1.22 | -0.26 | -7.65 | 12.04 |
| | 70.000 | 20.00 | 4456.24 | 4456.24 | 5396.59 | 5450.24 | 10567.93 | 0.0 | 21.60 | 0.25 | 0.0 | 0.0 | 19.94 |
| | 70.000 | 20.00 | 4569.84 | 4569.84 | 5369.75 | 5393.44 | 5832.56 | -6.43 | 15.17 | 1.36 | -6.28 | -6.28 | 13.66 |
| | 70.000 | 20.00 | 4569.84 | 4569.84 | 5369.74 | 5393.44 | 5210.07 | -1.45 | 13.72 | 0.22 | -1.40 | -7.68 | 12.26 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72.000 | 243.10 | 4565.82 | 4565.81 | 5601.46 | 5601.46 | 46097.64 | 0.0 | 22.10 | 1.65 | 0.0 | 0.0 | 21.59 |

| SECNO | XLCH | STENCL | SSTA | ENDST | STENCR | .01K | DIFEG | EG | DIFWSX | DIFWSP | DIFKWS | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72.000 | 243.10 | 4681.32 | 4681.31 | 5231.86 | 5231.86 | 12751.13 | -6.27 | 15.83 | 1.27 | -6.66 | -6.66 | 14.93 |
| 72.000 | 243.10 | 4681.32 | 4681.31 | 5231.86 | 5231.86 | 10415.16 | -1.53 | 14.30 | 1.38 | -1.29 | -7.95 | 13.64 |
| 74.000 | 141.80 | 4595.93 | 4595.92 | 5833.90 | 5833.91 | 43129.64 | 0.0 | 22.19 | 0.05 | 0.0 | 0.0 | 21.64 |
| 74.000 | 141.80 | 4738.80 | 4738.80 | 5253.73 | 5253.73 | 12143.41 | -6.12 | 16.07 | 0.09 | -6.62 | -6.62 | 15.02 |
| 74.000 | 141.80 | 4738.80 | 4738.80 | 5253.73 | 5253.73 | 9993.95 | -1.57 | 14.50 | 0.08 | -1.29 | -7.92 | 13.72 |
| 76.000 | 286.00 | 4615.00 | 4615.00 | 5860.00 | 5860.00 | 42284.89 | 0.0 | 22.33 | 0.12 | 0.0 | 0.0 | 21.76 |
| 76.000 | 286.00 | 4760.00 | 4760.00 | 5290.00 | 5290.00 | 13002.70 | -5.93 | 16.40 | 0.43 | -6.31 | -6.31 | 15.45 |
| 76.000 | 286.00 | 4760.00 | 4760.00 | 5290.00 | 5290.00 | 10510.45 | -1.63 | 14.77 | 0.33 | -1.39 | -7.70 | 14.06 |
| 78.000 | 224.20 | 4618.00 | 4618.00 | 5825.00 | 5825.00 | 34388.27 | 0.0 | 22.58 | -0.04 | 0.0 | 0.0 | 21.72 |
| 78.000 | 224.20 | 4740.90 | 4740.89 | 5210.00 | 5210.00 | 11780.01 | -5.84 | 16.74 | 0.12 | -6.15 | -6.15 | 15.57 |
| 78.000 | 224.20 | 4740.90 | 4740.89 | 5210.00 | 5210.00 | 9571.56 | -1.69 | 15.05 | 0.13 | -1.39 | -7.54 | 14.18 |
| 80.000 | 250.60 | 4605.50 | 4605.50 | 5885.00 | 5885.00 | 24562.04 | 0.0 | 23.14 | -0.25 | 0.0 | 0.0 | 21.47 |
| 80.000 | 250.60 | 4711.00 | 4711.00 | 5200.06 | 5210.00 | 10572.02 | -6.00 | 17.13 | 0.25 | -5.65 | -5.65 | 15.82 |
| 80.000 | 250.60 | 4711.00 | 4711.00 | 5200.05 | 5210.00 | 8356.06 | -1.73 | 15.40 | 0.21 | -1.43 | -7.08 | 14.39 |
| 82.000 | 221.70 | 4540.00 | 4540.00 | 6045.00 | 6045.00 | 50944.02 | 0.0 | 23.52 | 1.65 | 0.0 | 0.0 | 23.12 |
| 82.000 | 221.70 | 4648.00 | 4648.00 | 5355.00 | 5355.00 | 15932.19 | -6.04 | 17.48 | 1.01 | -6.30 | -6.30 | 16.83 |
| 82.000 | 221.70 | 4648.00 | 4648.00 | 5355.00 | 5355.00 | 12313.10 | -1.78 | 15.70 | 0.78 | -1.66 | -7.96 | 15.16 |
| 90.000 | 125.60 | 4540.00 | 4540.00 | 6120.00 | 6120.00 | 56757.99 | 0.0 | 23.87 | 0.46 | 0.0 | 0.0 | 23.59 |
| 90.000 | 125.60 | 4640.00 | 4640.00 | 5545.00 | 5545.00 | 16462.14 | -5.65 | 18.22 | 0.83 | -5.93 | -5.93 | 17.66 |
| 90.000 | 125.60 | 4640.00 | 4640.00 | 5545.00 | 5545.00 | 10535.54 | -2.52 | 15.70 | -0.14 | -2.63 | -8.57 | 15.02 |
| 91.000 | 130.00 | 4560.00 | 4560.00 | 6170.00 | 6170.00 | 75370.31 | 0.0 | 23.91 | 0.14 | 0.0 | 0.0 | 23.73 |
| 91.000 | 130.00 | 4630.00 | 4630.00 | 5600.00 | 5600.00 | 24855.46 | -5.58 | 18.33 | 0.42 | -5.65 | -5.65 | 18.08 |
| 91.000 | 130.00 | 4630.00 | 4630.00 | 5600.00 | 5600.00 | 17172.58 | -2.48 | 15.85 | 0.59 | -2.46 | -8.12 | 15.62 |
| 92.000 | 230.00 | 4670.00 | 4670.00 | 6310.00 | 6310.00 | 93055.94 | 0.0 | 23.94 | 0.04 | 0.0 | 0.0 | 23.77 |
| 92.000 | 230.00 | 4670.00 | 4670.00 | 5780.00 | 5780.00 | 37218.17 | -5.55 | 18.39 | 0.14 | -5.55 | -5.55 | 18.22 |
| 92.000 | 230.00 | 4670.00 | 4670.00 | 5780.00 | 5780.00 | 26880.64 | -2.47 | 15.92 | 0.16 | -2.45 | -8.00 | 15.78 |
| 94.000 | 370.00 | 4617.64 | 4617.64 | 5995.94 | 5995.95 | 85637.88 | 0.0 | 23.99 | 0.01 | 0.0 | 0.0 | 23.78 |
| 94.000 | 370.00 | 4617.64 | 4617.64 | 5634.04 | 5634.04 | 38546.27 | -5.56 | 18.43 | 0.05 | -5.51 | -5.51 | 18.27 |
| 94.000 | 370.00 | 4617.64 | 4617.64 | 5634.04 | 5634.04 | 27849.93 | -2.47 | 15.96 | 0.05 | -2.44 | -7.95 | 15.83 |
| 96.000 | 437.00 | 4264.92 | 4264.91 | 5421.91 | 5421.92 | 71776.06 | 0.0 | 24.06 | 0.01 | 0.0 | 0.0 | 23.79 |
| 96.000 | 437.00 | 4264.92 | 4264.91 | 5142.41 | 5142.42 | 34292.63 | -5.57 | 18.49 | 0.04 | -5.48 | -5.48 | 18.31 |
| 96.000 | 437.00 | 4264.92 | 4264.91 | 5142.41 | 5142.42 | 25238.41 | -2.46 | 16.03 | 0.05 | -2.43 | -7.91 | 15.88 |
| 98.000 | 530.00 | 3962.92 | 3962.92 | 5113.11 | 5113.12 | 67876.94 | 0.0 | 24.15 | 0.06 | 0.0 | 0.0 | 23.85 |
| 98.000 | 530.00 | 3962.92 | 3962.92 | 4871.71 | 4871.72 | 32770.20 | -5.58 | 18.57 | 0.07 | -5.47 | -5.47 | 18.38 |
| 98.000 | 530.00 | 3962.92 | 3962.92 | 4871.71 | 4871.72 | 23736.14 | -2.46 | 16.11 | 0.08 | -2.43 | -7.90 | 15.95 |
| 100.000 | 290.00 | 4026.95 | 4026.95 | 5391.95 | 5391.95 | 71708.88 | 0.0 | 24.21 | 0.11 | 0.0 | 0.0 | 23.97 |
| 100.000 | 290.00 | 4026.95 | 4026.95 | 5142.61 | 5142.61 | 32926.34 | -5.58 | 18.63 | 0.08 | -5.50 | -5.50 | 18.46 |
| 100.000 | 290.00 | 4026.95 | 4026.95 | 5142.61 | 5142.61 | 22930.89 | -2.45 | 16.17 | 0.07 | -2.44 | -7.94 | 16.03 |
| 102.000 | 320.00 | 4180.00 | 4180.00 | 5582.00 | 5582.00 | 70943.75 | 0.0 | 24.26 | 0.06 | 0.0 | 0.0 | 24.02 |
| 102.000 | 320.00 | 4180.00 | 4180.00 | 5400.00 | 5400.00 | 33763.92 | -5.58 | 18.68 | 0.07 | -5.49 | -5.49 | 18.54 |

| SECNO | XLCH | STENCL | SSTA | ENDST | STENCR | .01K | DIFEG | EG | DIFWSX | DIFWSP | DIFKWS | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 102.000 | 320.00 | 4180.00 | 4180.00 | 5400.00 | 5400.00 | 23136.46 | -2.44 | 16.24 | 0.08 | -2.43 | -7.92 | 16.11 |
| 104.000 | 78.90 | 4190.00 | 4190.00 | 5555.00 | 5555.00 | 69279.88 | 0.0 | 24.29 | 0.00 | 0.0 | 0.0 | 24.03 |
| 104.000 | 78.90 | 4190.00 | 4190.00 | 5410.00 | 5410.00 | 34501.25 | -5.58 | 18.70 | 0.01 | -5.48 | -5.48 | 18.55 |
| 104.000 | 78.90 | 4190.00 | 4190.00 | 5410.00 | 5410.00 | 23917.40 | -2.44 | 16.26 | 0.01 | -2.43 | -7.91 | 16.12 |
| 106.000 | 74.70 | 4200.00 | 4200.00 | 5535.00 | 5535.00 | 67729.75 | 0.0 | 24.30 | 0.01 | 0.0 | 0.0 | 24.04 |
| 106.000 | 74.70 | 4200.00 | 4200.00 | 5420.00 | 5420.00 | 34535.55 | -5.58 | 18.72 | 0.03 | -5.46 | -5.46 | 18.58 |
| 106.000 | 74.70 | 4200.00 | 4200.00 | 5420.00 | 5420.00 | 23868.13 | -2.44 | 16.28 | 0.04 | -2.42 | -7.89 | 16.15 |
| 108.000 | 550.00 | 4240.00 | 4240.00 | 5350.00 | 5350.00 | 54965.10 | 0.0 | 24.48 | 0.04 | 0.0 | 0.0 | 24.08 |
| 108.000 | 550.00 | 4240.00 | 4240.00 | 5350.00 | 5350.00 | 29222.30 | -5.64 | 18.84 | 0.06 | -5.44 | -5.44 | 18.64 |
| 108.000 | 550.00 | 4240.00 | 4240.00 | 5350.00 | 5350.00 | 20311.01 | -2.42 | 16.43 | 0.08 | -2.40 | -7.84 | 16.24 |
| 110.000 | 537.70 | 4390.00 | 4390.00 | 5240.00 | 5240.00 | 46733.41 | 0.0 | 24.73 | 0.06 | 0.0 | 0.0 | 24.14 |
| 110.000 | 537.70 | 4390.00 | 4390.00 | 5240.00 | 5240.00 | 26294.27 | -5.73 | 19.00 | 0.08 | -5.42 | -5.42 | 18.72 |
| 110.000 | 537.70 | 4390.00 | 4390.00 | 5240.00 | 5240.00 | 18852.98 | -2.40 | 16.60 | 0.11 | -2.38 | -7.79 | 16.35 |
| 112.000 | 298.70 | 4420.00 | 4420.00 | 5130.00 | 5130.00 | 38316.74 | 0.0 | 24.97 | -0.03 | 0.0 | 0.0 | 24.11 |
| 112.000 | 298.70 | 4420.00 | 4420.00 | 5130.00 | 5130.00 | 21534.43 | -5.82 | 19.15 | 0.02 | -5.37 | -5.37 | 18.74 |
| 112.000 | 298.70 | 4420.00 | 4420.00 | 5130.00 | 5130.00 | 15445.53 | -2.40 | 16.75 | 0.04 | -2.36 | -7.73 | 16.39 |
| 114.000 | 214.70 | 4460.00 | 4460.00 | 5105.00 | 5105.00 | 33841.80 | 0.0 | 25.21 | -0.01 | 0.0 | 0.0 | 24.11 |
| 114.000 | 214.70 | 4460.00 | 4460.00 | 5105.00 | 5105.00 | 19075.73 | -5.91 | 19.30 | 0.01 | -5.35 | -5.35 | 18.76 |
| 114.000 | 214.70 | 4460.00 | 4460.00 | 5105.00 | 5105.00 | 13726.96 | -2.39 | 16.92 | 0.02 | -2.35 | -7.70 | 16.41 |
| 120.000 | 105.00 | 4454.10 | 4454.09 | 5113.48 | 5113.50 | 38877.17 | 0.0 | 26.22 | 1.20 | 0.0 | 0.0 | 25.30 |
| 120.000 | 105.00 | 4454.10 | 4464.14 | 5098.77 | 5113.50 | 18975.39 | -6.92 | 19.30 | 0.04 | -6.50 | -6.50 | 18.80 |
| 120.000 | 105.00 | 4454.10 | 4474.86 | 5092.95 | 5113.50 | 13403.47 | -2.38 | 16.92 | 0.04 | -2.35 | -8.85 | 16.45 |
| 130.000 | 110.00 | 4470.00 | 4500.02 | 5182.00 | 5182.00 | 46647.72 | 0.0 | 27.41 | 1.40 | 0.0 | 0.0 | 26.70 |
| 130.000 | 110.00 | 4470.00 | 4522.74 | 5179.96 | 5182.00 | 20827.18 | -8.11 | 19.30 | 0.04 | -7.86 | -7.86 | 18.84 |
| 130.000 | 110.00 | 4470.00 | 4522.75 | 5179.96 | 5182.00 | 14693.79 | -2.38 | 16.92 | 0.03 | -2.35 | -10.21 | 16.49 |
| 132.000 | 282.00 | 4300.00 | 4300.00 | 5330.00 | 5330.00 | 69217.50 | 0.0 | 27.56 | 0.53 | 0.0 | 0.0 | 27.23 |
| 132.000 | 282.00 | 4300.00 | 4300.00 | 5330.00 | 5330.00 | 28715.54 | -8.14 | 19.42 | 0.35 | -8.04 | -8.04 | 19.19 |
| 132.000 | 282.00 | 4300.00 | 4300.00 | 5330.00 | 5330.00 | 19627.13 | -2.38 | 17.04 | 0.33 | -2.37 | -10.41 | 16.82 |
| 134.000 | 345.60 | 4330.00 | 4330.00 | 5700.00 | 5700.00 | 92397.69 | 0.0 | 27.63 | 0.22 | 0.0 | 0.0 | 27.44 |
| 134.000 | 345.60 | 4330.00 | 4330.00 | 5700.00 | 5700.00 | 38029.88 | -8.13 | 19.50 | 0.18 | -8.08 | -8.08 | 19.37 |
| 134.000 | 345.60 | 4330.00 | 4330.00 | 5700.00 | 5700.00 | 25996.54 | -2.36 | 17.14 | 0.19 | -2.36 | -10.44 | 17.01 |
| 136.000 | 1880.00 | 3760.00 | 3760.00 | 5505.70 | 5505.70 | 104274.19 | 0.0 | 27.80 | 0.22 | 0.0 | 0.0 | 27.66 |
| 136.000 | 1880.00 | 3760.00 | 3760.00 | 5505.70 | 5505.70 | 39447.10 | -8.07 | 19.73 | 0.25 | -8.04 | -8.04 | 19.62 |
| 136.000 | 1880.00 | 3760.00 | 3760.00 | 5505.70 | 5505.70 | 25898.82 | -2.30 | 17.43 | 0.31 | -2.31 | -10.35 | 17.31 |
| 138.000 | 1375.00 | 4500.00 | 4500.00 | 5950.00 | 5950.00 | 93887.69 | 0.0 | 27.92 | 0.08 | 0.0 | 0.0 | 27.74 |
| 138.000 | 1375.00 | 4500.00 | 4500.00 | 5950.00 | 5950.00 | 38024.23 | -8.02 | 19.90 | 0.15 | -7.97 | -7.97 | 19.77 |
| 138.000 | 1375.00 | 4500.00 | 4500.00 | 5950.00 | 5950.00 | 26091.90 | -2.26 | 17.64 | 0.20 | -2.26 | -10.23 | 17.51 |

SUMMARY OF ERRORS

RECEIVED
FEB 25 1985
DAMES & MOORE

SAN DIEGUITO RIVER
FLOODWAY RUN

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG 1981
  ERROR CORR - 01,02,03,04
  MODIFICATION - 50,51,52,53,54
**************************************************

C
T1      C-DOVES COUNTY OF SAN DIEGO, ZONE 1 AND CITY OF DEL MAR
T2      GEORGE S. NOLTE AND ASSOCIATES
T3      SAN DIEGUITO RIVER, REACH 1 - 100-YR

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        3.        0.        0.  0.0           0.0       0.0       0.    2.820     0.0
J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       15.000
J3  VARIABLE CODES FOR SUMMARY PRINTOUT
    160.000   0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0

QT      5.000   90000.000  41800.000  31400.000   5700.000  41800.000      0.0       0.0       0.0       0.0
NC      0.035       0.030      0.030      0.200      0.400      0.0        0.0       0.0       0.0       0.0
ET      0.0         0.0        9.100      0.0        0.0        9.100      0.0       0.0    4900.000  5435.000

        CENTER OF CHANNEL AT STA. 5065.

X1     50.000     16.000   4900.000   5435.000      0.0        0.0        0.0       0.0       0.0       0.0
GR      9.300   4056.300      8.000   4216.500      8.300   4422.398      7.500  4667.000       6.600  4778.898
GR      4.900   4857.098      4.500   4900.000     -4.000   5000.000     -4.000  5247.500       0.0    5386.199
GR      7.000   5435.000     21.000   5532.098     37.900   5571.000     39.400  5619.199      60.200  5666.598
GR     81.400   5712.297      0.0        0.0        0.0        0.0        0.0       0.0       0.0       0.0
NC      0.0         0.035      0.0        0.0        0.0        0.0        0.0       0.0       0.0       0.0
ET      0.0         0.0        9.100      0.0        9.100      9.100      0.0       0.0    4740.000  5250.000

        CENTER OF CHANNEL AT STA. 4935.

X1     52.000     18.000   4742.297   5250.000    150.000    183.000    157.000       0.0       0.0       0.0
GR     12.600   4434.000     13.400   4494.500     12.400   4622.797     11.700  4742.297       7.000  4799.699
GR      5.500   4814.500     -2.500   4884.898     -2.500   5000.000     -2.500  5092.500      -2.500  5148.797
GR      6.000   5250.000      7.100   5293.000      6.600   5505.398      7.800  5612.398      23.600  5710.000
GR     43.700   5775.699     62.500   5830.398     81.100   5867.898      0.0       0.0       0.0       0.0
NC      0.045       0.0        0.0        0.0        0.0        0.0        0.0       0.0       0.0       0.0
ET      0.0         0.0        9.100      0.0        9.100      9.100      0.0       0.0    4647.598  5142.699
```

CENTER OF CHANNEL AT STA. 4830.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 54.000 | 25.000 | 4647.598 | 5142.699 | 120.000 | 110.000 | 115.000 | 0.0 | 0.0 | 0.0 |
| GR | 11.000 | 3989.700 | 10.300 | 4151.297 | 11.200 | 4264.797 | 12.100 | 4405.500 | 11.500 | 4508.797 |
| GR | 11.100 | 4597.699 | 6.300 | 4620.598 | 6.800 | 4635.699 | 10.500 | 4647.598 | 6.200 | 4666.898 |
| GR | -1.000 | 4771.199 | -1.000 | 4845.598 | -1.000 | 4922.898 | -1.000 | 5000.000 | 3.200 | 5058.500 |
| GR | 5.500 | 5093.598 | 7.600 | 5142.699 | 6.300 | 5369.199 | 7.500 | 5478.598 | 9.000 | 5562.500 |
| GR | 15.700 | 5584.797 | 16.200 | 5625.699 | 19.100 | 5701.797 | 43.500 | 5775.000 | 57.700 | 5845.500 |
| NC | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 9.100 | 9.100 | 0.0 | 0.0 | 4539.297 | 5100.000 |

CENTER OF CHANNEL AT STA. 4780.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 56.000 | 20.000 | 4539.297 | 5063.000 | 85.000 | 87.000 | 82.000 | 0.0 | 0.0 | 0.0 |
| GR | 10.600 | 3977.000 | 10.700 | 4111.699 | 11.900 | 4274.699 | 13.300 | 4425.297 | 13.500 | 4468.199 |
| GR | 11.600 | 4499.398 | 5.700 | 4539.297 | -0.700 | 4577.598 | -0.700 | 4717.398 | -0.700 | 4881.898 |
| GR | -0.700 | 4955.297 | -0.700 | 5000.000 | 4.000 | 5044.500 | 5.900 | 5063.000 | 7.500 | 5082.199 |
| GR | 7.400 | 5182.797 | 9.400 | 5330.000 | 9.500 | 5474.699 | 11.200 | 5618.598 | 16.200 | 5709.398 |
| NC | 0.0 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.110 | 0.0 | 0.0 | 9.110 | 4387.598 | 5065.000 | 4387.598 | 5068.000 |
| SB | 1.080 | 1.627 | 2.600 | 0.0 | 608.000 | 42.800 | 5746.000 | 0.0 | -0.700 | -0.700 |

CAMINO DEL MAR BRIDGE, CENTER OF CHANNEL AT STA. 4725.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 60.000 | 23.000 | 4387.598 | 5068.000 | 110.000 | 104.000 | 104.300 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 11.600 | 17.600 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 23.000 | 3851.200 | 9.000 | 9.000 | 4000.900 | 11.000 | 11.000 | 4166.398 | 12.000 | 12.000 |
| BT | 4319.898 | 14.300 | 14.300 | 4387.598 | 14.600 | 14.600 | 4387.699 | 17.600 | 8.400 | 4427.699 |
| BT | 17.700 | 8.500 | 4452.898 | 17.800 | 8.630 | 4729.199 | 19.900 | 10.700 | 4815.199 | 20.100 |
| BT | 10.900 | 4894.898 | 20.200 | 11.000 | 4946.598 | 20.400 | 11.200 | 5000.000 | 20.600 | 11.400 |
| BT | 5042.898 | 20.800 | 11.600 | 5067.898 | 20.800 | 11.600 | 5068.000 | 17.800 | 17.800 | 5168.500 |
| BT | 18.200 | 18.200 | 5287.398 | 18.600 | 18.600 | 5463.898 | 19.500 | 19.500 | 5595.797 | 20.400 |
| BT | 20.400 | 5707.699 | 23.300 | 23.300 | 5710.898 | 23.400 | 23.400 | 5825.500 | 27.800 | 27.800 |
| GR | 9.000 | 3851.200 | 11.000 | 4000.900 | 12.000 | 4166.398 | 14.300 | 4319.898 | 14.600 | 4387.598 |
| GR | 14.600 | 4387.699 | -0.700 | 4427.699 | -0.700 | 4452.898 | 1.700 | 4729.199 | 1.900 | 4815.199 |
| GR | 2.000 | 4894.898 | 2.200 | 4946.598 | 2.400 | 5000.000 | 2.600 | 5042.898 | 11.300 | 5067.898 |
| GR | 17.800 | 5068.000 | 18.200 | 5168.500 | 18.600 | 5287.398 | 19.500 | 5463.898 | 20.400 | 5595.797 |
| GR | 23.300 | 5707.699 | 23.400 | 5710.898 | 27.800 | 5825.500 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 4330.000 | 5025.000 | 4300.000 | 5060.000 |

CENTER OF CHANNEL AT STA. 4685.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 61.000 | 7.000 | 4330.000 | 5000.000 | 50.000 | 50.000 | 50.000 | 0.940 | 0.0 | 0.0 |
| GR | 2.250 | 4299.988 | 2.250 | 4300.000 | 2.200 | 4330.000 | 1.900 | 4701.098 | 1.700 | 4905.297 |
| GR | 1.800 | 5000.000 | 1.900 | 5060.000 | 1.900 | 5060.098 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.045 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 4250.000 | 4950.000 | 4150.000 | 5070.000 |

CHANNEL CENTER @ 4560. REPEAT OF #61 W/80' SUBTRACTED FROM EACH STA.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 62.000 | 8.000 | 4250.000 | 4920.000 | 170.000 | 135.000 | 134.000 | 0.770 | 0.0 | 0.0 |
| GR | 2.300 | 4149.988 | 2.300 | 4150.000 | 2.200 | 4250.000 | 1.900 | 4621.098 | 1.700 | 4825.297 |
| GR | 1.800 | 4920.000 | 1.800 | 4960.000 | 1.800 | 5070.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 4905.500 | 5645.000 | 4860.000 | 5830.000 |

CENTER OF CHANNEL AT STA. 5050.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 64.000 | 17.000 | 4905.500 | 5490.598 | 200.000 | 452.000 | 480.000 | 0.800 | 0.0 | 0.0 |
| GR | 13.300 | 4859.977 | 13.300 | 4859.988 | 13.300 | 4860.000 | 14.000 | 4884.898 | 9.600 | 4905.500 |
| GR | 2.100 | 4926.199 | 2.000 | 5000.000 | 1.800 | 5130.098 | 1.800 | 5355.199 | 4.400 | 5366.500 |
| GR | 5.400 | 5490.598 | 4.800 | 5546.797 | 3.900 | 5558.297 | 4.000 | 5727.398 | 6.100 | 5747.398 |
| GR | 6.600 | 5810.000 | 6.600 | 5830.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 4800.000 | 5616.098 | 4719.898 | 5919.398 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 66.000 | 16.000 | 4864.598 | 5616.098 | 363.000 | 200.000 | 286.000 | 0.710 | -0.100 | 0.0 |
| GR | 50.000 | 4719.887 | 8.400 | 4719.898 | 8.400 | 4730.000 | 8.300 | 4830.398 | 9.300 | 4864.598 |
| GR | 2.800 | 4886.398 | 2.700 | 5000.000 | 2.500 | 5194.297 | 3.700 | 5394.297 | 3.200 | 5562.598 |
| GR | 5.300 | 5616.098 | 5.200 | 5696.000 | 3.300 | 5713.199 | 3.500 | 5810.199 | 6.100 | 5896.500 |
| GR | 9.600 | 5919.398 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.040 | 0.040 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 4740.000 | 5880.000 |

GR POINTS FROM SECTION 70

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 68.000 | 32.000 | 4842.398 | 5416.000 | 171.000 | 150.000 | 100.000 | 0.710 | 0.0 | 0.0 |
| GR | 11.000 | 4226.699 | 10.700 | 4287.098 | 10.700 | 4351.199 | 11.100 | 4470.699 | 12.200 | 4563.598 |
| GR | 12.000 | 4624.797 | 11.600 | 4750.598 | 11.800 | 4803.297 | 11.900 | 4842.398 | 8.700 | 4842.500 |
| GR | 2.000 | 4871.398 | 2.200 | 5119.898 | 11.300 | 5120.000 | 12.400 | 5303.199 | 3.500 | 5303.297 |
| GR | 7.800 | 5415.898 | 7.900 | 5416.000 | 8.400 | 5532.500 | 8.400 | 5548.000 | 8.800 | 5716.797 |
| GR | 10.000 | 5836.598 | 19.500 | 5836.699 | 21.000 | 5965.500 | 22.400 | 6104.898 | 24.600 | 6316.098 |
| GR | 26.400 | 6497.500 | 27.300 | 6572.797 | 29.600 | 6804.098 | 31.400 | 6987.000 | 33.300 | 7154.898 |
| GR | 35.600 | 7358.898 | 37.100 | 7522.598 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.110 | 0.0 | 9.110 | 9.110 | 0.0 | 0.0 | 4710.000 | 5870.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 69.000 | 32.000 | 4842.398 | 5416.000 | 5.000 | 5.000 | 5.000 | 0.710 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 0.0 | 17.600 | 11.900 | 0.0 | 0.0 | 0.0 | 0.710 | 0.0 |
| BT | 32.000 | 4226.699 | 11.000 | 11.000 | 4287.098 | 10.700 | 10.700 | 4351.199 | 10.700 | 10.700 |
| BT | 4470.699 | 11.100 | 11.100 | 4563.598 | 12.200 | 12.200 | 4624.797 | 12.000 | 12.000 | 4750.598 |
| BT | 11.500 | 11.500 | 4803.297 | 11.800 | 11.800 | 4842.398 | 11.900 | 11.900 | 4842.500 | 11.900 |
| BT | 9.900 | 4871.398 | 12.000 | 10.000 | 5119.898 | 13.300 | 11.300 | 5120.000 | 13.300 | 11.300 |
| BT | 5303.199 | 14.400 | 12.400 | 5303.297 | 14.400 | 12.400 | 5415.898 | 15.400 | 13.400 | 5416.000 |
| BT | 15.400 | 13.400 | 5532.500 | 16.600 | 14.600 | 5548.000 | 16.700 | 14.700 | 5716.797 | 18.500 |
| BT | 16.500 | 5836.598 | 19.500 | 17.500 | 5836.699 | 19.500 | 19.500 | 5965.500 | 21.000 | 21.000 |
| BT | 6104.898 | 22.400 | 22.400 | 6316.098 | 24.600 | 24.600 | 6497.500 | 26.400 | 26.400 | 6572.797 |
| BT | 27.300 | 27.300 | 6804.098 | 29.600 | 29.600 | 6987.000 | 31.400 | 31.400 | 7154.898 | 33.300 |
| BT | 33.300 | 7358.898 | 35.600 | 35.600 | 7522.598 | 37.100 | 37.100 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| GR | 11.000 | 4226.699 | 10.700 | 4287.098 | 10.700 | 4351.199 | 11.100 | 4470.699 | 12.200 | 4563.598 |
| GR | 12.000 | 4624.797 | 11.600 | 4750.598 | 11.800 | 4803.297 | 11.900 | 4842.398 | 8.700 | 4842.500 |
| GR | 2.000 | 4871.398 | 2.200 | 5119.898 | 11.300 | 5120.000 | 12.400 | 5303.199 | 3.500 | 5303.297 |
| GR | 7.800 | 5415.898 | 7.900 | 5416.000 | 8.400 | 5532.500 | 8.400 | 5548.000 | 8.800 | 5716.797 |
| GR | 10.000 | 5836.598 | 19.500 | 5836.699 | 21.000 | 5965.500 | 22.400 | 6104.898 | 24.600 | 6316.098 |
| GR | 26.400 | 6497.500 | 27.300 | 6572.797 | 29.600 | 6804.098 | 31.400 | 6987.000 | 33.300 | 7154.898 |
| GR | 35.600 | 7358.898 | 37.100 | 7522.598 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.110 | 0.0 | 9.110 | 9.110 | 0.0 | 0.0 | 4710.000 | 5870.000 |

DISCHARGES FROM LEEDSHILL STUDY

A/T AND SANTA FE RAILROAD BRIDGE, RE-ENTRY OF FLOW FROM SECTION 90

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 70.000 | 32.000 | 4842.398 | 5416.000 | 20.000 | 20.000 | 20.000 | 0.710 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 0.0 | 17.600 | 11.900 | 0.0 | 0.0 | 0.0 | 0.710 | 0.0 |
| BT | 32.000 | 4226.699 | 11.000 | 11.000 | 4287.098 | 10.700 | 10.700 | 4351.199 | 10.700 | 10.700 |
| BT | 4470.699 | 11.100 | 11.100 | 4563.598 | 12.200 | 12.200 | 4624.797 | 12.000 | 12.000 | 4750.598 |
| BT | 11.500 | 11.500 | 4803.297 | 11.800 | 11.800 | 4842.398 | 11.900 | 11.900 | 4842.500 | 11.900 |
| BT | 9.900 | 4871.398 | 12.000 | 10.000 | 5119.898 | 13.300 | 11.300 | 5120.000 | 13.300 | 11.300 |
| BT | 5303.199 | 14.400 | 12.400 | 5303.297 | 14.400 | 12.400 | 5415.898 | 15.400 | 13.400 | 5416.000 |
| BT | 15.400 | 13.400 | 5532.500 | 16.600 | 14.600 | 5548.000 | 16.700 | 14.700 | 5716.797 | 18.500 |
| BT | 16.500 | 5836.598 | 19.500 | 17.500 | 5836.699 | 19.500 | 19.500 | 5965.500 | 21.000 | 21.000 |
| BT | 6104.898 | 22.400 | 22.400 | 6316.098 | 24.600 | 24.600 | 6497.500 | 26.400 | 26.400 | 6572.797 |
| BT | 27.300 | 27.300 | 6804.098 | 29.600 | 29.600 | 6987.000 | 31.400 | 31.400 | 7154.898 | 33.300 |
| BT | 33.300 | 7358.898 | 35.600 | 35.600 | 7522.598 | 37.100 | 37.100 | 0.0 | 0.0 | 0.0 |
| GR | 11.000 | 4226.699 | 10.700 | 4287.098 | 10.700 | 4351.199 | 11.100 | 4470.699 | 12.200 | 4563.598 |
| GR | 12.000 | 4624.797 | 11.600 | 4750.598 | 11.800 | 4803.297 | 11.900 | 4842.398 | 8.700 | 4842.500 |
| GR | 2.000 | 4871.398 | 2.200 | 5119.898 | 11.300 | 5120.000 | 12.400 | 5303.199 | 3.500 | 5303.297 |
| GR | 7.800 | 5415.898 | 7.900 | 5416.000 | 8.400 | 5532.500 | 8.400 | 5548.000 | 8.800 | 5716.797 |
| GR | 10.000 | 5836.598 | 19.500 | 5836.699 | 21.000 | 5965.500 | 22.400 | 6104.898 | 24.600 | 6316.098 |
| GR | 26.400 | 6497.500 | 27.300 | 6572.797 | 29.600 | 6804.098 | 31.400 | 6987.000 | 33.300 | 7154.898 |
| GR | 35.600 | 7358.898 | 37.100 | 7522.598 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.045 | 0.035 | 0.030 | 0.200 | 0.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 40880.000 | 30710.000 | 5700.000 | 41800.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 4760.000 | 5475.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 72.000 | 16.000 | 4844.797 | 5153.000 | 150.000 | 330.000 | 243.100 | 0.770 | 0.0 | 0.0 |
| GR | 9.900 | 4417.898 | 4.400 | 4501.500 | 4.500 | 4594.898 | 9.900 | 4638.000 | 8.500 | 4685.598 |
| GR | 12.400 | 4803.797 | 12.900 | 4844.797 | 7.700 | 4859.297 | 2.000 | 4867.398 | 1.900 | 5000.000 |
| GR | 1.700 | 5140.098 | 7.900 | 5153.000 | 4.400 | 5166.598 | 4.700 | 5346.699 | 6.000 | 5609.098 |
| GR | 5.600 | 5804.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 4775.000 | 5322.797 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 74.000 | 14.000 | 4858.098 | 5153.797 | 135.000 | 216.000 | 141.800 | 0.940 | 0.0 | 0.0 |
| GR | 10.500 | 4767.699 | 11.000 | 4837.598 | 16.100 | 4858.098 | 9.000 | 4873.898 | 2.000 | 4883.098 |
| GR | 1.900 | 5000.000 | 1.700 | 5139.500 | 7.100 | 5153.797 | 4.300 | 5185.398 | 6.300 | 5345.098 |
| GR | 20.000 | 5345.199 | 20.000 | 5540.000 | 7.400 | 5540.098 | 7.500 | 5816.797 | 7.500 | 5780.098 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 4760.000 | 5290.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 76.000 | 15.000 | 4874.398 | 5134.000 | 232.000 | 317.000 | 286.000 | 0.0 | 0.0 | 0.0 |
| GR | 8.700 | 4759.898 | 8.700 | 4760.000 | 8.200 | 4822.199 | 8.100 | 4874.398 | 2.200 | 4886.297 |
| GR | 2.000 | 5000.000 | 1.800 | 5124.297 | 8.600 | 5134.000 | 5.000 | 5159.898 | 7.500 | 5328.699 |
| GR | 8.400 | 5408.297 | 20.000 | 5408.398 | 20.000 | 5623.699 | 8.100 | 5623.797 | 8.200 | 5750.000 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 4740.898 | 5210.000 |
| X1 | 78.000 | 15.000 | 4878.797 | 5126.398 | 187.000 | 295.000 | 224.200 | 0.0 | 0.0 | 0.0 |
| GR | 8.200 | 4740.887 | 8.200 | 4740.898 | 7.500 | 4878.797 | 2.300 | 4895.098 | 2.200 | 5000.000 |
| GR | 2.000 | 5113.098 | 8.200 | 5126.398 | 4.400 | 5138.297 | 5.600 | 5210.000 | 20.000 | 5210.098 |
| GR | 20.000 | 5386.500 | 20.000 | 5560.000 | 8.600 | 5560.098 | 8.800 | 5622.898 | 9.600 | 5701.000 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 7.100 | 4775.000 | 5210.000 | 4711.000 | 5210.000 |
| X1 | 80.000 | 18.000 | 4850.898 | 5114.797 | 245.000 | 260.000 | 250.600 | 0.0 | 0.0 | 0.0 |
| GR | 10.100 | 4705.488 | 10.100 | 4705.500 | 12.100 | 4776.598 | 7.500 | 4794.398 | 6.600 | 4836.500 |
| GR | 9.800 | 4850.898 | 3.300 | 4889.598 | 3.100 | 5000.000 | 3.000 | 5100.098 | 10.200 | 5114.797 |
| GR | 5.600 | 5130.699 | 7.000 | 5200.000 | 20.000 | 5200.098 | 20.000 | 5262.098 | 20.000 | 5382.797 |
| GR | 20.000 | 5560.898 | 10.100 | 5561.000 | 10.300 | 5676.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 7.100 | 4810.000 | 5355.000 | 4648.000 | 5355.000 |
| X1 | 82.000 | 15.000 | 4860.898 | 5105.598 | 213.000 | 260.000 | 221.700 | 0.0 | 0.0 | 0.0 |
| GR | 13.000 | 4648.000 | 13.000 | 4650.000 | 11.800 | 4757.098 | 12.000 | 4799.699 | 11.700 | 4833.598 |
| GR | 10.800 | 4860.898 | 3.700 | 4870.000 | 3.000 | 4884.797 | 2.100 | 5000.000 | 1.700 | 5092.500 |
| GR | 7.500 | 5105.598 | 5.600 | 5197.500 | 6.600 | 5278.797 | 9.200 | 5427.297 | 9.000 | 5668.000 |
| NC | 0.035 | 0.035 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.110 | 0.0 | 0.0 | 7.110 | 4859.000 | 5545.000 | 4640.000 | 5545.000 |
| SB | 1.000 | 1.660 | 2.600 | 0.0 | 260.000 | 10.000 | 2605.000 | 1.730 | -3.400 | -3.400 |

JIMMY DURANTE BRIDGE, RIGHT OVERBANK FLOW SPILL

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 90.000 | 17.000 | 4868.699 | 5144.898 | 93.000 | 128.000 | 125.600 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 13.500 | 14.900 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 18.000 | 4640.000 | 13.300 | 13.300 | 4706.699 | 12.500 | 12.500 | 4822.000 | 12.600 | 12.600 |
| BT | 4868.699 | 13.100 | 13.100 | 4868.797 | 14.900 | 10.900 | 4888.699 | 15.200 | 11.200 | 4905.797 |
| BT | 15.500 | 11.500 | 5000.000 | 17.500 | 13.500 | 5111.797 | 16.400 | 12.400 | 5144.797 | 15.900 |
| BT | 11.900 | 5144.898 | 14.000 | 14.000 | 5242.000 | 13.000 | 13.000 | 5396.898 | 12.000 | 12.000 |
| BT | 5497.000 | 11.300 | 11.300 | 5554.898 | 10.900 | 10.900 | 5632.598 | 9.800 | 9.800 | 5710.000 |
| BT | 9.400 | 9.400 | 5710.098 | 9.400 | 9.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 13.000 | 4640.000 | 12.500 | 4706.699 | 12.600 | 4822.000 | 13.100 | 4868.699 | 10.900 | 4868.797 |
| GR | 5.600 | 4888.699 | 2.500 | 4905.797 | 0.0 | 5000.000 | -3.400 | 5111.797 | 12.500 | 5144.797 |
| GR | 14.000 | 5144.898 | 13.000 | 5242.000 | 12.000 | 5396.898 | 11.300 | 5497.000 | 10.900 | 5554.898 |
| GR | 9.800 | 5632.598 | 9.700 | 5710.000 | 9.700 | 5710.098 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 42400.000 | 32100.000 | 5800.000 | 42400.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 5.400 | 0.0 | 0.0 | 4630.000 | 5600.000 |

FROM PUGH RAW DATA, INFORMATIONAL SECTION

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 91.000 | 18.000 | 4880.297 | 5122.898 | 145.000 | 100.000 | 130.000 | 0.0 | 0.0 | 0.0 |
| GR | 12.300 | 4629.977 | 12.300 | 4629.988 | 12.300 | 4630.000 | 11.800 | 4679.297 | 12.700 | 4787.797 |
| GR | 12.600 | 4865.398 | 5.100 | 4880.297 | 2.800 | 4890.398 | 2.600 | 5000.000 | 2.000 | 5106.699 |
| GR | 7.700 | 5122.898 | 4.400 | 5139.098 | 4.800 | 5306.598 | 6.100 | 5509.500 | 10.900 | 5558.297 |
| GR | 11.000 | 5607.398 | 5.600 | 5630.199 | 7.100 | 5690.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.035 | 0.030 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4670.000 | 5780.000 |
| X1 | 92.000 | 17.000 | 4908.797 | 5114.500 | 260.000 | 200.000 | 230.000 | 0.0 | 0.0 | 0.0 |
| GR | 11.500 | 4670.000 | 11.500 | 4699.000 | 20.000 | 4700.000 | 20.000 | 4849.988 | 5.100 | 4850.000 |
| GR | 10.200 | 4886.797 | 11.400 | 4908.797 | 1.600 | 4924.199 | 1.000 | 5000.000 | 0.300 | 5096.898 |
| GR | 5.300 | 5114.500 | 6.400 | 5179.000 | 4.400 | 5334.297 | 4.800 | 5575.898 | 5.500 | 5772.598 |
| GR | 9.500 | 5780.000 | 9.500 | 5780.098 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4680.000 | 6000.000 |
| X1 | 94.000 | 19.000 | 4777.199 | 5245.500 | 453.300 | 270.000 | 370.000 | 0.770 | 0.0 | 0.0 |
| GR | 10.800 | 4679.969 | 10.800 | 4679.977 | 10.800 | 4679.988 | 10.800 | 4680.000 | 10.900 | 4743.500 |
| GR | 11.000 | 4777.199 | 2.700 | 4795.898 | 4.100 | 4839.199 | 5.400 | 4879.797 | 1.000 | 4890.098 |
| GR | 0.800 | 5000.000 | 0.500 | 5122.898 | 3.300 | 5154.000 | 5.500 | 5216.797 | 8.100 | 5245.500 |
| GR | 4.800 | 5260.098 | 5.900 | 5484.898 | 5.200 | 5783.398 | 5.300 | 6000.000 | 5.300 | 6000.098 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 8.400 | 0.0 | 0.0 | 4450.000 | 5800.000 |
| X1 | 96.000 | 16.000 | 4849.398 | 5192.398 | 491.000 | 336.000 | 437.000 | 0.650 | 0.0 | 0.0 |
| GR | 1.900 | 4449.957 | 1.900 | 4449.969 | 1.900 | 4449.977 | 1.900 | 4449.988 | 1.900 | 4450.000 |
| GR | 2.300 | 4606.797 | 3.600 | 4796.398 | 5.600 | 4849.398 | 1.900 | 4867.699 | 1.500 | 5000.000 |
| GR | 0.200 | 5138.398 | 6.800 | 5150.398 | 10.100 | 5192.398 | 5.400 | 5218.797 | 5.300 | 5509.598 |
| GR | 6.600 | 5800.000 | 6.600 | 5800.098 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4210.000 | 5490.000 |
| X1 | 98.000 | 17.000 | 4698.098 | 5153.598 | 500.000 | 392.800 | 530.000 | 0.710 | 0.0 | 0.0 |
| GR | 4.100 | 4209.898 | 4.100 | 4210.000 | 5.000 | 4368.898 | 4.700 | 4569.699 | 4.500 | 4660.699 |
| GR | 11.600 | 4698.098 | 5.200 | 4726.598 | 3.600 | 4824.098 | 4.600 | 4869.598 | 1.400 | 4892.297 |
| GR | 1.500 | 5000.000 | 1.100 | 5103.199 | 5.500 | 5117.098 | 10.600 | 5153.598 | 5.100 | 5226.898 |
| GR | 6.300 | 5469.500 | 11.000 | 5490.000 | 11.000 | 5490.098 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4160.000 | 5386.000 |
| X1 | 100.000 | 17.000 | 4838.699 | 5130.699 | 320.000 | 216.000 | 290.000 | 0.910 | 0.0 | 0.0 |
| GR | 5.400 | 4159.898 | 5.400 | 4160.000 | 6.200 | 4254.699 | 5.900 | 4516.000 | 9.000 | 4547.000 |
| GR | 5.400 | 4568.699 | 6.600 | 4794.398 | 12.200 | 4838.699 | 5.700 | 4858.297 | 5.400 | 4890.797 |
| GR | 2.300 | 4903.000 | 2.700 | 5000.000 | 2.500 | 5088.098 | 4.600 | 5109.699 | 8.300 | 5130.699 |
| GR | 7.400 | 5255.500 | 8.400 | 5386.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4180.000 | 5400.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 102.000 | 14.000 | 4914.098 | 5307.699 | 350.000 | 342.000 | 320.000 | 0.0 | 0.0 | 0.0 |
| GR | 5.400 | 4179.898 | 5.400 | 4180.000 | 5.600 | 4198.797 | 9.300 | 4469.199 | 6.400 | 4608.000 |
| GR | 8.100 | 4788.699 | 7.100 | 4914.098 | 1.300 | 4923.797 | 2.100 | 5000.000 | 1.500 | 5096.297 |
| GR | 4.900 | 5142.098 | 13.000 | 5307.699 | 7.200 | 5353.699 | 8.000 | 5400.000 | 8.000 | 5400.098 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4190.000 | 5410.000 |
| X1 | 104.000 | 15.000 | 4886.500 | 5096.500 | 90.000 | 138.000 | 78.900 | 0.0 | 0.0 | 0.0 |
| GR | 5.500 | 4189.898 | 5.500 | 4190.000 | 5.500 | 4243.797 | 10.800 | 4438.199 | 5.800 | 4699.699 |
| GR | 6.900 | 4847.199 | 6.900 | 4886.500 | 1.300 | 4903.000 | 1.500 | 5000.000 | 1.400 | 5078.297 |
| GR | 5.500 | 5096.500 | 5.900 | 5178.699 | 13.400 | 5296.598 | 7.000 | 5376.797 | 8.900 | 5410.000 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 5.400 | 0.0 | 0.0 | 4200.000 | 5420.000 |
| X1 | 106.000 | 18.000 | 4856.598 | 5293.297 | 90.000 | 106.400 | 74.700 | 0.0 | 0.0 | 0.0 |
| GR | 5.000 | 4199.977 | 5.000 | 4199.988 | 5.000 | 4200.000 | 6.100 | 4449.797 | 13.200 | 4498.199 |
| GR | 6.500 | 4574.199 | 6.800 | 4830.500 | 12.400 | 4856.598 | 8.400 | 4886.898 | 1.600 | 4907.000 |
| GR | 1.800 | 5000.000 | 1.800 | 5074.199 | 4.300 | 5086.898 | 6.900 | 5189.398 | 7.300 | 5198.898 |
| GR | 13.700 | 5293.297 | 7.200 | 5349.797 | 11.200 | 5420.000 | 11.200 | 5420.098 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4240.000 | 5350.000 |
| X1 | 108.000 | 17.000 | 4857.297 | 5259.000 | 595.000 | 487.000 | 550.000 | 0.0 | 0.0 | 0.0 |
| GR | 7.900 | 4239.977 | 7.900 | 4239.988 | 7.900 | 4240.000 | 7.900 | 4275.500 | 7.400 | 4412.500 |
| GR | 13.000 | 4440.000 | 6.900 | 4484.500 | 8.300 | 4820.098 | 13.400 | 4857.297 | 6.500 | 4888.598 |
| GR | 1.900 | 4921.598 | 1.800 | 5000.000 | 1.900 | 5085.297 | 6.000 | 5098.098 | 5.000 | 5215.598 |
| GR | 19.300 | 5259.000 | 11.000 | 5350.000 | 11.000 | 5350.098 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4390.000 | 5240.000 |
| X1 | 110.000 | 13.000 | 4918.898 | 5108.699 | 579.000 | 535.000 | 537.700 | 0.0 | 0.0 | 0.0 |
| GR | 7.000 | 4389.988 | 7.000 | 4390.000 | 6.700 | 4487.199 | 12.700 | 4501.398 | 7.200 | 4542.699 |
| GR | 8.100 | 4800.000 | 7.200 | 4894.500 | 12.300 | 4918.898 | 0.700 | 4935.797 | 1.000 | 5000.000 |
| GR | 1.800 | 5093.898 | 6.500 | 5108.699 | 5.600 | 5240.000 | 5.600 | 5240.098 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4420.000 | 5130.000 |
| X1 | 112.000 | 17.000 | 4901.297 | 5086.598 | 292.000 | 296.000 | 298.700 | 0.0 | 0.0 | 0.0 |
| GR | 7.900 | 4419.957 | 7.900 | 4419.969 | 7.900 | 4419.977 | 7.900 | 4419.988 | 7.900 | 4420.000 |
| GR | 7.400 | 4447.500 | 14.400 | 4474.199 | 7.700 | 4503.797 | 6.400 | 4748.898 | 7.400 | 4873.898 |
| GR | 13.300 | 4901.297 | 10.800 | 4918.199 | 1.100 | 4938.199 | 0.900 | 5000.000 | 0.800 | 5077.500 |
| GR | 7.200 | 5086.598 | 7.500 | 5130.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4460.000 | 5105.000 |
| X1 | 114.000 | 11.000 | 4899.297 | 5105.000 | 241.000 | 200.000 | 214.700 | 0.0 | 0.0 | 0.0 |
| GR | 9.200 | 4459.977 | 9.200 | 4459.988 | 9.200 | 4460.000 | 8.800 | 4699.598 | 9.200 | 4845.098 |
| GR | 9.200 | 4899.297 | 1.500 | 4911.898 | 1.200 | 5000.000 | 0.900 | 5069.000 | 2.500 | 5085.000 |
| GR | 8.200 | 5105.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.035 | 0.035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.110 | 0.0 | 0.0 | 9.110 | 0.0 | 0.0 | 4454.098 | 5113.500 |
| SB | 0.900 | 1.590 | 2.600 | 0.0 | 510.000 | 39.000 | 9727.000 | 1.730 | 1.200 | 1.200 |

HIGHWAY 5 BRIDGE (SOUTH-BOUND)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 120.000 | 27.000 | 4454.098 | 5113.500 | 120.000 | 130.000 | 105.000 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 24.000 | 28.400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 27.000 | 3151.500 | 57.300 | 57.300 | 3172.400 | 57.200 | 57.200 | 3282.600 | 53.900 | 53.900 |
| BT | 3598.800 | 44.900 | 44.900 | 3974.900 | 33.700 | 33.700 | 4269.699 | 28.100 | 28.100 | 4454.000 |
| BT | 27.000 | 27.000 | 4454.098 | 30.000 | 24.000 | 4514.797 | 29.800 | 23.800 | 4648.598 | 29.500 |
| BT | 23.500 | 4821.797 | 29.000 | 23.000 | 4878.199 | 28.800 | 22.800 | 4878.297 | 28.800 | 22.800 |
| BT | 4881.098 | 28.800 | 22.800 | 5000.000 | 28.500 | 22.800 | 5060.598 | 28.400 | 22.400 | 5078.699 |
| BT | 28.400 | 22.400 | 5113.398 | 28.400 | 22.400 | 5113.500 | 25.400 | 25.400 | 5236.699 | 25.300 |
| BT | 25.300 | 5540.297 | 24.900 | 24.900 | 5852.797 | 23.400 | 23.400 | 6090.699 | 22.800 | 22.800 |
| BT | 6473.000 | 25.000 | 25.000 | 6721.000 | 30.000 | 30.000 | 6899.000 | 35.000 | 35.000 | 7060.000 |
| BT | 40.000 | 40.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 57.300 | 3151.500 | 57.200 | 3172.400 | 53.900 | 3282.600 | 44.900 | 3598.800 | 33.700 | 3974.900 |
| GR | 28.100 | 4269.699 | 27.000 | 4454.000 | 21.000 | 4454.098 | 7.700 | 4514.797 | 8.900 | 4648.598 |
| GR | 8.400 | 4821.797 | 7.500 | 4878.199 | 7.400 | 4878.297 | 2.300 | 4881.098 | 1.600 | 5000.000 |
| GR | 1.200 | 5060.598 | 10.700 | 5078.699 | 24.700 | 5113.398 | 25.400 | 5113.500 | 25.300 | 5236.699 |
| GR | 24.900 | 5540.297 | 23.400 | 5852.797 | 22.800 | 6090.699 | 25.000 | 6473.000 | 30.000 | 6721.000 |
| GR | 35.000 | 6899.000 | 40.000 | 7060.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.110 | 0.0 | 0.0 | 9.110 | 0.0 | 0.0 | 4470.000 | 5182.000 |
| SB | 0.900 | 1.590 | 2.600 | 0.0 | 510.000 | 39.000 | 9727.000 | 1.730 | 1.400 | 1.400 |

HIGHWAY 5 BRIDGE (NORTH-BOUND)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 130.000 | 27.000 | 4522.699 | 5182.000 | 130.000 | 130.000 | 110.000 | 0.0 | 0.0 | 0.0 |
| X2 | 0.0 | 0.0 | 1.000 | 23.600 | 28.700 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BT | 27.000 | 3272.200 | 54.300 | 54.300 | 3497.200 | 47.700 | 47.700 | 3810.400 | 38.300 | 38.300 |
| BT | 4147.500 | 30.200 | 30.200 | 4409.699 | 27.100 | 27.100 | 4522.699 | 26.600 | 26.600 | 4522.797 |
| BT | 29.600 | 23.600 | 4759.297 | 29.100 | 23.100 | 4870.797 | 28.800 | 22.800 | 4870.898 | 28.800 |
| BT | 22.800 | 4885.199 | 28.800 | 22.800 | 4940.898 | 28.900 | 22.900 | 5000.000 | 29.000 | 23.000 |
| BT | 5069.098 | 28.800 | 22.800 | 5085.000 | 28.800 | 22.800 | 5085.098 | 28.800 | 22.800 | 5181.898 |
| BT | 28.700 | 22.700 | 5182.000 | 25.700 | 25.700 | 5357.598 | 25.500 | 25.500 | 5728.297 | 24.000 |
| BT | 24.000 | 5954.398 | 23.500 | 23.500 | 6109.898 | 23.300 | 23.300 | 6126.500 | 23.200 | 23.200 |
| BT | 6450.000 | 25.000 | 25.000 | 6711.000 | 30.000 | 30.000 | 6883.000 | 35.000 | 35.000 | 7064.000 |
| BT | 40.000 | 40.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| GR | 54.300 | 3272.200 | 47.700 | 3497.200 | 38.300 | 3810.400 | 30.200 | 4147.500 | 27.100 | 4409.699 |
| GR | 26.600 | 4522.699 | 9.500 | 4522.797 | 10.200 | 4759.297 | 9.000 | 4870.797 | 8.900 | 4870.898 |
| GR | 2.600 | 4885.199 | 2.300 | 4940.898 | 1.900 | 5000.000 | 1.400 | 5069.098 | 4.300 | 5085.000 |
| GR | 4.400 | 5085.098 | 3.700 | 5179.898 | 25.700 | 5180.000 | 25.500 | 5357.598 | 24.000 | 5728.297 |
| GR | 23.500 | 5954.398 | 23.000 | 6109.898 | 23.200 | 6126.500 | 25.000 | 6450.000 | 30.000 | 6711.000 |
| GR | 35.000 | 6883.000 | 40.000 | 7064.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.030 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| QT | 5.000 | 90000.000 | 42800.000 | 32500.000 | 6000.000 | 42800.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 10.400 | 0.0 | 0.0 | 4300.000 | 5330.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 132.000 | 15.000 | 4922.398 | 5095.500 | 282.000 | 288.000 | 282.000 | 0.0 | 0.0 | 0.0 |
| GR | 9.600 | 4299.977 | 9.600 | 4299.988 | 9.600 | 4300.000 | 9.700 | 4364.199 | 9.300 | 4636.500 |
| GR | 9.300 | 4815.398 | 10.300 | 4922.398 | 6.900 | 4935.699 | 1.400 | 4939.699 | 1.000 | 5000.000 |
| GR | 1.000 | 5058.297 | 4.400 | 5078.398 | 8.200 | 5095.500 | 8.000 | 5182.398 | 8.900 | 5330.000 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 10.400 | 0.0 | 0.0 | 4330.000 | 5700.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 134.000 | 17.000 | 4916.000 | 5201.898 | 374.000 | 350.000 | 345.600 | 0.0 | 0.0 | 0.0 |
| GR | 8.700 | 4329.898 | 8.700 | 4330.000 | 8.900 | 4378.297 | 9.800 | 4705.398 | 9.400 | 4852.699 |
| GR | 10.400 | 4916.000 | 7.900 | 4951.699 | 1.300 | 4955.398 | 1.500 | 5000.000 | 1.600 | 5044.000 |
| GR | 2.700 | 5079.898 | 0.300 | 5144.500 | 4.700 | 5178.898 | 9.500 | 5201.898 | 9.800 | 5269.199 |
| GR | 10.200 | 5484.898 | 9.600 | 5700.000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NC | 0.030 | 0.030 | 0.030 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3760.000 | 5505.699 |
| X1 | 136.000 | 21.000 | 4938.297 | 5068.398 | 1815.000 | 1815.000 | 1880.000 | 0.0 | 0.0 | 0.0 |
| GR | 11.800 | 3759.960 | 11.800 | 3759.970 | 11.800 | 3759.980 | 11.800 | 3759.990 | 11.800 | 3760.000 |
| GR | 12.200 | 3925.600 | 11.700 | 4306.000 | 7.800 | 4427.500 | 10.700 | 4539.797 | 11.900 | 4647.598 |
| GR | 4.700 | 4724.898 | 6.700 | 4762.000 | 5.100 | 4893.297 | 5.700 | 4938.297 | 2.500 | 4948.500 |
| GR | 1.800 | 5000.000 | 1.100 | 5050.898 | 10.900 | 5068.398 | 11.400 | 5197.098 | 12.400 | 5407.699 |
| GR | 14.600 | 5505.699 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ET | 0.0 | 0.0 | 9.100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4500.000 | 5950.000 |
| X1 | 138.000 | 18.000 | 4951.297 | 5214.000 | 1280.000 | 1312.000 | 1375.000 | 0.0 | 0.0 | 0.0 |
| GR | 9.500 | 4499.898 | 9.500 | 4500.000 | 11.600 | 4681.898 | 11.600 | 4848.898 | 10.800 | 4951.297 |
| GR | 3.900 | 4956.898 | 1.100 | 4964.098 | 1.300 | 5000.000 | 2.100 | 5049.500 | 4.400 | 5054.598 |
| GR | 3.900 | 5110.000 | 7.100 | 5192.797 | 10.500 | 5214.000 | 9.600 | 5320.598 | 8.600 | 5496.098 |
| GR | 9.300 | 5708.000 | 10.600 | 5900.000 | 14.000 | 5950.000 | 0.0 | 0.0 | 0.0 | 0.0 |
| EJ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**********
HEC2 RELEASE DATED NOV 76 UPDATED AUG 1980
ERROR CORR - 01,02,03,04
MODIFICATION - 50,51,52,53,54
**********

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SAN DIEGUITO RIVER, REAC

SUMMARY PRINTOUT

| | SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 50.000 | 0.0 | 4900.00 | 5435.00 | -4.00 | 41800.00 | 13.97 | 0.0 | 2992.17 | 498.82 | 0.0 | 6.53 | 3.50 |
| * | 50.000 | 0.0 | 4900.00 | 5435.00 | -4.00 | 41800.00 | 13.97 | 0.0 | 2992.17 | 498.82 | 0.0 | 6.53 | 3.50 |
| * | 52.000 | 157.00 | 4742.30 | 5250.00 | -2.50 | 41800.00 | 14.62 | 10.54 | 2859.23 | 433.86 | 0.0 | 9.02 | 5.70 |
| * | 52.000 | 157.00 | 4742.30 | 5250.00 | -2.50 | 41800.00 | 14.62 | 10.54 | 2859.23 | 433.86 | 0.0 | 9.02 | 5.70 |
| * | 54.000 | 115.00 | 4647.60 | 5142.70 | -1.00 | 41800.00 | 14.18 | 18.21 | 2947.71 | 476.75 | 0.0 | 10.53 | 7.41 |
| * | 54.000 | 115.00 | 4647.60 | 5142.70 | -1.00 | 41800.00 | 14.18 | 18.21 | 2947.71 | 476.75 | 0.0 | 10.53 | 7.41 |
| | 56.000 | 82.00 | 4539.30 | 5063.00 | -0.70 | 41800.00 | 7.68 | 26.18 | 5514.08 | 560.70 | 0.0 | 11.16 | 10.25 |
| | 56.000 | 82.00 | 4539.30 | 5063.00 | -0.70 | 41800.00 | 7.68 | 26.18 | 5514.08 | 560.70 | 0.0 | 11.16 | 10.25 |
| | 60.000 | 104.30 | 4387.60 | 5068.00 | -0.70 | 41800.00 | 7.09 | 39.84 | 5898.05 | 666.80 | 0.0 | 11.21 | 10.43 |
| | 60.000 | 104.30 | 4387.60 | 5068.00 | -0.70 | 41800.00 | 7.09 | 39.84 | 5898.05 | 666.80 | 0.0 | 11.21 | 10.43 |
| | 61.000 | 50.00 | 4328.20 | 4958.00 | 1.70 | 41800.00 | 6.99 | 46.76 | 6151.66 | 714.40 | 2.77 | 11.28 | 10.55 |
| | 61.000 | 50.00 | 4328.20 | 4958.00 | 1.70 | 41800.00 | 6.99 | 46.76 | 6151.66 | 714.40 | 2.77 | 11.28 | 10.55 |
| A | 62.000 | 134.00 | 4227.00 | 4742.89 | 1.70 | 41800.00 | 7.07 | 66.15 | 6206.23 | 708.40 | 6.69 | 11.43 | 10.70 |
| | 62.000 | 134.00 | 4227.00 | 4742.89 | 1.70 | 41800.00 | 7.07 | 66.15 | 6206.23 | 708.40 | 6.69 | 11.43 | 10.70 |
| | 64.000 | 480.00 | 4896.39 | 5364.47 | 1.80 | 41800.00 | 7.68 | 128.95 | 5735.27 | 745.64 | 0.01 | 12.05 | 11.21 |
| | 64.000 | 480.00 | 4896.39 | 5364.47 | 1.80 | 41800.00 | 7.68 | 128.95 | 5735.27 | 745.64 | 0.01 | 12.05 | 11.21 |
| | 66.000 | 286.00 | 4822.63 | 5356.20 | 2.40 | 41800.00 | 6.83 | 166.23 | 6513.32 | 851.64 | 1.98 | 12.41 | 11.73 |
| | 66.000 | 286.00 | 4822.63 | 5356.20 | 2.40 | 41800.00 | 6.83 | 166.23 | 6513.32 | 851.64 | 1.98 | 12.41 | 11.73 |
| * | 68.000 | 100.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 12.90 | 179.76 | 3678.80 | 771.12 | 0.25 | 14.59 | 12.34 |
| * | 68.000 | 100.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 12.90 | 179.76 | 3678.80 | 771.12 | 0.25 | 14.59 | 12.34 |
| * | 69.000 | 5.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 13.81 | 180.17 | 3601.99 | 787.62 | 0.26 | 14.86 | 12.30 |
| * | 69.000 | 5.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 13.81 | 180.17 | 3601.99 | 787.62 | 0.26 | 14.86 | 12.30 |
| | 70.000 | 20.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 10.74 | 182.02 | 4460.97 | 799.91 | 1.77 | 15.18 | 13.66 |
| | 70.000 | 20.00 | 4663.84 | 5071.10 | 2.00 | 41800.00 | 10.74 | 182.02 | 4460.97 | 799.91 | 1.77 | 15.18 | 13.66 |
| | 72.000 | 243.10 | 4746.61 | 4983.93 | 1.70 | 40880.00 | 8.41 | 213.84 | 5652.90 | 550.55 | 0.90 | 15.84 | 14.94 |
| | 72.000 | 243.10 | 4746.61 | 4983.93 | 1.70 | 41800.00 | 8.63 | 213.77 | 5630.07 | 550.55 | 0.89 | 15.84 | 14.90 |

Draw down

| | SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | 74.000 | 141.80 | 4852.67 | 5130.63 | 1.70 | 40880.00 | 8.85 | 235.04 | 5264.95 | 508.61 | 1.83 | 16.07 | 15.02 |
| | 74.000 | 141.80 | 4852.67 | 5130.63 | 1.70 | 41800.00 | 9.08 | 234.89 | 5246.89 | 508.40 | 1.81 | 16.09 | 14.99 |
| | 76.000 | 286.00 | 4874.40 | 5134.00 | 1.80 | 40880.00 | 8.62 | 271.42 | 5698.34 | 530.00 | 7.42 | 16.40 | 15.45 |
| | 76.000 | 286.00 | 4874.40 | 5134.00 | 1.80 | 41800.00 | 8.82 | 271.20 | 5694.81 | 530.00 | 7.42 | 16.44 | 15.44 |
| C | 78.000 | 224.20 | 4878.80 | 5126.40 | 2.00 | 40880.00 | 9.48 | 300.47 | 5168.10 | 469.10 | 11.26 | 16.74 | 15.57 |
| | 78.000 | 224.20 | 4878.80 | 5126.40 | 2.00 | 41800.00 | 9.69 | 300.24 | 5168.09 | 469.10 | 11.26 | 16.79 | 15.57 |
| | 80.000 | 250.60 | 4850.90 | 5114.80 | 3.00 | 40880.00 | 9.98 | 329.32 | 4842.30 | 489.07 | 9.80 | 17.14 | 15.82 |
| | 80.000 | 250.60 | 4850.90 | 5114.80 | 3.00 | 41800.00 | 10.51 | 328.18 | 4522.64 | 425.07 | 7.47 | 17.27 | 15.77 |
| | 82.000 | 221.70 | 4860.90 | 5105.60 | 1.70 | 40880.00 | 7.38 | 360.81 | 7034.72 | 707.00 | 5.95 | 17.49 | 16.83 |
| | 82.000 | 221.70 | 4860.90 | 5105.60 | 1.70 | 41800.00 | 7.85 | 357.16 | 6322.05 | 545.00 | 1.72 | 17.66 | 16.88 |
| | 90.000 | 125.60 | 4868.70 | 5144.90 | -3.40 | 40880.00 | 6.71 | 381.57 | 7830.73 | 905.00 | 8.51 | 18.23 | 17.66 |
| | 90.000 | 125.60 | 4868.70 | 5144.90 | -3.40 | 41800.00 | 7.13 | 376.48 | 7064.49 | 686.00 | 0.29 | 18.82 | 18.15 |
| D | 91.000 | 130.00 | 4880.30 | 5122.90 | 2.00 | 42400.00 | 4.45 | 407.40 | 11004.16 | 970.00 | 8.25 | 18.34 | 18.09 |
| | 91.000 | 130.00 | 4880.30 | 5122.90 | 2.00 | 42400.00 | 4.52 | 399.58 | 10327.61 | 771.80 | 1.87 | 18.95 | 18.68 |
| | 92.000 | 230.00 | 4908.80 | 5114.50 | 0.30 | 42400.00 | 3.75 | 466.32 | 12914.46 | 959.80 | 3.23 | 18.39 | 18.22 |
| | 92.000 | 230.00 | 4908.80 | 5114.50 | 0.30 | 42400.00 | 3.80 | 454.84 | 12501.67 | 861.88 | 0.39 | 19.01 | 18.82 |
| | 94.000 | 370.00 | 4754.84 | 5115.43 | 0.50 | 42400.00 | 3.41 | 561.97 | 13693.13 | 1016.40 | 2.19 | 18.44 | 18.28 |
| | 94.000 | 370.00 | 4754.84 | 5115.43 | 0.50 | 42400.00 | 3.43 | 545.63 | 13220.16 | 906.11 | 0.0 | 19.05 | 18.89 |
| | 96.000 | 437.00 | 4709.59 | 4932.54 | 0.20 | 42400.00 | 3.84 | 682.05 | 12555.96 | 877.50 | 29.68 | 18.50 | 18.32 |
| | 96.000 | 437.00 | 4709.59 | 4932.54 | 0.20 | 42400.00 | 4.01 | 660.46 | 11962.79 | 797.83 | 28.37 | 19.12 | 18.92 |
| | 98.000 | 530.00 | 4556.52 | 4879.92 | 1.10 | 42400.00 | 3.87 | 818.37 | 12375.34 | 908.80 | 33.20 | 18.58 | 18.39 |
| | 98.000 | 530.00 | 4556.52 | 4879.92 | 1.10 | 42400.00 | 4.05 | 791.16 | 11787.80 | 823.08 | 32.09 | 19.20 | 18.99 |
| | 100.000 | 290.00 | 4777.61 | 5043.32 | 2.30 | 42400.00 | 3.69 | 905.49 | 13900.86 | 1115.66 | 49.00 | 18.64 | 18.48 |
| | 100.000 | 290.00 | 4777.61 | 5043.32 | 2.30 | 42400.00 | 3.89 | 874.24 | 13071.57 | 990.85 | 49.41 | 19.26 | 19.09 |
| E | 102.000 | 320.00 | 4914.10 | 5307.70 | 1.30 | 42400.00 | 3.52 | 1015.52 | 14356.61 | 1220.00 | 50.33 | 18.69 | 18.55 |
| | 102.000 | 320.00 | 4914.10 | 5307.70 | 1.30 | 42400.00 | 3.72 | 977.36 | 13464.60 | 1081.70 | 51.02 | 19.32 | 19.15 |
| | 104.000 | 78.90 | 4886.50 | 5096.50 | 1.30 | 42400.00 | 3.97 | 1046.24 | 14318.80 | 1220.00 | 46.26 | 18.71 | 18.55 |
| | 104.000 | 78.90 | 4886.50 | 5096.50 | 1.30 | 42400.00 | 4.14 | 1005.37 | 13448.07 | 1083.93 | 46.93 | 19.33 | 19.16 |
| | 106.000 | 74.70 | 4856.60 | 5293.30 | 1.60 | 42400.00 | 3.37 | 1075.17 | 14491.31 | 1220.00 | 47.87 | 18.72 | 18.58 |
| | 106.000 | 74.70 | 4856.60 | 5293.30 | 1.60 | 42400.00 | 3.42 | 1032.77 | 14176.24 | 1123.54 | 48.35 | 19.35 | 19.21 |
| | 108.000 | 550.00 | 4857.30 | 5259.00 | 1.80 | 42400.00 | 4.11 | 1250.90 | 12350.42 | 1101.00 | 45.27 | 18.85 | 18.65 |
| | 108.000 | 550.00 | 4857.30 | 5259.00 | 1.80 | 42400.00 | 4.15 | 1204.50 | 11963.50 | 981.63 | 43.58 | 19.48 | 19.26 |
| F | 110.000 | 537.70 | 4918.90 | 5108.70 | 0.70 | 42400.00 | 5.16 | 1398.51 | 10632.41 | 850.00 | 45.07 | 19.01 | 18.73 |
| | 110.000 | 537.70 | 4918.90 | 5108.70 | 0.70 | 42400.00 | 5.20 | 1348.75 | 10498.21 | 800.03 | 45.82 | 19.63 | 19.35 |
| | 112.000 | 298.70 | 4901.30 | 5086.60 | 0.80 | 42400.00 | 6.13 | 1464.22 | 8803.14 | 710.00 | 51.88 | 19.15 | 18.75 |
| | 112.000 | 298.70 | 4901.30 | 5086.60 | 0.80 | 42400.00 | 6.18 | 1413.30 | 8590.50 | 655.67 | 53.18 | 19.77 | 19.35 |

| SECNO | XLCH | STCHL | STCHR | ELMIN | Q | VCH | VOL | AREA | TOPWID | QLOBP | EG | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 114.000 | 214.70 | 4899.30 | 5105.00 | 0.90 | 42400.00 | 6.97 | 1507.81 | 7741.90 | 645.00 | 43.01 | 19.31 | 18.76 |
| 114.000 | 214.70 | 4899.30 | 5105.00 | 0.90 | 42400.00 | 7.03 | 1455.73 | 7511.92 | 584.70 | 40.47 | 19.93 | 19.36 |
| 120.000 | 105.00 | 4454.10 | 5113.50 | 1.20 | 42400.00 | 5.68 | 1526.88 | 7469.95 | 634.66 | 0.0 | 19.30 | 18.80 |
| 120.000 | 105.00 | 4454.10 | 5113.50 | 1.20 | 42400.00 | 5.40 | 1474.92 | 7852.02 | 638.89 | 0.0 | 19.93 | 19.40 |
| 130.000 | 110.00 | 4522.70 | 5182.00 | 1.40 | 42400.00 | 5.24 | 1546.53 | 8094.17 | 657.22 | 0.0 | 19.30 | 18.84 |
| 130.000 | 110.00 | 4522.70 | 5182.00 | 1.40 | 42400.00 | 5.00 | 1495.55 | 8484.69 | 657.23 | 0.0 | 19.93 | 19.44 |
| 132.000 | 282.00 | 4922.40 | 5095.50 | 1.00 | 42800.00 | 4.76 | 1610.05 | 11473.65 | 1030.00 | 46.79 | 19.43 | 19.19 |
| 132.000 | 282.00 | 4922.40 | 5095.50 | 1.00 | 42800.00 | 5.15 | 1556.80 | 10399.68 | 873.68 | 47.42 | 20.04 | 19.75 |
| 134.000 | 345.60 | 4916.00 | 5201.90 | 0.30 | 42800.00 | 3.53 | 1720.01 | 15178.57 | 1370.00 | 34.66 | 19.50 | 19.37 |
| 134.000 | 345.60 | 4916.00 | 5201.90 | 0.30 | 42800.00 | 3.81 | 1656.46 | 13769.17 | 1160.04 | 33.16 | 20.13 | 19.96 |
| 136.000 | 1880.00 | 4938.30 | 5068.40 | 1.10 | 42800.00 | 3.51 | 2391.68 | 16816.00 | 1745.69 | 65.68 | 19.73 | 19.62 |
| 136.000 | 1880.00 | 4938.30 | 5068.40 | 1.10 | 42800.00 | 3.79 | 2256.85 | 14794.86 | 1349.26 | 68.57 | 20.38 | 20.24 |
| 138.000 | 1375.00 | 4951.30 | 5214.00 | 1.10 | 42800.00 | 3.45 | 2877.51 | 15510.89 | 1450.00 | 21.25 | 19.90 | 19.77 |
| 138.000 | 1375.00 | 4951.30 | 5214.00 | 1.10 | 42800.00 | 3.72 | 2690.52 | 14015.97 | 1204.06 | 17.64 | 20.57 | 20.41 |

SAN DIEGUITO RIVER, REAC

SUMMARY PRINTOUT

| | SECNO | XLCH | STENCL | SSTA | ENDST | STENCR | .01K | DIFEG | EG | DIFWSX | DIFWSP | DIFKWS | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 50.000 | 0.0 | 4900.00 | 4911.77 | 5410.59 | 5435.00 | 4889.26 | 0.0 | 6.53 | 0.0 | 0.0 | 0.68 | 3.50 |
| * | 50.000 | 0.0 | 4900.00 | 4911.77 | 5410.59 | 5435.00 | 4889.26 | 0.0 | 6.53 | 0.0 | 0.0 | 0.0 | 3.50 |
| * | 52.000 | 157.00 | 4740.00 | 4812.54 | 5246.40 | 5250.00 | 4972.46 | 0.0 | 9.02 | 2.20 | 0.0 | 0.0 | 5.70 |
| * | 52.000 | 157.00 | 4740.00 | 4812.54 | 5246.40 | 5250.00 | 4972.46 | 0.0 | 9.02 | 2.20 | 0.0 | 0.0 | 5.70 |
| * | 54.000 | 115.00 | 4647.60 | 4661.47 | 5138.22 | 5142.70 | 4914.52 | 0.0 | 10.53 | 1.71 | 0.0 | 0.0 | 7.41 |
| * | 54.000 | 115.00 | 4647.60 | 4661.47 | 5138.22 | 5142.70 | 4914.52 | 0.0 | 10.53 | 1.71 | 0.0 | 0.0 | 7.41 |
| | 56.000 | 82.00 | 4539.30 | 4539.29 | 5100.00 | 5100.00 | 12678.96 | 0.0 | 11.16 | 2.84 | 0.0 | 0.0 | 10.25 |
| | 56.000 | 82.00 | 4539.30 | 4539.29 | 5100.00 | 5100.00 | 12678.96 | 0.0 | 11.16 | 2.84 | 0.0 | 0.00 | 10.25 |
| | 60.000 | 104.30 | 4387.60 | 4398.60 | 5065.40 | 5068.00 | 12454.00 | 0.0 | 11.21 | 0.18 | 0.0 | 0.0 | 10.43 |
| | 60.000 | 104.30 | 4387.60 | 4398.60 | 5065.40 | 5068.00 | 12454.00 | 0.0 | 11.21 | 0.18 | 0.0 | 0.0 | 10.43 |
| | 61.000 | 50.00 | 4300.00 | 4299.99 | 5014.39 | 5014.40 | 12443.03 | 0.0 | 11.28 | 0.12 | 0.0 | 0.0 | 10.55 |
| | 61.000 | 50.00 | 4300.00 | 4299.99 | 5014.39 | 5014.40 | 12443.03 | 0.0 | 11.28 | 0.12 | 0.0 | 0.00 | 10.55 |
| A | 62.000 | 134.00 | 4150.00 | 4149.99 | 4858.39 | 4858.39 | 12457.40 | 0.0 | 11.43 | 0.15 | 0.0 | 0.0 | 10.70 |
| | 62.000 | 134.00 | 4150.00 | 4149.99 | 4858.39 | 4858.39 | 12457.40 | 0.0 | 11.43 | 0.15 | 0.0 | 0.00 | 10.70 |
| | 64.000 | 480.00 | 4859.99 | 4890.35 | 5635.99 | 5635.99 | 11227.59 | 0.0 | 12.05 | 0.51 | 0.0 | 0.0 | 11.21 |
| | 64.000 | 480.00 | 4859.99 | 4890.35 | 5635.99 | 5635.99 | 11227.59 | 0.0 | 12.05 | 0.51 | 0.0 | 0.00 | 11.21 |
| | 66.000 | 286.00 | 4719.89 | 4719.89 | 5571.54 | 5571.54 | 12776.18 | 0.0 | 12.41 | 0.52 | 0.0 | 0.0 | 11.73 |
| | 66.000 | 286.00 | 4719.89 | 4719.89 | 5571.54 | 5571.54 | 12776.18 | 0.0 | 12.41 | 0.52 | 0.0 | 0.00 | 11.73 |
| * | 68.000 | 100.00 | 4591.14 | 4591.14 | 5369.74 | 5400.54 | 4562.52 | 0.0 | 14.59 | 0.61 | 0.0 | 0.0 | 12.34 |
| * | 68.000 | 100.00 | 4591.14 | 4591.14 | 5369.74 | 5400.54 | 4562.52 | 0.0 | 14.59 | 0.61 | 0.0 | 0.0 | 12.34 |
| * | 69.000 | 5.00 | 4569.84 | 4569.84 | 5369.74 | 5393.44 | 5251.34 | 0.0 | 14.86 | -0.04 | 0.0 | 0.0 | 12.30 |
| * | 69.000 | 5.00 | 4569.84 | 4569.84 | 5369.74 | 5393.44 | 5251.34 | 0.0 | 14.86 | -0.04 | 0.0 | 0.0 | 12.30 |
| | 70.000 | 20.00 | 4569.84 | 4569.84 | 5369.75 | 5393.44 | 5828.84 | 0.0 | 15.18 | 1.36 | 0.0 | 0.0 | 13.66 |
| | 70.000 | 20.00 | 4569.84 | 4569.84 | 5369.75 | 5393.44 | 5828.84 | 0.0 | 15.18 | 1.36 | 0.0 | 0.0 | 13.66 |
| | 72.000 | 243.10 | 4681.32 | 4681.31 | 5231.86 | 5231.86 | 12760.81 | 0.0 | 15.84 | 1.28 | 0.0 | 0.0 | 14.94 |
| | 72.000 | 243.10 | 4681.32 | 4681.31 | 5231.86 | 5231.86 | 12682.35 | 0.01 | 15.84 | 1.24 | -0.04 | -0.04 | 14.90 |
| B | 74.000 | 141.80 | 4774.56 | 4774.55 | 5289.48 | 5289.49 | 12151.91 | 0.0 | 16.07 | 0.09 | 0.0 | 0.0 | 15.02 |
| | 74.000 | 141.80 | 4774.56 | 4774.55 | 5289.48 | 5289.49 | 12090.49 | 0.02 | 16.09 | 0.09 | -0.04 | -0.04 | 14.99 |
| | 76.000 | 286.00 | 4760.00 | 4760.00 | 5290.00 | 5290.00 | 12996.78 | 0.0 | 16.40 | 0.43 | 0.0 | 0.0 | 15.45 |
| | 76.000 | 286.00 | 4760.00 | 4760.00 | 5290.00 | 5290.00 | 12984.35 | 0.04 | 16.44 | 0.46 | -0.01 | -0.01 | 15.44 |
| C | 78.000 | 224.20 | 4740.90 | 4740.89 | 5210.00 | 5210.00 | 11785.35 | 0.0 | 16.74 | 0.12 | 0.0 | 0.0 | 15.57 |
| | 78.000 | 224.20 | 4740.90 | 4740.89 | 5210.00 | 5210.00 | 11785.32 | 0.05 | 16.79 | 0.13 | -0.00 | -0.00 | 15.57 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80.000 | 250.60 | 4711.00 | 4711.00 | 5200.06 | 5210.00 | 10576.88 | 0.0 | 17.14 | 0.25 | 0.0 | 0.0 | 15.82 |

| | SECNO | XLCH | STENCL | SSTA | ENDST | STENCR | .01K | DIFEG | EG | DIFWSX | DIFWSP | DIFKWS | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 80.000 | 250.60 | 4775.00 | 4775.00 | 5200.06 | 5210.00 | 10237.95 | 0.13 | 17.27 | 0.20 | -0.05 | -0.05 | 15.77 |
| | 82.000 | 221.70 | 4648.00 | 4648.00 | 5355.00 | 5355.00 | 15934.16 | 0.0 | 17.49 | 1.01 | 0.0 | 0.0 | 16.83 |
| | 82.000 | 221.70 | 4810.00 | 4810.00 | 5355.00 | 5355.00 | 15359.71 | 0.17 | 17.66 | 1.11 | 0.05 | 0.05 | 16.88 |
| | 90.000 | 125.60 | 4640.00 | 4640.00 | 5545.00 | 5545.00 | 16475.27 | 0.0 | 18.23 | 0.84 | 0.0 | 0.0 | 17.66 |
| | 90.000 | 125.60 | 4859.00 | 4859.00 | 5545.00 | 5545.00 | 16149.25 | 0.59 | 18.82 | 1.27 | 0.48 | 0.48 | 18.15 |
| D | 91.000 | 130.00 | 4630.00 | 4630.00 | 5600.00 | 5600.00 | 24897.44 | 0.0 | 18.34 | 0.42 | 0.0 | 0.0 | 18.09 |
| D | 91.000 | 130.00 | 4837.90 | 4837.89 | 5609.70 | 5609.70 | 25167.77 | 0.61 | 18.95 | 0.53 | 0.59 | 0.59 | 18.68 |
| | 92.000 | 230.00 | 4670.00 | 4670.00 | 5780.00 | 5780.00 | 36147.24 | 0.0 | 18.39 | 0.13 | 0.0 | 0.0 | 18.22 |
| | 92.000 | 230.00 | 4894.21 | 4894.21 | 5756.09 | 5756.09 | 36602.56 | 0.61 | 19.01 | 0.14 | 0.60 | 0.60 | 18.82 |
| | 94.000 | 370.00 | 4679.99 | 4679.99 | 5696.39 | 5696.39 | 38350.10 | 0.0 | 18.44 | 0.07 | 0.0 | 0.0 | 18.28 |
| | 94.000 | 370.00 | 4754.84 | 4754.83 | 5660.95 | 5660.95 | 38576.21 | 0.61 | 19.05 | 0.06 | 0.60 | 0.60 | 18.89 |
| | 96.000 | 437.00 | 4449.98 | 4449.98 | 5327.48 | 5327.48 | 34374.72 | 0.0 | 18.50 | 0.04 | 0.0 | 0.0 | 18.32 |
| | 96.000 | 437.00 | 4477.47 | 4477.47 | 5275.30 | 5275.30 | 33736.70 | 0.62 | 19.12 | 0.03 | 0.60 | 0.60 | 18.92 |
| | 98.000 | 530.00 | 4209.97 | 4209.96 | 5118.77 | 5118.77 | 32822.01 | 0.0 | 18.58 | 0.07 | 0.0 | 0.0 | 18.39 |
| | 98.000 | 530.00 | 4247.94 | 4247.93 | 5071.02 | 5071.02 | 32128.44 | 0.62 | 19.20 | 0.07 | 0.60 | 0.60 | 18.99 |
| | 100.000 | 290.00 | 4159.99 | 4159.98 | 5275.64 | 5275.65 | 34058.20 | 0.0 | 18.64 | 0.09 | 0.0 | 0.0 | 18.48 |
| | 100.000 | 290.00 | 4213.43 | 4213.42 | 5204.27 | 5204.28 | 33204.39 | 0.62 | 19.26 | 0.09 | 0.60 | 0.60 | 19.09 |
| E | 102.000 | 320.00 | 4180.00 | 4180.00 | 5400.00 | 5400.00 | 33812.56 | 0.0 | 18.69 | 0.06 | 0.0 | 0.0 | 18.55 |
| E | 102.000 | 320.00 | 4235.49 | 4235.49 | 5317.19 | 5317.19 | 32934.43 | 0.63 | 19.32 | 0.06 | 0.61 | 0.61 | 19.15 |
| | 104.000 | 78.90 | 4190.00 | 4190.00 | 5410.00 | 5410.00 | 34511.11 | 0.0 | 18.71 | 0.01 | 0.0 | 0.0 | 18.55 |
| | 104.000 | 78.90 | 4243.66 | 4243.65 | 5327.59 | 5327.59 | 33886.68 | 0.63 | 19.33 | 0.01 | 0.61 | 0.61 | 19.16 |
| | 106.000 | 74.70 | 4200.00 | 4200.00 | 5420.00 | 5420.00 | 34589.48 | 0.0 | 18.72 | 0.03 | 0.0 | 0.0 | 18.58 |
| | 106.000 | 74.70 | 4230.69 | 4230.69 | 5354.23 | 5354.23 | 35114.88 | 0.63 | 19.35 | 0.05 | 0.62 | 0.62 | 19.21 |
| | 108.000 | 550.00 | 4240.00 | 4240.00 | 5350.00 | 5350.00 | 29223.63 | 0.0 | 18.85 | 0.06 | 0.0 | 0.0 | 18.65 |
| | 108.000 | 550.00 | 4302.67 | 4302.67 | 5284.79 | 5284.80 | 29698.02 | 0.63 | 19.48 | 0.06 | 0.62 | 0.62 | 19.26 |
| F | 110.000 | 537.70 | 4390.00 | 4390.00 | 5240.00 | 5240.00 | 26354.75 | 0.0 | 19.01 | 0.08 | 0.0 | 0.0 | 18.73 |
| F | 110.000 | 537.70 | 4415.74 | 4415.73 | 5215.77 | 5215.77 | 26769.48 | 0.62 | 19.63 | 0.08 | 0.61 | 0.61 | 19.35 |
| | 112.000 | 298.70 | 4420.00 | 4420.00 | 5130.00 | 5130.00 | 21531.80 | 0.0 | 19.15 | 0.02 | 0.0 | 0.0 | 18.75 |
| | 112.000 | 298.70 | 4447.24 | 4447.24 | 5102.91 | 5102.91 | 21874.16 | 0.62 | 19.77 | 0.01 | 0.61 | 0.61 | 19.35 |
| | 114.000 | 214.70 | 4460.00 | 4460.00 | 5105.00 | 5105.00 | 18972.73 | 0.0 | 19.31 | 0.01 | 0.0 | 0.0 | 18.76 |
| | 114.000 | 214.70 | 4520.30 | 4520.30 | 5105.00 | 5105.00 | 19212.84 | 0.62 | 19.93 | 0.00 | 0.60 | 0.60 | 19.36 |
| | 120.000 | 105.00 | 4454.10 | 4464.12 | 5098.78 | 5113.50 | 18983.97 | 0.0 | 19.30 | 0.04 | 0.0 | 0.0 | 18.80 |
| | 120.000 | 105.00 | 4454.10 | 4461.38 | 5100.27 | 5113.50 | 20536.00 | 0.63 | 19.93 | 0.05 | 0.60 | 0.60 | 19.40 |
| | 130.000 | 110.00 | 4470.00 | 4522.74 | 5179.96 | 5182.00 | 20836.52 | 0.0 | 19.30 | 0.04 | 0.0 | 0.0 | 18.84 |
| | 130.000 | 110.00 | 4470.00 | 4522.74 | 5179.97 | 5182.00 | 22512.75 | 0.63 | 19.93 | 0.03 | 0.59 | 0.59 | 19.44 |
| | 132.000 | 282.00 | 4300.00 | 4300.00 | 5330.00 | 5330.00 | 28728.96 | 0.0 | 19.43 | 0.35 | 0.0 | 0.0 | 19.19 |

| SECNO | XLCH | STENCL | SSTA | ENDST | STENCR | .01K | DIFEG | EG | DIFWSX | DIFWSP | DIFKWS | CWSEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 132.000 | 282.00 | 4380.56 | 4380.55 | 5254.23 | 5254.24 | 27122.80 | 0.61 | 20.04 | 0.32 | 0.56 | 0.56 | 19.75 |
| 134.000 | 345.60 | 4330.00 | 4330.00 | 5700.00 | 5700.00 | 38080.72 | 0.0 | 19.50 | 0.18 | 0.0 | 0.0 | 19.37 |
| 134.000 | 345.60 | 4423.69 | 4423.69 | 5583.72 | 5583.73 | 36103.49 | 0.62 | 20.13 | 0.21 | 0.60 | 0.60 | 19.96 |
| 136.000 | 1880.00 | 3760.00 | 3760.00 | 5505.70 | 5505.70 | 39457.43 | 0.0 | 19.73 | 0.25 | 0.0 | 0.0 | 19.62 |
| 136.000 | 1880.00 | 3942.15 | 3942.15 | 5291.42 | 5291.42 | 37386.67 | 0.65 | 20.38 | 0.28 | 0.62 | 0.62 | 20.24 |
| 138.000 | 1375.00 | 4500.00 | 4500.00 | 5950.00 | 5950.00 | 38094.99 | 0.0 | 19.90 | 0.15 | 0.0 | 0.0 | 19.77 |
| 138.000 | 1375.00 | 4614.34 | 4614.34 | 5818.40 | 5818.40 | 36222.35 | 0.67 | 20.57 | 0.17 | 0.64 | 0.64 | 20.41 |

SUMMARY OF ERRORS

CAUTION SECNO= 50.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 50.000 PROFILE= 2 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 52.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 52.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 52.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 52.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 52.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 52.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 54.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 54.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 54.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 54.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 54.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 54.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 68.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 68.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 68.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 68.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 68.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 68.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 69.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 69.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 69.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 69.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

# Appendix D

## Duplicate Effective Model Results

HEC-RAS Plan: Duplicate_Effective River: RIVER-1 Reach: Reach-1

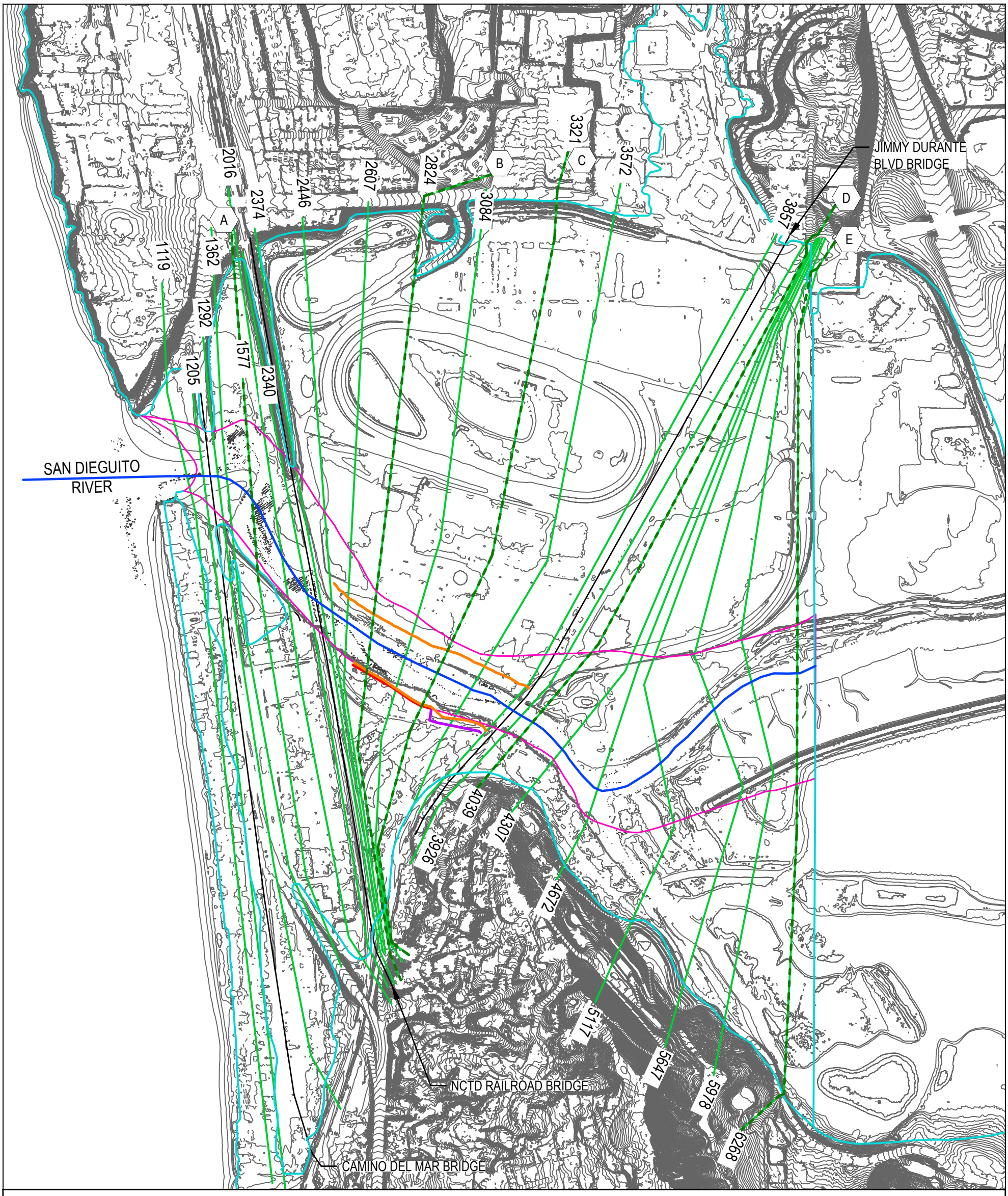
| Reach | River Sta | Profile | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach-1 | 138 | PF 1 | 42800.00 | 1.10 | 19.45 | | 19.59 | 0.000140 | 3.58 | 15040.78 | 1450.10 | 0.16 |
| Reach-1 | 138 | PF 2 | 42800.00 | 1.10 | 20.81 | | 20.95 | 0.000127 | 3.61 | 14371.35 | 1191.15 | 0.16 |
| Reach-1 | 136 | PF 1 | 42800.00 | 1.10 | 19.28 | | 19.40 | 0.000139 | 3.76 | 16218.03 | 1745.74 | 0.16 |
| Reach-1 | 136 | PF 2 | 42800.00 | 1.10 | 20.65 | | 20.78 | 0.000125 | 3.75 | 15092.62 | 1320.14 | 0.16 |
| Reach-1 | 134 | PF 1 | 42800.00 | 0.30 | 18.99 | | 19.14 | 0.000141 | 3.67 | 14664.44 | 1370.10 | 0.16 |
| Reach-1 | 134 | PF 2 | 42800.00 | 0.30 | 20.40 | | 20.55 | 0.000127 | 3.69 | 14180.72 | 1152.33 | 0.16 |
| Reach-1 | 132 | PF 1 | 42800.00 | 1.00 | 18.80 | | 19.05 | 0.000250 | 4.97 | 11068.32 | 1030.02 | 0.22 |
| Reach-1 | 132 | PF 2 | 42800.00 | 1.00 | 20.20 | | 20.47 | 0.000225 | 4.98 | 10714.37 | 866.53 | 0.21 |
| Reach-1 | 130 | PF 1 | 42400.00 | 1.40 | 18.46 | 11.56 | 18.92 | 0.000459 | 5.40 | 7845.85 | 657.22 | 0.28 |
| Reach-1 | 130 | PF 2 | 42400.00 | 1.40 | 20.02 | 11.56 | 20.38 | 0.000307 | 4.78 | 8868.63 | 657.24 | 0.23 |
| Reach-1 | 125 | | Bridge | | | | | | | | | |
| Reach-1 | 120 | PF 1 | 42400.00 | 1.20 | 18.24 | 11.78 | 18.79 | 0.000582 | 5.96 | 7113.59 | 630.69 | 0.31 |
| Reach-1 | 120 | PF 2 | 42400.00 | 1.20 | 19.87 | 11.78 | 20.29 | 0.000379 | 5.20 | 8148.58 | 642.14 | 0.26 |
| Reach-1 | 117 | | Bridge | | | | | | | | | |
| Reach-1 | 114 | PF 1 | 42400.00 | 0.90 | 18.00 | | 18.64 | 0.000609 | 7.48 | 7255.00 | 645.02 | 0.33 |
| Reach-1 | 114 | PF 2 | 42400.00 | 0.90 | 19.59 | | 20.15 | 0.000468 | 6.95 | 7580.97 | 578.34 | 0.29 |
| Reach-1 | 112 | PF 1 | 42400.00 | 0.80 | 17.98 | | 18.45 | 0.000482 | 6.61 | 8261.20 | 710.04 | 0.30 |
| Reach-1 | 112 | PF 2 | 42400.00 | 0.80 | 19.59 | | 20.00 | 0.000366 | 6.16 | 8734.06 | 654.84 | 0.26 |
| Reach-1 | 110 | PF 1 | 42400.00 | 0.70 | 17.96 | | 18.28 | 0.000319 | 5.55 | 9967.93 | 850.01 | 0.24 |
| Reach-1 | 110 | PF 2 | 42400.00 | 0.70 | 19.58 | | 19.86 | 0.000241 | 5.15 | 10602.38 | 793.42 | 0.22 |
| Reach-1 | 108 | PF 1 | 42400.00 | 1.80 | 17.85 | | 18.08 | 0.000267 | 4.46 | 11461.88 | 1089.66 | 0.22 |
| Reach-1 | 108 | PF 2 | 42400.00 | 1.80 | 19.50 | | 19.71 | 0.000197 | 4.12 | 12015.92 | 943.99 | 0.19 |
| Reach-1 | 106 | PF 1 | 42400.00 | 1.60 | 17.76 | | 17.92 | 0.000191 | 3.64 | 13499.52 | 1220.02 | 0.18 |
| Reach-1 | 106 | PF 2 | 42400.00 | 1.60 | 19.45 | | 19.59 | 0.000139 | 3.39 | 14408.97 | 1121.66 | 0.16 |
| Reach-1 | 104 | PF 1 | 42400.00 | 1.30 | 17.72 | | 17.90 | 0.000193 | 4.34 | 13297.32 | 1220.10 | 0.19 |
| Reach-1 | 104 | PF 2 | 42400.00 | 1.30 | 19.40 | | 19.57 | 0.000154 | 4.14 | 13610.40 | 1077.84 | 0.17 |
| Reach-1 | 102 | PF 1 | 42400.00 | 1.30 | 17.71 | | 17.88 | 0.000200 | 3.80 | 13351.79 | 1220.10 | 0.19 |
| Reach-1 | 102 | PF 2 | 42400.00 | 1.30 | 19.39 | | 19.55 | 0.000158 | 3.67 | 13602.51 | 1070.01 | 0.17 |
| Reach-1 | 100 | PF 1 | 42400.00 | 2.30 | 17.64 | | 17.81 | 0.000196 | 3.99 | 12956.56 | 1115.75 | 0.19 |
| Reach-1 | 100 | PF 2 | 42400.00 | 2.30 | 19.33 | | 19.50 | 0.000156 | 3.85 | 13235.98 | 985.06 | 0.17 |
| Reach-1 | 98 | PF 1 | 42400.00 | 1.10 | 17.53 | | 17.75 | 0.000208 | 4.15 | 11598.16 | 908.87 | 0.19 |
| Reach-1 | 98 | PF 2 | 42400.00 | 1.10 | 19.24 | | 19.45 | 0.000169 | 4.04 | 11855.73 | 813.52 | 0.18 |
| Reach-1 | 96 | PF 1 | 42400.00 | 0.20 | 17.44 | | 17.65 | 0.000188 | 4.11 | 11776.48 | 877.53 | 0.19 |
| Reach-1 | 96 | PF 2 | 42400.00 | 0.20 | 19.17 | | 19.36 | 0.000153 | 3.99 | 12044.64 | 792.01 | 0.17 |
| Reach-1 | 94 | PF 1 | 42400.00 | 0.50 | 17.39 | | 17.57 | 0.000153 | 3.67 | 12779.40 | 1016.42 | 0.17 |
| Reach-1 | 94 | PF 2 | 42400.00 | 0.50 | 19.14 | | 19.30 | 0.000116 | 3.39 | 13336.60 | 898.26 | 0.15 |
| Reach-1 | 92 | PF 1 | 42400.00 | 0.30 | 17.31 | | 17.51 | 0.000174 | 4.07 | 12043.73 | 959.79 | 0.18 |
| Reach-1 | 92 | PF 2 | 42400.00 | 0.30 | 19.07 | | 19.25 | 0.000130 | 3.77 | 12520.77 | 843.30 | 0.16 |
| Reach-1 | 91 | PF 1 | 42400.00 | 2.00 | 17.20 | | 17.45 | 0.000328 | 4.55 | 11044.52 | 1060.02 | 0.21 |
| Reach-1 | 91 | PF 2 | 42400.00 | 2.00 | 18.99 | | 19.21 | 0.000235 | 4.16 | 11673.07 | 906.17 | 0.18 |
| Reach-1 | 90 | PF 1 | 40880.00 | -3.40 | 16.80 | 9.98 | 17.34 | 0.000662 | 6.71 | 8152.14 | 1070.00 | 0.30 |
| Reach-1 | 90 | PF 2 | 41800.00 | -3.40 | 18.45 | 9.91 | 19.08 | 0.000621 | 6.94 | 7268.60 | 686.00 | 0.29 |
| Reach-1 | 86 | | Bridge | | | | | | | | | |
| Reach-1 | 82 | PF 1 | 40880.00 | 1.70 | 16.50 | | 16.90 | 0.000466 | 6.11 | 9157.28 | 1020.00 | 0.29 |
| Reach-1 | 82 | PF 2 | 41800.00 | 1.70 | 17.88 | | 18.54 | 0.000575 | 7.23 | 6864.24 | 545.00 | 0.33 |
| Reach-1 | 80 | PF 1 | 40880.00 | 3.00 | 15.37 | | 16.56 | 0.001505 | 9.76 | 5244.59 | 609.63 | 0.51 |
| Reach-1 | 80 | PF 2 | 41800.00 | 3.00 | 17.05 | | 18.25 | 0.001170 | 9.42 | 5066.15 | 425.08 | 0.46 |
| Reach-1 | 78 | PF 1 | 40880.00 | 2.00 | 15.19 | | 16.14 | 0.001096 | 8.86 | 5865.72 | 610.13 | 0.44 |
| Reach-1 | 78 | PF 2 | 41800.00 | 2.00 | 16.94 | | 17.90 | 0.000875 | 8.63 | 5807.90 | 469.10 | 0.40 |
| Reach-1 | 76 | PF 1 | 40880.00 | 1.80 | 15.19 | | 15.79 | 0.000719 | 7.25 | 7336.11 | 774.72 | 0.36 |

HEC-RAS Plan: Duplicate_Effective River: RIVER-1 Reach: Reach-1 (Continued)

| Reach | River Sta | Profile | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach-1 | 76 | PF 2 | 41800.00 | 1.80 | 16.87 | | 17.64 | 0.000704 | 7.79 | 6451.10 | 530.00 | 0.36 |
| | | | | | | | | | | | | |
| Reach-1 | 74 | PF 1 | 40880.00 | 1.70 | 15.01 | | 15.57 | 0.000688 | 6.89 | 7441.42 | 796.57 | 0.34 |
| Reach-1 | 74 | PF 2 | 41800.00 | 1.70 | 16.67 | | 17.43 | 0.000717 | 7.61 | 6325.92 | 535.53 | 0.36 |
| | | | | | | | | | | | | |
| Reach-1 | 72 | PF 1 | 40880.00 | 1.70 | 15.07 | | 15.37 | 0.000420 | 5.42 | 10141.99 | 1067.30 | 0.27 |
| Reach-1 | 72 | PF 2 | 41800.00 | 1.70 | 16.82 | | 17.18 | 0.000375 | 5.54 | 8983.28 | 715.00 | 0.25 |
| | | | | | | | | | | | | |
| Reach-1 | 70 | PF 1 | 41800.00 | 2.00 | 14.14 | 12.51 | 15.03 | 0.002654 | 8.49 | 6096.62 | 1143.06 | 0.53 |
| Reach-1 | 70 | PF 2 | 41800.00 | 2.02 | 16.00 | 12.59 | 16.88 | 0.001956 | 8.05 | 5718.38 | 664.77 | 0.46 |
| | | | | | | | | | | | | |
| Reach-1 | 69.5 | | Bridge | | | | | | | | | |
| | | | | | | | | | | | | |
| Reach-1 | 68 | PF 1 | 41800.00 | 2.00 | 12.51 | 12.51 | 14.40 | 0.007212 | 12.03 | 4232.22 | 1143.05 | 0.84 |
| Reach-1 | 68 | PF 2 | 41800.00 | 2.06 | 13.02 | 13.02 | 15.60 | 0.010589 | 13.97 | 3351.47 | 629.75 | 0.99 |
| | | | | | | | | | | | | |
| Reach-1 | 66 | PF 1 | 41800.00 | 2.40 | 11.61 | | 12.31 | 0.001136 | 6.97 | 6410.55 | 851.65 | 0.42 |
| Reach-1 | 66 | PF 2 | 41800.00 | 2.40 | 11.74 | | 12.42 | 0.001077 | 6.85 | 6520.55 | 851.64 | 0.41 |
| | | | | | | | | | | | | |
| Reach-1 | 64 | PF 1 | 41800.00 | 1.80 | 11.05 | | 11.93 | 0.001504 | 7.89 | 5611.64 | 745.02 | 0.48 |
| Reach-1 | 64 | PF 2 | 41800.00 | 1.80 | 11.22 | | 12.06 | 0.001399 | 7.72 | 5737.46 | 745.65 | 0.47 |
| | | | | | | | | | | | | |
| Reach-1 | 62 | PF 1 | 41800.00 | 1.70 | 10.48 | | 11.26 | 0.001226 | 7.25 | 6049.02 | 708.41 | 0.44 |
| Reach-1 | 62 | PF 2 | 41800.00 | 1.70 | 10.70 | | 11.43 | 0.001130 | 7.08 | 6201.15 | 708.40 | 0.42 |
| | | | | | | | | | | | | |
| Reach-1 | 61 | PF 1 | 41800.00 | 1.70 | 10.32 | | 11.09 | 0.001235 | 7.18 | 5987.53 | 714.41 | 0.44 |
| Reach-1 | 61 | PF 2 | 41800.00 | 1.70 | 10.55 | | 11.28 | 0.001129 | 6.99 | 6152.03 | 714.40 | 0.42 |
| | | | | | | | | | | | | |
| Reach-1 | 60 | PF 1 | 41800.00 | -0.70 | 10.20 | 6.43 | 11.02 | 0.001226 | 7.27 | 5795.42 | 755.10 | 0.44 |
| Reach-1 | 60 | PF 2 | 41800.00 | -0.70 | 10.43 | 6.43 | 11.21 | 0.001127 | 7.09 | 5898.25 | 666.81 | 0.42 |
| | | | | | | | | | | | | |
| Reach-1 | 58 | | Bridge | | | | | | | | | |
| | | | | | | | | | | | | |
| Reach-1 | 56 | PF 1 | 41800.00 | -0.70 | 9.98 | | 10.87 | 0.001118 | 7.70 | 5959.01 | 1004.89 | 0.43 |
| Reach-1 | 56 | PF 2 | 41800.00 | -0.70 | 10.25 | | 11.16 | 0.001083 | 7.67 | 5520.50 | 560.70 | 0.42 |
| | | | | | | | | | | | | |
| Reach-1 | 54 | PF 1 | 41800.00 | -1.00 | 7.91 | 7.91 | 10.39 | 0.005385 | 12.77 | 3551.35 | 868.73 | 0.88 |
| Reach-1 | 54 | PF 2 | 41800.00 | -1.00 | 7.41 | 7.41 | 10.53 | 0.007219 | 14.17 | 2950.18 | 476.89 | 1.00 |
| | | | | | | | | | | | | |
| Reach-1 | 52 | PF 1 | 41800.00 | -2.50 | 5.70 | 5.70 | 9.02 | 0.007075 | 14.62 | 2858.23 | 433.81 | 1.00 |
| Reach-1 | 52 | PF 2 | 41800.00 | -2.50 | 5.70 | 5.70 | 9.02 | 0.007063 | 14.62 | 2859.96 | 433.89 | 1.00 |
| | | | | | | | | | | | | |
| Reach-1 | 50 | PF 1 | 41800.00 | -4.00 | 3.50 | 3.50 | 6.53 | 0.007310 | 13.97 | 2992.28 | 498.82 | 1.01 |
| Reach-1 | 50 | PF 2 | 41800.00 | -4.00 | 3.50 | 3.50 | 6.53 | 0.007310 | 13.97 | 2992.28 | 498.82 | 1.01 |

# Appendix E

## Hydraulic Workmap




## LEGEND

- RIVER CENTERLINE
- EFFECTIVE 100-YR FLOODPLAIN
- EFFECTIVE FLOODWAY
- HEC-RAS CROSS-SECTIONS
- XXXX — HEC-RAS CROSS-SECTION STATION (FEET)
- X — FEMA PUBLISHED CROSS-SECTION
- USGS 2014 TOPOGRAPHIC CONTOURS (OVERBANKS, 2 FT INTERVAL)
- USACE 2014 TOPOGRAPHIC CONTOURS (CHANNEL, 2 FT INTERVAL)
- PROPOSED TRAIL ALIGNMENT
- PROPOSED BERM ALIGNMENT
- PROPOSED FLOODWALL ALIGNMENT

0 650' 1300'

N

GHD

**DUREK - CITY OF DELMAR**
**SDL SHORELINE PROTECTION**

**HYDRAULIC WORKMAP**

Project No. **12661343**
Date **August 25**

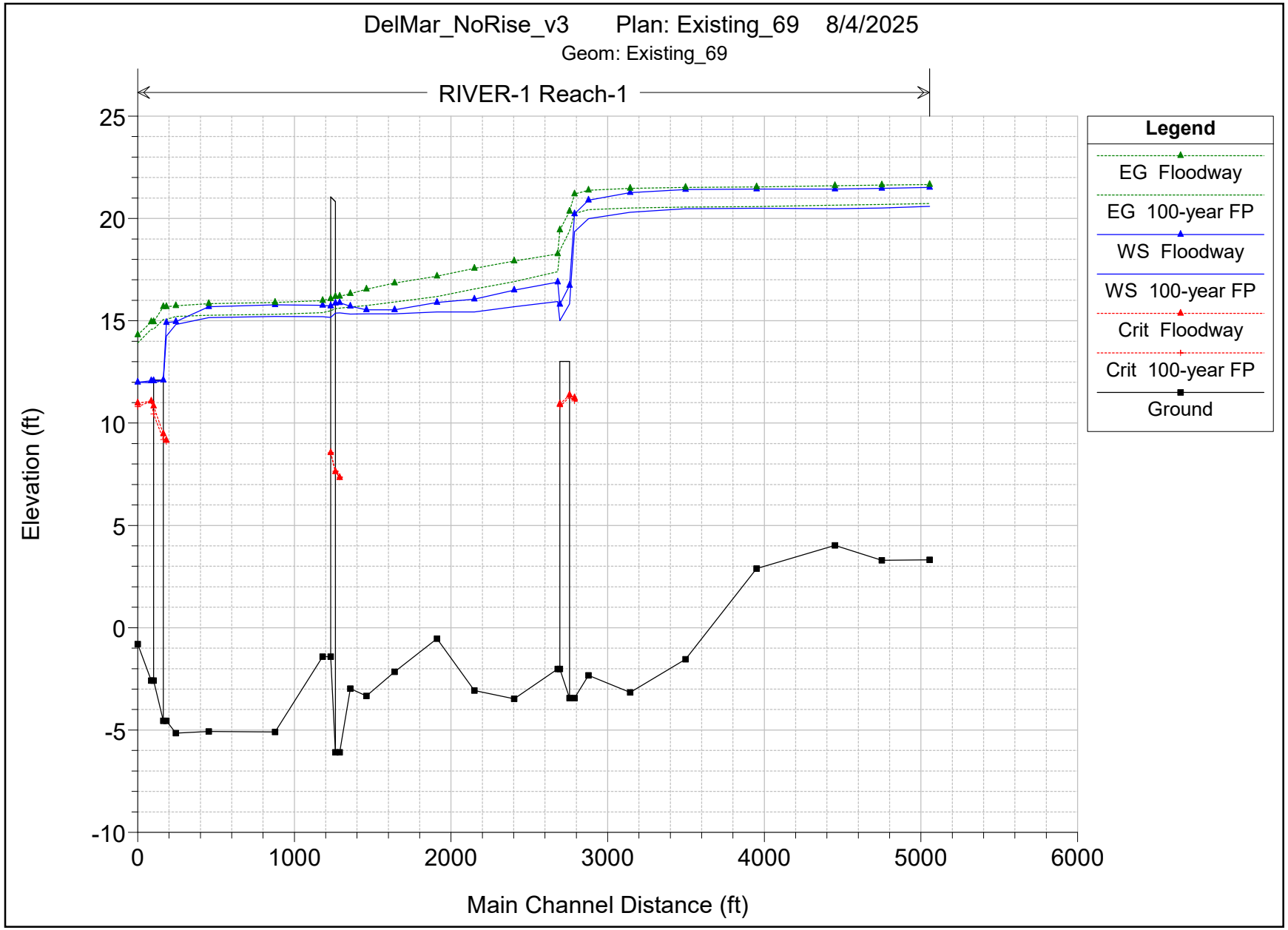
**EXHIBIT 1**

Filename: \\ghdnet\ghd\US\San Diego\Projects\561\12661343\Digital_Design\ACAD\Figures\12661343-FIG-TopographicWorkmap.dwg
Plot Date: 07 August 2025 11:04 AM

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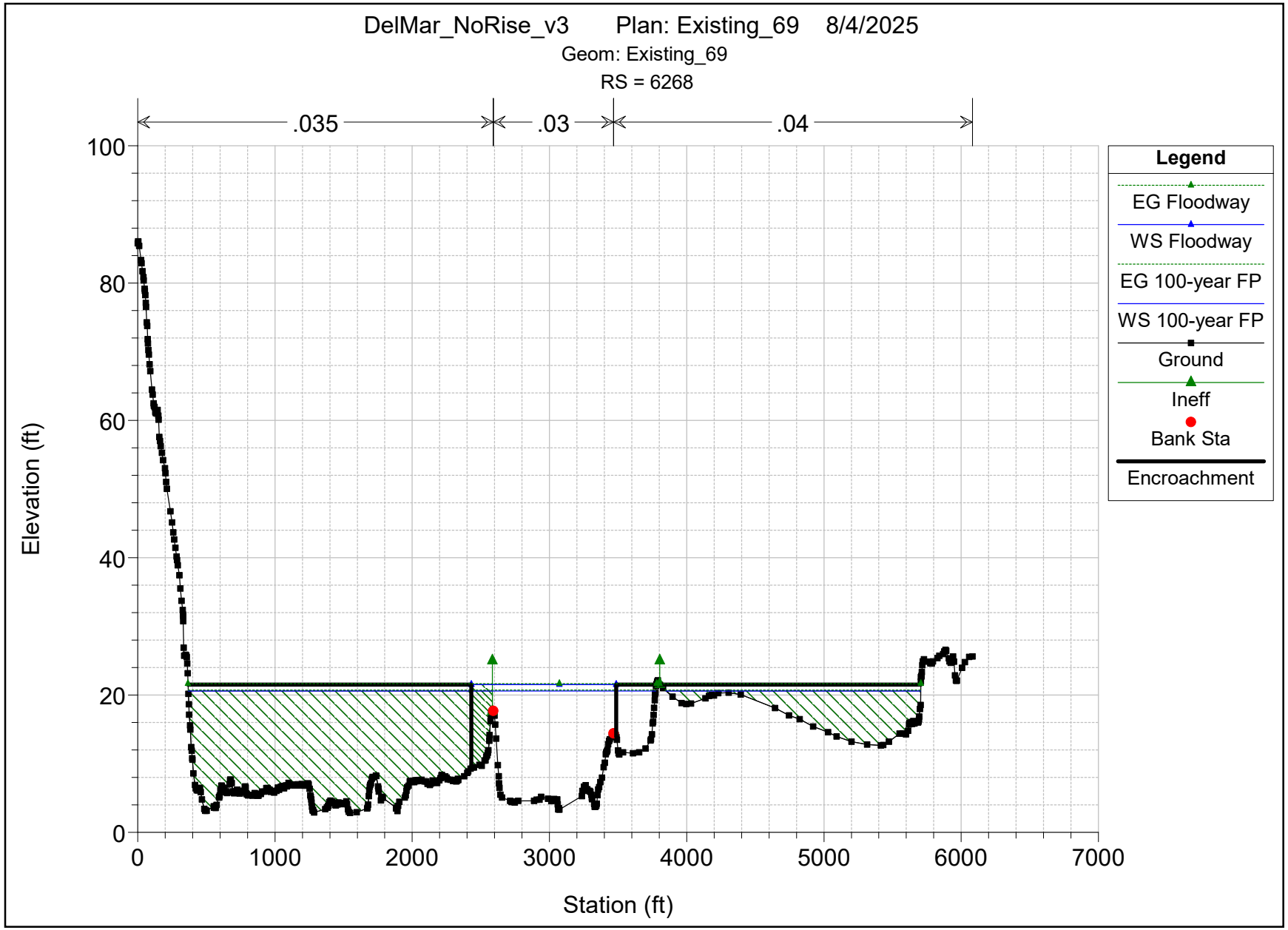
# Appendix F

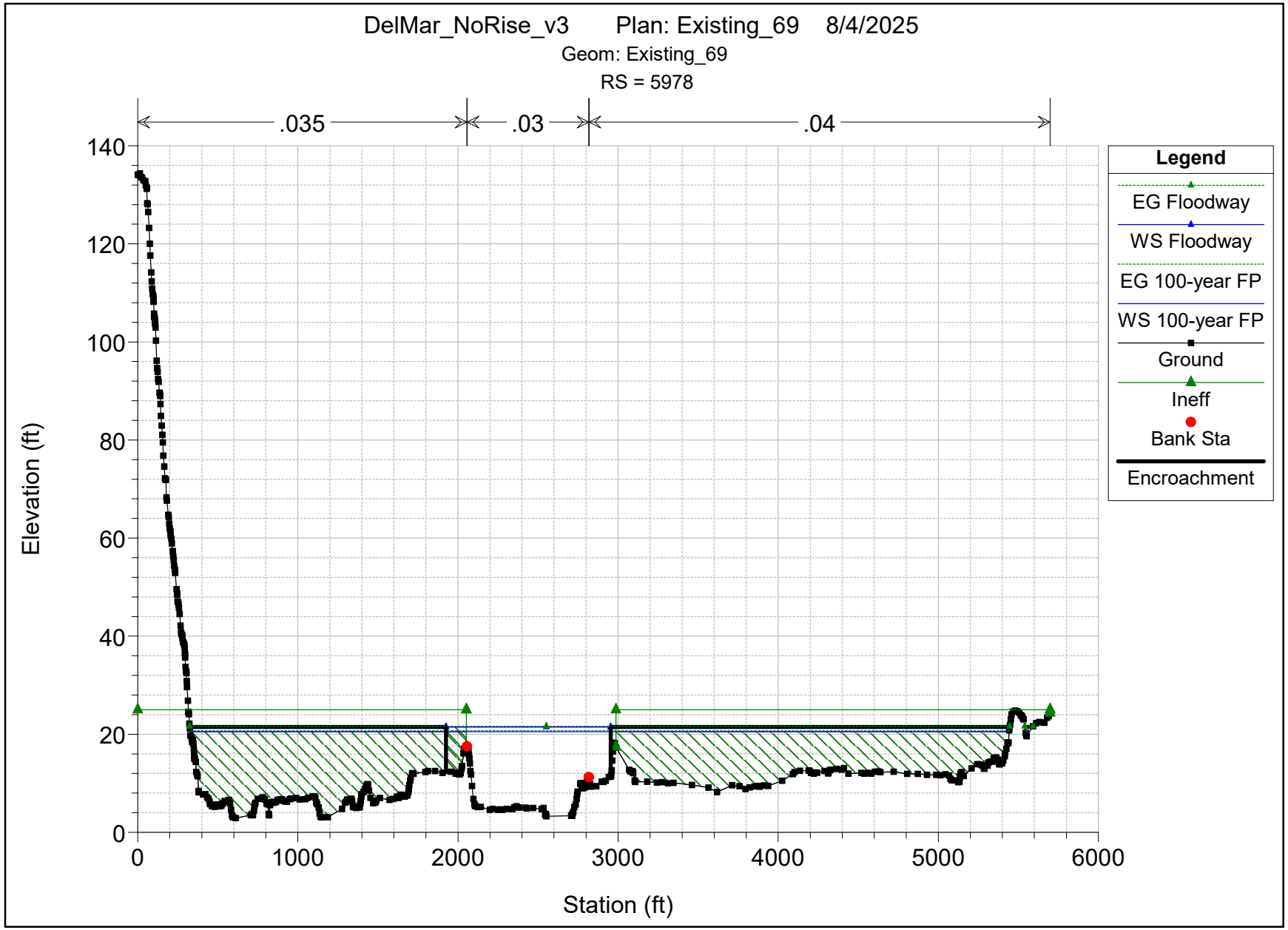
## Existing Conditions Model Results

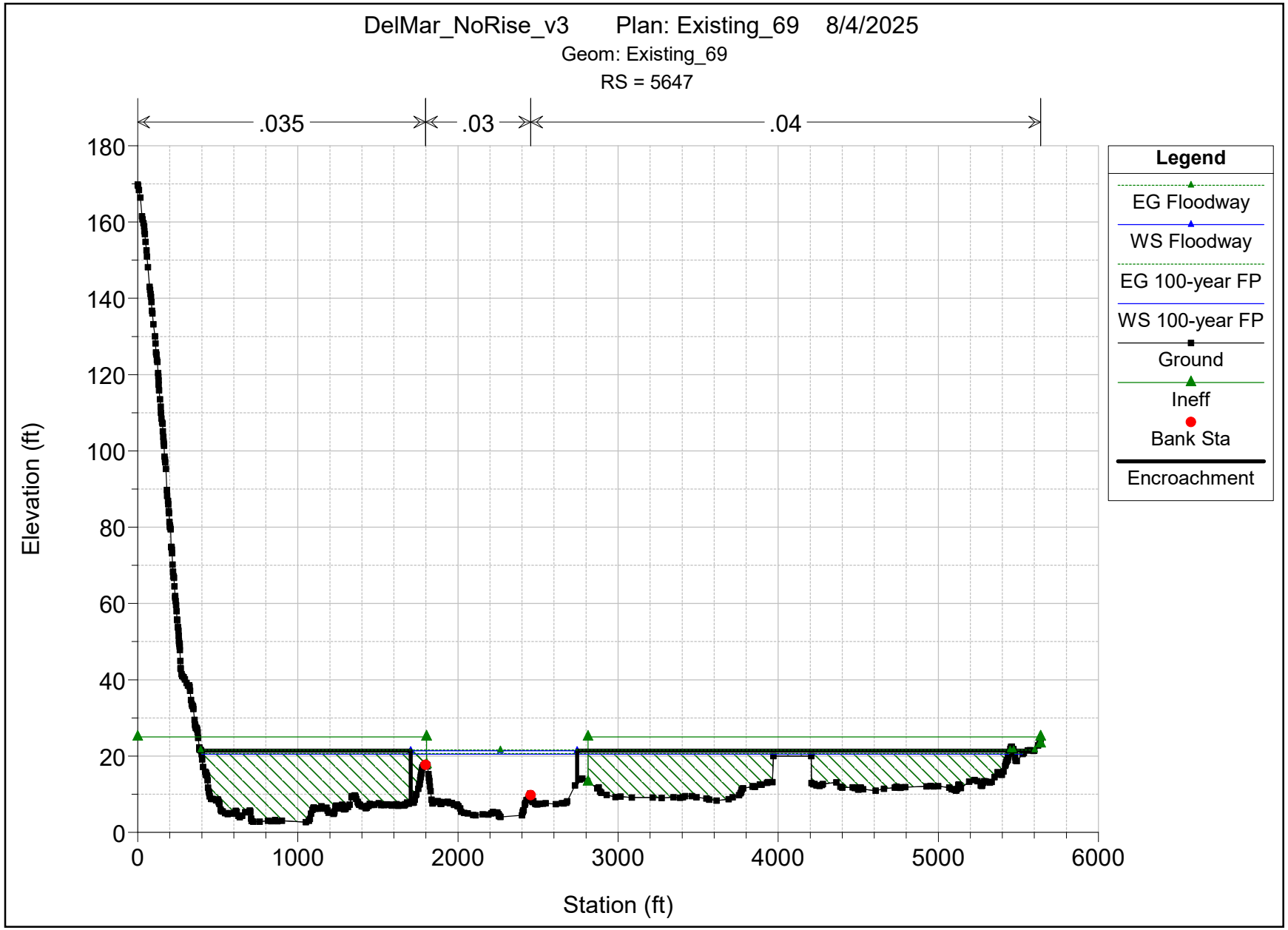

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RIVER-1 Reach-1
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Elevation (ft)
Main Channel Distance (ft)
25
20
15
10
5
0
-5
-10
0
1000
2000
3000
4000
5000
6000

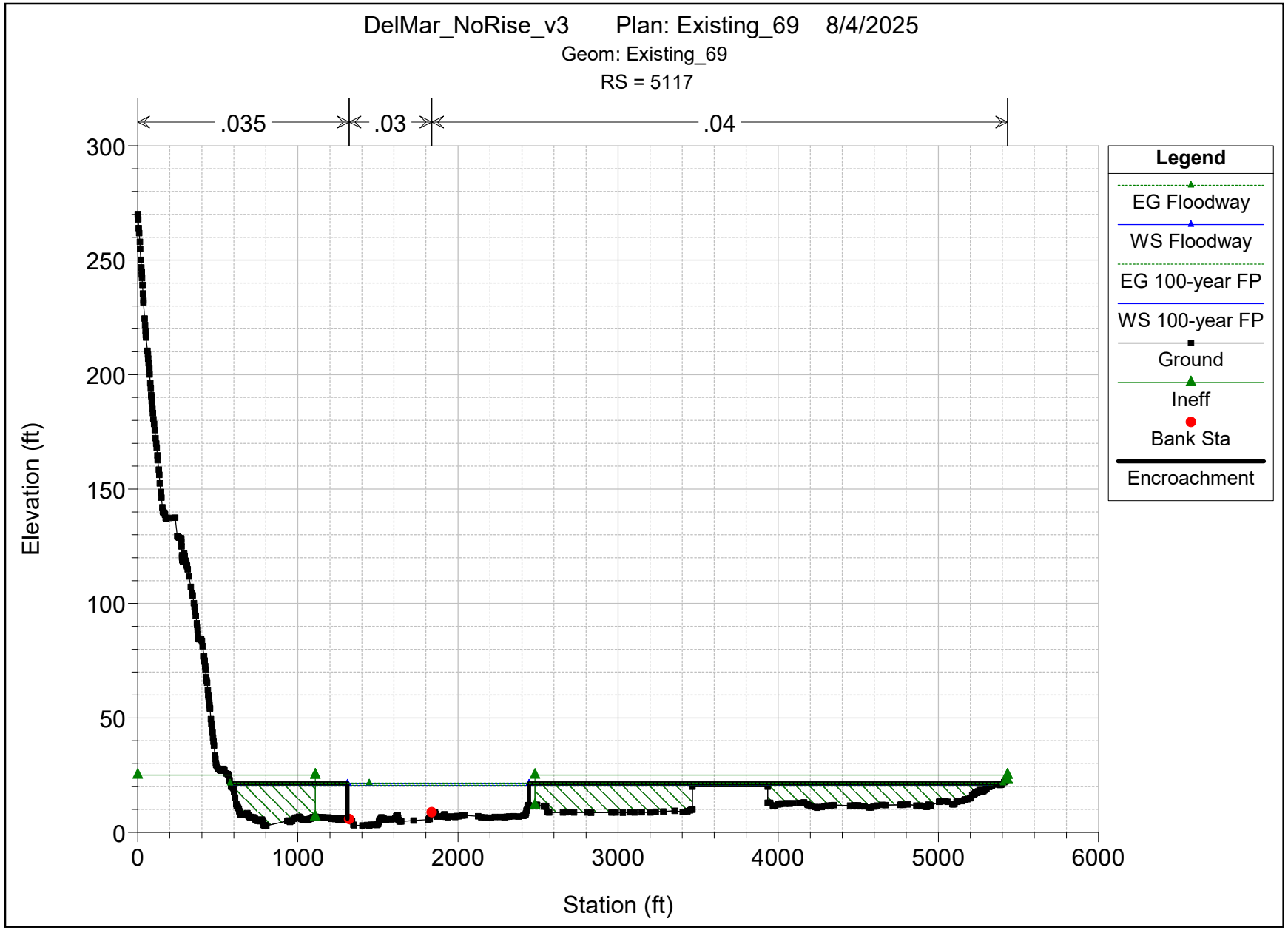
HEC-RAS Plan: Existing_69 River: RIVER-1 Reach: Reach-1

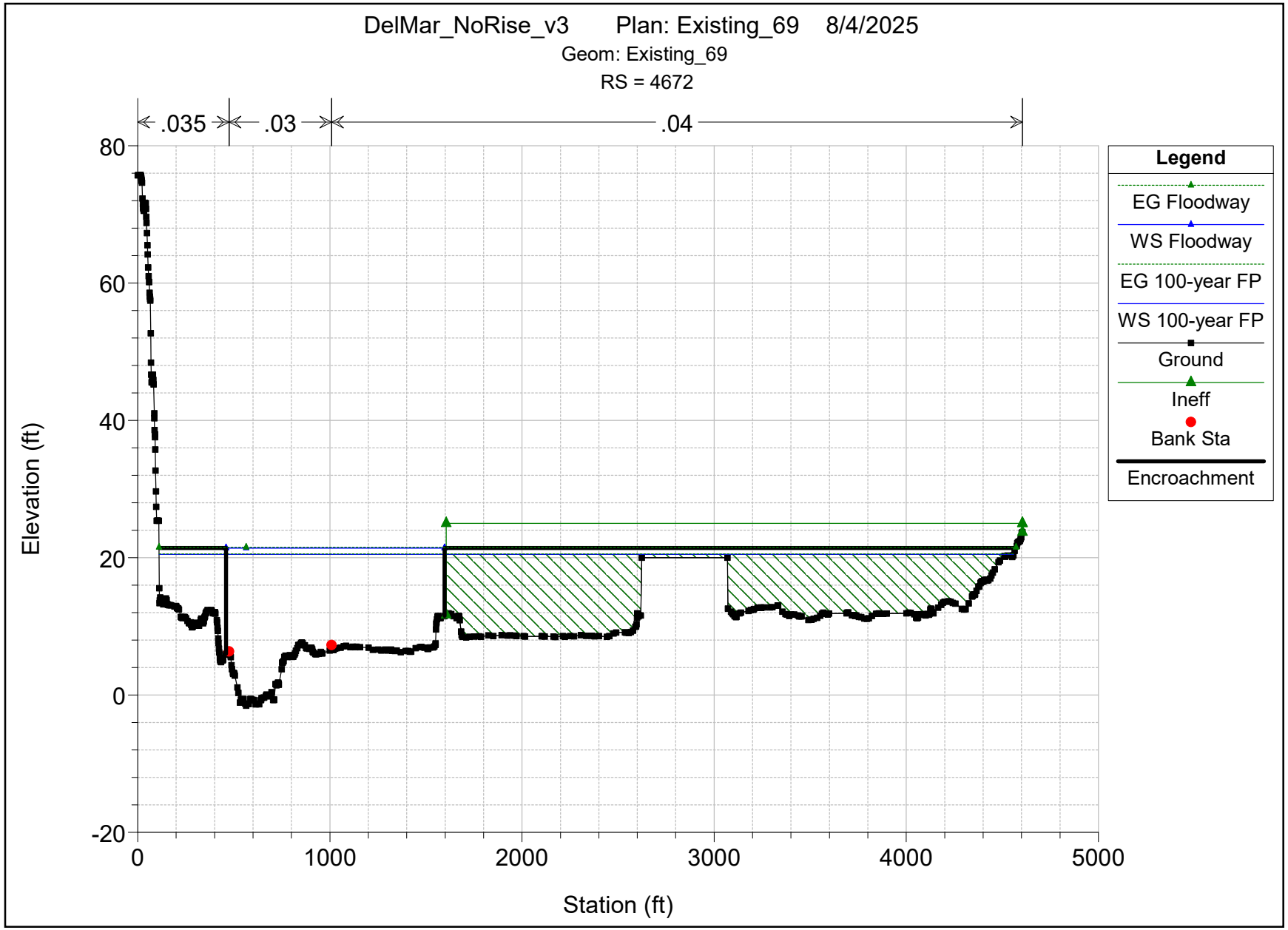
| Reach | River Sta | Profile | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach-1 | 6268 | 100-year FP | 42400.00 | 3.32 | 20.60 | | 20.73 | 0.000103 | 3.01 | 15315.30 | 5262.47 | 0.14 |
| Reach-1 | 6268 | Floodway | 42400.00 | 3.32 | 21.51 | | 21.66 | 0.000101 | 3.09 | 13821.31 | 1057.13 | 0.14 |
| Reach-1 | 5978 | 100-year FP | 42400.00 | 3.29 | 20.51 | | 20.69 | 0.000131 | 3.44 | 13039.42 | 5140.13 | 0.16 |
| Reach-1 | 5978 | Floodway | 42400.00 | 3.29 | 21.47 | | 21.63 | 0.000107 | 3.24 | 13753.28 | 1028.44 | 0.14 |
| Reach-1 | 5647 | 100-year FP | 42400.00 | 4.02 | 20.47 | | 20.65 | 0.000151 | 3.58 | 13304.64 | 5087.22 | 0.17 |
| Reach-1 | 5647 | Floodway | 42400.00 | 4.02 | 21.44 | | 21.60 | 0.000125 | 3.40 | 13745.81 | 1039.98 | 0.15 |
| Reach-1 | 5117 | 100-year FP | 42400.00 | 2.89 | 20.50 | | 20.58 | 0.000072 | 2.62 | 19561.23 | 4753.46 | 0.12 |
| Reach-1 | 5117 | Floodway | 42400.00 | 2.89 | 21.44 | | 21.54 | 0.000083 | 2.92 | 17432.86 | 1134.18 | 0.13 |
| Reach-1 | 4672 | 100-year FP | 42400.00 | -1.54 | 20.48 | | 20.55 | 0.000063 | 2.62 | 20615.68 | 4447.74 | 0.11 |
| Reach-1 | 4672 | Floodway | 42400.00 | -1.54 | 21.42 | | 21.51 | 0.000067 | 2.80 | 18352.85 | 1137.28 | 0.12 |
| Reach-1 | 4307 | 100-year FP | 42400.00 | -3.16 | 20.30 | | 20.51 | 0.000189 | 4.59 | 15580.18 | 4152.31 | 0.19 |
| Reach-1 | 4307 | Floodway | 42400.00 | -3.16 | 21.27 | | 21.48 | 0.000189 | 4.56 | 14286.60 | 885.24 | 0.19 |
| Reach-1 | 4039 | 100-year FP | 42400.00 | -2.33 | 19.99 | | 20.43 | 0.000333 | 6.31 | 12619.74 | 3861.90 | 0.26 |
| Reach-1 | 4039 | Floodway | 42400.00 | -2.33 | 20.89 | | 21.38 | 0.000329 | 6.46 | 11076.42 | 745.38 | 0.26 |
| Reach-1 | 3926 | 100-year FP | 40880.00 | -3.44 | 19.35 | 11.08 | 20.25 | 0.000618 | 8.08 | 8155.06 | 3976.29 | 0.34 |
| Reach-1 | 3926 | Floodway | 41800.00 | -3.44 | 20.22 | 11.23 | 21.20 | 0.000602 | 8.23 | 6966.56 | 669.94 | 0.34 |
| Reach-1 | 3900 | | Bridge | | | | | | | | | |
| Reach-1 | 3857 | 100-year FP | 40880.00 | -2.02 | 15.95 | | 17.40 | 0.001339 | 9.92 | 5495.05 | 3570.90 | 0.48 |
| Reach-1 | 3857 | Floodway | 41800.00 | -2.02 | 16.89 | | 18.27 | 0.001104 | 9.66 | 5421.98 | 517.15 | 0.44 |
| Reach-1 | 3572 | 100-year FP | 40880.00 | -3.48 | 15.69 | | 16.91 | 0.001334 | 9.68 | 6542.66 | 3011.50 | 0.48 |
| Reach-1 | 3572 | Floodway | 41800.00 | -3.48 | 16.49 | | 17.92 | 0.001332 | 10.07 | 5256.89 | 444.81 | 0.48 |
| Reach-1 | 3321 | 100-year FP | 40880.00 | -3.07 | 15.43 | | 16.55 | 0.001197 | 9.46 | 7297.10 | 3668.97 | 0.46 |
| Reach-1 | 3321 | Floodway | 41800.00 | -3.07 | 16.05 | | 17.56 | 0.001350 | 10.36 | 5206.76 | 448.64 | 0.49 |
| Reach-1 | 3084 | 100-year FP | 40880.00 | -0.54 | 15.43 | | 16.19 | 0.000881 | 8.07 | 9344.64 | 4119.06 | 0.39 |
| Reach-1 | 3084 | Floodway | 41800.00 | -0.54 | 15.89 | | 17.18 | 0.001195 | 9.62 | 5689.01 | 510.05 | 0.46 |
| Reach-1 | 2824 | 100-year FP | 40880.00 | -2.16 | 15.34 | | 15.91 | 0.000700 | 7.29 | 11291.39 | 4293.35 | 0.35 |
| Reach-1 | 2824 | Floodway | 41800.00 | -2.16 | 15.54 | | 16.84 | 0.001205 | 9.66 | 5689.19 | 530.27 | 0.46 |
| Reach-1 | 2607 | 100-year FP | 40880.00 | -3.34 | 15.34 | | 15.74 | 0.000606 | 6.44 | 13062.55 | 4601.55 | 0.32 |
| Reach-1 | 2607 | Floodway | 41800.00 | -3.34 | 15.53 | | 16.54 | 0.001142 | 8.87 | 7024.69 | 701.30 | 0.44 |
| Reach-1 | 2446 | 100-year FP | 40880.00 | -2.98 | 15.32 | | 15.67 | 0.000443 | 5.80 | 14171.85 | 4497.36 | 0.28 |
| Reach-1 | 2446 | Floodway | 41800.00 | -2.98 | 15.71 | | 16.32 | 0.000643 | 7.12 | 9529.93 | 891.40 | 0.33 |
| Reach-1 | 2374 | 100-year FP | 41800.00 | -6.09 | 15.38 | 7.35 | 15.61 | 0.000243 | 4.57 | 15453.75 | 4397.38 | 0.21 |
| Reach-1 | 2374 | Floodway | 41800.00 | -6.09 | 15.88 | 7.34 | 16.20 | 0.000285 | 5.06 | 12707.09 | 1159.38 | 0.23 |
| Reach-1 | 2360 | | Bridge | | | | | | | | | |
| Reach-1 | 2340 | 100-year FP | 41800.00 | -1.42 | 15.20 | | 15.40 | 0.000233 | 4.19 | 15421.85 | 4105.72 | 0.20 |
| Reach-1 | 2340 | Floodway | 41800.00 | -1.42 | 15.76 | | 15.98 | 0.000240 | 4.33 | 11909.13 | 1187.57 | 0.21 |
| Reach-1 | 2016 | 100-year FP | 41800.00 | -5.09 | 15.22 | | 15.31 | 0.000083 | 2.52 | 18089.60 | 4703.37 | 0.12 |
| Reach-1 | 2016 | Floodway | 41800.00 | -5.09 | 15.78 | | 15.89 | 0.000088 | 2.66 | 15688.48 | 1093.13 | 0.12 |
| Reach-1 | 1577 | 100-year FP | 41800.00 | -5.07 | 15.15 | | 15.27 | 0.000096 | 2.77 | 15368.28 | 4367.00 | 0.13 |
| Reach-1 | 1577 | Floodway | 41800.00 | -3.69 | 15.69 | | 15.84 | 0.000127 | 3.17 | 13174.61 | 927.28 | 0.15 |
| Reach-1 | 1362 | 100-year FP | 41800.00 | -5.15 | 14.82 | | 15.21 | 0.000344 | 5.40 | 11563.03 | 3857.95 | 0.24 |
| Reach-1 | 1362 | Floodway | 41800.00 | -4.46 | 14.95 | | 15.73 | 0.000712 | 7.55 | 7993.03 | 661.60 | 0.35 |
| Reach-1 | 1292 | 100-year FP | 41800.00 | -4.55 | 14.25 | 9.09 | 15.06 | 0.000940 | 7.35 | 6609.97 | 4652.24 | 0.39 |
| Reach-1 | 1292 | Floodway | 41800.00 | -4.55 | 14.91 | 9.15 | 15.68 | 0.000818 | 7.11 | 6247.49 | 557.02 | 0.37 |
| Reach-1 | 1250 | | Bridge | | | | | | | | | |
| Reach-1 | 1205 | 100-year FP | 41800.00 | -2.58 | 11.98 | 11.07 | 14.58 | 0.004029 | 13.64 | 4239.36 | 4461.04 | 0.80 |
| Reach-1 | 1205 | Floodway | 41800.00 | -2.58 | 12.07 | 11.07 | 14.94 | 0.004224 | 14.05 | 3604.37 | 464.90 | 0.82 |
| Reach-1 | 1119 | 100-year FP | 41800.00 | -0.80 | 12.00 | 10.81 | 13.92 | 0.003447 | 11.89 | 4598.77 | 4448.83 | 0.73 |
| Reach-1 | 1119 | Floodway | 41800.00 | -0.80 | 12.00 | 10.97 | 14.31 | 0.003915 | 12.67 | 3630.17 | 493.82 | 0.77 |

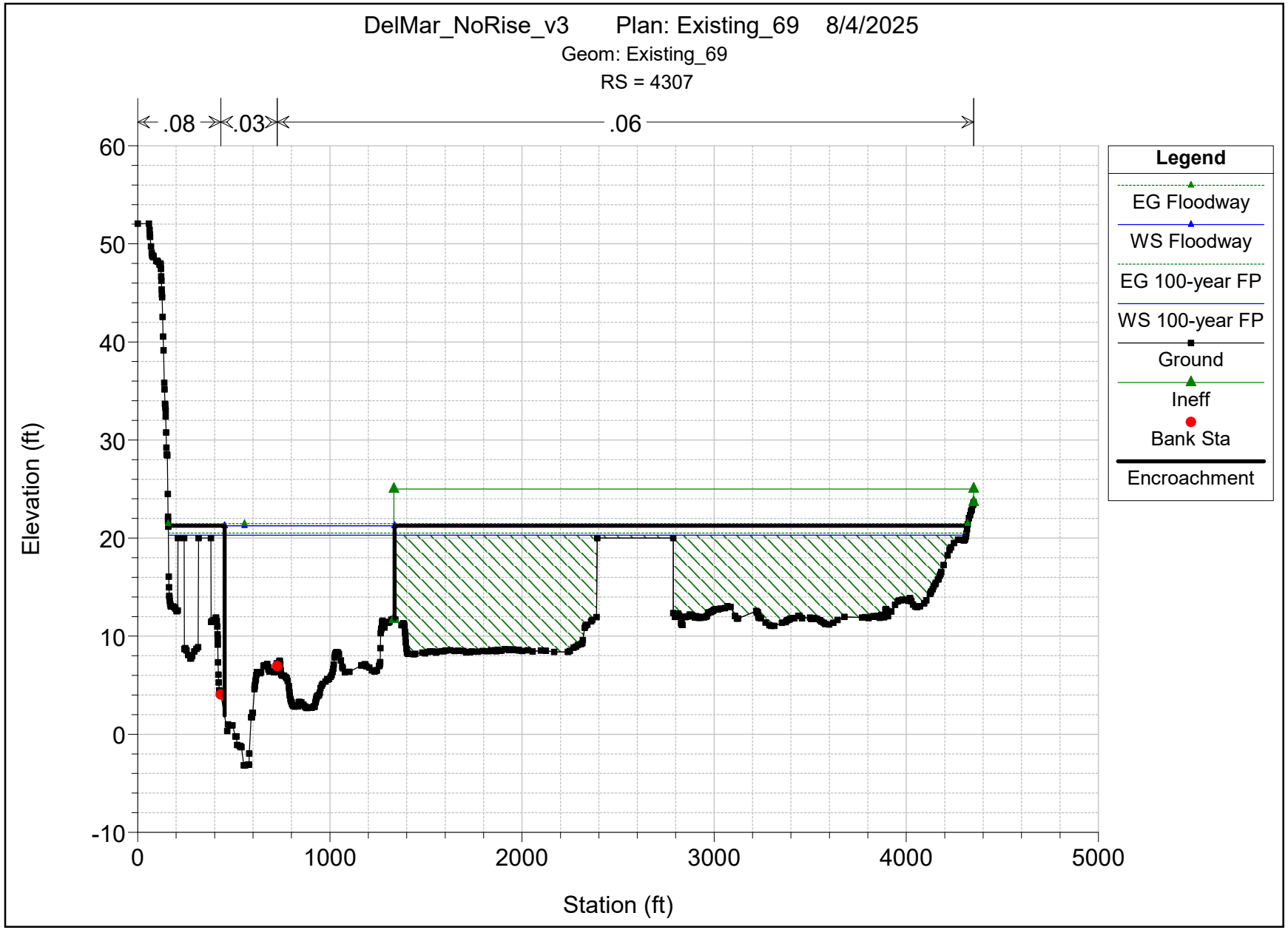

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 6268
.035
.03
.04
Elevation (ft)
Station (ft)
0
20
40
60
80
100
0
1000
2000
3000
4000
5000
6000
7000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

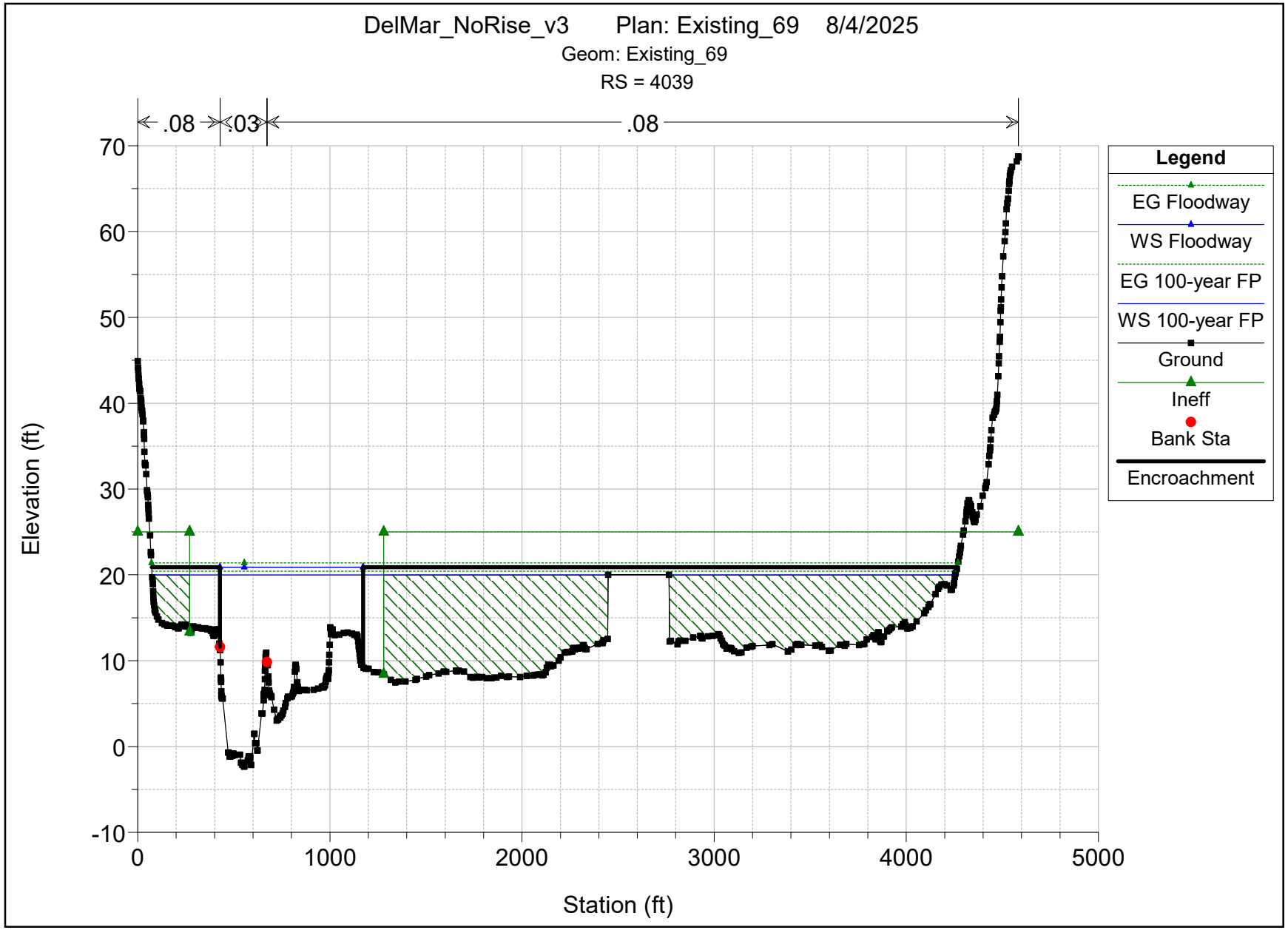

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 5978
.035
.03
.04
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
0
20
40
60
80
100
120
140
0
1000
2000
3000
4000
5000
6000

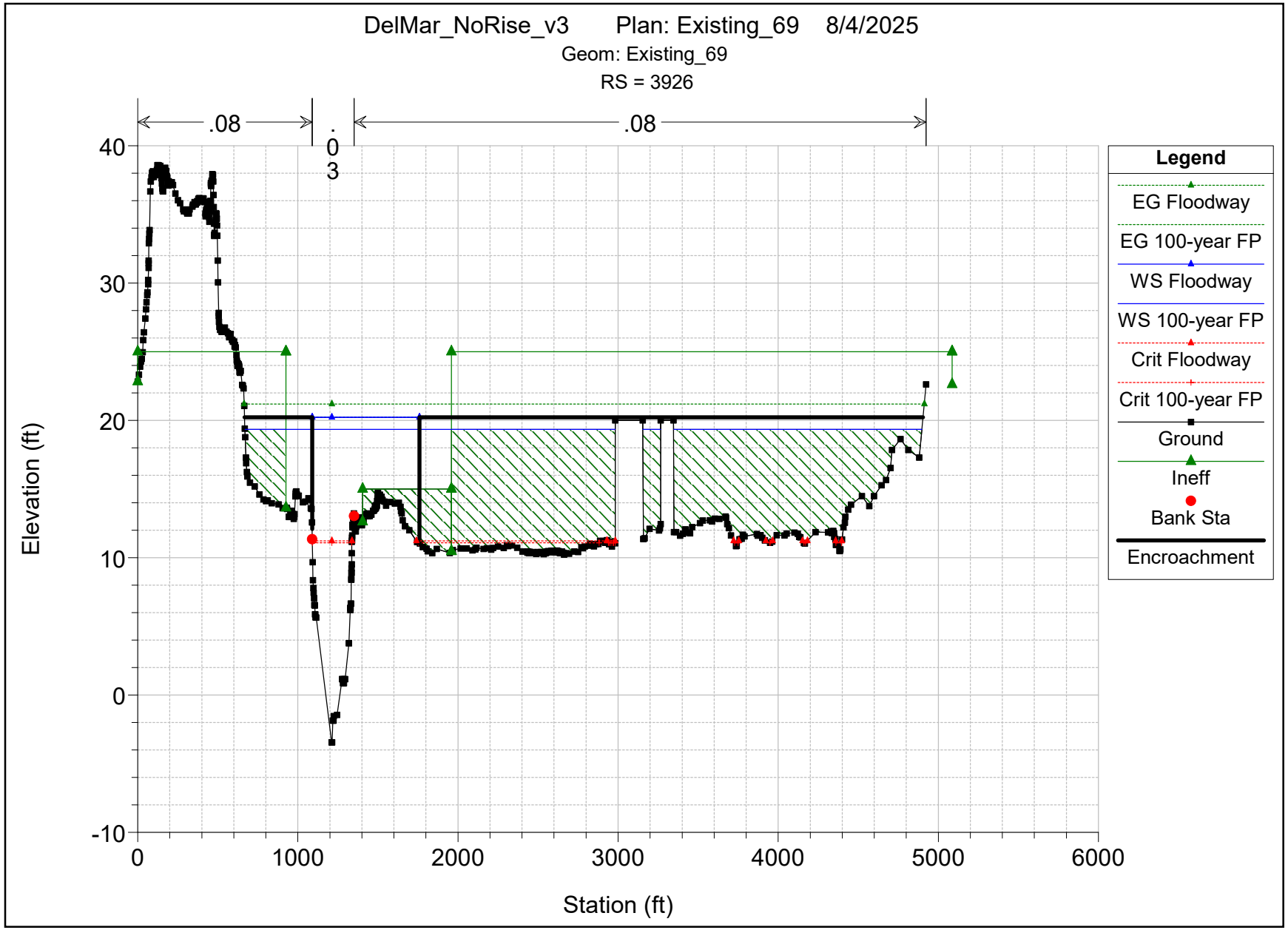

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 5647
.035
.03
.04
Elevation (ft)
Station (ft)
0
20
40
60
80
100
120
140
160
180
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

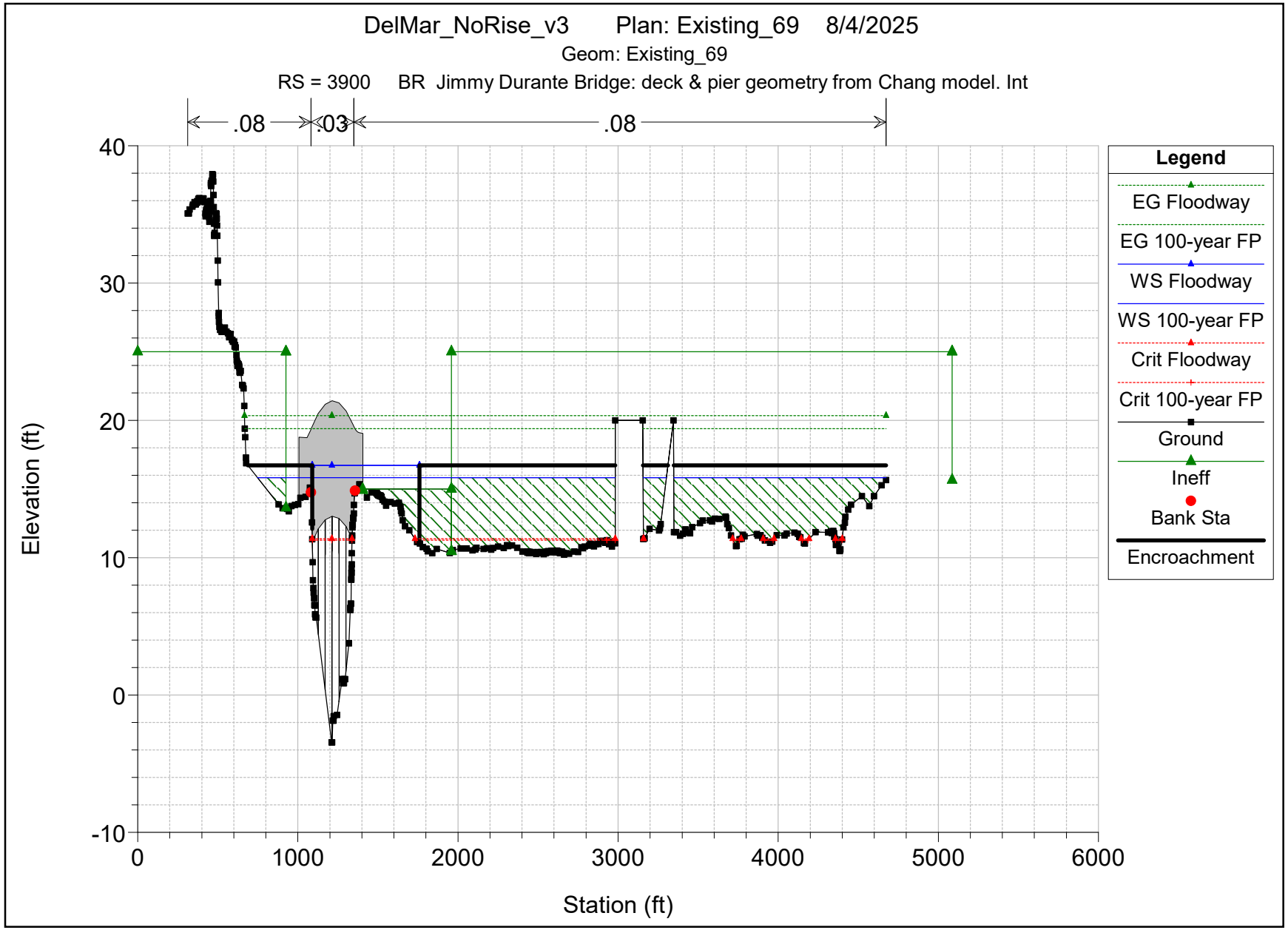

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 5117
.035
.03
.04
Elevation (ft)
300
250
200
150
100
50
0
0
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

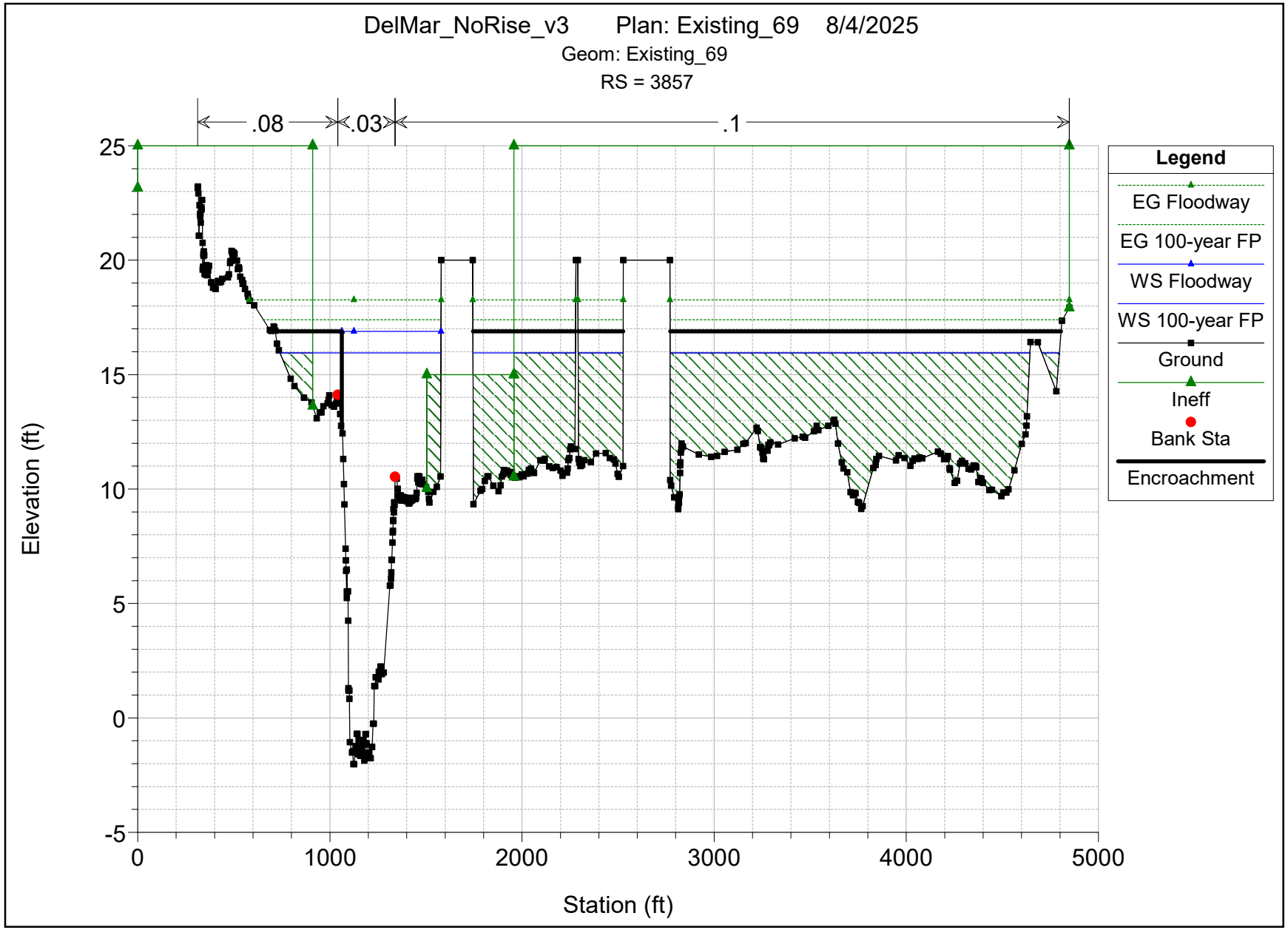

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 4672
.035
.03
.04
Elevation (ft)
Station (ft)
80
60
40
20
0
-20
0
1000
2000
3000
4000
5000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

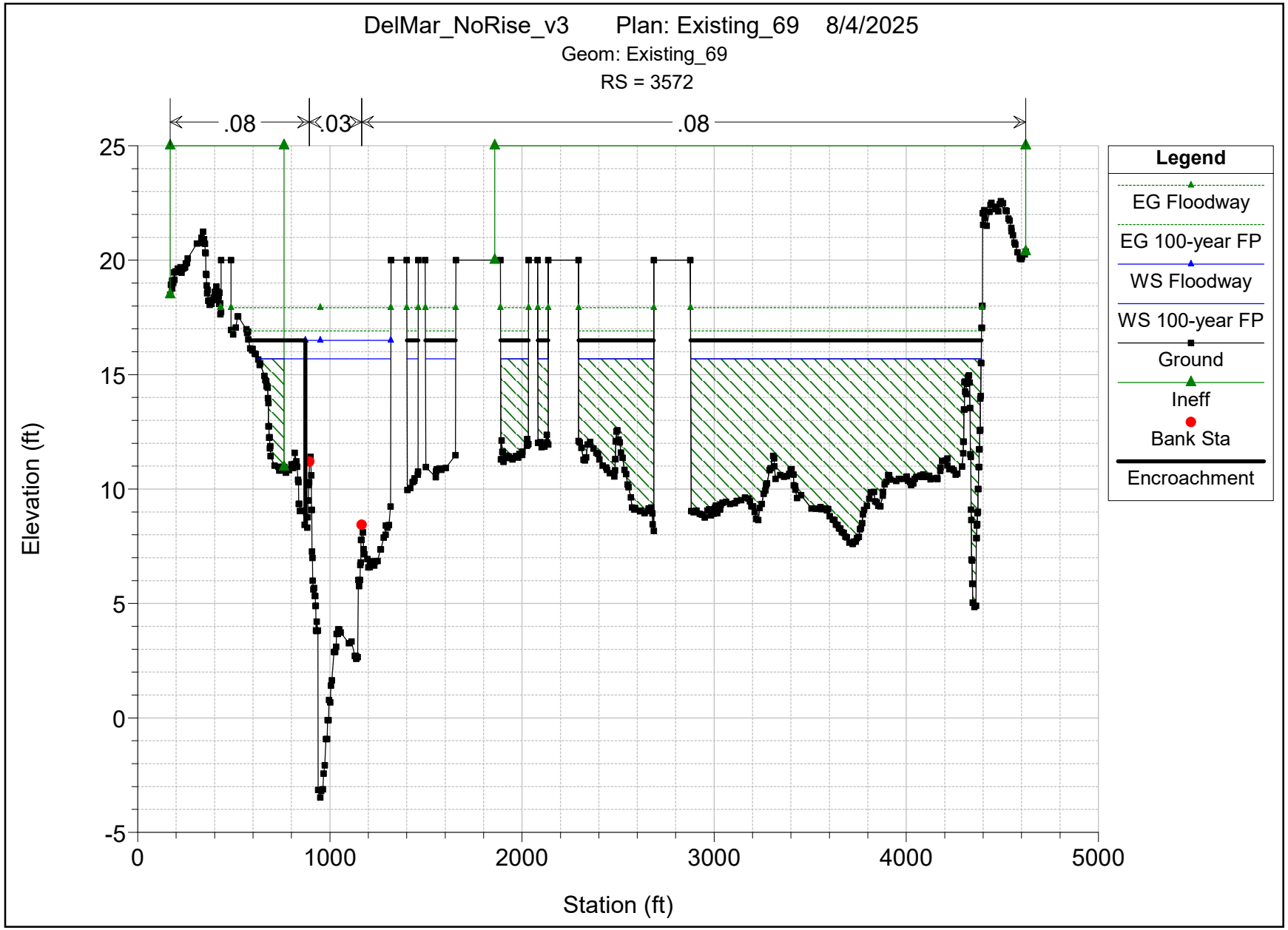

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 4307
.08
.03
.06
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

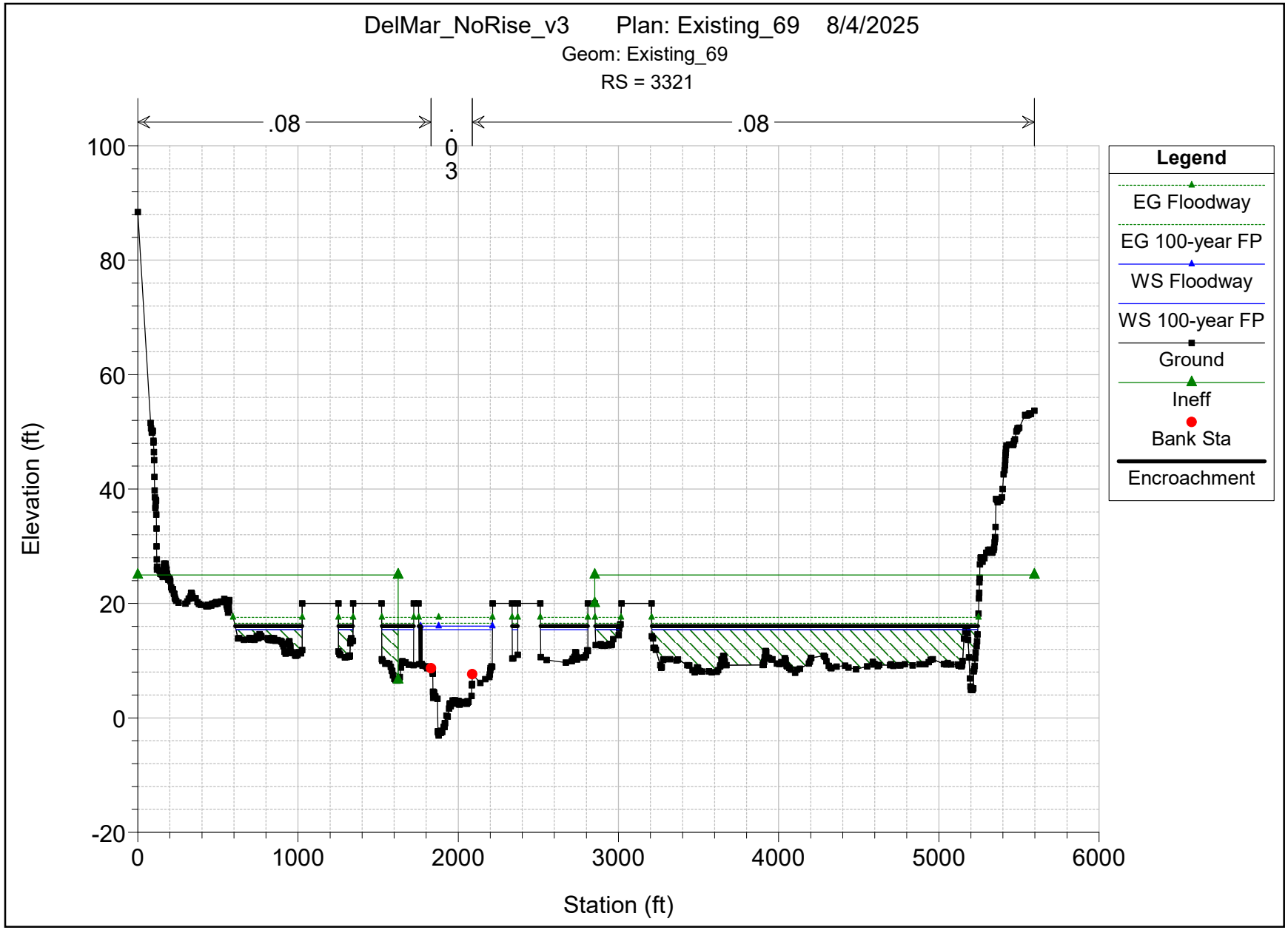

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 4039
.08
.03
.08
Elevation (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

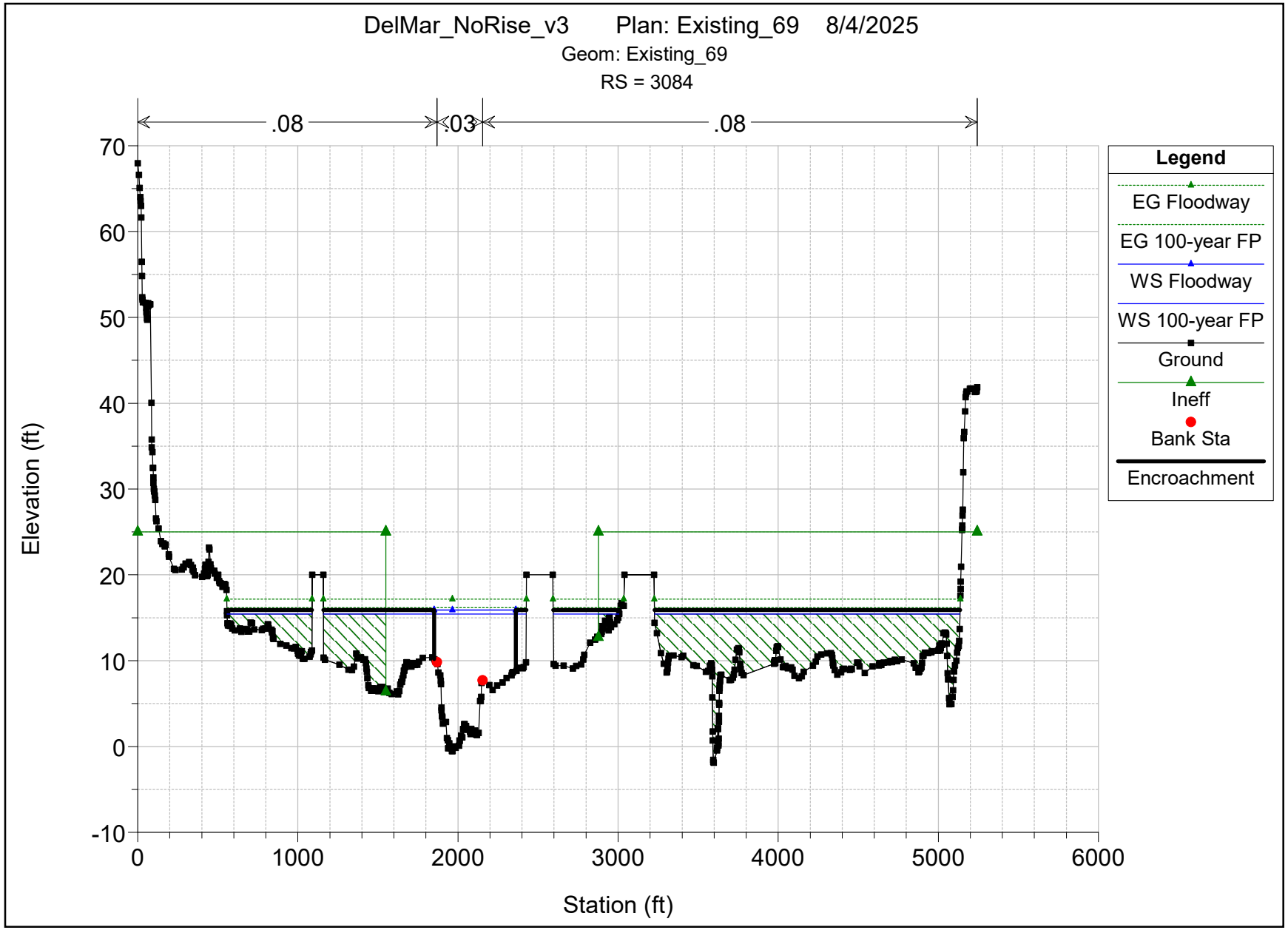

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 3926
.08
.03
.08
Elevation (ft)
Station (ft)
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment

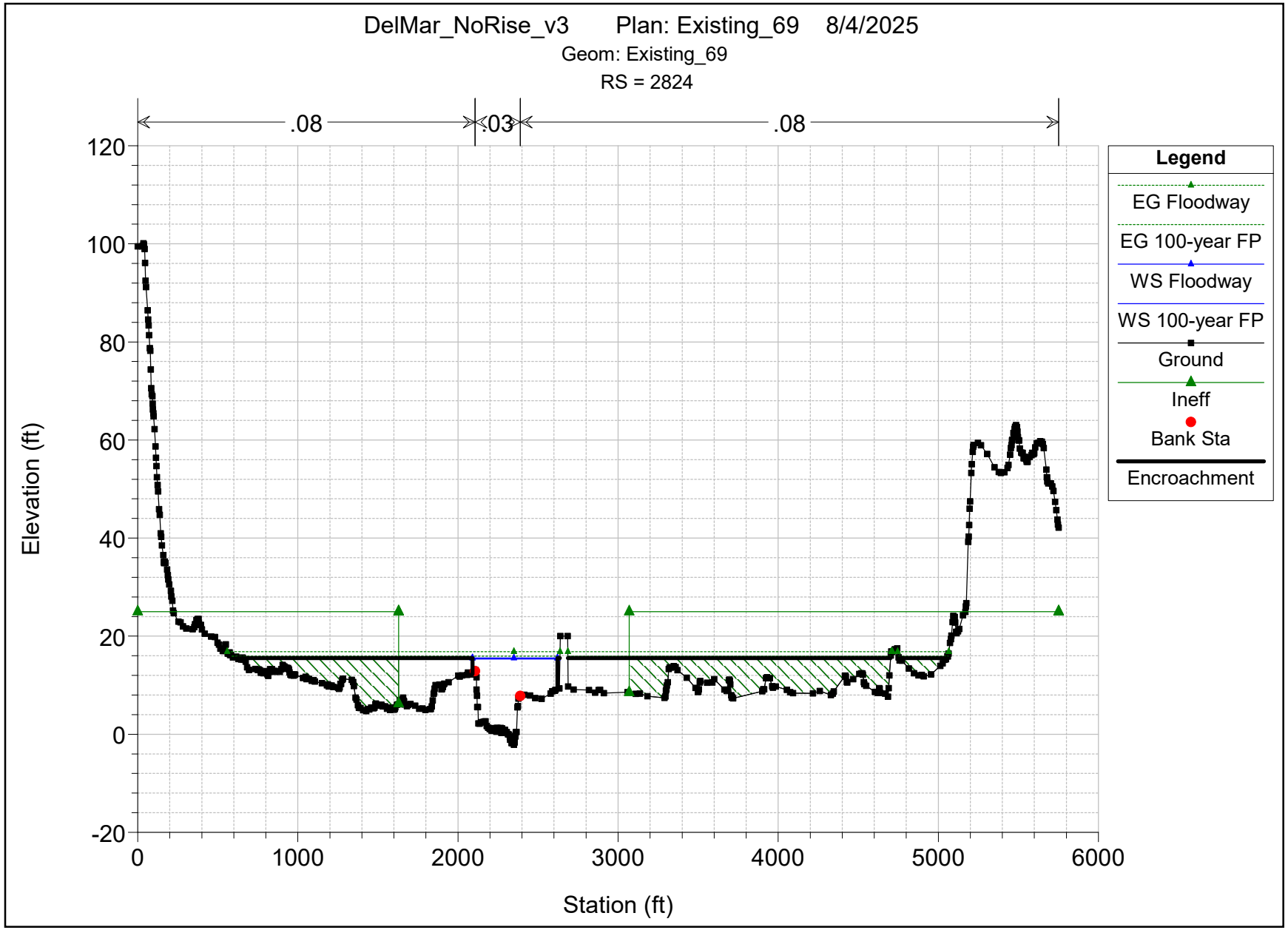

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 3900 BR Jimmy Durante Bridge: deck & pier geometry from Chang model. Int
.08
.03
.08
Elevation (ft)
Station (ft)
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment

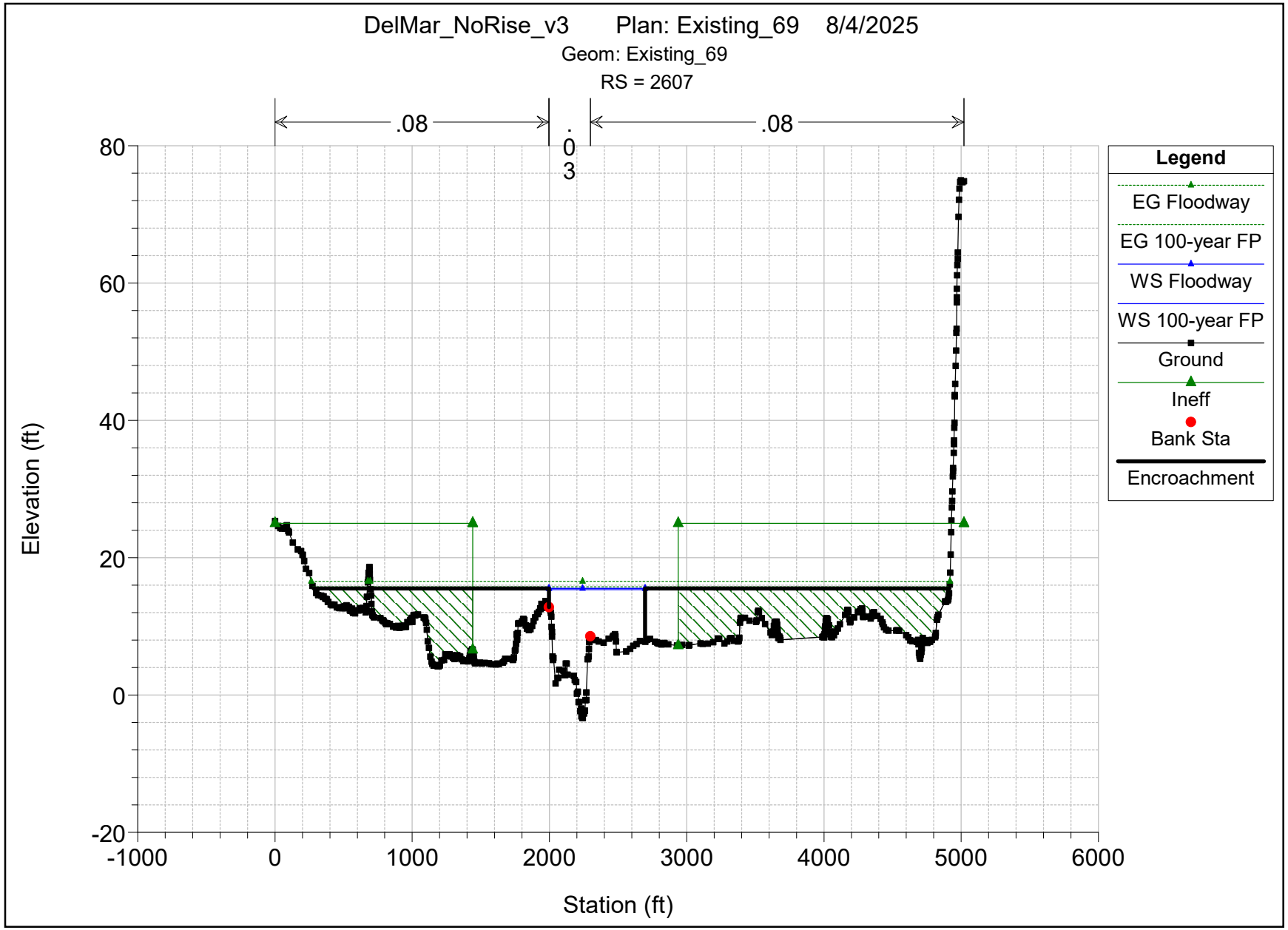

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 3857
.08
.03
.1
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000

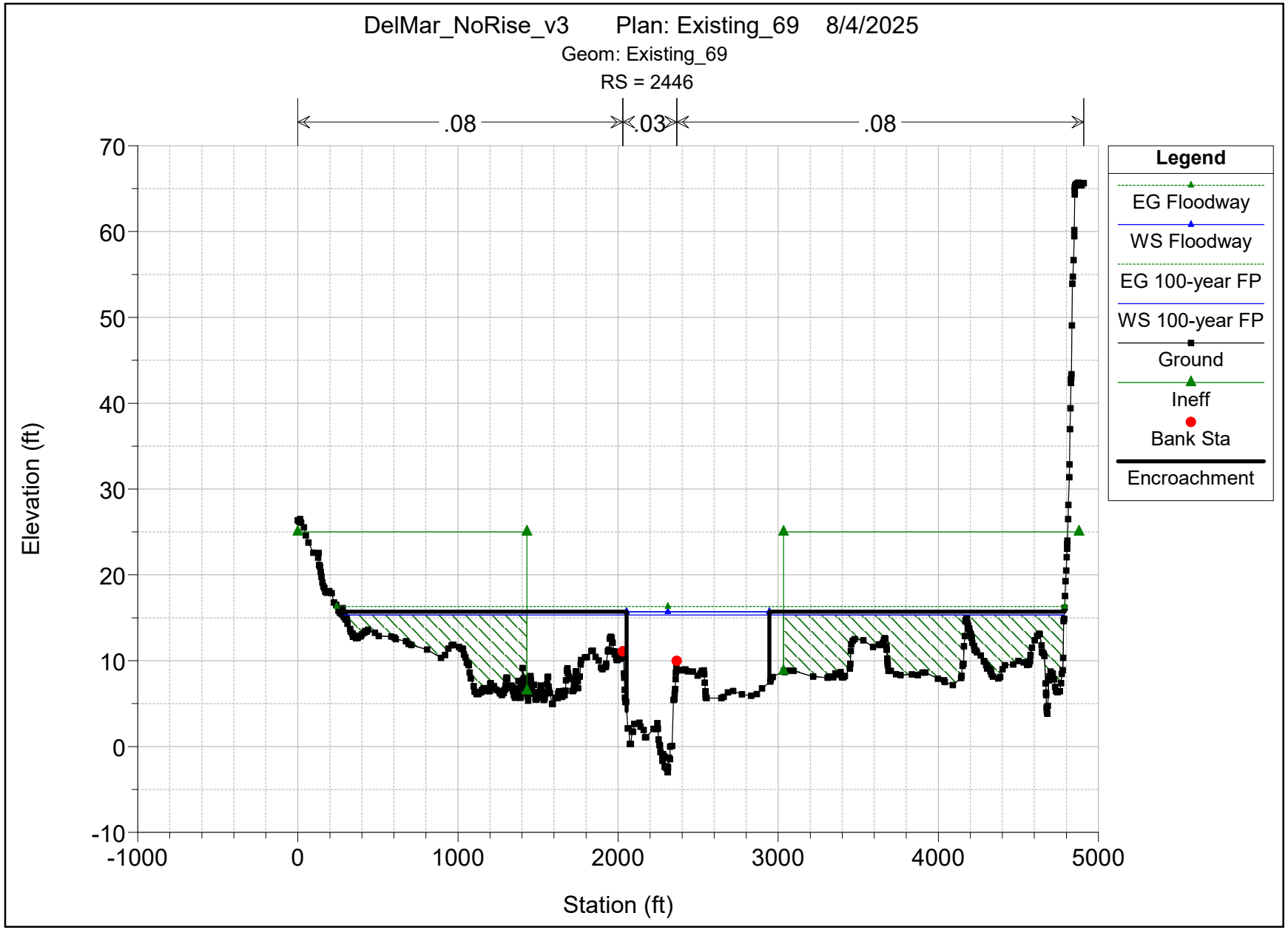

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 3572
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000

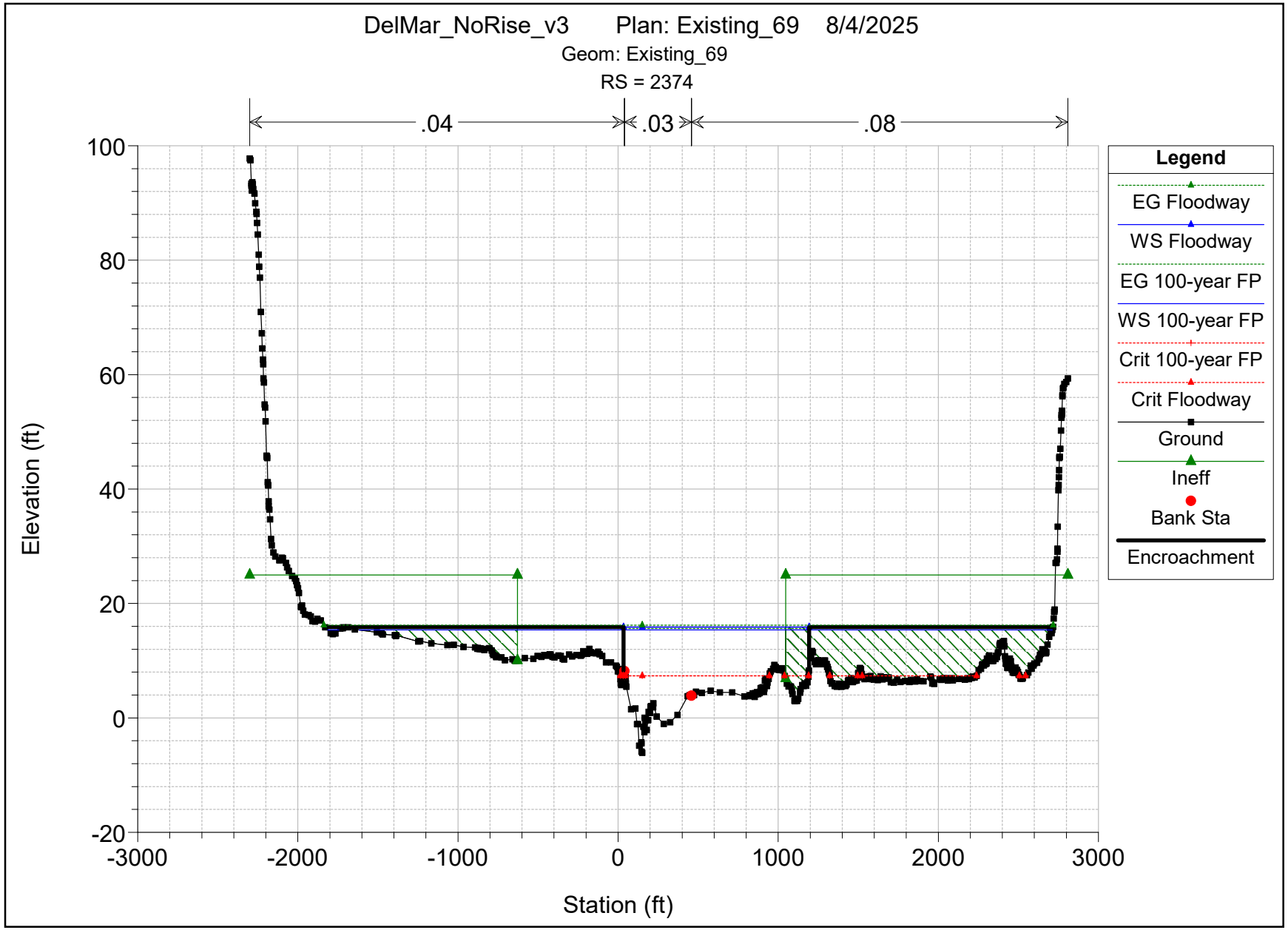

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 3321
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
80
60
40
20
0
-20
0
1000
2000
3000
4000
5000
6000

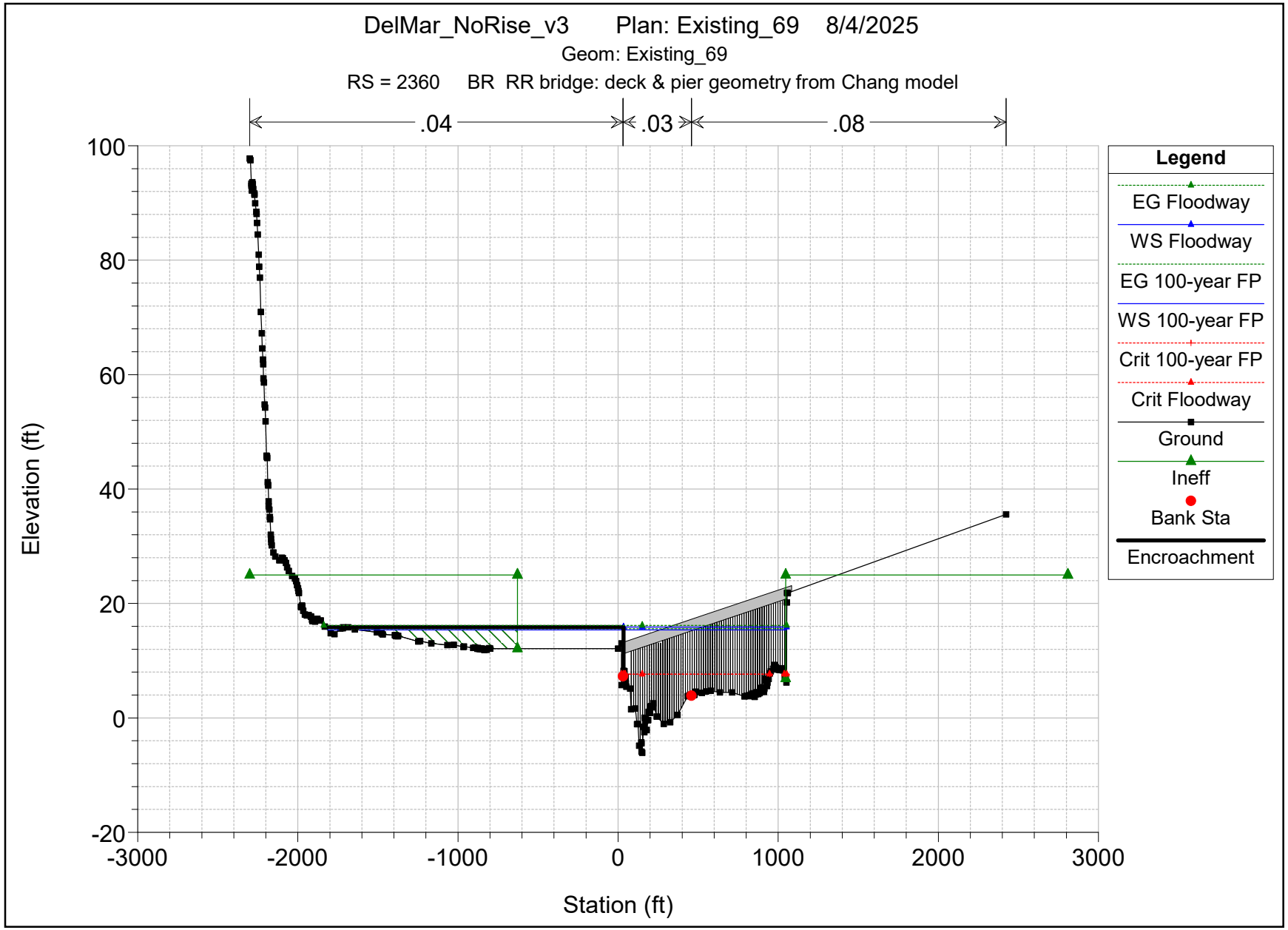

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 3084
.08
.03
.08
Elevation (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

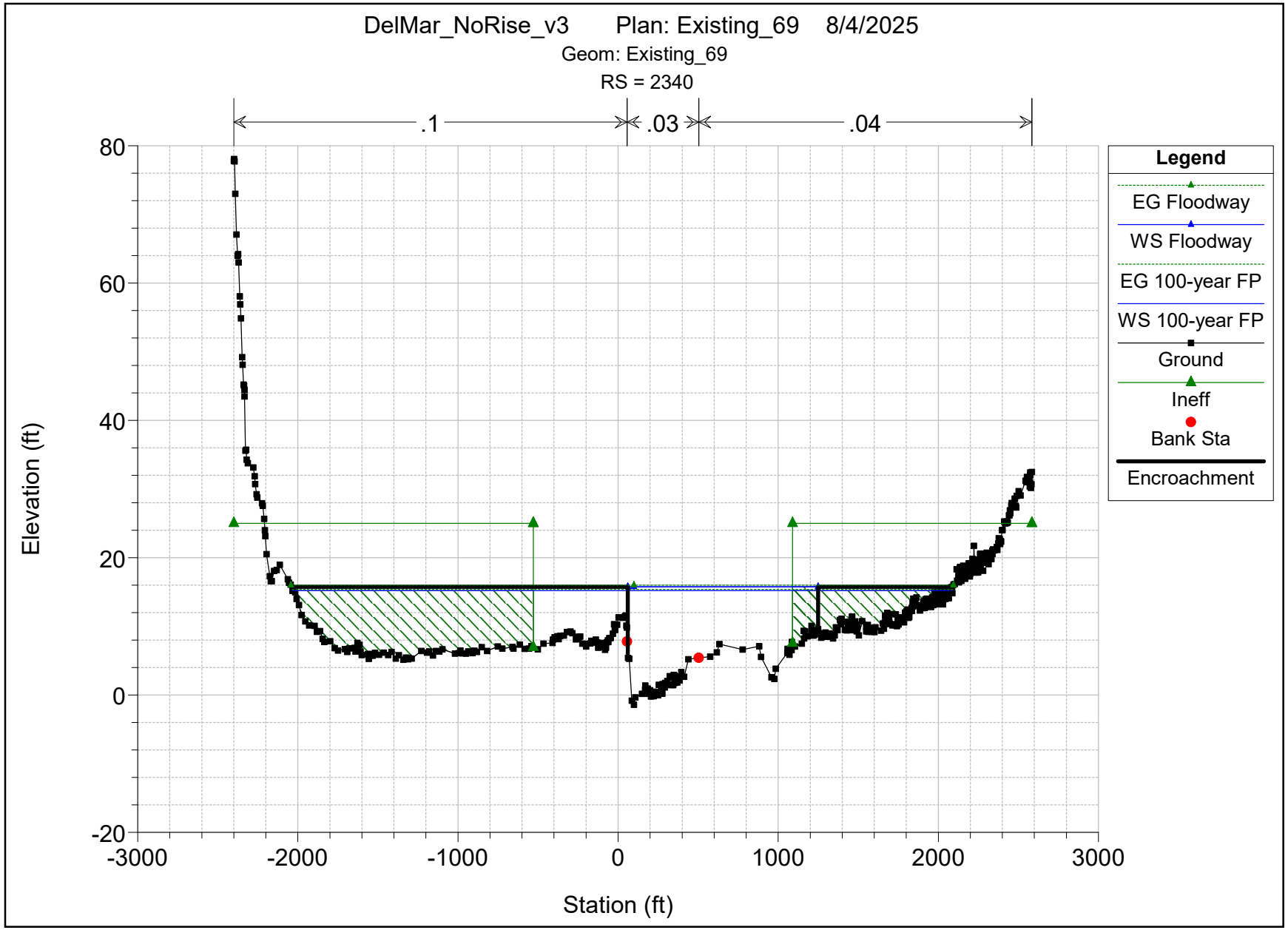

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2824
.08
.03
.08
120
100
80
60
40
20
0
-20
Elevation (ft)
0
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

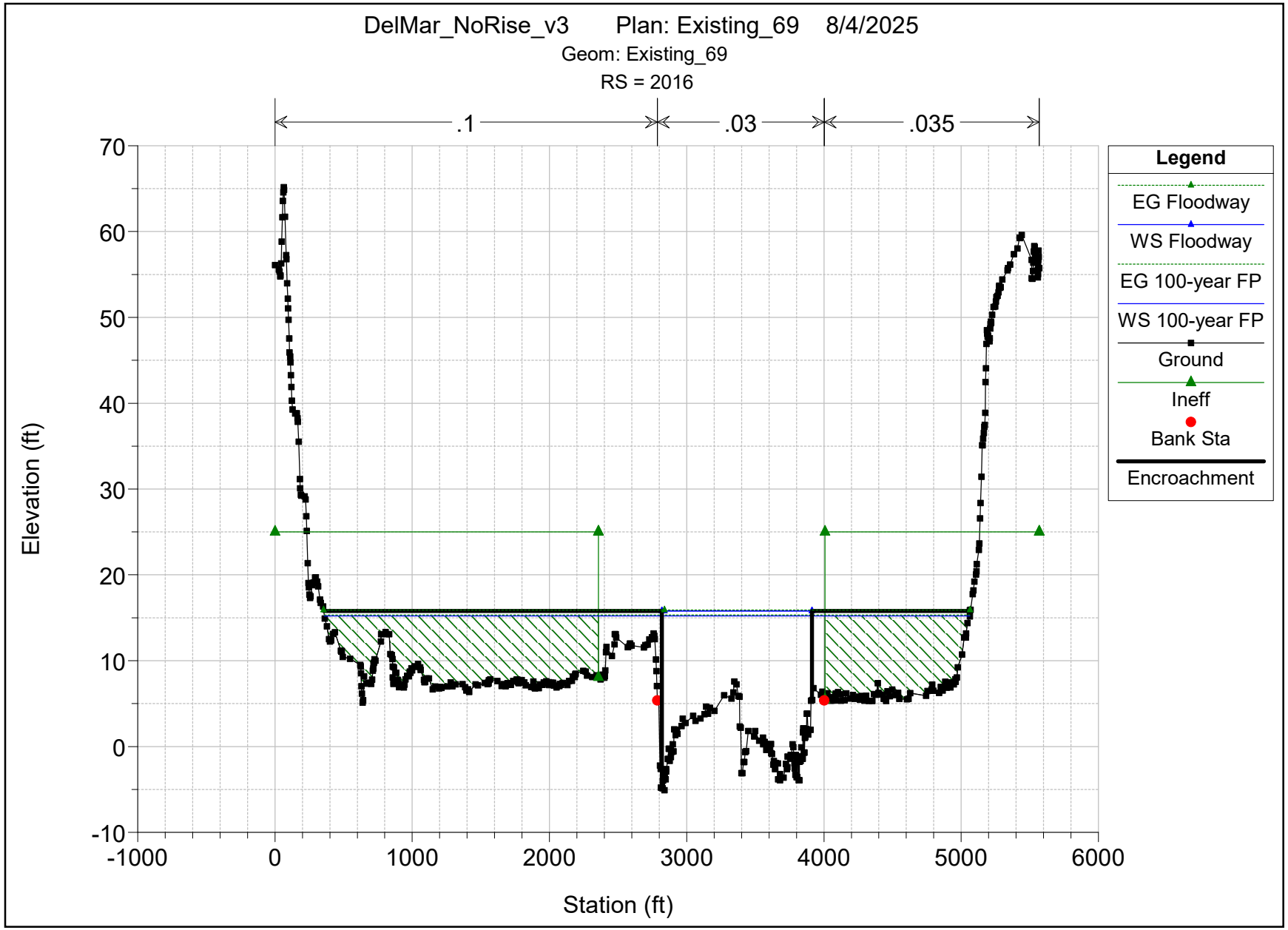

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2607
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
80
60
40
20
0
-20
-1000
0
1000
2000
3000
4000
5000
6000
Station (ft)

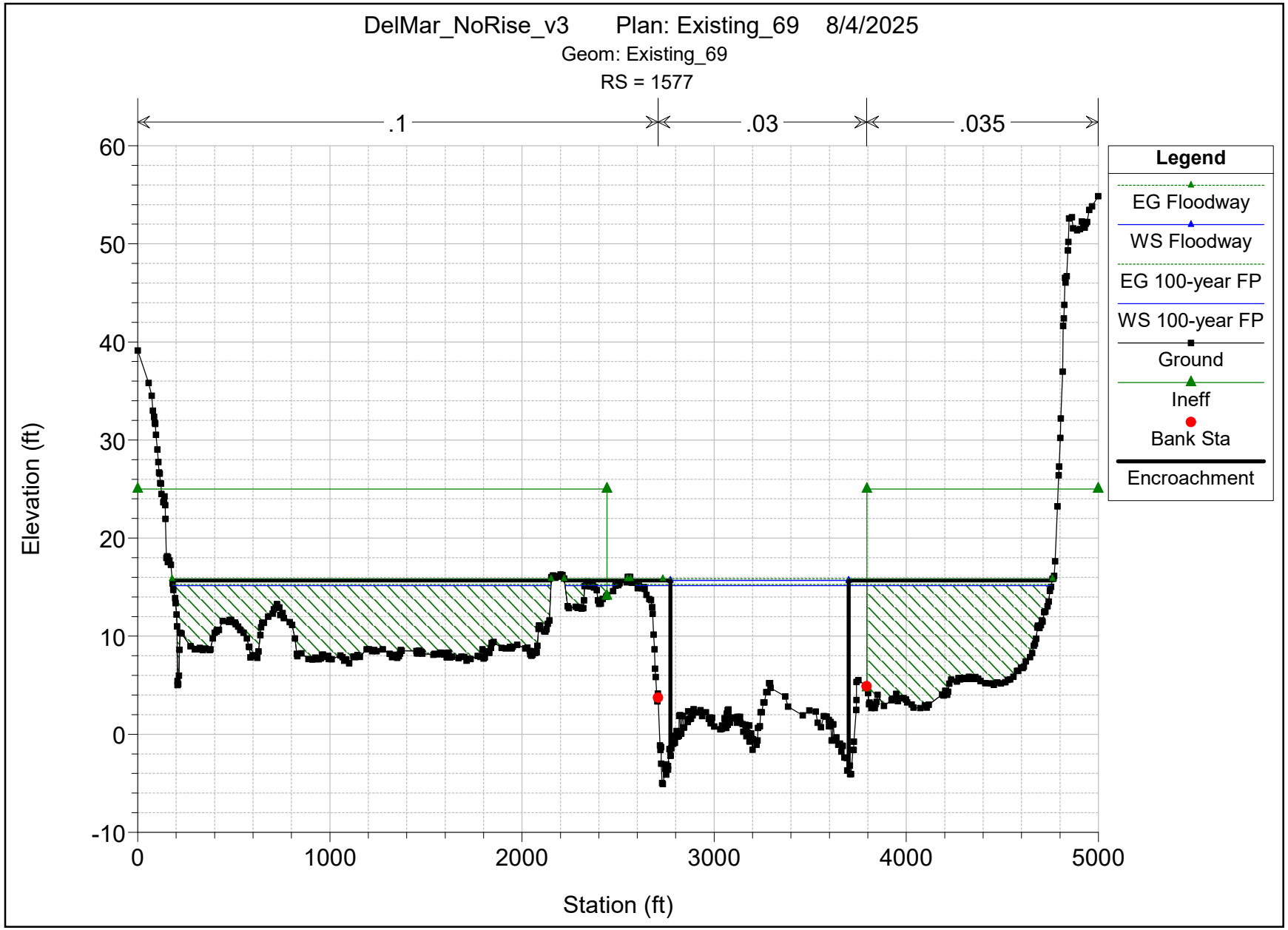

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2446
.08
.03
.08
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
70
60
50
40
30
20
10
0
-10
-1000
0
1000
2000
3000
4000
5000
Station (ft)

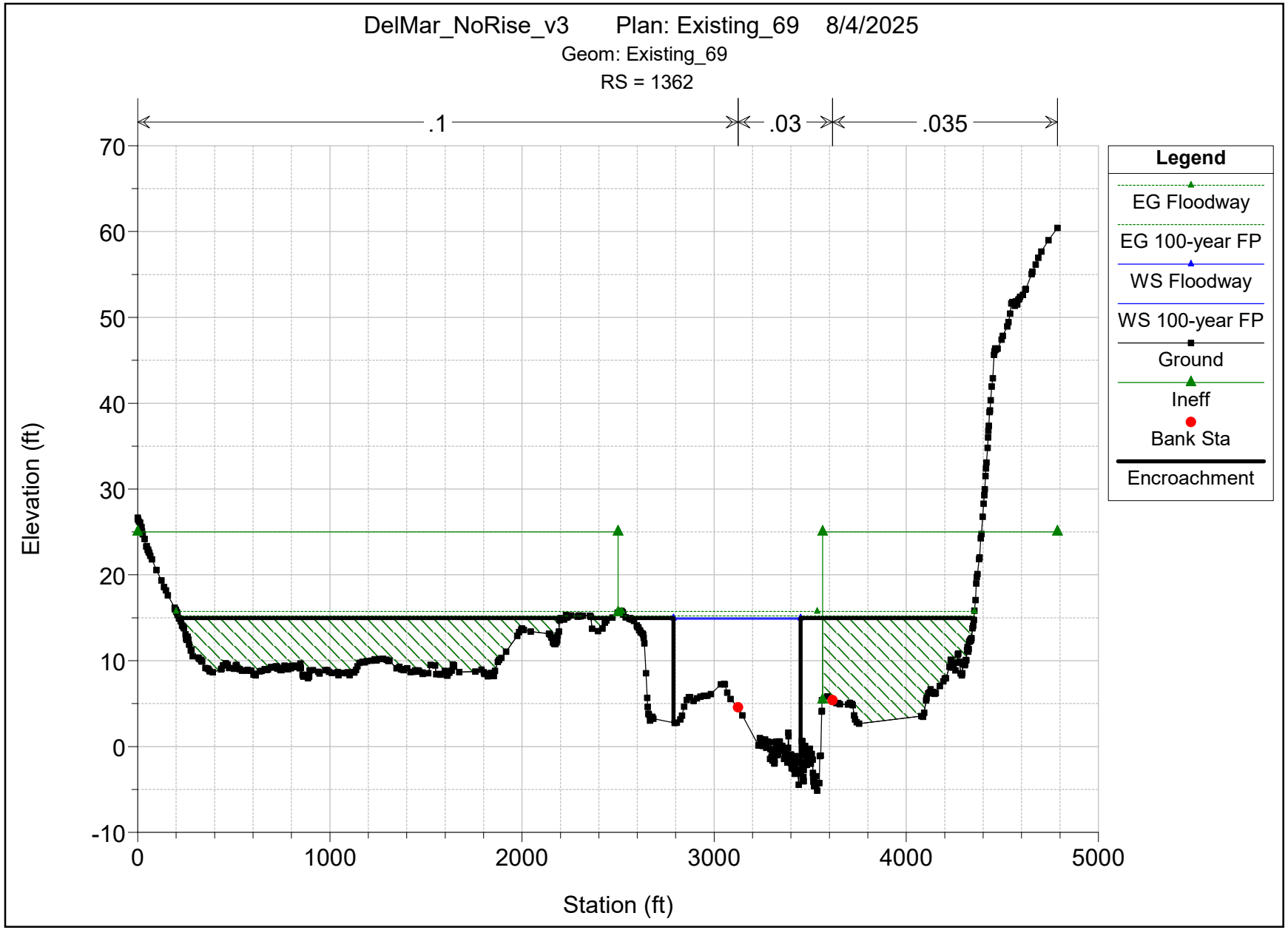

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2374
.04
.03
.08
Elevation (ft)
100
80
60
40
20
0
-20
-3000
-2000
-1000
0
1000
2000
3000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Crit 100-year FP
Crit Floodway
Ground
Ineff
Bank Sta
Encroachment

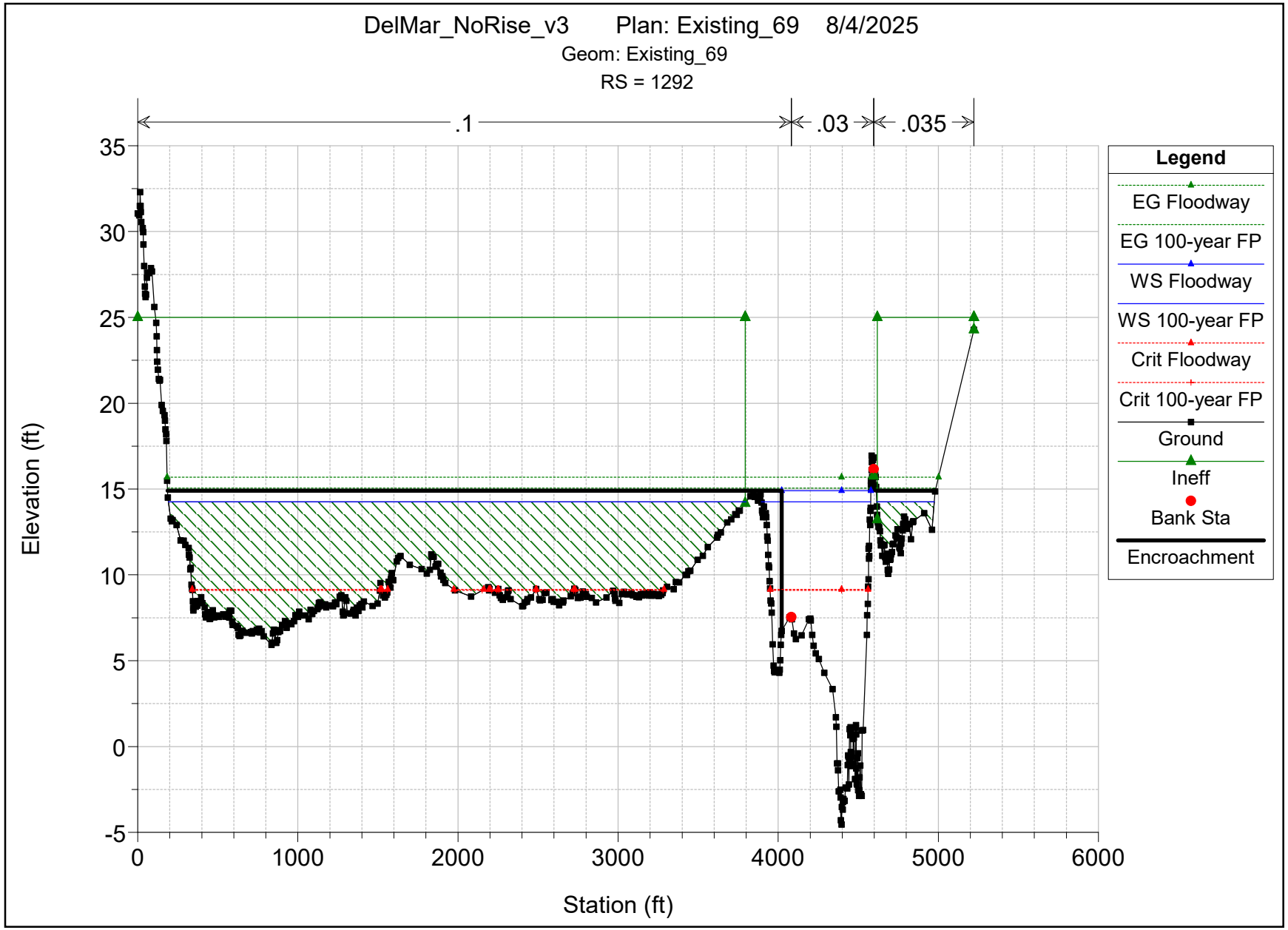

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2360 BR RR bridge: deck & pier geometry from Chang model
.04
.03
.08
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Crit 100-year FP
Crit Floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
80
60
40
20
0
-20
-3000
-2000
-1000
0
1000
2000
3000

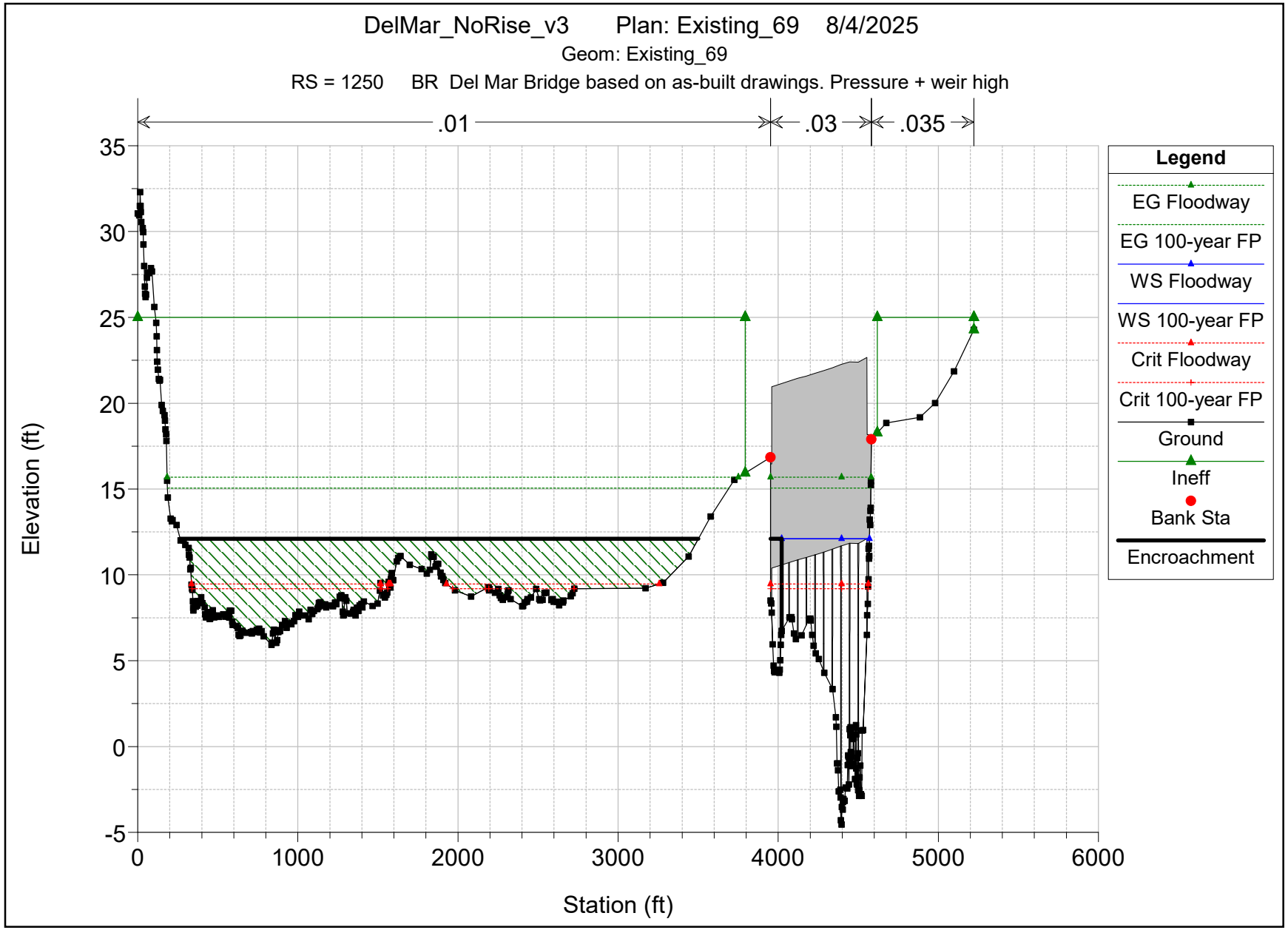

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2340
.1
.03
.04
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
80
60
40
20
0
-20
-3000
-2000
-1000
0
1000
2000
3000

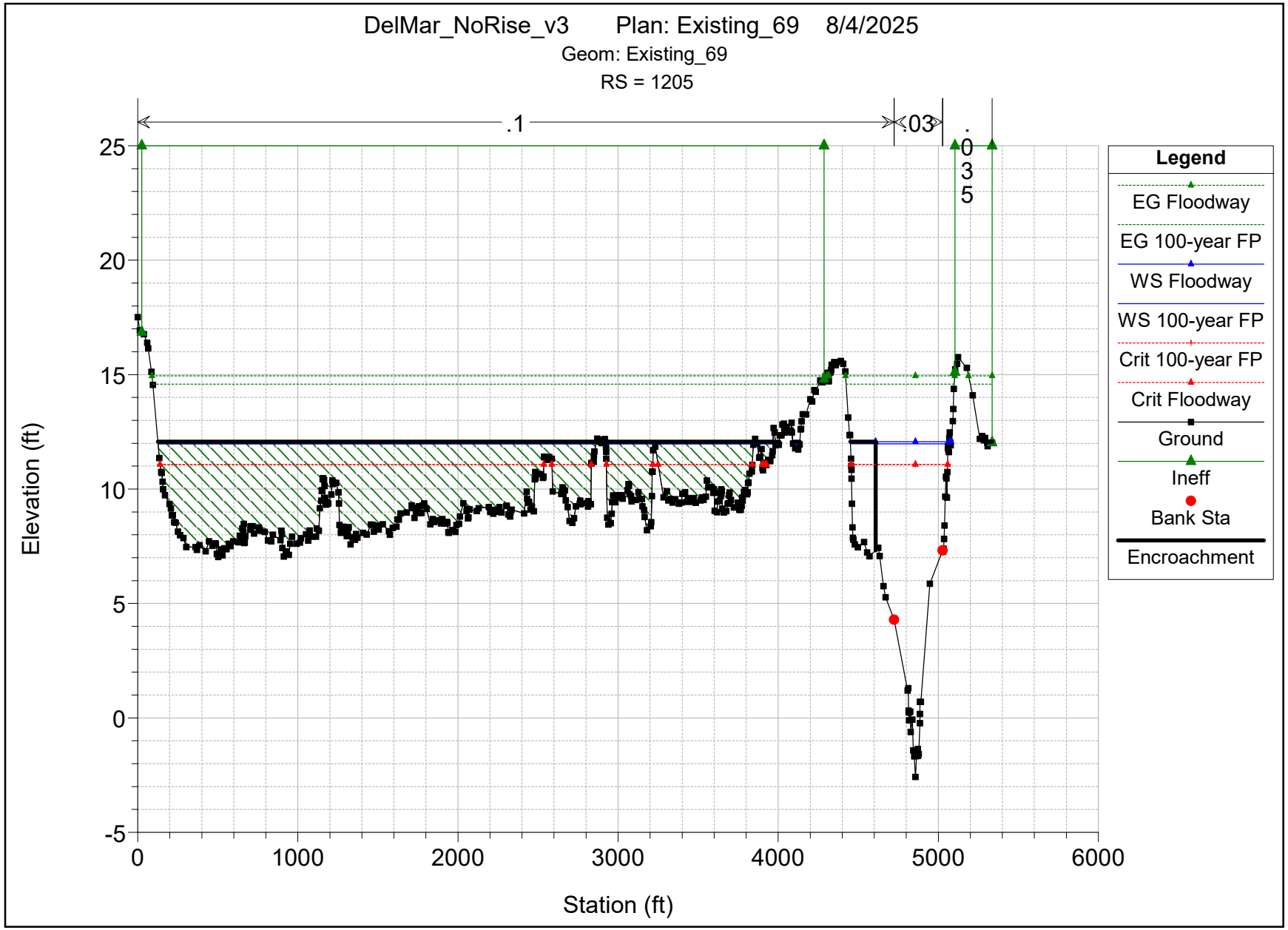

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 2016
.1
.03
.035
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
70
60
50
40
30
20
10
0
-10
-1000
0
1000
2000
3000
4000
5000
6000

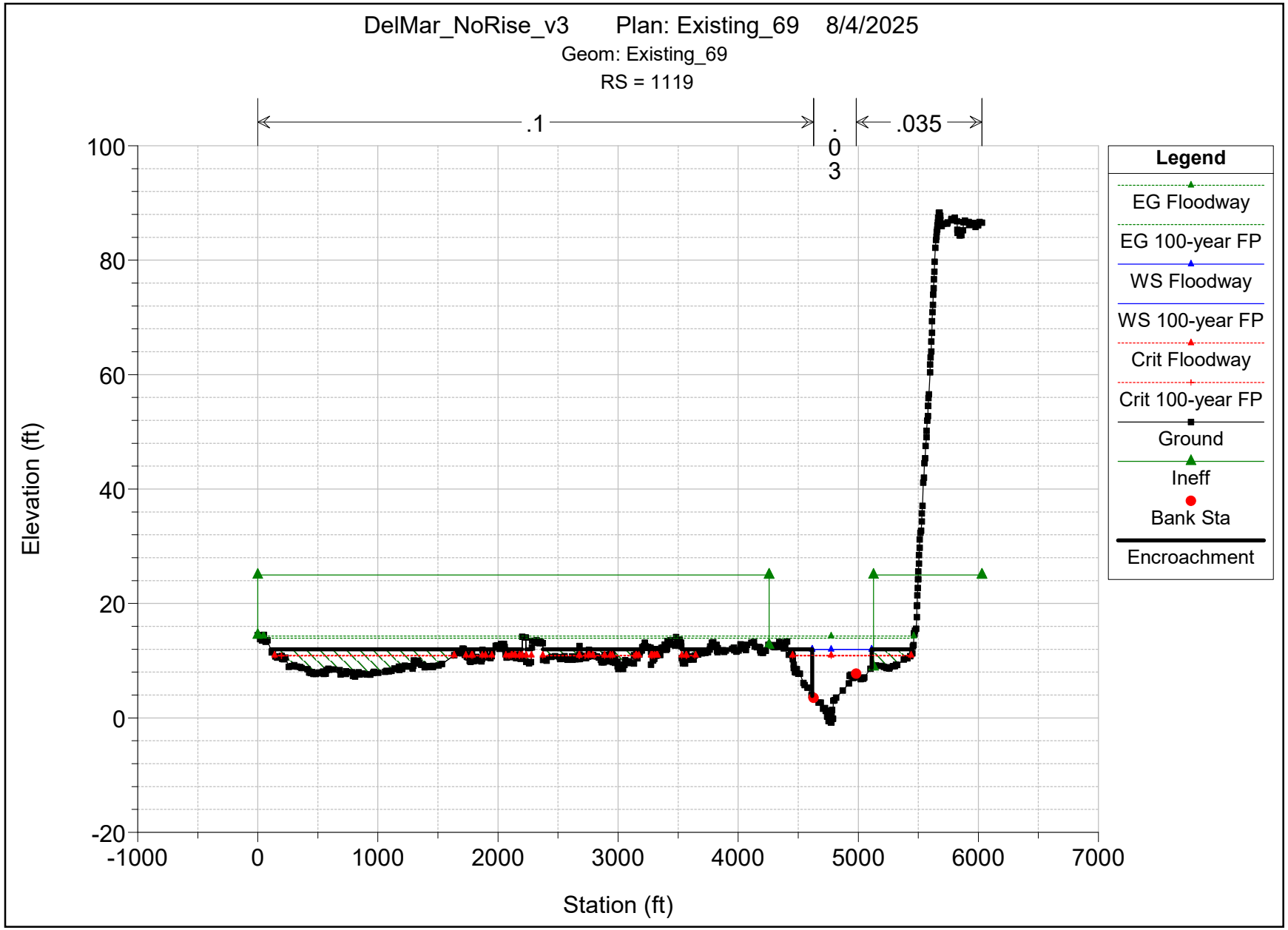

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 1577
.1
.03
.035
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000


DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 1362
.1
.03
.035
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
Station (ft)


DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 1292
.1
.03
.035
Elevation (ft)
Station (ft)
35
30
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment

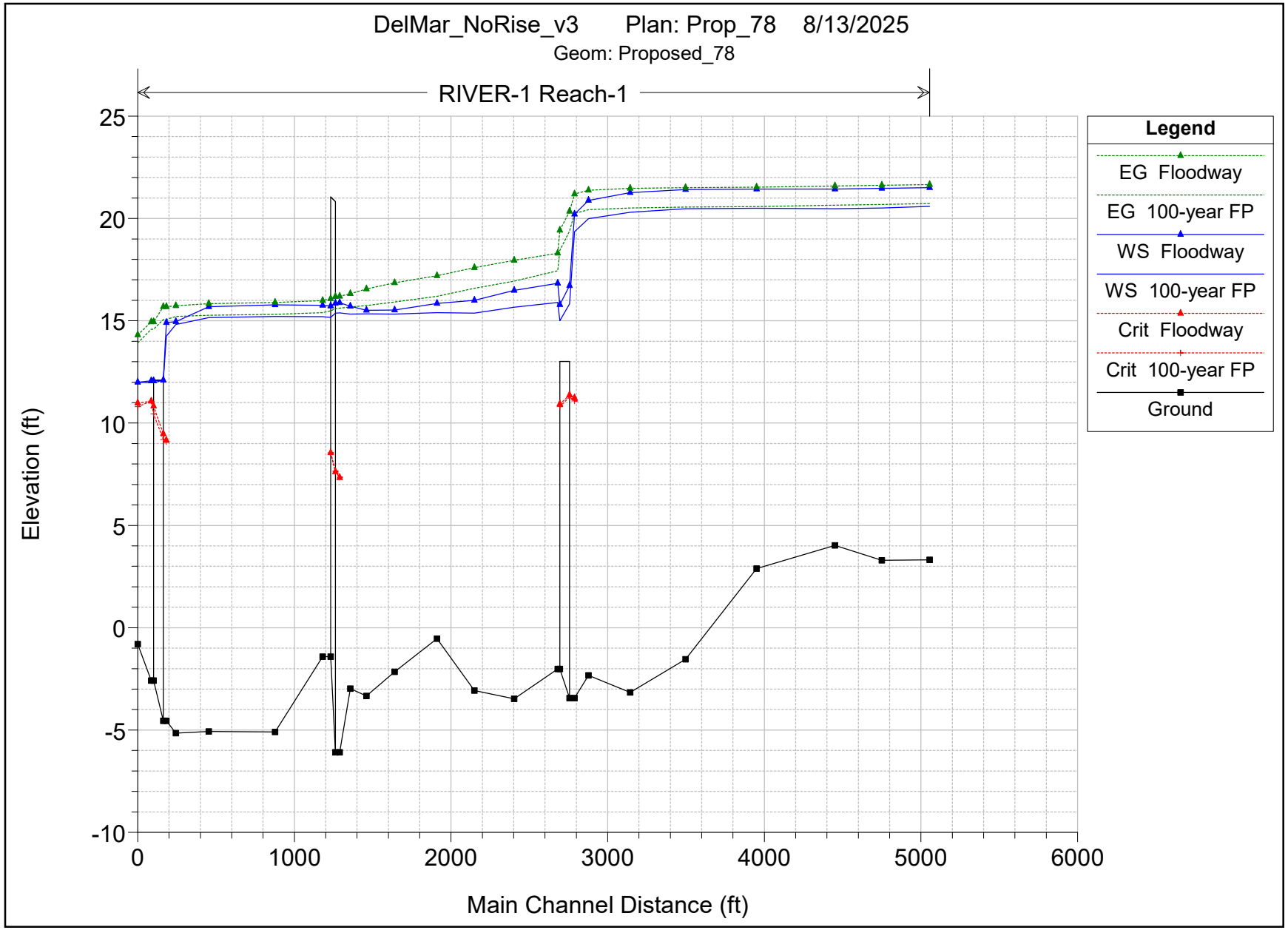

DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 1250 BR Del Mar Bridge based on as-built drawings. Pressure + weir high
.01
.03
.035
Elevation (ft)
Station (ft)
35
30
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment


DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 1205
.1
.03
.035
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit 100-year FP
Crit Floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000


DelMar_NoRise_v3 Plan: Existing_69 8/4/2025
Geom: Existing_69
RS = 1119
.1
.03
.035
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
80
60
40
20
0
-20
-1000
0
1000
2000
3000
4000
5000
6000
7000

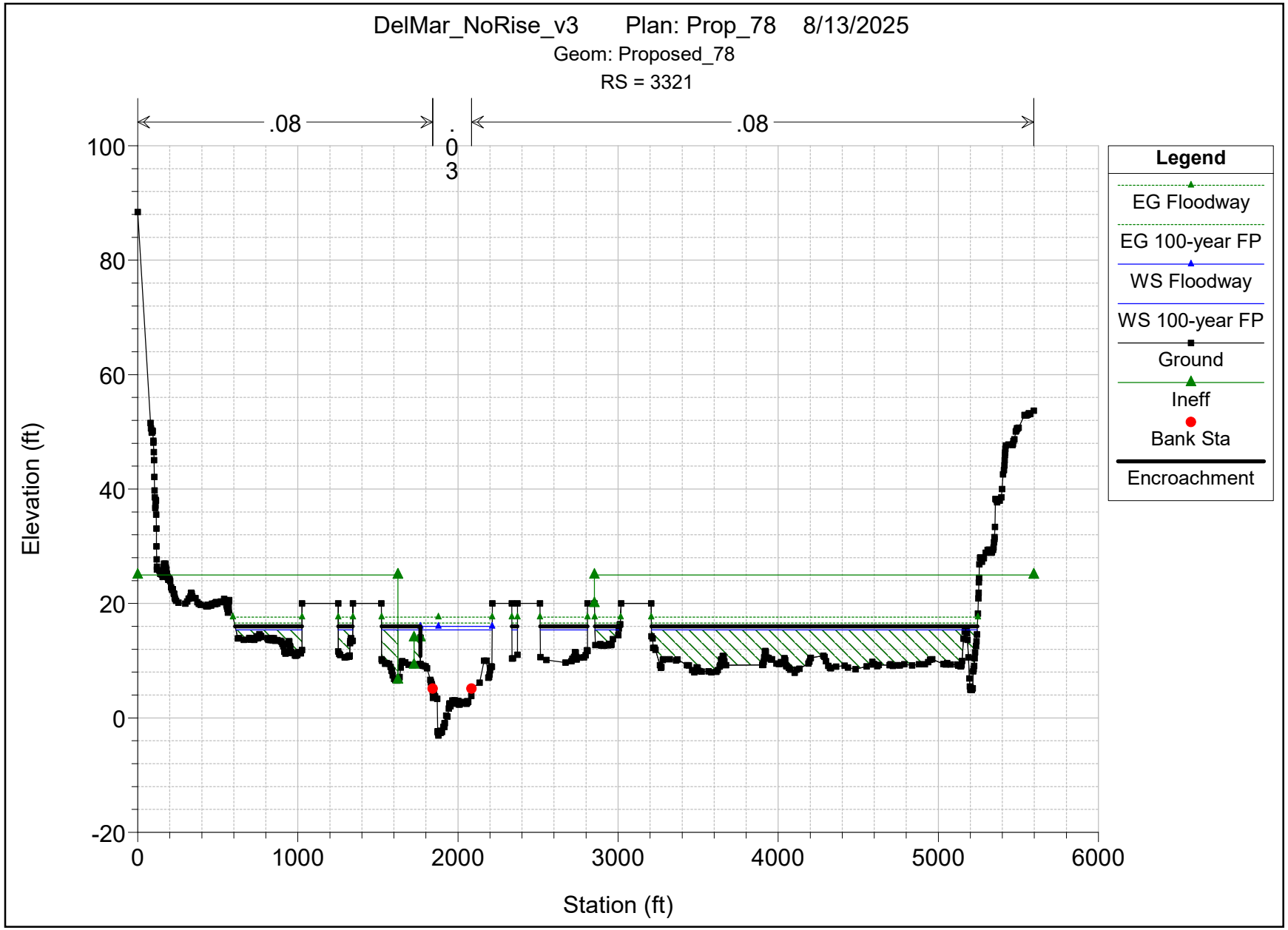
# Appendix G

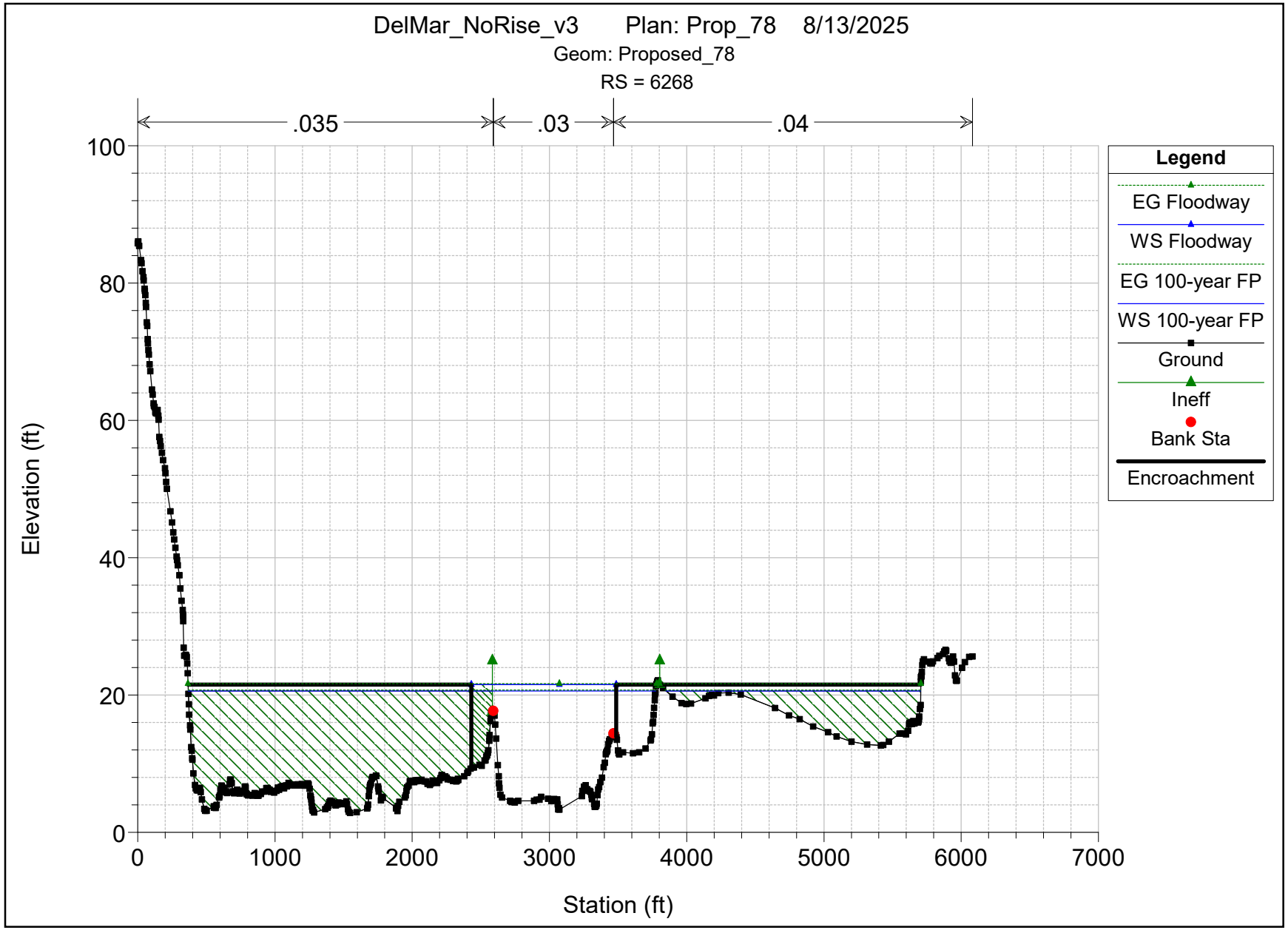
## Proposed Conditions Model Results

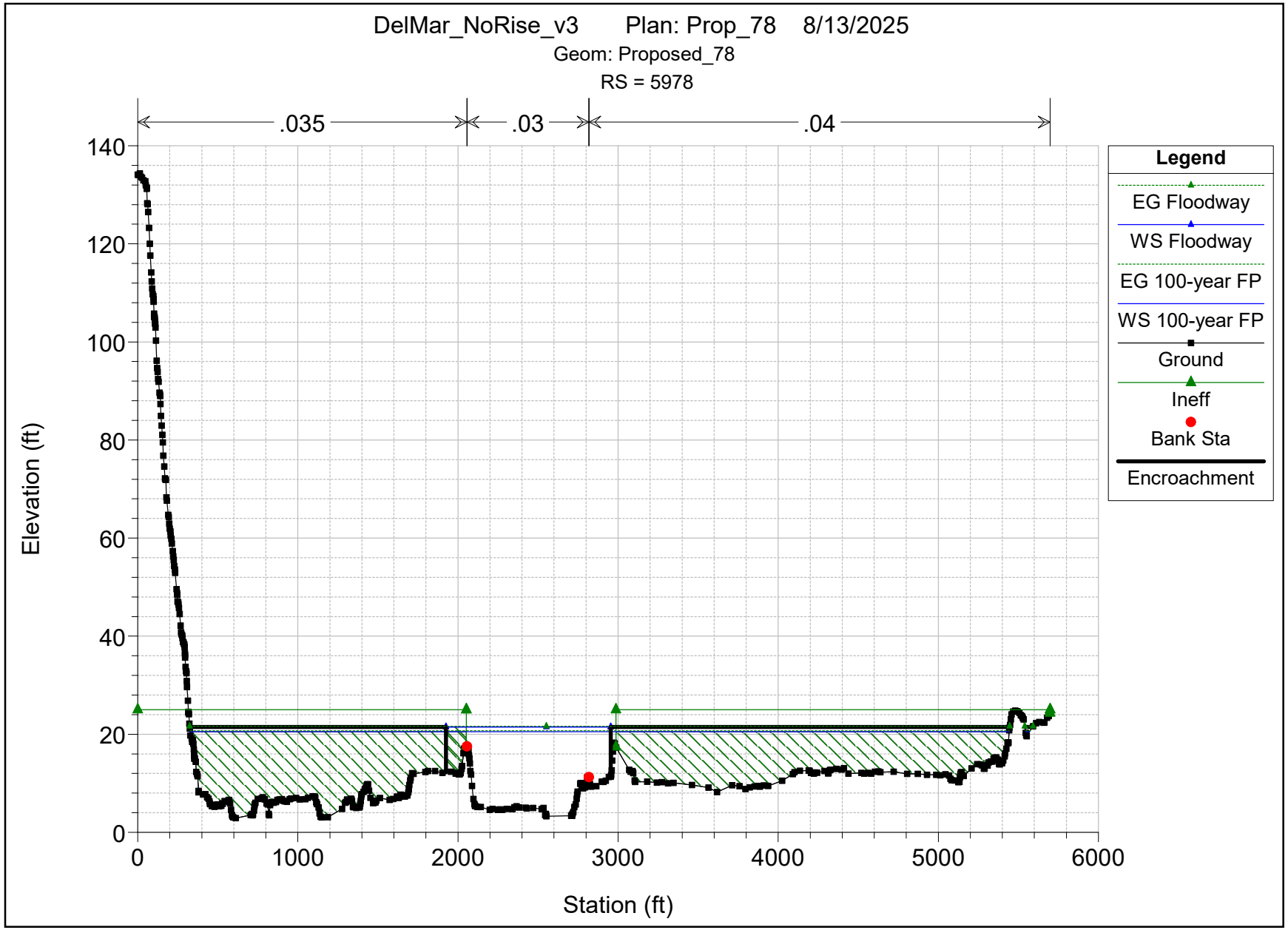

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RIVER-1 Reach-1
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Elevation (ft)
Main Channel Distance (ft)
25
20
15
10
5
0
-5
-10
0
1000
2000
3000
4000
5000
6000

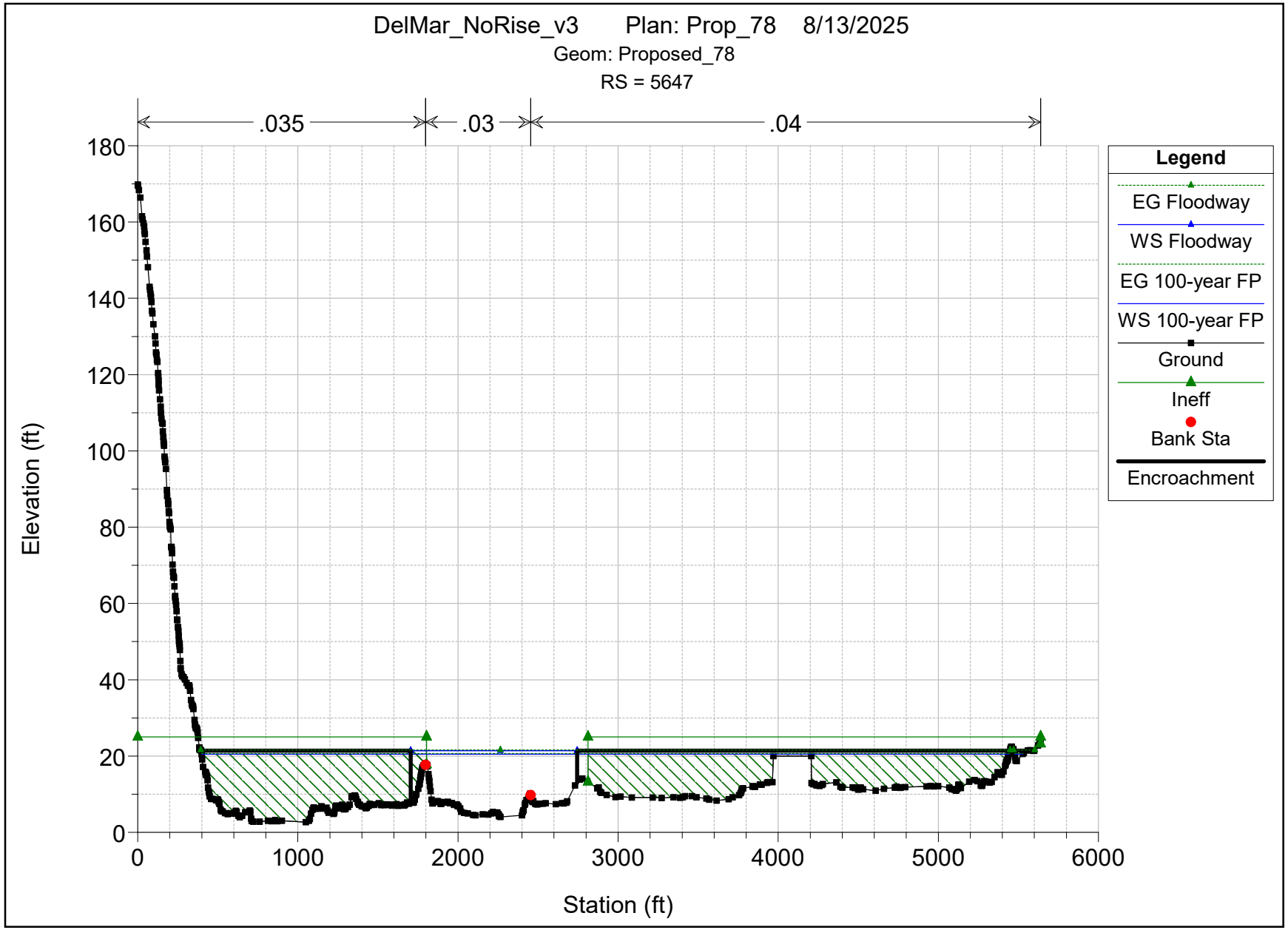
HEC-RAS Plan: Prop_78 River: RIVER-1 Reach: Reach-1

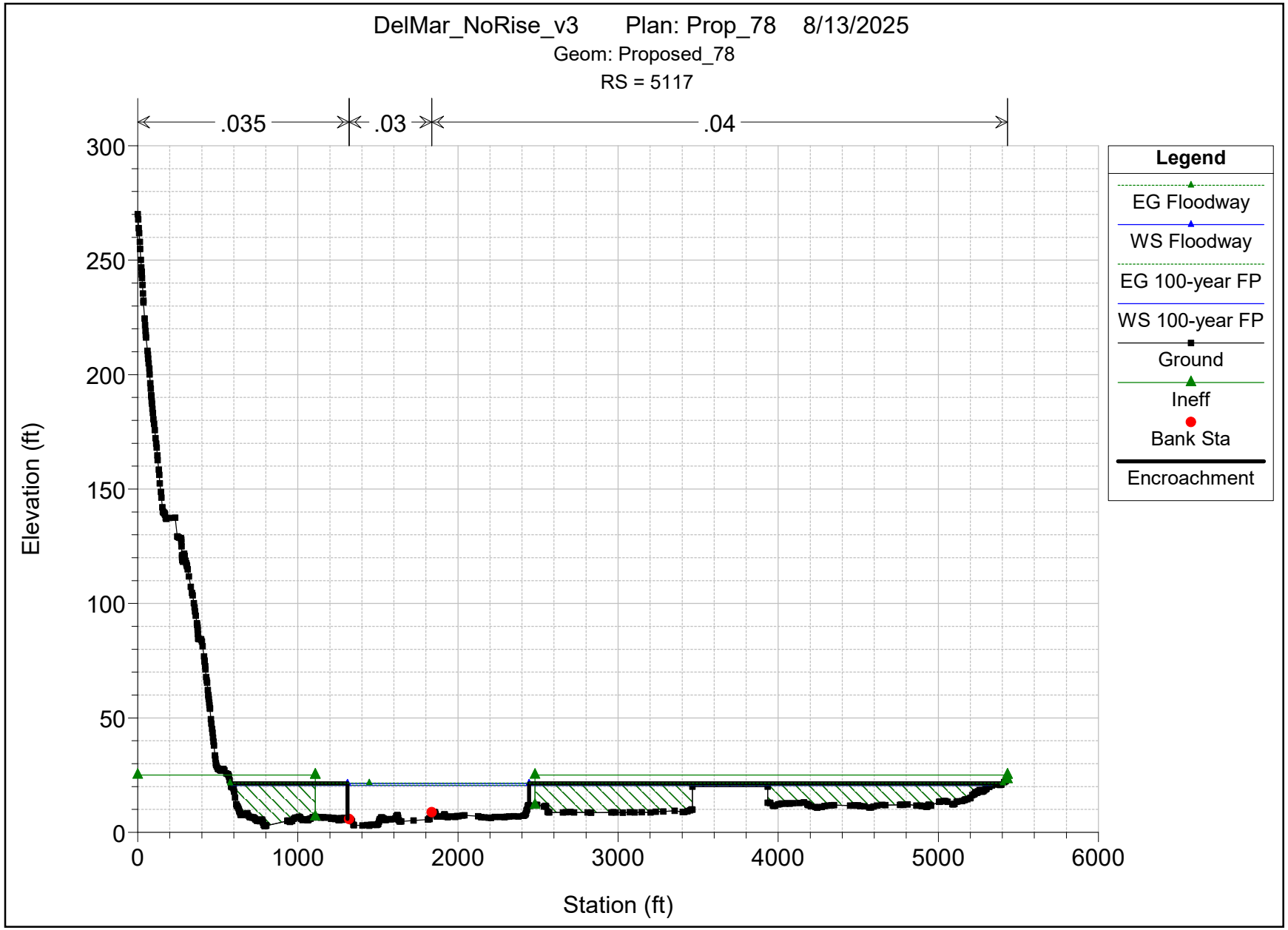
| Reach | River Sta | Profile | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach-1 | 6268 | 100-year FP | 42400.00 | 3.32 | 20.60 | | 20.73 | 0.000103 | 3.01 | 15315.64 | 5262.49 | 0.14 |
| Reach-1 | 6268 | Floodway | 42400.00 | 3.32 | 21.51 | | 21.66 | 0.000101 | 3.09 | 13816.59 | 1057.13 | 0.14 |
| Reach-1 | 5978 | 100-year FP | 42400.00 | 3.29 | 20.51 | | 20.69 | 0.000130 | 3.44 | 13039.70 | 5140.14 | 0.16 |
| Reach-1 | 5978 | Floodway | 42400.00 | 3.29 | 21.47 | | 21.62 | 0.000107 | 3.24 | 13748.52 | 1028.44 | 0.14 |
| Reach-1 | 5647 | 100-year FP | 42400.00 | 4.02 | 20.47 | | 20.65 | 0.000151 | 3.58 | 13304.95 | 5087.23 | 0.17 |
| Reach-1 | 5647 | Floodway | 42400.00 | 4.02 | 21.43 | | 21.59 | 0.000125 | 3.40 | 13740.80 | 1039.98 | 0.15 |
| Reach-1 | 5117 | 100-year FP | 42400.00 | 2.89 | 20.50 | | 20.58 | 0.000072 | 2.62 | 19561.64 | 4753.47 | 0.12 |
| Reach-1 | 5117 | Floodway | 42400.00 | 2.89 | 21.43 | | 21.53 | 0.000083 | 2.93 | 17426.79 | 1134.18 | 0.13 |
| Reach-1 | 4672 | 100-year FP | 42400.00 | -1.54 | 20.48 | | 20.55 | 0.000063 | 2.62 | 20616.13 | 4447.74 | 0.11 |
| Reach-1 | 4672 | Floodway | 42400.00 | -1.54 | 21.41 | | 21.51 | 0.000067 | 2.80 | 18346.75 | 1137.28 | 0.12 |
| Reach-1 | 4307 | 100-year FP | 42400.00 | -3.16 | 20.30 | | 20.51 | 0.000189 | 4.59 | 15580.54 | 4152.31 | 0.19 |
| Reach-1 | 4307 | Floodway | 42400.00 | -3.16 | 21.26 | | 21.47 | 0.000190 | 4.56 | 14281.76 | 885.24 | 0.19 |
| Reach-1 | 4039 | 100-year FP | 42400.00 | -2.33 | 19.99 | | 20.43 | 0.000333 | 6.31 | 12620.06 | 3861.90 | 0.26 |
| Reach-1 | 4039 | Floodway | 42400.00 | -2.33 | 20.88 | | 21.38 | 0.000329 | 6.46 | 11072.08 | 745.38 | 0.26 |
| Reach-1 | 3926 | 100-year FP | 40880.00 | -3.44 | 19.35 | 11.08 | 20.25 | 0.000618 | 8.08 | 8155.46 | 3976.30 | 0.34 |
| Reach-1 | 3926 | Floodway | 41800.00 | -3.44 | 20.21 | 11.23 | 21.19 | 0.000602 | 8.24 | 6962.06 | 669.94 | 0.34 |
| Reach-1 | 3900 | | Bridge | | | | | | | | | |
| Reach-1 | 3857 | 100-year FP | 40880.00 | -2.02 | 15.90 | | 17.45 | 0.001350 | 10.28 | 5473.91 | 3565.60 | 0.49 |
| Reach-1 | 3857 | Floodway | 41800.00 | -2.02 | 16.84 | | 18.30 | 0.001136 | 9.98 | 5416.27 | 517.13 | 0.45 |
| Reach-1 | 3572 | 100-year FP | 40880.00 | -3.48 | 15.66 | | 16.94 | 0.001326 | 9.94 | 6545.99 | 3009.91 | 0.48 |
| Reach-1 | 3572 | Floodway | 41800.00 | -3.48 | 16.49 | | 17.96 | 0.001312 | 10.29 | 5311.80 | 444.81 | 0.48 |
| Reach-1 | 3321 | 100-year FP | 40880.00 | -3.07 | 15.38 | | 16.58 | 0.001233 | 9.81 | 7271.00 | 3698.89 | 0.47 |
| Reach-1 | 3321 | Floodway | 41800.00 | -3.07 | 16.00 | | 17.60 | 0.001386 | 10.71 | 5182.08 | 448.62 | 0.50 |
| Reach-1 | 3084 | 100-year FP | 40880.00 | -0.54 | 15.40 | | 16.20 | 0.000898 | 8.30 | 9320.40 | 4118.64 | 0.40 |
| Reach-1 | 3084 | Floodway | 41800.00 | -0.54 | 15.84 | | 17.20 | 0.001225 | 9.91 | 5668.50 | 510.05 | 0.47 |
| Reach-1 | 2824 | 100-year FP | 40880.00 | -2.16 | 15.32 | | 15.92 | 0.000685 | 7.44 | 11100.94 | 4272.19 | 0.35 |
| Reach-1 | 2824 | Floodway | 41800.00 | -2.16 | 15.52 | | 16.85 | 0.001168 | 9.81 | 5797.54 | 530.27 | 0.46 |
| Reach-1 | 2607 | 100-year FP | 40880.00 | -3.34 | 15.34 | | 15.75 | 0.000616 | 6.59 | 13101.21 | 4601.34 | 0.33 |
| Reach-1 | 2607 | Floodway | 41800.00 | -3.34 | 15.51 | | 16.55 | 0.001174 | 9.12 | 7056.09 | 701.30 | 0.45 |
| Reach-1 | 2446 | 100-year FP | 40880.00 | -2.98 | 15.32 | | 15.67 | 0.000443 | 5.80 | 14171.81 | 4497.36 | 0.28 |
| Reach-1 | 2446 | Floodway | 41800.00 | -2.98 | 15.71 | | 16.32 | 0.000643 | 7.12 | 9529.91 | 891.40 | 0.33 |
| Reach-1 | 2374 | 100-year FP | 41800.00 | -6.09 | 15.38 | 7.35 | 15.61 | 0.000243 | 4.57 | 15453.75 | 4397.38 | 0.21 |
| Reach-1 | 2374 | Floodway | 41800.00 | -6.09 | 15.88 | 7.34 | 16.20 | 0.000285 | 5.06 | 12707.09 | 1159.38 | 0.23 |
| Reach-1 | 2360 | | Bridge | | | | | | | | | |
| Reach-1 | 2340 | 100-year FP | 41800.00 | -1.42 | 15.20 | | 15.40 | 0.000233 | 4.19 | 15421.85 | 4105.72 | 0.20 |
| Reach-1 | 2340 | Floodway | 41800.00 | -1.42 | 15.76 | | 15.98 | 0.000240 | 4.33 | 11909.13 | 1187.57 | 0.21 |
| Reach-1 | 2016 | 100-year FP | 41800.00 | -5.09 | 15.22 | | 15.31 | 0.000083 | 2.52 | 18089.60 | 4703.37 | 0.12 |
| Reach-1 | 2016 | Floodway | 41800.00 | -5.09 | 15.78 | | 15.89 | 0.000088 | 2.66 | 15688.48 | 1093.13 | 0.12 |
| Reach-1 | 1577 | 100-year FP | 41800.00 | -5.07 | 15.15 | | 15.27 | 0.000096 | 2.77 | 15368.28 | 4367.00 | 0.13 |
| Reach-1 | 1577 | Floodway | 41800.00 | -3.69 | 15.69 | | 15.84 | 0.000127 | 3.17 | 13174.61 | 927.28 | 0.15 |
| Reach-1 | 1362 | 100-year FP | 41800.00 | -5.15 | 14.82 | | 15.21 | 0.000344 | 5.40 | 11563.03 | 3857.95 | 0.24 |
| Reach-1 | 1362 | Floodway | 41800.00 | -4.46 | 14.95 | | 15.73 | 0.000712 | 7.55 | 7993.03 | 661.60 | 0.35 |
| Reach-1 | 1292 | 100-year FP | 41800.00 | -4.55 | 14.25 | 9.09 | 15.06 | 0.000940 | 7.35 | 6609.97 | 4652.24 | 0.39 |
| Reach-1 | 1292 | Floodway | 41800.00 | -4.55 | 14.91 | 9.15 | 15.68 | 0.000818 | 7.11 | 6247.49 | 557.02 | 0.37 |
| Reach-1 | 1250 | | Bridge | | | | | | | | | |
| Reach-1 | 1205 | 100-year FP | 41800.00 | -2.58 | 11.98 | 11.07 | 14.58 | 0.004029 | 13.64 | 4239.36 | 4461.04 | 0.80 |
| Reach-1 | 1205 | Floodway | 41800.00 | -2.58 | 12.07 | 11.07 | 14.94 | 0.004224 | 14.05 | 3604.37 | 464.90 | 0.82 |
| Reach-1 | 1119 | 100-year FP | 41800.00 | -0.80 | 12.00 | 10.81 | 13.92 | 0.003447 | 11.89 | 4598.77 | 4448.83 | 0.73 |
| Reach-1 | 1119 | Floodway | 41800.00 | -0.80 | 12.00 | 10.97 | 14.31 | 0.003915 | 12.67 | 3630.17 | 493.82 | 0.77 |

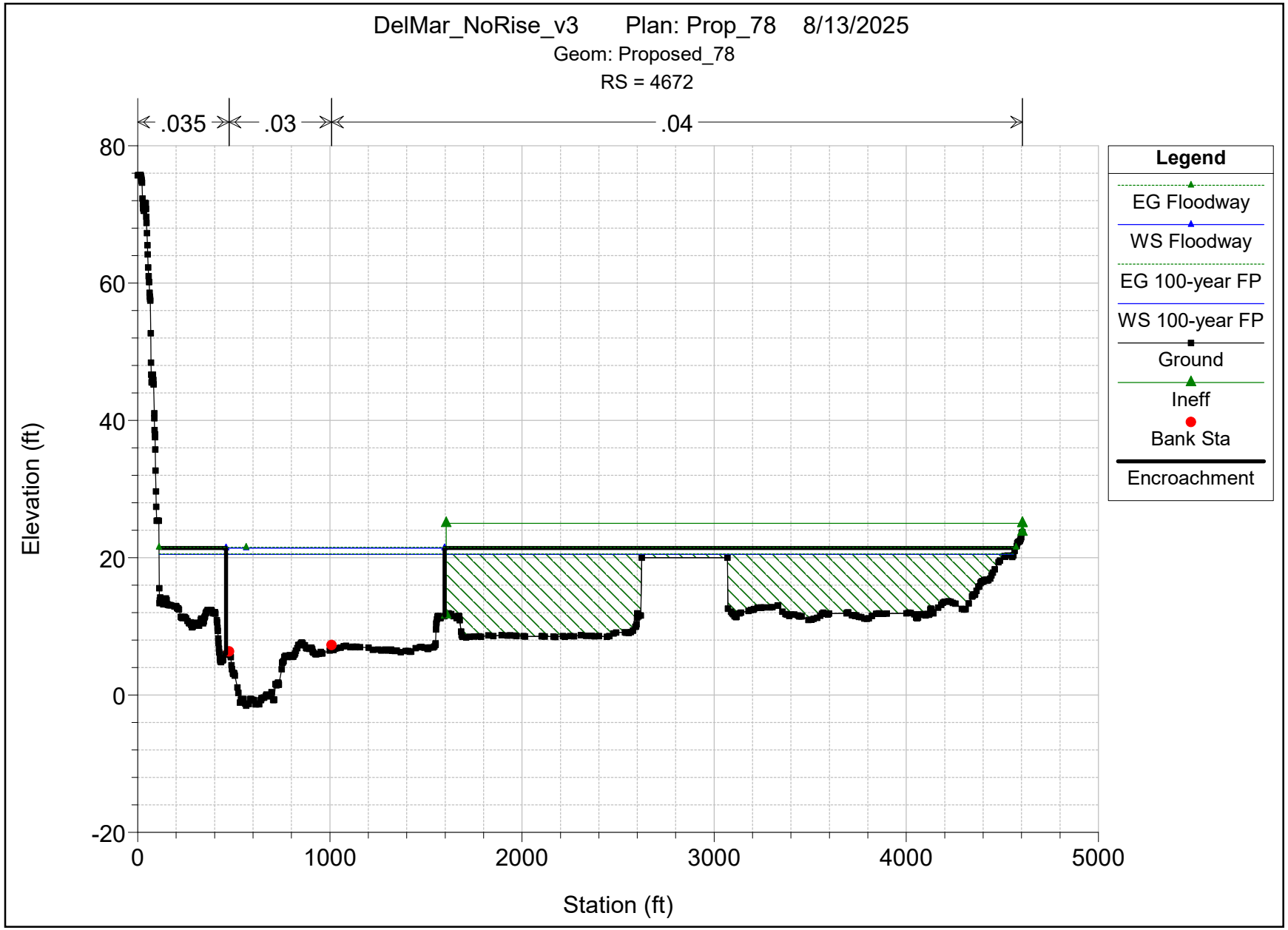

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 3321
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
80
60
40
20
0
-20
0
1000
2000
3000
4000
5000
6000

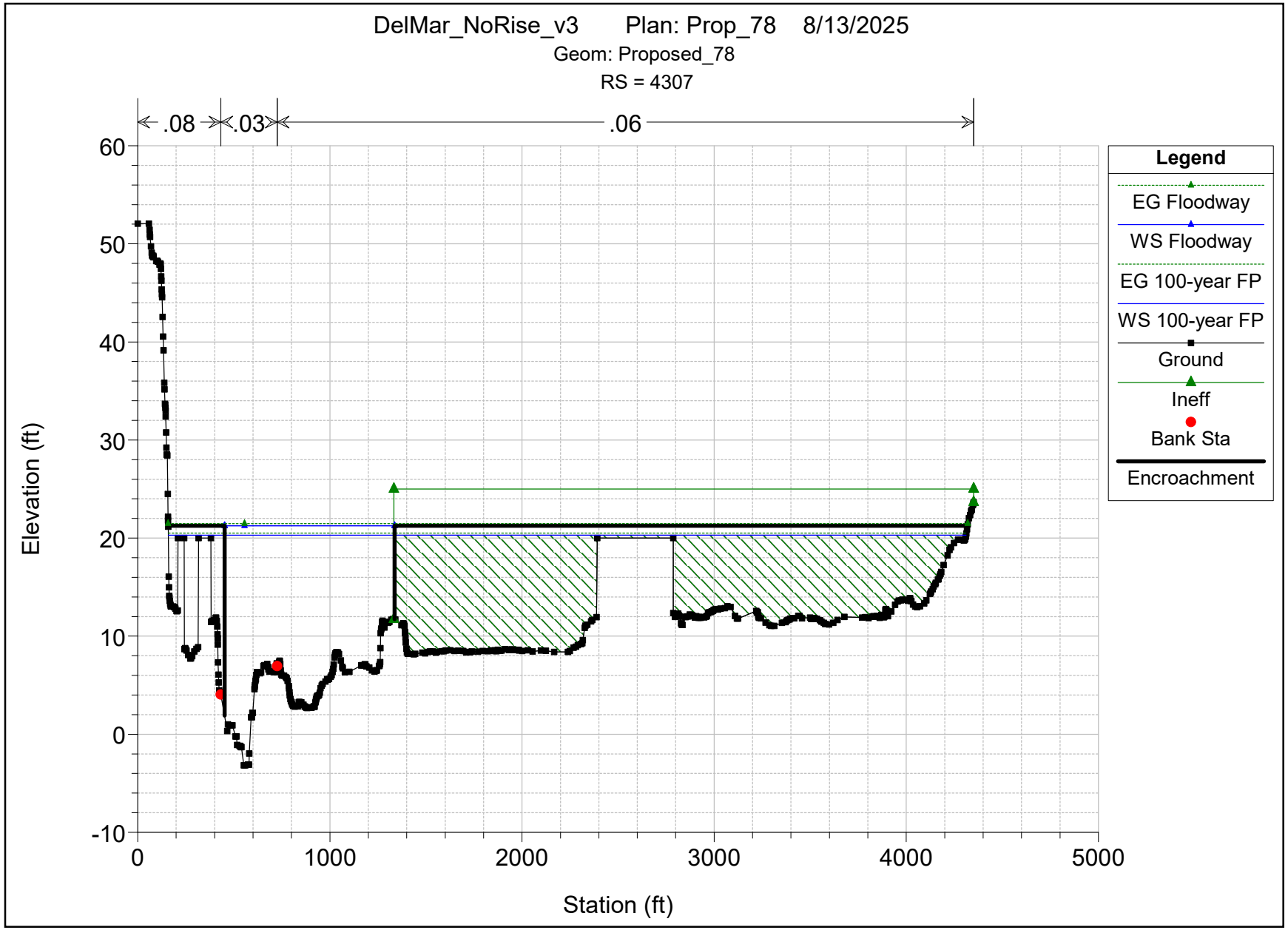

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 6268
.035
.03
.04
Elevation (ft)
Station (ft)
0
20
40
60
80
100
0
1000
2000
3000
4000
5000
6000
7000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

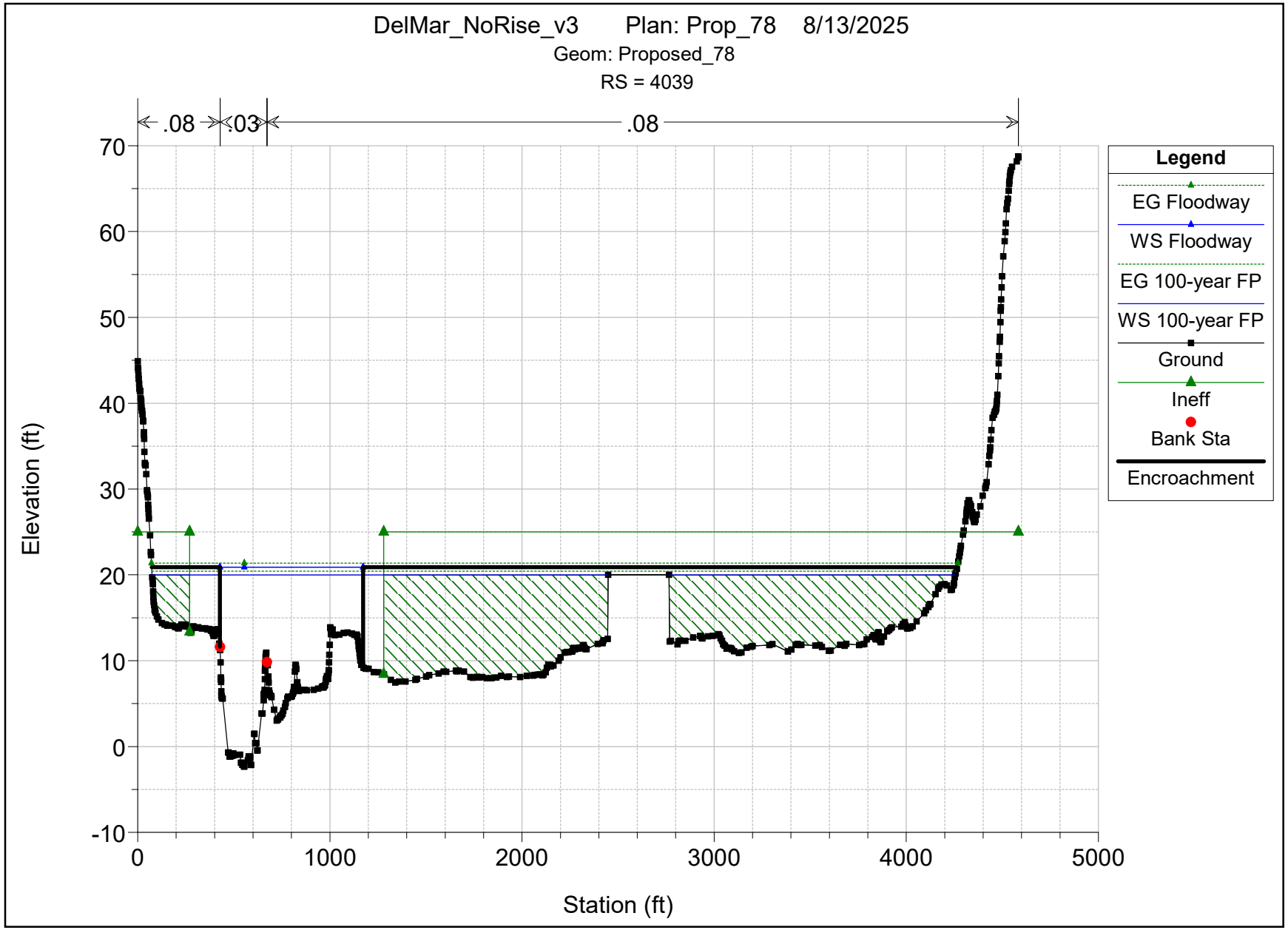

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 5978
.035
.03
.04
Elevation (ft)
Station (ft)
0
20
40
60
80
100
120
140
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

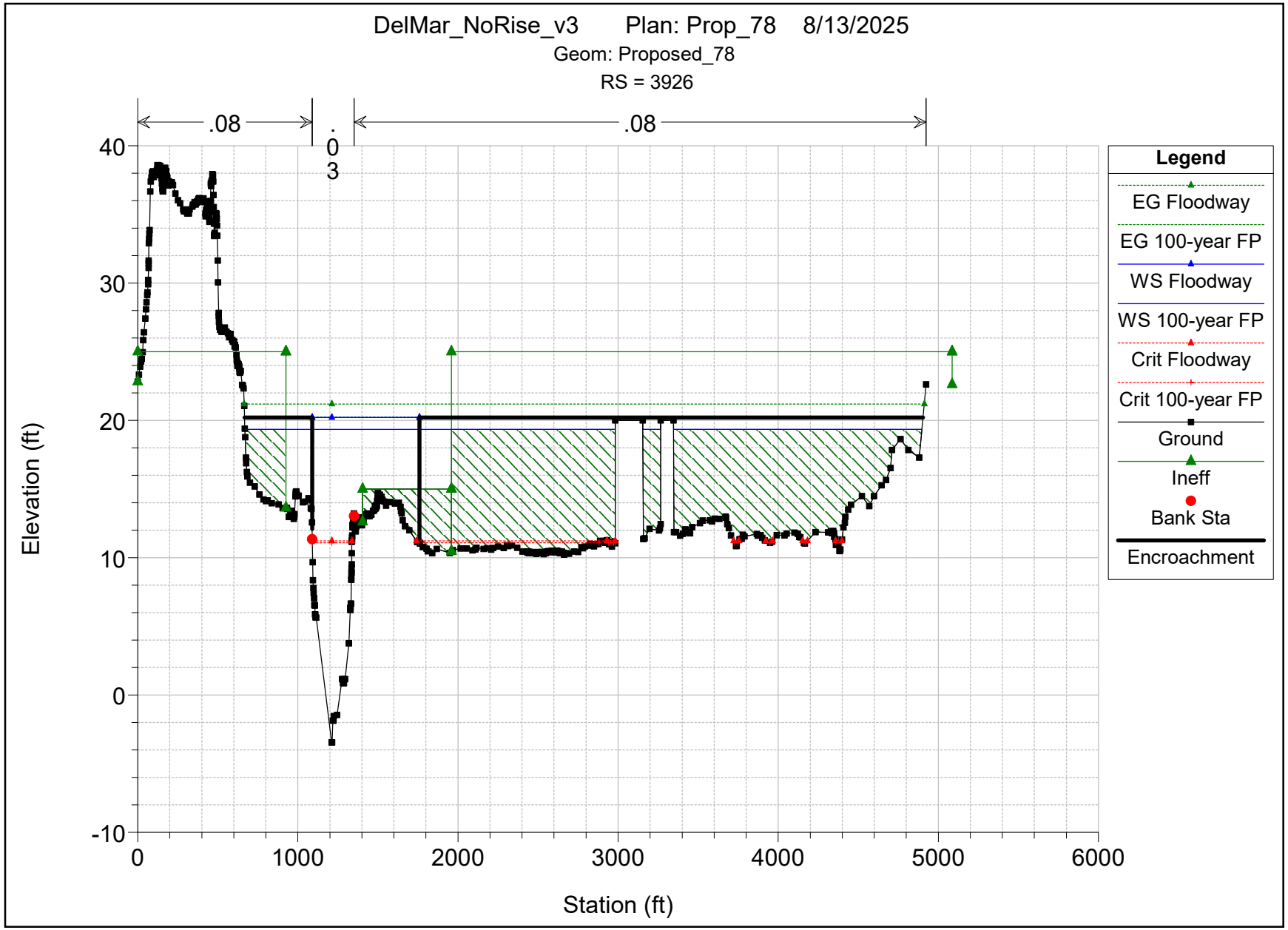

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 5647
.035
.03
.04
Elevation (ft)
Station (ft)
0
20
40
60
80
100
120
140
160
180
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

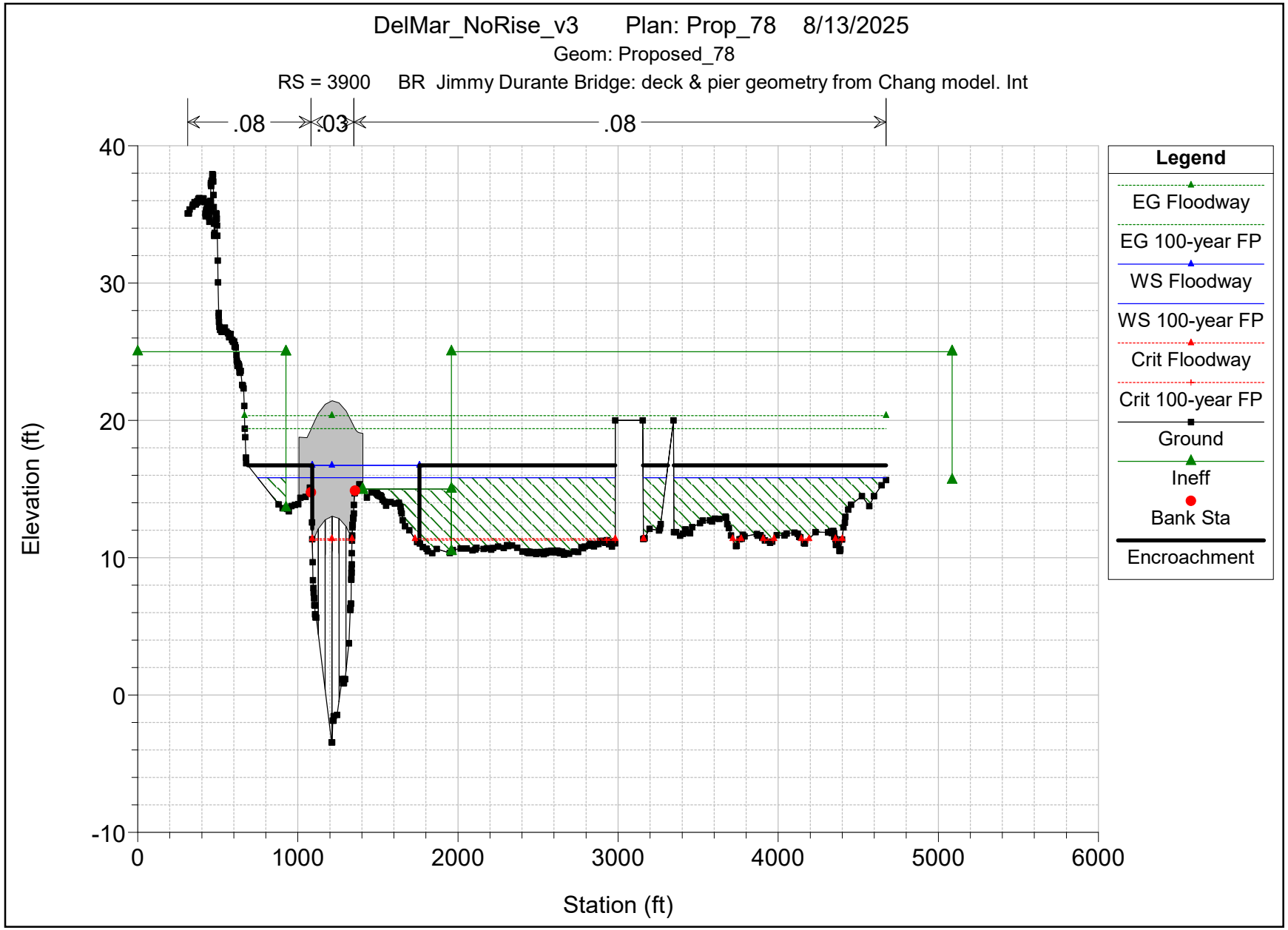

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 5117
.035
.03
.04
Elevation (ft)
300
250
200
150
100
50
0
0
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

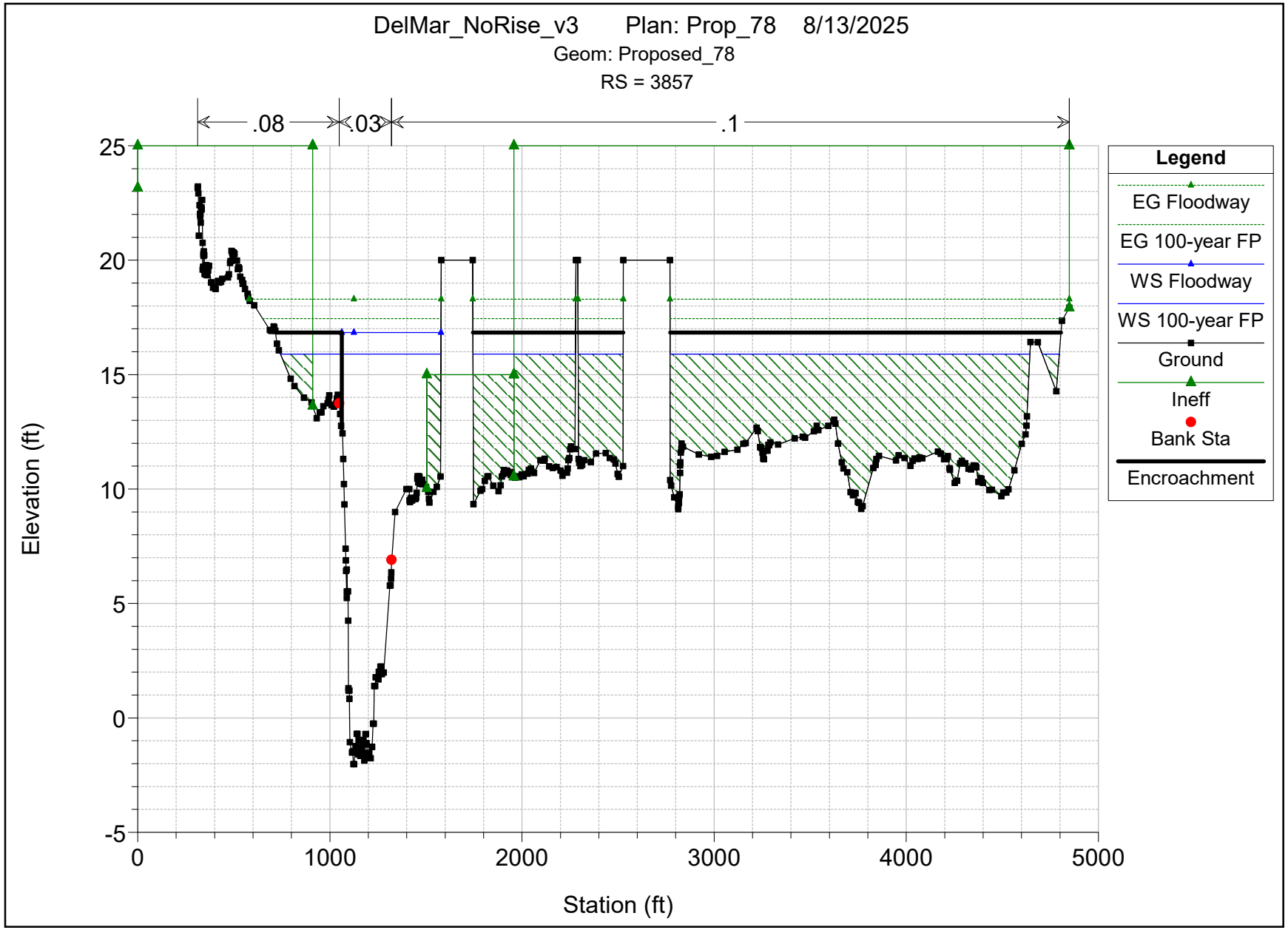

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 4672
.035
.03
.04
Elevation (ft)
Station (ft)
80
60
40
20
0
-20
0
1000
2000
3000
4000
5000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

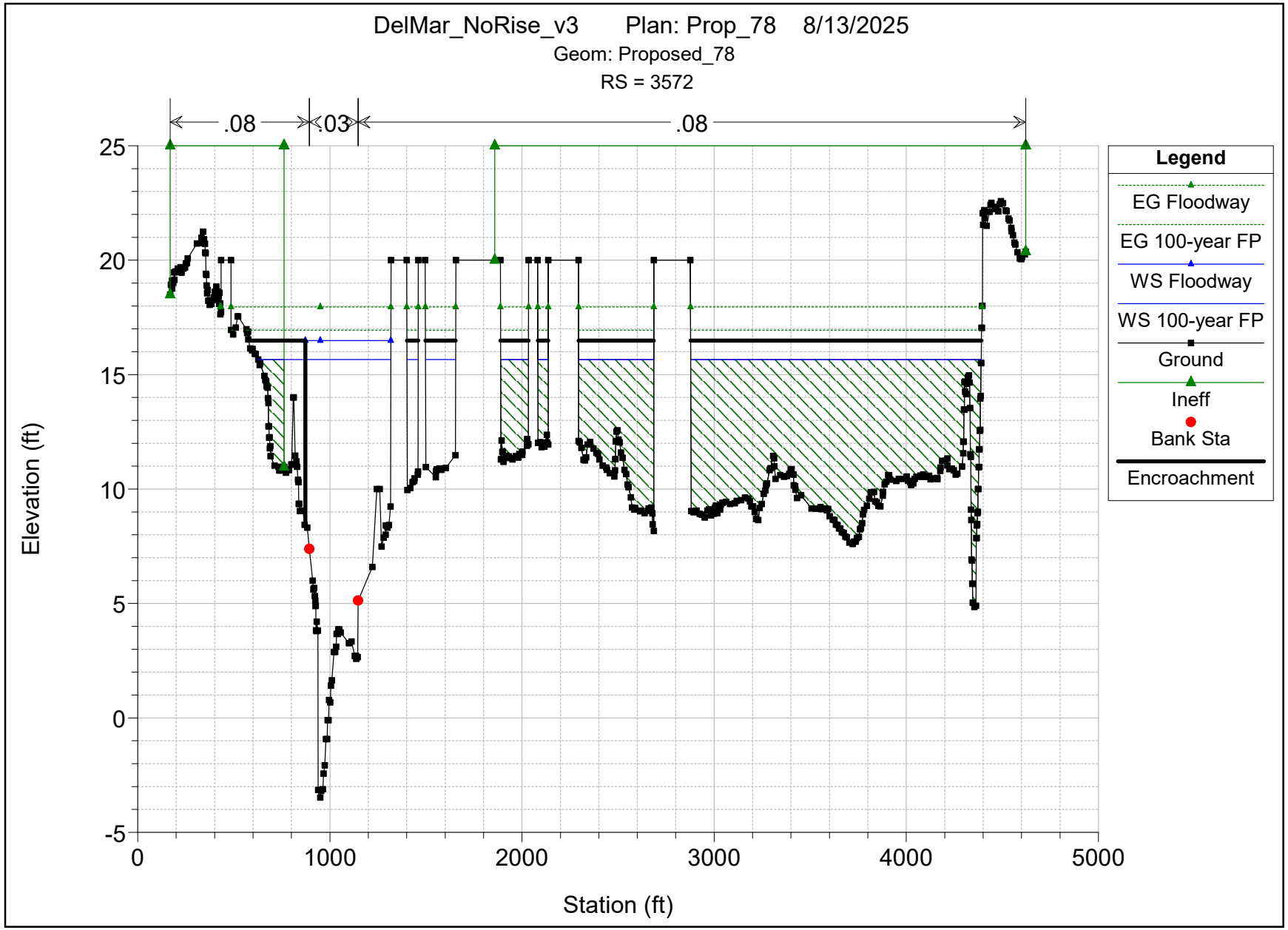

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 4307
.08
.03
.06
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

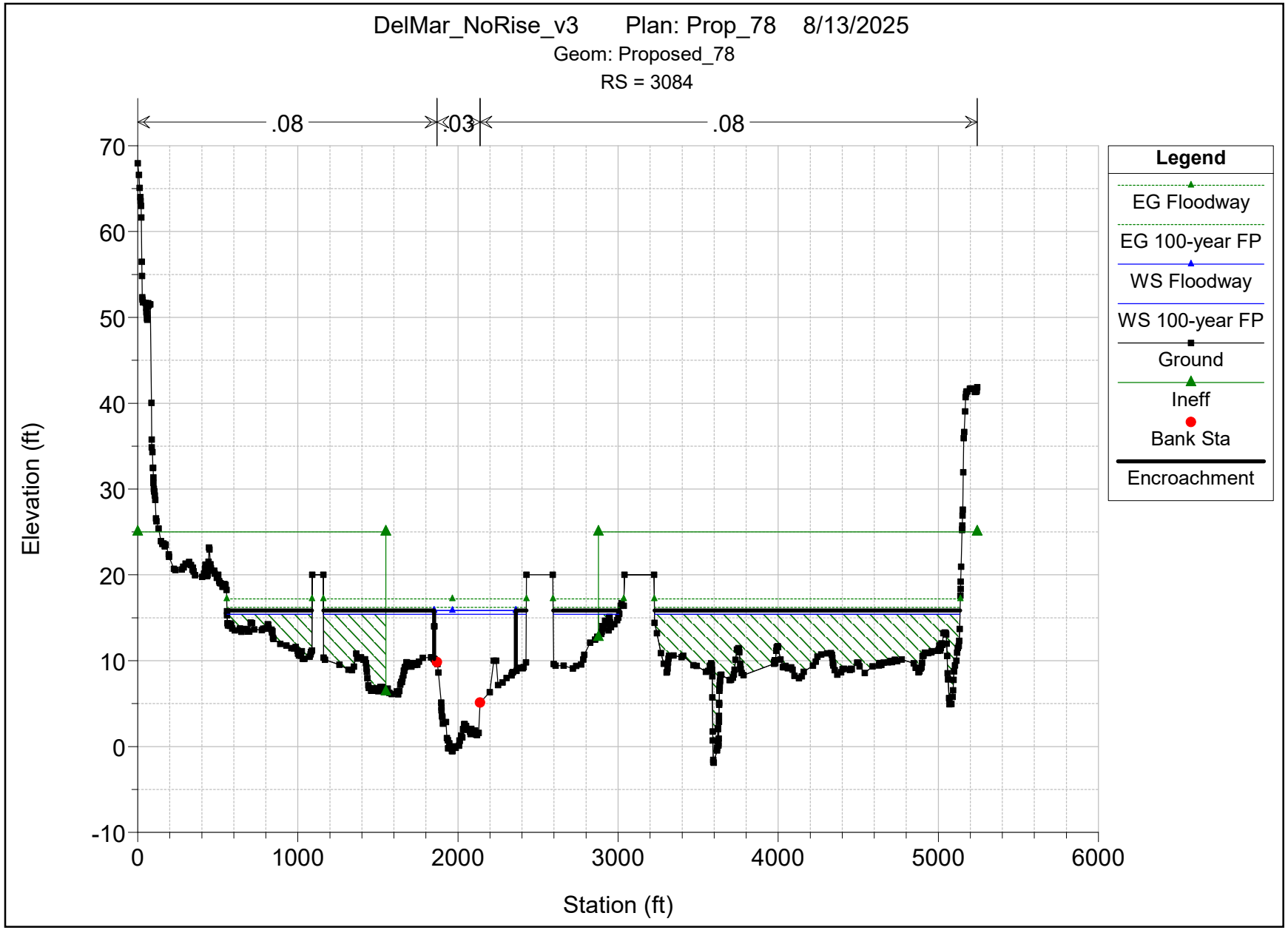

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 4039
.08
.03
.08
Elevation (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

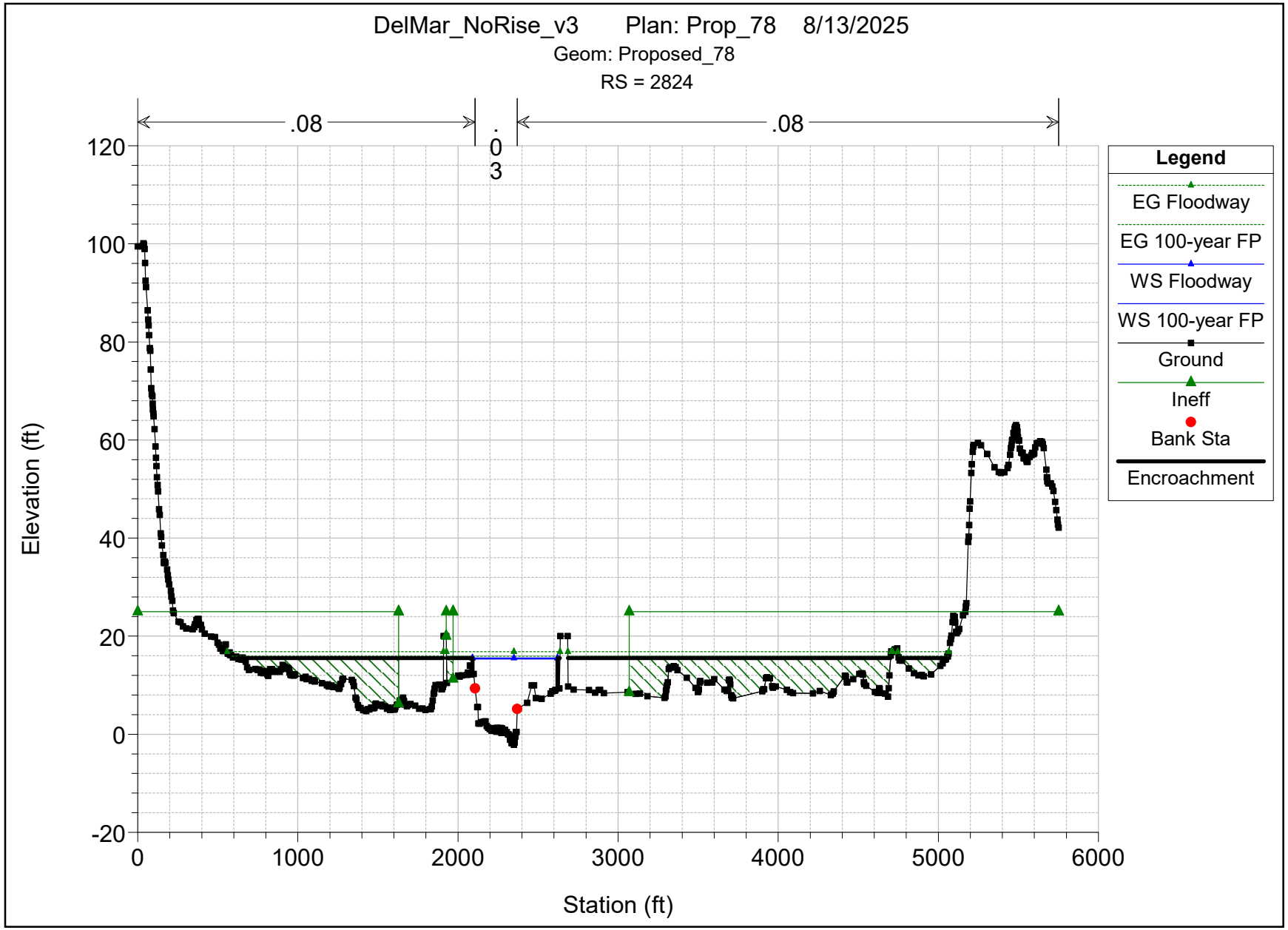

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 3926
.08
.03
.08
Elevation (ft)
Station (ft)
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment

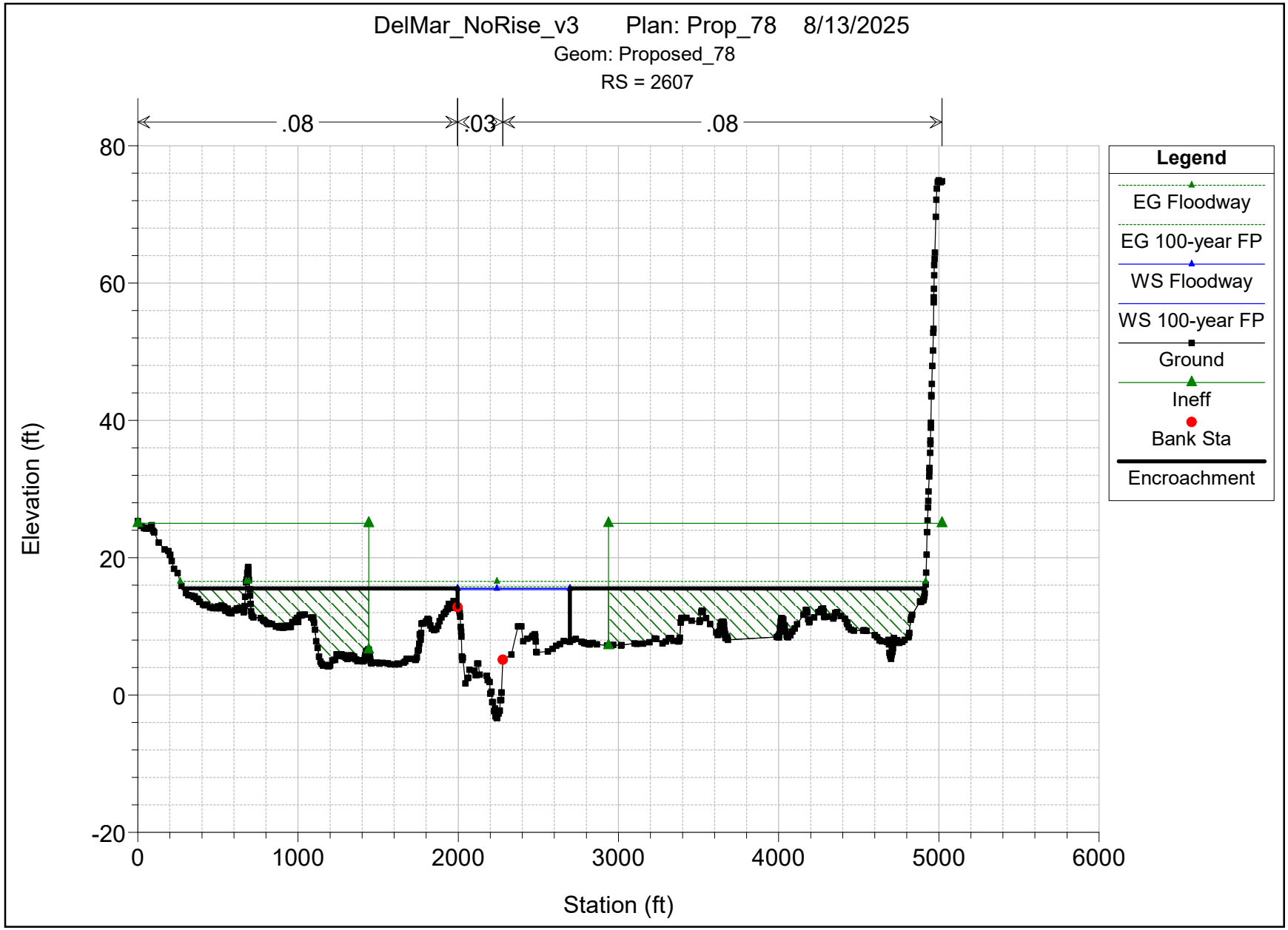

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 3900 BR Jimmy Durante Bridge: deck & pier geometry from Chang model. Int
.08
.03
.08
Elevation (ft)
Station (ft)
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment

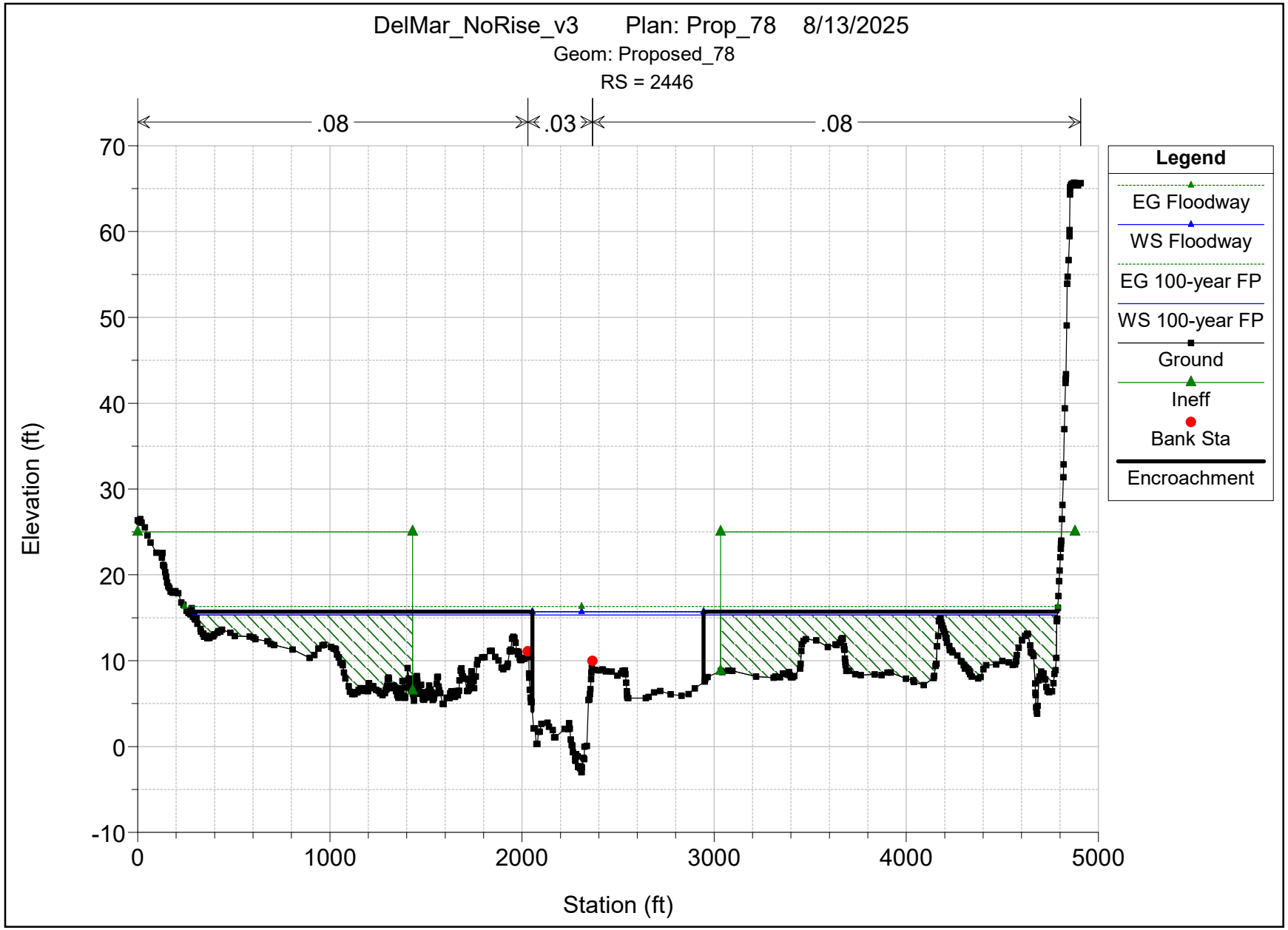

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 3857
.08
.03
.1
Elevation (ft)
Station (ft)
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

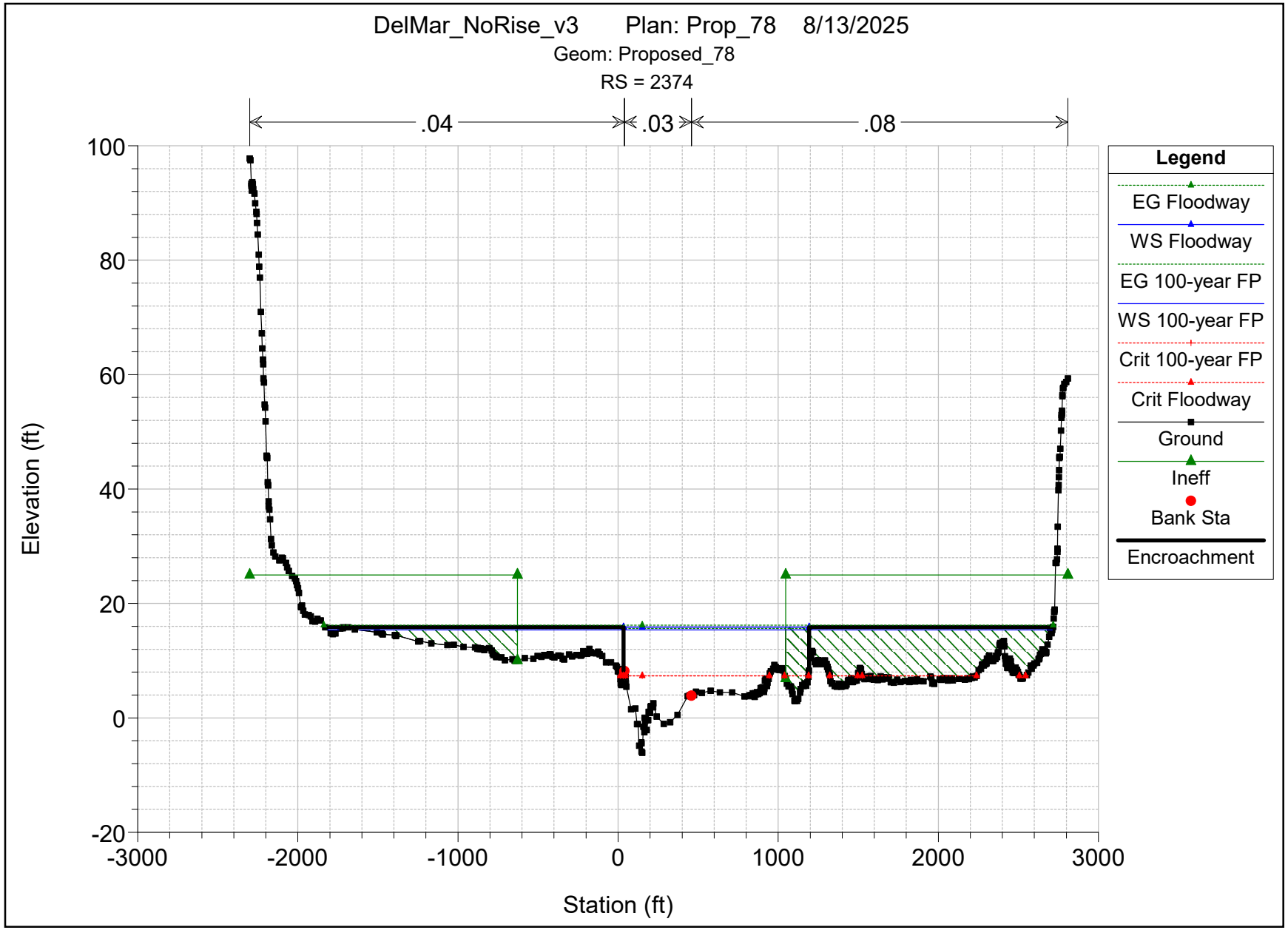

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 3572
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000

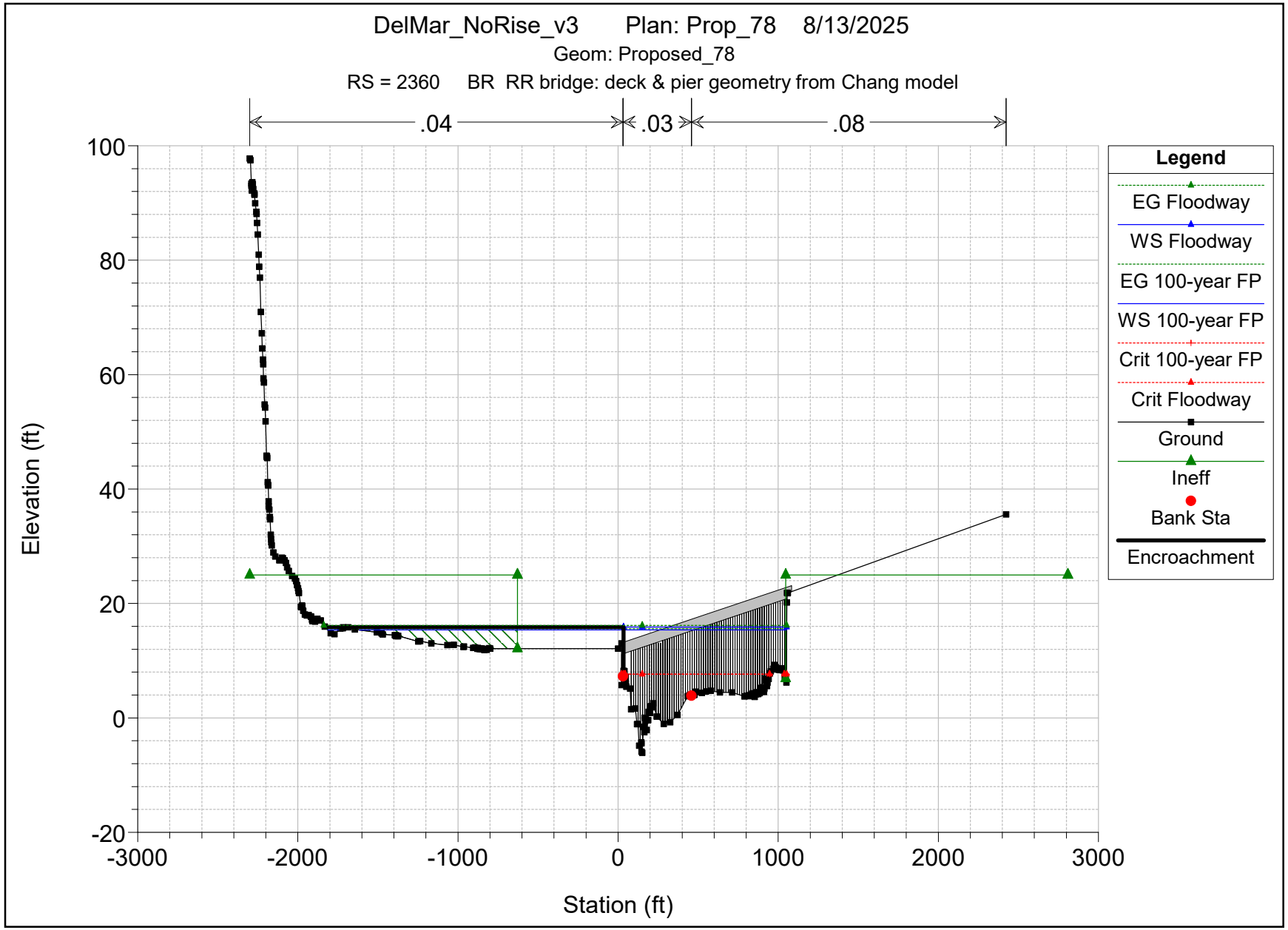

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 3084
.08
.03
.08
Elevation (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

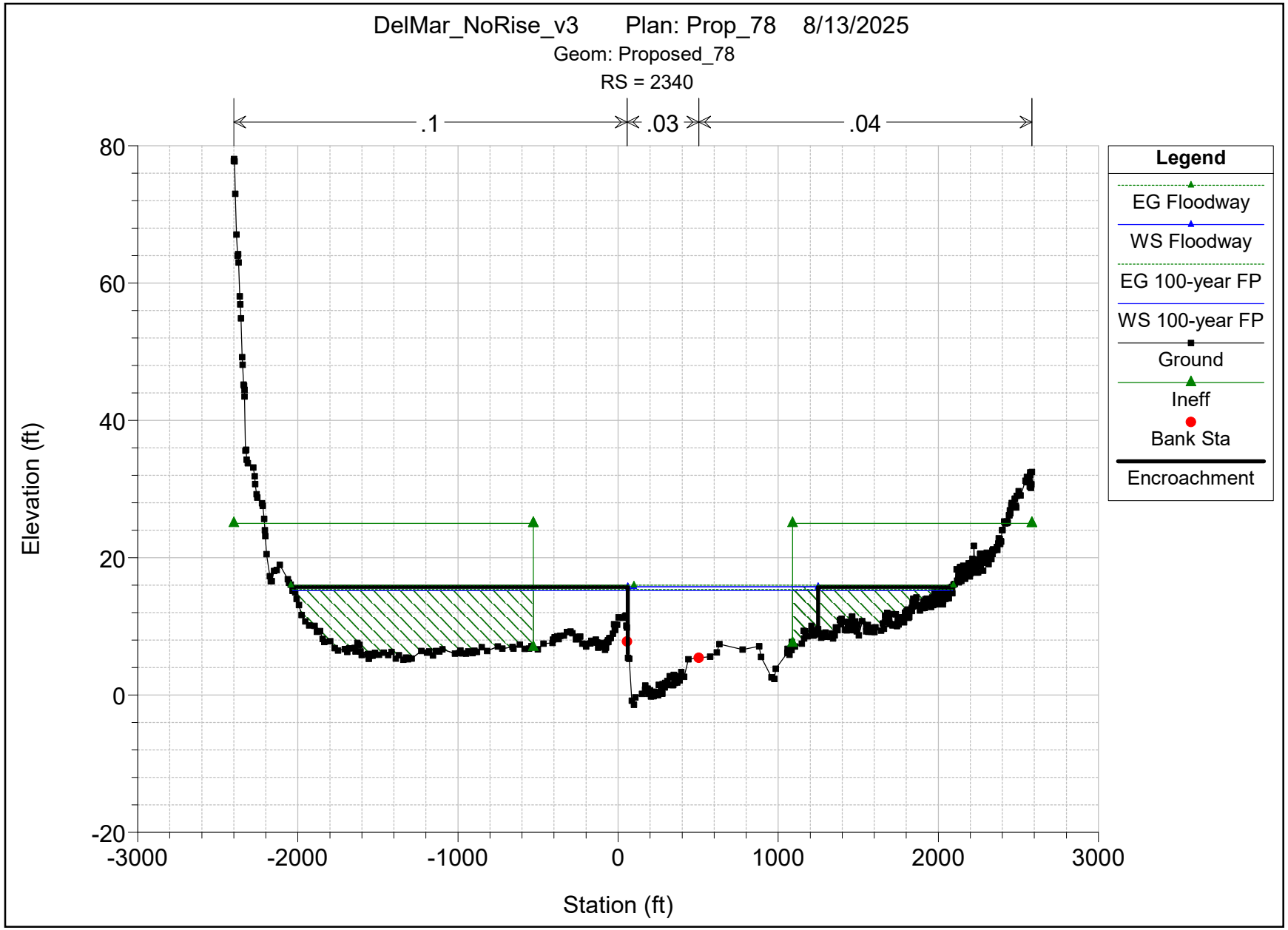

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2824
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
120
100
80
60
40
20
0
-20
0
1000
2000
3000
4000
5000
6000
Station (ft)

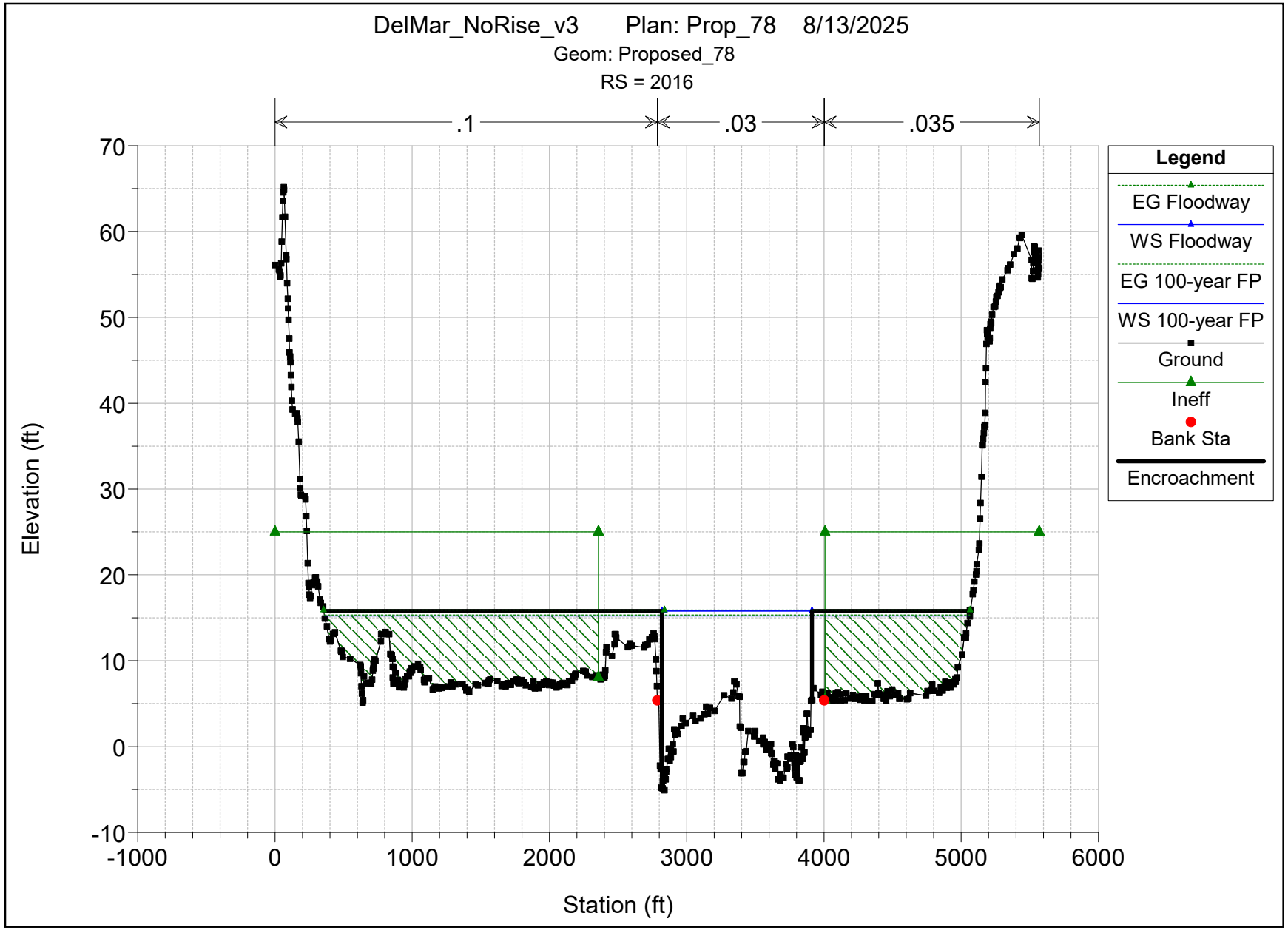

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2607
.08
.03
.08
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
80
60
40
20
0
-20
0
1000
2000
3000
4000
5000
6000
Station (ft)

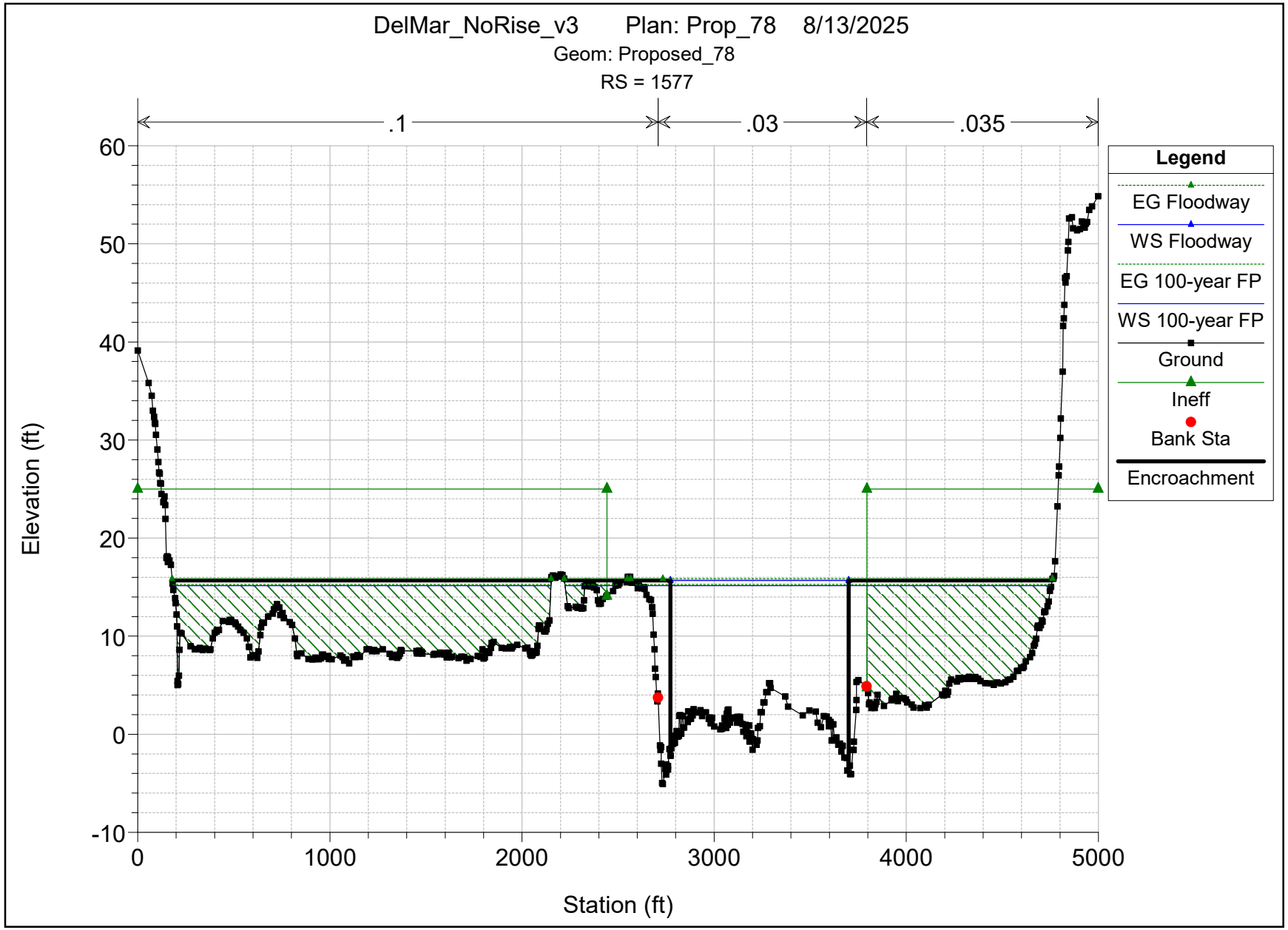

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2446
.08
.03
.08
Elevation (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment

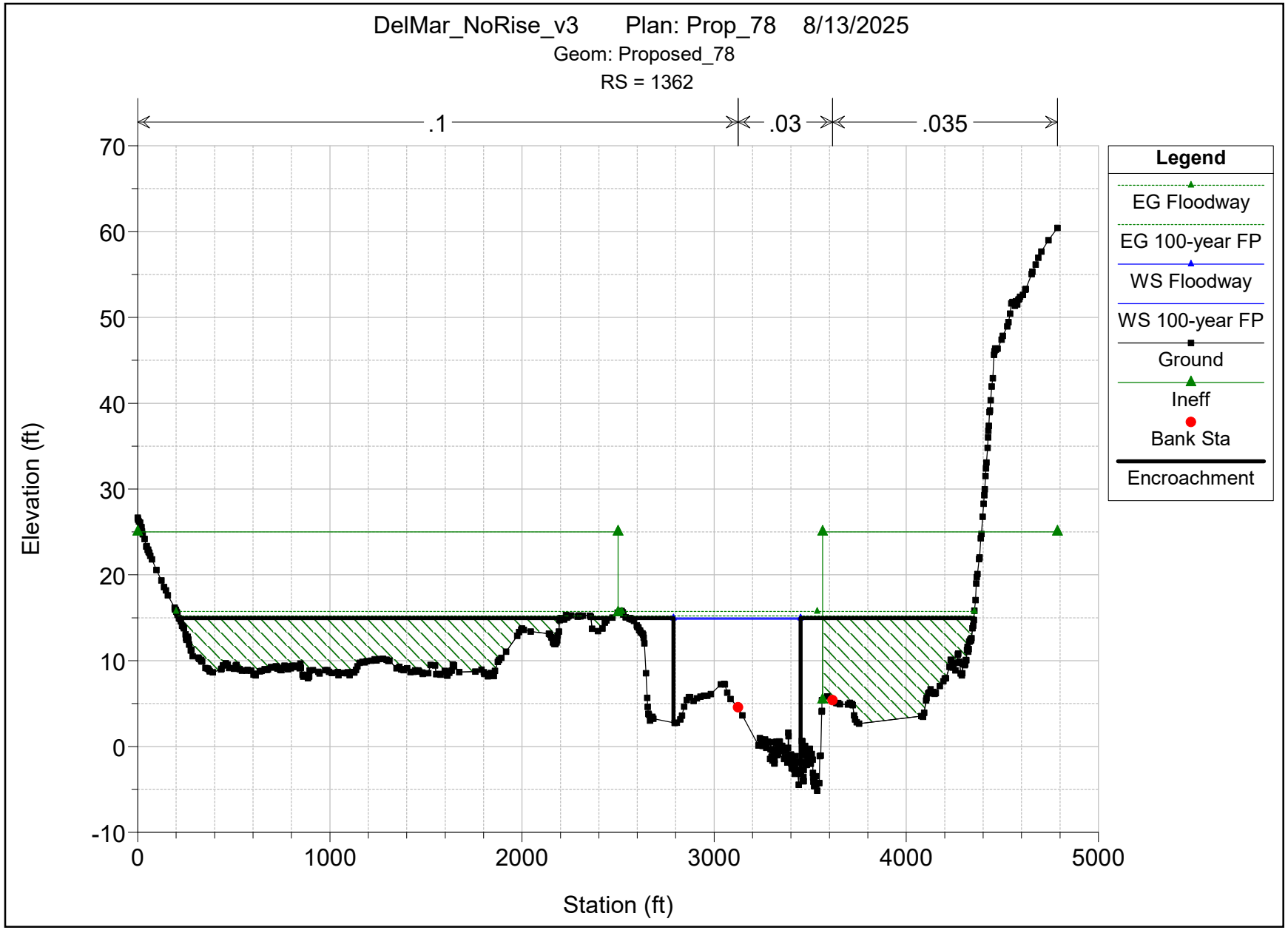

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2374
.04
.03
.08
Elevation (ft)
100
80
60
40
20
0
-20
-3000
-2000
-1000
0
1000
2000
3000
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Crit 100-year FP
Crit Floodway
Ground
Ineff
Bank Sta
Encroachment

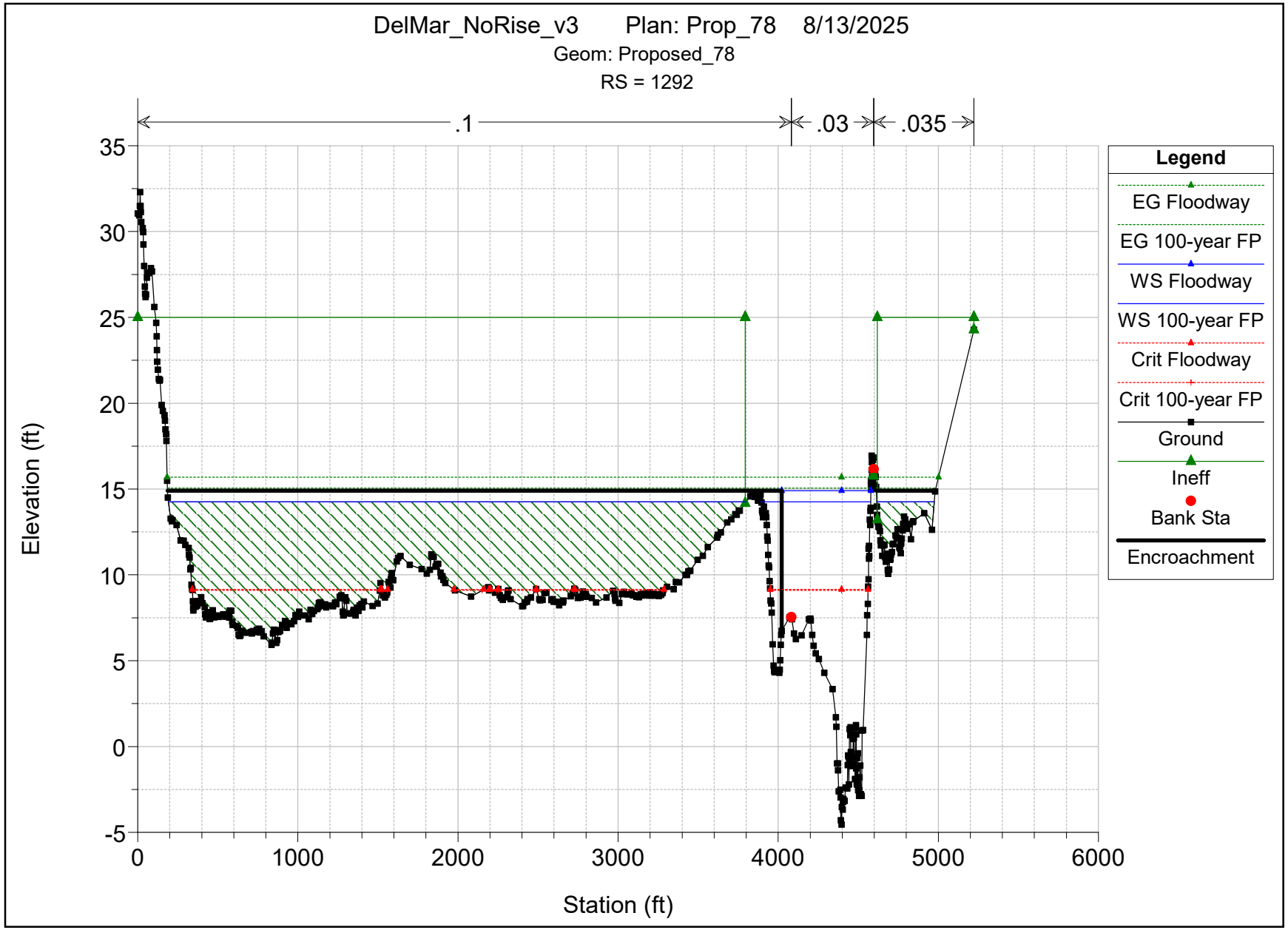

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2360 BR RR bridge: deck & pier geometry from Chang model
.04
.03
.08
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Crit 100-year FP
Crit Floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
80
60
40
20
0
-20
-3000
-2000
-1000
0
1000
2000
3000

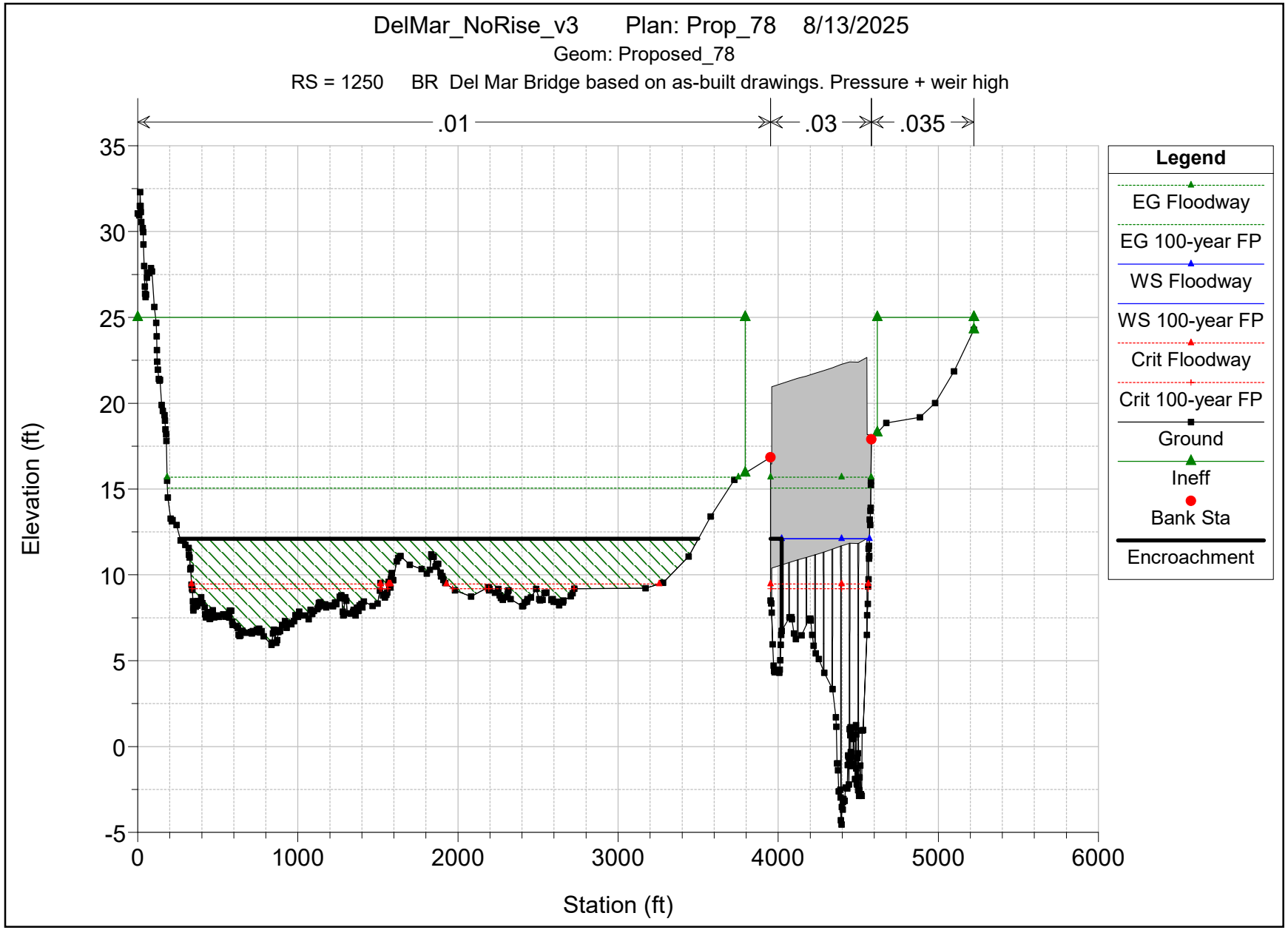

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2340
.1
.03
.04
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
80
60
40
20
0
-20
-3000
-2000
-1000
0
1000
2000
3000
Station (ft)

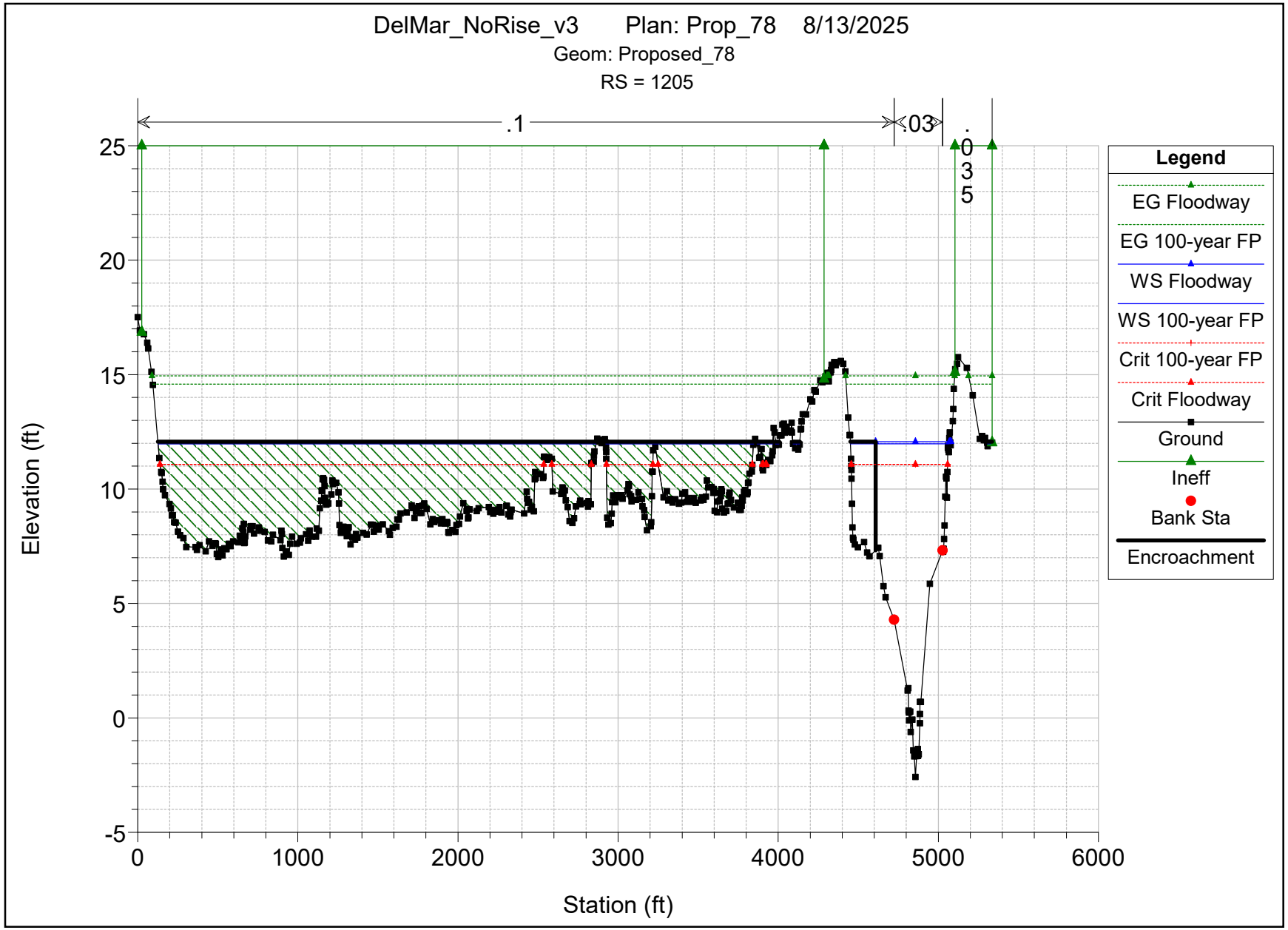

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 2016
.1
.03
.035
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
70
60
50
40
30
20
10
0
-10
-1000
0
1000
2000
3000
4000
5000
6000
Station (ft)

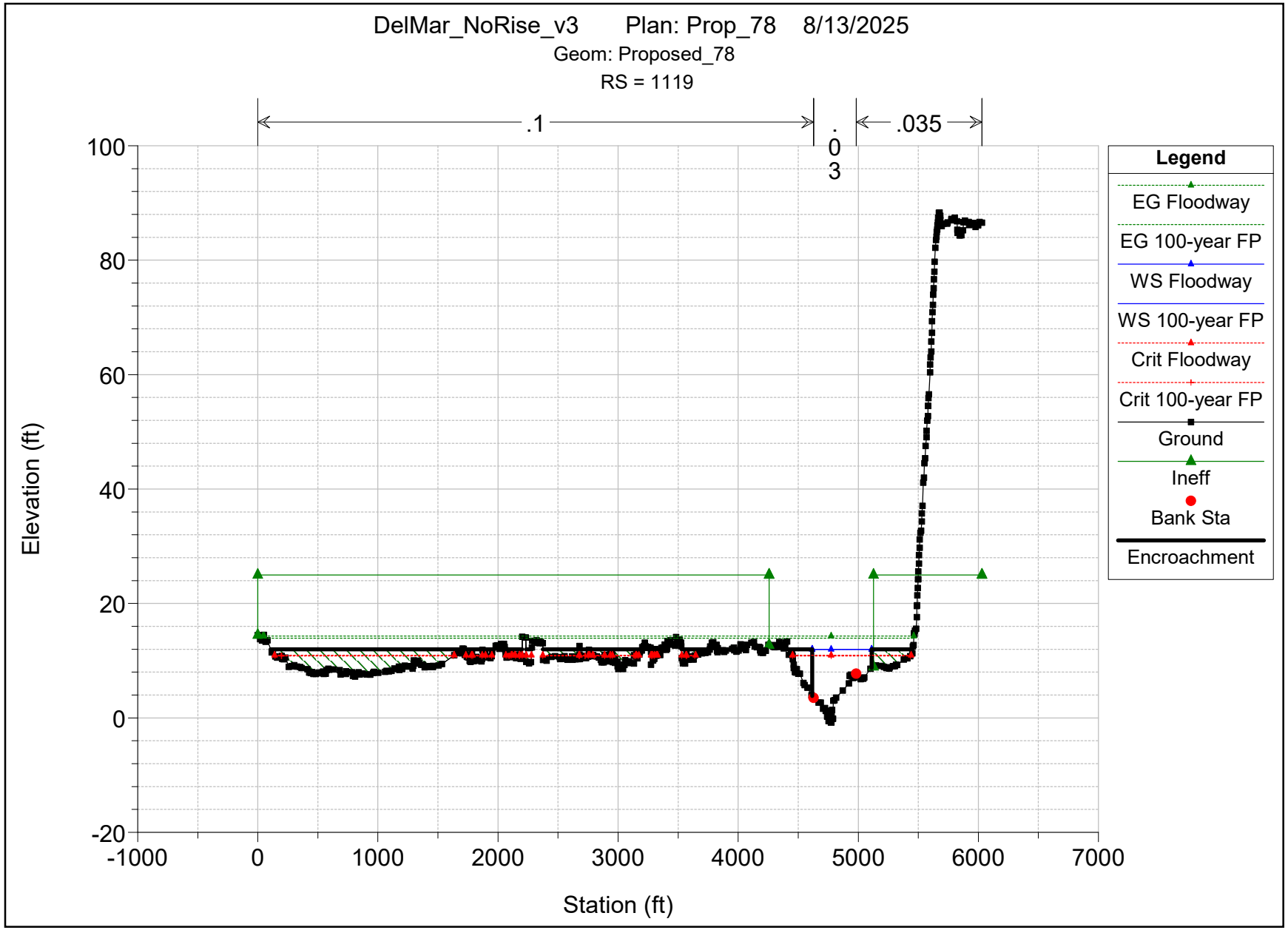

DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 1577
.1
.03
.035
Legend
EG Floodway
WS Floodway
EG 100-year FP
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000


DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 1362
.1
.03
.035
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
5000


DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 1292
.1
.03
.035
Elevation (ft)
Station (ft)
35
30
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment


DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 1250 BR Del Mar Bridge based on as-built drawings. Pressure + weir high
.01
.03
.035
Elevation (ft)
Station (ft)
35
30
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment


DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 1205
.1
.03
.035
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit 100-year FP
Crit Floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000


DelMar_NoRise_v3 Plan: Prop_78 8/13/2025
Geom: Proposed_78
RS = 1119
.1
.03
.035
Legend
EG Floodway
EG 100-year FP
WS Floodway
WS 100-year FP
Crit Floodway
Crit 100-year FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
80
60
40
20
0
-20
-1000
0
1000
2000
3000
4000
5000
6000
7000

# Appendix H

## No-Rise Certification

# FLOODWAY "NO-RISE" CERTIFICATION

This document is to certify that I am a duly qualified engineer licensed to practice in the State of California. It is to further certify that the attached technical data supports the fact that the proposed San Dieguito Lagoon Shoreline Protection Project above will not create any increase to the base flood elevations, floodway elevations or floodway widths on the San Dieguito River at published cross-sections in the Flood Insurance Study for San Diego County, California, dated March 22, 2022 and will not create any increase to the based flood elevations, floodway elevations, or floodway widths at unpublished cross-sections in the area of the proposed development.




Name: Madeline Howell

Signature:

Date: October 3, 2025

Title: Water Resources Engineer, GHD

License No: 91851

**FOR COMMUNITY USE:**

Community Approval

☐ Approved ☐ Disapproved

| | | |
|---|---|---|
| _____ | _____ | _____ |
| *Community Official's Name* | *Community Official's Signature* | *Title* |

# Appendix B

Air Quality/Greenhouse Gas Emissions/
Energy Model Results

# Del Mar Shoreline Detailed Report

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1. Basic Project Information

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1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

3. Construction Emissions Details

3.1.  Phase 2: Removal asbestos cement and Water Main (2026) - Unmitigated

3.3. Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING (2026) - Unmitigated

3.5. Phase1: Mass Grading (2026) - Unmitigated

3.7. Phase 2: Mass Grading (2026) - Unmitigated

3.9. Phase 2: Revetment (2026) - Unmitigated

3.11. Phase 2: Public Works Building (2026) - Unmitigated

3.13. Phase 2: Recreational Amenities (2026) - Unmitigated

3.15. Phase 1: Restore Asphalt Concrete Pavement (2026) - Unmitigated

3.17. Phase 2: Concrete Floodwall (2026) - Unmitigated

3.19. Phase 2: Restore Asphalt Concrete Pavement (2027) - Unmitigated

3.21. Restore Stripping (2027) - Unmitigated

3.23. Phase 2: Water Main Construction (2026) - Unmitigated

3.25. Phase 2: Water Main Connection (2026) - Unmitigated

3.27. Phase 1: Revegetation (2026) - Unmitigated

3.29. Phase 1: Pothole and Utility Locating (2026) - Unmitigated

3.31. Phase 1: Erosion Control (2026) - Unmitigated

3.33. Phase 1: Trail Construction (2026) - Unmitigated

3.35. Phase 1: Job Site Management (2026) - Unmitigated

3.37. Phase 2: Pothole and Utility Locating (2026) - Unmitigated

3.39. Phase 2: Concrete Vault Construction (2026) - Unmitigated

3.41. Phase 2: Revegetation (2026) - Unmitigated

3.43. Phase 2: Revegetation (2027) - Unmitigated

3.45. Phase 2: Job Site Managemnet (2026) - Unmitigated

3.47. Phase 2: Job Site Managemnet (2027) - Unmitigated

3.49. Phase 2: Silent Sheet Pile Wall Construction (2026) - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

8.1. Justifications

8.4. Construction

8.4.2. Off-Road Equipment

8.4.6. Trips and VMT

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Del Mar Shoreline |
| Construction Start Date | 1/2/2026 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.60000 |
| Precipitation (days) | 15.4000 |
| Location | 32.971873295381485, -117.26487416567129 |
| County | San Diego |
| City | Del Mar |
| Air District | San Diego County APCD |
| Air Basin | San Diego |
| TAZ | 6382 |
| EDFZ | 12 |
| Electric Utility | San Diego Gas & Electric |
| Gas Utility | San Diego Gas & Electric |
| App Version | 2022.1.1.37 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 1.000000 | 1000sqft | 0.02296 | 0.00000 | 0.00000 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

## 2.1. Construction Emissions Compared Against Thresholds

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

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 4.03390 | 3.37818 | 29.3722 | 35.7282 | 0.05552 | 1.23188 | 12.9339 | 14.1658 | 1.13332 | 6.12361 | 7.25693 | — | 6,491.78 | 6,491.78 | 0.26658 | 0.11663 | 2.57017 | 6,535.77 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 4.01828 | 3.37525 | 29.4093 | 35.4640 | 0.05552 | 1.23188 | 12.9339 | 14.1658 | 1.13332 | 6.12361 | 7.25693 | — | 6,464.84 | 6,464.84 | 0.26774 | 0.15668 | 0.09579 | 6,506.70 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.81989 | 1.52799 | 12.8749 | 16.0891 | 0.02769 | 0.51708 | 4.01445 | 4.53153 | 0.47580 | 1.84890 | 2.32470 | — | 3,262.93 | 3,262.93 | 0.13590 | 0.06754 | 0.74734 | 3,287.20 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.33213 | 0.27886 | 2.34968 | 2.93627 | 0.00505 | 0.09437 | 0.73264 | 0.82700 | 0.08683 | 0.33742 | 0.42426 | — | 540.216 | 540.216 | 0.02250 | 0.01118 | 0.12373 | 544.234 |

## 2.2. Construction Emissions by Year, Unmitigated

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

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 4.03390 | 3.37818 | 29.3722 | 35.7282 | 0.05552 | 1.23188 | 12.9339 | 14.1658 | 1.13332 | 6.12361 | 7.25693 | — | 6,491.78 | 6,491.78 | 0.26658 | 0.11663 | 2.57017 | 6,535.77 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 4.01828 | 3.37525 | 29.4093 | 35.4640 | 0.05552 | 1.23188 | 12.9339 | 14.1658 | 1.13332 | 6.12361 | 7.25693 | — | 6,464.84 | 6,464.84 | 0.26774 | 0.15668 | 0.09579 | 6,506.70 |
| 2027 | 0.65043 | 0.54570 | 4.33330 | 6.01514 | 0.00924 | 0.16929 | 0.22857 | 0.34712 | 0.15586 | 0.05465 | 0.19861 | — | 1,074.59 | 1,074.59 | 0.04546 | 0.02650 | 0.02396 | 1,083.64 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 1.81989 | 1.52799 | 12.8749 | 16.0891 | 0.02769 | 0.51708 | 4.01445 | 4.53153 | 0.47580 | 1.84890 | 2.32470 | — | 3,262.93 | 3,262.93 | 0.13590 | 0.06754 | 0.74734 | 3,287.20 |
| 2027 | 0.05505 | 0.04629 | 0.36867 | 0.55506 | 0.00082 | 0.01225 | 0.01866 | 0.03091 | 0.01128 | 0.00452 | 0.01580 | — | 101.635 | 101.635 | 0.00426 | 0.00301 | 0.03578 | 102.673 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 0.33213 | 0.27886 | 2.34968 | 2.93627 | 0.00505 | 0.09437 | 0.73264 | 0.82700 | 0.08683 | 0.33742 | 0.42426 | — | 540.216 | 540.216 | 0.02250 | 0.01118 | 0.12373 | 544.234 |
| 2027 | 0.01005 | 0.00845 | 0.06728 | 0.10130 | 0.00015 | 0.00223 | 0.00341 | 0.00564 | 0.00206 | 0.00082 | 0.00288 | — | 16.8268 | 16.8268 | 0.00071 | 0.00050 | 0.00592 | 16.9987 |

# 3. Construction Emissions Details

## 3.1. Phase 2: Removal asbestos cement and Water Main (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.68723 | 0.57453 | 5.30145 | 7.24963 | 0.01092 | 0.20988 | — | 0.20988 | 0.19309 | — | 0.19309 | — | 1,085.29 | 1,085.29 | 0.04402 | 0.00880 | — | 1,089.01 |
| Demolition | — | — | — | — | — | — | 0.56943 | 0.56943 | — | 0.08623 | 0.08623 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01318 | 0.01102 | 0.10167 | 0.13903 | 0.00021 | 0.00403 | — | 0.00403 | 0.00370 | — | 0.00370 | — | 20.8138 | 20.8138 | 0.00084 | 0.00017 | — | 20.8852 |
| Demolition | — | — | — | — | — | — | 0.01092 | 0.01092 | — | 0.00165 | 0.00165 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00241 | 0.00201 | 0.01856 | 0.02537 | 0.00004 | 0.00073 | — | 0.00073 | 0.00068 | — | 0.00068 | — | 3.44596 | 3.44596 | 0.00014 | 0.00003 | — | 3.45778 |
| Demolition | — | — | — | — | — | — | 0.00199 | 0.00199 | — | 0.00030 | 0.00030 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03922 | 0.03570 | 0.03125 | 0.38135 | 0.00000 | 0.00000 | 0.08457 | 0.08457 | 0.00000 | 0.01982 | 0.01982 | — | 87.7802 | 87.7802 | 0.00462 | 0.00352 | 0.00845 | 88.9534 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.03318 | 0.00971 | 0.61746 | 0.23093 | 0.00304 | 0.00869 | 0.12183 | 0.13053 | 0.00580 | 0.03336 | 0.03915 | — | 462.394 | 462.394 | 0.02304 | 0.07432 | 0.02507 | 485.142 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00074 | 0.00068 | 0.00060 | 0.00738 | 0.00000 | 0.00000 | 0.00161 | 0.00161 | 0.00000 | 0.00038 | 0.00038 | — | 1.69850 | 1.69850 | 0.00009 | 0.00007 | 0.00269 | 1.72353 |
| Vendor | 0.00015 | 0.00006 | 0.00251 | 0.00114 | 0.00001 | 0.00003 | 0.00049 | 0.00051 | 0.00003 | 0.00013 | 0.00016 | — | 1.88494 | 1.88494 | 0.00007 | 0.00027 | 0.00199 | 1.96967 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00064 | 0.00019 | 0.01179 | 0.00440 | 0.00006 | 0.00017 | 0.00232 | 0.00249 | 0.00011 | 0.00064 | 0.00075 | — | 8.86582 | 8.86582 | 0.00044 | 0.00143 | 0.00803 | 9.30964 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00014 | 0.00012 | 0.00011 | 0.00135 | 0.00000 | 0.00000 | 0.00029 | 0.00029 | 0.00000 | 0.00007 | 0.00007 | — | 0.28121 | 0.28121 | 0.00001 | 0.00001 | 0.00045 | 0.28535 |
| Vendor | 0.00003 | 0.00001 | 0.00046 | 0.00021 | < 0.000005 | < 0.000005 | 0.00009 | 0.00009 | < 0.000005 | 0.00002 | 0.00003 | — | 0.31207 | 0.31207 | 0.00001 | 0.00004 | 0.00033 | 0.32610 |
| Hauling | 0.00012 | 0.00003 | 0.00215 | 0.00080 | 0.00001 | 0.00003 | 0.00042 | 0.00045 | 0.00002 | 0.00012 | 0.00014 | — | 1.46784 | 1.46784 | 0.00007 | 0.00024 | 0.00133 | 1.54132 |

## 3.3. Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.99652 | 0.82855 | 7.59419 | 11.2246 | 0.01751 | 0.21282 | — | 0.21282 | 0.19580 | — | 0.19580 | — | 1,603.18 | 1,603.18 | 0.06503 | 0.01301 | — | 1,608.68 |
| Demolition | — | — | — | — | — | — | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08191 | 0.06810 | 0.62418 | 0.92257 | 0.00144 | 0.01749 | — | 0.01749 | 0.01609 | — | 0.01609 | — | 131.768 | 131.768 | 0.00535 | 0.00107 | — | 132.220 |
| Demolition | — | — | — | — | — | — | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01495 | 0.01243 | 0.11391 | 0.16837 | 0.00026 | 0.00319 | — | 0.00319 | 0.00294 | — | 0.00294 | — | 21.8157 | 21.8157 | 0.00088 | 0.00018 | — | 21.8906 |
| Demolition | — | — | — | — | — | — | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00510 | 0.00464 | 0.00408 | 0.05064 | 0.00000 | 0.00000 | 0.01101 | 0.01101 | 0.00000 | 0.00258 | 0.00258 | — | 11.6469 | 11.6469 | 0.00061 | 0.00046 | 0.01846 | 11.8185 |
| Vendor | 0.00063 | 0.00027 | 0.01074 | 0.00490 | 0.00006 | 0.00011 | 0.00209 | 0.00220 | 0.00011 | 0.00058 | 0.00069 | — | 8.07830 | 8.07830 | 0.00031 | 0.00116 | 0.00854 | 8.44143 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00093 | 0.00085 | 0.00074 | 0.00924 | 0.00000 | 0.00000 | 0.00201 | 0.00201 | 0.00000 | 0.00047 | 0.00047 | — | 1.92827 | 1.92827 | 0.00010 | 0.00008 | 0.00306 | 1.95669 |
| Vendor | 0.00012 | 0.00005 | 0.00196 | 0.00090 | 0.00001 | 0.00002 | 0.00038 | 0.00040 | 0.00002 | 0.00011 | 0.00013 | — | 1.33745 | 1.33745 | 0.00005 | 0.00019 | 0.00141 | 1.39757 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.5. Phase1: Mass Grading (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.58731 | 1.33378 | 12.2079 | 14.7636 | 0.02283 | 0.51670 | — | 0.51670 | 0.47537 | — | 0.47537 | — | 2,472.91 | 2,472.91 | 0.10031 | 0.02006 | — | 2,481.40 |
| Dust From Material Movement | — | — | — | — | — | — | 5.31194 | 5.31194 | — | 2.56855 | 2.56855 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.58731 | 1.33378 | 12.2079 | 14.7636 | 0.02283 | 0.51670 | — | 0.51670 | 0.47537 | — | 0.47537 | — | 2,472.91 | 2,472.91 | 0.10031 | 0.02006 | — | 2,481.40 |
| Dust From Material Movement | — | — | — | — | — | — | 5.31194 | 5.31194 | — | 2.56855 | 2.56855 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.39139 | 0.32888 | 3.01018 | 3.64035 | 0.00563 | 0.12741 | — | 0.12741 | 0.11721 | — | 0.11721 | — | 609.758 | 609.758 | 0.02473 | 0.00495 | — | 611.851 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 1.30979 | 1.30979 | — | 0.63334 | 0.63334 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.07143 | 0.06002 | 0.54936 | 0.66436 | 0.00103 | 0.02325 | — | 0.02325 | 0.02139 | — | 0.02139 | — | 100.952 | 100.952 | 0.00410 | 0.00082 | — | 101.299 |
| Dust From Material Movement | — | — | — | — | — | — | 0.23904 | 0.23904 | — | 0.11558 | 0.11558 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06733 | 0.05783 | 0.04436 | 0.69169 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 148.720 | 148.720 | 0.00704 | 0.00528 | 0.52047 | 150.990 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01530 | 0.01391 | 0.01224 | 0.15192 | 0.00000 | 0.00000 | 0.03304 | 0.03304 | 0.00000 | 0.00774 | 0.00774 | — | 34.9406 | 34.9406 | 0.00182 | 0.00139 | 0.05538 | 35.4555 |
| Vendor | 0.00190 | 0.00081 | 0.03222 | 0.01471 | 0.00017 | 0.00033 | 0.00626 | 0.00659 | 0.00033 | 0.00173 | 0.00206 | — | 24.2349 | 24.2349 | 0.00092 | 0.00349 | 0.02562 | 25.3243 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00279 | 0.00254 | 0.00223 | 0.02772 | 0.00000 | 0.00000 | 0.00603 | 0.00603 | 0.00000 | 0.00141 | 0.00141 | — | 5.78482 | 5.78482 | 0.00030 | 0.00023 | 0.00917 | 5.87007 |
| Vendor | 0.00035 | 0.00015 | 0.00588 | 0.00269 | 0.00003 | 0.00006 | 0.00114 | 0.00120 | 0.00006 | 0.00032 | 0.00038 | — | 4.01236 | 4.01236 | 0.00015 | 0.00058 | 0.00424 | 4.19272 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.7. Phase 2: Mass Grading (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.95871 | 1.64586 | 14.9701 | 17.4372 | 0.02732 | 0.64622 | — | 0.64622 | 0.59452 | — | 0.59452 | — | 2,959.64 | 2,959.64 | 0.12006 | 0.02401 | — | 2,969.79 |
| Dust From Material Movement | — | — | — | — | — | — | 7.08302 | 7.08302 | — | 3.42480 | 3.42480 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.95871 | 1.64586 | 14.9701 | 17.4372 | 0.02732 | 0.64622 | — | 0.64622 | 0.59452 | — | 0.59452 | — | 2,959.64 | 2,959.64 | 0.12006 | 0.02401 | — | 2,969.79 |
| Dust From Material Movement | — | — | — | — | — | — | 7.08302 | 7.08302 | — | 3.42480 | 3.42480 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48297 | 0.40583 | 3.69126 | 4.29959 | 0.00674 | 0.15934 | — | 0.15934 | 0.14659 | — | 0.14659 | — | 729.774 | 729.774 | 0.02960 | 0.00592 | — | 732.278 |
| Dust From Material Movement | — | — | — | — | — | — | 1.74650 | 1.74650 | — | 0.84447 | 0.84447 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08814 | 0.07406 | 0.67366 | 0.78468 | 0.00123 | 0.02908 | — | 0.02908 | 0.02675 | — | 0.02675 | — | 120.822 | 120.822 | 0.00490 | 0.00098 | — | 121.237 |
| Dust From Material Movement | — | — | — | — | — | — | 0.31874 | 0.31874 | — | 0.15412 | 0.15412 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06733 | 0.05783 | 0.04436 | 0.69169 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 148.720 | 148.720 | 0.00704 | 0.00528 | 0.52047 | 150.990 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00502 | 0.00153 | 0.08857 | 0.03402 | 0.00045 | 0.00129 | 0.01813 | 0.01942 | 0.00086 | 0.00496 | 0.00583 | — | 68.7738 | 68.7738 | 0.00343 | 0.01106 | 0.14365 | 72.2985 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00494 | 0.00144 | 0.09187 | 0.03436 | 0.00045 | 0.00129 | 0.01813 | 0.01942 | 0.00086 | 0.00496 | 0.00583 | — | 68.8006 | 68.8006 | 0.00343 | 0.01106 | 0.00373 | 72.1854 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01530 | 0.01391 | 0.01224 | 0.15192 | 0.00000 | 0.00000 | 0.03304 | 0.03304 | 0.00000 | 0.00774 | 0.00774 | — | 34.9406 | 34.9406 | 0.00182 | 0.00139 | 0.05538 | 35.4555 |
| Vendor | 0.00190 | 0.00081 | 0.03222 | 0.01471 | 0.00017 | 0.00033 | 0.00626 | 0.00659 | 0.00033 | 0.00173 | 0.00206 | — | 24.2349 | 24.2349 | 0.00092 | 0.00349 | 0.02562 | 25.3243 |
| Hauling | 0.00123 | 0.00037 | 0.02255 | 0.00842 | 0.00011 | 0.00032 | 0.00444 | 0.00476 | 0.00021 | 0.00122 | 0.00143 | — | 16.9607 | 16.9607 | 0.00085 | 0.00273 | 0.01535 | 17.8097 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00279 | 0.00254 | 0.00223 | 0.02772 | 0.00000 | 0.00000 | 0.00603 | 0.00603 | 0.00000 | 0.00141 | 0.00141 | — | 5.78482 | 5.78482 | 0.00030 | 0.00023 | 0.00917 | 5.87007 |
| Vendor | 0.00035 | 0.00015 | 0.00588 | 0.00269 | 0.00003 | 0.00006 | 0.00114 | 0.00120 | 0.00006 | 0.00032 | 0.00038 | — | 4.01236 | 4.01236 | 0.00015 | 0.00058 | 0.00424 | 4.19272 |
| Hauling | 0.00023 | 0.00007 | 0.00412 | 0.00154 | 0.00002 | 0.00006 | 0.00081 | 0.00087 | 0.00004 | 0.00022 | 0.00026 | — | 2.80804 | 2.80804 | 0.00014 | 0.00045 | 0.00254 | 2.94861 |

## 3.9. Phase 2: Revetment (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.95871 | 1.64586 | 14.9701 | 17.4372 | 0.02732 | 0.64622 | — | 0.64622 | 0.59452 | — | 0.59452 | — | 2,959.64 | 2,959.64 | 0.12006 | 0.02401 | — | 2,969.79 |
| Dust From Material Movement | — | — | — | — | — | — | 7.08259 | 7.08259 | — | 3.42474 | 3.42474 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.16099 | 0.13528 | 1.23042 | 1.43320 | 0.00225 | 0.05311 | — | 0.05311 | 0.04886 | — | 0.04886 | — | 243.258 | 243.258 | 0.00987 | 0.00197 | — | 244.093 |
| Dust From Material Movement | — | — | — | — | — | — | 0.58213 | 0.58213 | — | 0.28149 | 0.28149 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02938 | 0.02469 | 0.22455 | 0.26156 | 0.00041 | 0.00969 | — | 0.00969 | 0.00892 | — | 0.00892 | — | 40.2741 | 40.2741 | 0.00163 | 0.00033 | — | 40.4123 |
| Dust From Material Movement | — | — | — | — | — | — | 0.10624 | 0.10624 | — | 0.05137 | 0.05137 | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06733 | 0.05783 | 0.04436 | 0.69169 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 148.720 | 148.720 | 0.00704 | 0.00528 | 0.52047 | 150.990 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00510 | 0.00464 | 0.00408 | 0.05064 | 0.00000 | 0.00000 | 0.01101 | 0.01101 | 0.00000 | 0.00258 | 0.00258 | — | 11.6469 | 11.6469 | 0.00061 | 0.00046 | 0.01846 | 11.8185 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.00063 | 0.00027 | 0.01074 | 0.00490 | 0.00006 | 0.00011 | 0.00209 | 0.00220 | 0.00011 | 0.00058 | 0.00069 | — | 8.07830 | 8.07830 | 0.00031 | 0.00116 | 0.00854 | 8.44143 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00093 | 0.00085 | 0.00074 | 0.00924 | 0.00000 | 0.00000 | 0.00201 | 0.00201 | 0.00000 | 0.00047 | 0.00047 | — | 1.92827 | 1.92827 | 0.00010 | 0.00008 | 0.00306 | 1.95669 |
| Vendor | 0.00012 | 0.00005 | 0.00196 | 0.00090 | 0.00001 | 0.00002 | 0.00038 | 0.00040 | 0.00002 | 0.00011 | 0.00013 | — | 1.33745 | 1.33745 | 0.00005 | 0.00019 | 0.00141 | 1.39757 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.11. Phase 2: Public Works Building (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.58782 | 0.49393 | 4.80600 | 6.90565 | 0.01205 | 0.18874 | — | 0.18874 | 0.17364 | — | 0.17364 | — | 1,304.47 | 1,304.47 | 0.05291 | 0.01058 | — | 1,308.94 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04831 | 0.04060 | 0.39501 | 0.56759 | 0.00099 | 0.01551 | — | 0.01551 | 0.01427 | — | 0.01427 | — | 107.216 | 107.216 | 0.00435 | 0.00087 | — | 107.584 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.00882 | 0.00741 | 0.07209 | 0.10358 | 0.00018 | 0.00283 | — | 0.00283 | 0.00260 | — | 0.00260 | — | 17.7509 | 17.7509 | 0.00072 | 0.00014 | — | 17.8118 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11767 | 0.10710 | 0.09374 | 1.14404 | 0.00000 | 0.00000 | 0.25372 | 0.25372 | 0.00000 | 0.05947 | 0.05947 | — | 263.341 | 263.341 | 0.01387 | 0.01056 | 0.02536 | 266.860 |
| Vendor | 0.01524 | 0.00640 | 0.26346 | 0.12112 | 0.00135 | 0.00269 | 0.05120 | 0.05389 | 0.00269 | 0.01415 | 0.01684 | — | 196.640 | 196.640 | 0.00750 | 0.02832 | 0.01245 | 205.281 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00956 | 0.00869 | 0.00765 | 0.09495 | 0.00000 | 0.00000 | 0.02065 | 0.02065 | 0.00000 | 0.00484 | 0.00484 | — | 21.8379 | 21.8379 | 0.00114 | 0.00087 | 0.03461 | 22.1597 |
| Vendor | 0.00127 | 0.00054 | 0.02148 | 0.00981 | 0.00011 | 0.00022 | 0.00417 | 0.00439 | 0.00022 | 0.00115 | 0.00138 | — | 16.1566 | 16.1566 | 0.00062 | 0.00233 | 0.01708 | 16.8829 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00175 | 0.00159 | 0.00140 | 0.01733 | 0.00000 | 0.00000 | 0.00377 | 0.00377 | 0.00000 | 0.00088 | 0.00088 | — | 3.61551 | 3.61551 | 0.00019 | 0.00014 | 0.00573 | 3.66879 |
| Vendor | 0.00023 | 0.00010 | 0.00392 | 0.00179 | 0.00002 | 0.00004 | 0.00076 | 0.00080 | 0.00004 | 0.00021 | 0.00025 | — | 2.67491 | 2.67491 | 0.00010 | 0.00039 | 0.00283 | 2.79515 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.13. Phase 2: Recreational Amenities (2026) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.58782 | 0.49393 | 4.80600 | 6.90565 | 0.01205 | 0.18874 | — | 0.18874 | 0.17364 | — | 0.17364 | — | 1,304.47 | 1,304.47 | 0.05291 | 0.01058 | — | 1,308.94 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01610 | 0.01353 | 0.13167 | 0.18920 | 0.00033 | 0.00517 | — | 0.00517 | 0.00476 | — | 0.00476 | — | 35.7388 | 35.7388 | 0.00145 | 0.00029 | — | 35.8614 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00294 | 0.00247 | 0.02403 | 0.03453 | 0.00006 | 0.00094 | — | 0.00094 | 0.00087 | — | 0.00087 | — | 5.91697 | 5.91697 | 0.00024 | 0.00005 | — | 5.93727 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00170 | 0.00155 | 0.00136 | 0.01688 | 0.00000 | 0.00000 | 0.00367 | 0.00367 | 0.00000 | 0.00086 | 0.00086 | — | 3.88229 | 3.88229 | 0.00020 | 0.00015 | 0.00615 | 3.93950 |
| Vendor | 0.00021 | 0.00009 | 0.00358 | 0.00163 | 0.00002 | 0.00004 | 0.00070 | 0.00073 | 0.00004 | 0.00019 | 0.00023 | — | 2.69277 | 2.69277 | 0.00010 | 0.00039 | 0.00285 | 2.81381 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00031 | 0.00028 | 0.00025 | 0.00308 | 0.00000 | 0.00000 | 0.00067 | 0.00067 | 0.00000 | 0.00016 | 0.00016 | — | 0.64276 | 0.64276 | 0.00003 | 0.00003 | 0.00102 | 0.65223 |
| Vendor | 0.00004 | 0.00002 | 0.00065 | 0.00030 | < 0.000005 | 0.00001 | 0.00013 | 0.00013 | 0.00001 | 0.00004 | 0.00004 | — | 0.44582 | 0.44582 | 0.00002 | 0.00006 | 0.00047 | 0.46586 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.15. Phase 1: Restore Asphalt Concrete Pavement (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48255 | 0.40274 | 3.33680 | 3.62978 | 0.00622 | 0.14863 | — | 0.14863 | 0.13674 | — | 0.13674 | — | 568.898 | 568.898 | 0.02308 | 0.00462 | — | 570.850 |
| Paving | 0.00000 | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48255 | 0.40274 | 3.33680 | 3.62978 | 0.00622 | 0.14863 | — | 0.14863 | 0.13674 | — | 0.13674 | — | 568.898 | 568.898 | 0.02308 | 0.00462 | — | 570.850 |
| Paving | 0.00000 | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03966 | 0.03310 | 0.27426 | 0.29834 | 0.00051 | 0.01222 | — | 0.01222 | 0.01124 | — | 0.01124 | — | 46.7587 | 46.7587 | 0.00190 | 0.00038 | — | 46.9192 |
| Paving | 0.00000 | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00724 | 0.00604 | 0.05005 | 0.05445 | 0.00009 | 0.00223 | — | 0.00223 | 0.00205 | — | 0.00205 | — | 7.74144 | 7.74144 | 0.00031 | 0.00006 | — | 7.76801 |
| Paving | 0.00000 | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06733 | 0.05783 | 0.04436 | 0.69169 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 148.720 | 148.720 | 0.00704 | 0.00528 | 0.52047 | 150.990 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00510 | 0.00464 | 0.00408 | 0.05064 | 0.00000 | 0.00000 | 0.01101 | 0.01101 | 0.00000 | 0.00258 | 0.00258 | — | 11.6469 | 11.6469 | 0.00061 | 0.00046 | 0.01846 | 11.8185 |
| Vendor | 0.00063 | 0.00027 | 0.01074 | 0.00490 | 0.00006 | 0.00011 | 0.00209 | 0.00220 | 0.00011 | 0.00058 | 0.00069 | — | 8.07830 | 8.07830 | 0.00031 | 0.00116 | 0.00854 | 8.44143 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00093 | 0.00085 | 0.00074 | 0.00924 | 0.00000 | 0.00000 | 0.00201 | 0.00201 | 0.00000 | 0.00047 | 0.00047 | — | 1.92827 | 1.92827 | 0.00010 | 0.00008 | 0.00306 | 1.95669 |
| Vendor | 0.00012 | 0.00005 | 0.00196 | 0.00090 | 0.00001 | 0.00002 | 0.00038 | 0.00040 | 0.00002 | 0.00011 | 0.00013 | — | 1.33745 | 1.33745 | 0.00005 | 0.00019 | 0.00141 | 1.39757 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.17. Phase 2: Concrete Floodwall (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.30325 | 0.25208 | 2.14781 | 2.63403 | 0.00488 | 0.07883 | — | 0.07883 | 0.07253 | — | 0.07253 | — | 423.007 | 423.007 | 0.01716 | 0.00343 | — | 424.459 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01662 | 0.01381 | 0.11769 | 0.14433 | 0.00027 | 0.00432 | — | 0.00432 | 0.00397 | — | 0.00397 | — | 23.1785 | 23.1785 | 0.00094 | 0.00019 | — | 23.2580 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.00303 | 0.00252 | 0.02148 | 0.02634 | 0.00005 | 0.00079 | — | 0.00079 | 0.00073 | — | 0.00073 | — | 3.83746 | 3.83746 | 0.00016 | 0.00003 | — | 3.85063 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05491 | 0.04998 | 0.04374 | 0.53389 | 0.00000 | 0.00000 | 0.11840 | 0.11840 | 0.00000 | 0.02775 | 0.02775 | — | 122.892 | 122.892 | 0.00647 | 0.00493 | 0.01183 | 124.535 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00298 | 0.00270 | 0.00238 | 0.02954 | 0.00000 | 0.00000 | 0.00642 | 0.00642 | 0.00000 | 0.00150 | 0.00150 | — | 6.79401 | 6.79401 | 0.00035 | 0.00027 | 0.01077 | 6.89413 |
| Vendor | 0.00042 | 0.00018 | 0.00716 | 0.00327 | 0.00004 | 0.00007 | 0.00139 | 0.00146 | 0.00007 | 0.00038 | 0.00046 | — | 5.38553 | 5.38553 | 0.00021 | 0.00078 | 0.00569 | 5.62762 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00054 | 0.00049 | 0.00043 | 0.00539 | 0.00000 | 0.00000 | 0.00117 | 0.00117 | 0.00000 | 0.00027 | 0.00027 | — | 1.12483 | 1.12483 | 0.00006 | 0.00004 | 0.00178 | 1.14140 |
| Vendor | 0.00008 | 0.00003 | 0.00131 | 0.00060 | 0.00001 | 0.00001 | 0.00025 | 0.00027 | 0.00001 | 0.00007 | 0.00008 | — | 0.89164 | 0.89164 | 0.00003 | 0.00013 | 0.00094 | 0.93172 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.19. Phase 2: Restore Asphalt Concrete Pavement (2027) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.57535 | 0.48071 | 4.15212 | 5.30895 | 0.00857 | 0.16795 | — | 0.16795 | 0.15451 | — | 0.15451 | — | 823.016 | 823.016 | 0.03339 | 0.00668 | — | 825.840 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02364 | 0.01976 | 0.17064 | 0.21818 | 0.00035 | 0.00690 | — | 0.00690 | 0.00635 | — | 0.00635 | — | 33.8226 | 33.8226 | 0.00137 | 0.00027 | — | 33.9386 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00432 | 0.00361 | 0.03114 | 0.03982 | 0.00006 | 0.00126 | — | 0.00126 | 0.00116 | — | 0.00116 | — | 5.59971 | 5.59971 | 0.00023 | 0.00005 | — | 5.61893 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06822 | 0.06188 | 0.05545 | 0.64800 | 0.00000 | 0.00000 | 0.15223 | 0.15223 | 0.00000 | 0.03568 | 0.03568 | — | 155.340 | 155.340 | 0.00832 | 0.00634 | 0.01379 | 157.451 |
| Vendor | 0.00686 | 0.00311 | 0.12573 | 0.05819 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 96.2340 | 96.2340 | 0.00375 | 0.01349 | 0.00557 | 100.353 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00279 | 0.00253 | 0.00226 | 0.02695 | 0.00000 | 0.00000 | 0.00619 | 0.00619 | 0.00000 | 0.00145 | 0.00145 | — | 6.44095 | 6.44095 | 0.00033 | 0.00024 | 0.00946 | 6.53131 |
| Vendor | 0.00029 | 0.00013 | 0.00513 | 0.00239 | 0.00003 | 0.00006 | 0.00104 | 0.00110 | 0.00006 | 0.00029 | 0.00034 | — | 3.95328 | 3.95328 | 0.00015 | 0.00055 | 0.00381 | 4.12615 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00051 | 0.00046 | 0.00041 | 0.00492 | 0.00000 | 0.00000 | 0.00113 | 0.00113 | 0.00000 | 0.00026 | 0.00026 | — | 1.06637 | 1.06637 | 0.00005 | 0.00004 | 0.00157 | 1.08133 |
| Vendor | 0.00005 | 0.00002 | 0.00094 | 0.00044 | 0.00001 | 0.00001 | 0.00019 | 0.00020 | 0.00001 | 0.00005 | 0.00006 | — | 0.65451 | 0.65451 | 0.00003 | 0.00009 | 0.00063 | 0.68313 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.21. Restore Stripping (2027) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.13715 | 0.11335 | 0.83116 | 1.12539 | 0.00173 | 0.01905 | — | 0.01905 | 0.01752 | — | 0.01752 | — | 133.513 | 133.513 | 0.00542 | 0.00108 | — | 133.971 |
| Architectural Coatings | 0.05564 | 0.05564 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 0.00188 | 0.00155 | 0.01139 | 0.01542 | 0.00002 | 0.00026 | — | 0.00026 | 0.00024 | — | 0.00024 | — | 1.82894 | 1.82894 | 0.00007 | 0.00001 | — | 1.83522 |
| Architectural Coatings | 0.00076 | 0.00076 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00034 | 0.00028 | 0.00208 | 0.00281 | < 0.000005 | 0.00005 | — | 0.00005 | 0.00004 | — | 0.00004 | — | 0.30280 | 0.30280 | 0.00001 | < 0.000005 | — | 0.30384 |
| Architectural Coatings | 0.00014 | 0.00014 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03790 | 0.03438 | 0.03081 | 0.36000 | 0.00000 | 0.00000 | 0.08457 | 0.08457 | 0.00000 | 0.01982 | 0.01982 | — | 86.3001 | 86.3001 | 0.00462 | 0.00352 | 0.00766 | 87.4725 |
| Vendor | 0.00686 | 0.00311 | 0.12573 | 0.05819 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 96.2340 | 96.2340 | 0.00375 | 0.01349 | 0.00557 | 100.353 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00052 | 0.00047 | 0.00042 | 0.00499 | 0.00000 | 0.00000 | 0.00115 | 0.00115 | 0.00000 | 0.00027 | 0.00027 | — | 1.19277 | 1.19277 | 0.00006 | 0.00005 | 0.00175 | 1.20950 |
| Vendor | 0.00010 | 0.00004 | 0.00171 | 0.00080 | 0.00001 | 0.00002 | 0.00035 | 0.00037 | 0.00002 | 0.00010 | 0.00011 | — | 1.31776 | 1.31776 | 0.00005 | 0.00018 | 0.00127 | 1.37538 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00009 | 0.00009 | 0.00008 | 0.00091 | 0.00000 | 0.00000 | 0.00021 | 0.00021 | 0.00000 | 0.00005 | 0.00005 | — | 0.19748 | 0.19748 | 0.00001 | 0.00001 | 0.00029 | 0.20025 |
| Vendor | 0.00002 | 0.00001 | 0.00031 | 0.00015 | < 0.000005 | < 0.000005 | 0.00006 | 0.00007 | < 0.000005 | 0.00002 | 0.00002 | — | 0.21817 | 0.21817 | 0.00001 | 0.00003 | 0.00021 | 0.22771 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.23. Phase 2: Water Main Construction (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.33234 | 0.27926 | 2.28056 | 3.33566 | 0.00460 | 0.08450 | — | 0.08450 | 0.07774 | — | 0.07774 | — | 497.807 | 497.807 | 0.02019 | 0.00404 | — | 499.515 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00637 | 0.00536 | 0.04374 | 0.06397 | 0.00009 | 0.00162 | — | 0.00162 | 0.00149 | — | 0.00149 | — | 9.54698 | 9.54698 | 0.00039 | 0.00008 | — | 9.57974 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00116 | 0.00098 | 0.00798 | 0.01167 | 0.00002 | 0.00030 | — | 0.00030 | 0.00027 | — | 0.00027 | — | 1.58061 | 1.58061 | 0.00006 | 0.00001 | — | 1.58604 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00119 | 0.00108 | 0.00095 | 0.01182 | 0.00000 | 0.00000 | 0.00257 | 0.00257 | 0.00000 | 0.00060 | 0.00060 | — | 2.71760 | 2.71760 | 0.00014 | 0.00011 | 0.00431 | 2.75765 |
| Vendor | 0.00015 | 0.00006 | 0.00251 | 0.00114 | 0.00001 | 0.00003 | 0.00049 | 0.00051 | 0.00003 | 0.00013 | 0.00016 | — | 1.88494 | 1.88494 | 0.00007 | 0.00027 | 0.00199 | 1.96967 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00022 | 0.00020 | 0.00017 | 0.00216 | 0.00000 | 0.00000 | 0.00047 | 0.00047 | 0.00000 | 0.00011 | 0.00011 | — | 0.44993 | 0.44993 | 0.00002 | 0.00002 | 0.00071 | 0.45656 |
| Vendor | 0.00003 | 0.00001 | 0.00046 | 0.00021 | < 0.000005 | < 0.000005 | 0.00009 | 0.00009 | < 0.000005 | 0.00002 | 0.00003 | — | 0.31207 | 0.31207 | 0.00001 | 0.00004 | 0.00033 | 0.32610 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.25. Phase 2: Water Main Connection (2026) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.21227 | 0.17837 | 1.24742 | 1.42751 | 0.00191 | 0.04971 | — | 0.04971 | 0.04573 | — | 0.04573 | — | 207.444 | 207.444 | 0.00841 | 0.00168 | — | 208.156 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00058 | 0.00049 | 0.00342 | 0.00391 | 0.00001 | 0.00014 | — | 0.00014 | 0.00013 | — | 0.00013 | — | 0.56834 | 0.56834 | 0.00002 | < 0.000005 | — | 0.57029 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00011 | 0.00009 | 0.00062 | 0.00071 | < 0.000005 | 0.00002 | — | 0.00002 | 0.00002 | — | 0.00002 | — | 0.09410 | 0.09410 | < 0.000005 | < 0.000005 | — | 0.09442 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06276 | 0.05712 | 0.04999 | 0.61015 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 140.448 | 140.448 | 0.00740 | 0.00563 | 0.01352 | 142.325 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00017 | 0.00015 | 0.00014 | 0.00169 | 0.00000 | 0.00000 | 0.00037 | 0.00037 | 0.00000 | 0.00009 | 0.00009 | — | 0.38823 | 0.38823 | 0.00002 | 0.00002 | 0.00062 | 0.39395 |
| Vendor | 0.00002 | 0.00001 | 0.00036 | 0.00016 | < 0.000005 | < 0.000005 | 0.00007 | 0.00007 | < 0.000005 | 0.00002 | 0.00002 | — | 0.26928 | 0.26928 | 0.00001 | 0.00004 | 0.00028 | 0.28138 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00003 | 0.00003 | 0.00002 | 0.00031 | 0.00000 | 0.00000 | 0.00007 | 0.00007 | 0.00000 | 0.00002 | 0.00002 | — | 0.06428 | 0.06428 | < 0.000005 | < 0.000005 | 0.00010 | 0.06522 |
| Vendor | < 0.000005 | < 0.000005 | 0.00007 | 0.00003 | < 0.000005 | < 0.000005 | 0.00001 | 0.00001 | < 0.000005 | < 0.000005 | < 0.000005 | — | 0.04458 | 0.04458 | < 0.000005 | 0.00001 | 0.00005 | 0.04659 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.27. Phase 1: Revegetation (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23296 | 0.19575 | 1.85514 | 2.92652 | 0.00399 | 0.05858 | — | 0.05858 | 0.05389 | — | 0.05389 | — | 431.997 | 431.997 | 0.01752 | 0.00350 | — | 433.480 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01915 | 0.01609 | 0.15248 | 0.24054 | 0.00033 | 0.00481 | — | 0.00481 | 0.00443 | — | 0.00443 | — | 35.5066 | 35.5066 | 0.00144 | 0.00029 | — | 35.6285 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00349 | 0.00294 | 0.02783 | 0.04390 | 0.00006 | 0.00088 | — | 0.00088 | 0.00081 | — | 0.00081 | — | 5.87853 | 5.87853 | 0.00024 | 0.00005 | — | 5.89870 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06733 | 0.05783 | 0.04436 | 0.69169 | 0.00000 | 0.00000 | 0.13532 | 0.13532 | 0.00000 | 0.03172 | 0.03172 | — | 148.720 | 148.720 | 0.00704 | 0.00528 | 0.52047 | 150.990 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00510 | 0.00464 | 0.00408 | 0.05064 | 0.00000 | 0.00000 | 0.01101 | 0.01101 | 0.00000 | 0.00258 | 0.00258 | — | 11.6469 | 11.6469 | 0.00061 | 0.00046 | 0.01846 | 11.8185 |
| Vendor | 0.00063 | 0.00027 | 0.01074 | 0.00490 | 0.00006 | 0.00011 | 0.00209 | 0.00220 | 0.00011 | 0.00058 | 0.00069 | — | 8.07830 | 8.07830 | 0.00031 | 0.00116 | 0.00854 | 8.44143 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00093 | 0.00085 | 0.00074 | 0.00924 | 0.00000 | 0.00000 | 0.00201 | 0.00201 | 0.00000 | 0.00047 | 0.00047 | — | 1.92827 | 1.92827 | 0.00010 | 0.00008 | 0.00306 | 1.95669 |
| Vendor | 0.00012 | 0.00005 | 0.00196 | 0.00090 | 0.00001 | 0.00002 | 0.00038 | 0.00040 | 0.00002 | 0.00011 | 0.00013 | — | 1.33745 | 1.33745 | 0.00005 | 0.00019 | 0.00141 | 1.39757 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.29. Phase 1: Pothole and Utility Locating (2026) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03922 | 0.03570 | 0.03125 | 0.38135 | 0.00000 | 0.00000 | 0.08457 | 0.08457 | 0.00000 | 0.01982 | 0.01982 | — | 87.7802 | 87.7802 | 0.00462 | 0.00352 | 0.00845 | 88.9534 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00021 | 0.00019 | 0.00017 | 0.00211 | 0.00000 | 0.00000 | 0.00046 | 0.00046 | 0.00000 | 0.00011 | 0.00011 | — | 0.48529 | 0.48529 | 0.00003 | 0.00002 | 0.00077 | 0.49244 |
| Vendor | 0.00004 | 0.00002 | 0.00072 | 0.00033 | < 0.000005 | 0.00001 | 0.00014 | 0.00015 | 0.00001 | 0.00004 | 0.00005 | — | 0.53855 | 0.53855 | 0.00002 | 0.00008 | 0.00057 | 0.56276 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00004 | 0.00004 | 0.00003 | 0.00039 | 0.00000 | 0.00000 | 0.00008 | 0.00008 | 0.00000 | 0.00002 | 0.00002 | — | 0.08034 | 0.08034 | < 0.000005 | < 0.000005 | 0.00013 | 0.08153 |
| Vendor | 0.00001 | < 0.000005 | 0.00013 | 0.00006 | < 0.000005 | < 0.000005 | 0.00003 | 0.00003 | < 0.000005 | 0.00001 | 0.00001 | — | 0.08916 | 0.08916 | < 0.000005 | 0.00001 | 0.00009 | 0.09317 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.31. Phase 1: Erosion Control (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.24014 | 0.20178 | 2.06629 | 3.81629 | 0.00536 | 0.06958 | — | 0.06958 | 0.06401 | — | 0.06401 | — | 580.725 | 580.725 | 0.02356 | 0.00471 | — | 582.718 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00329 | 0.00276 | 0.02831 | 0.05228 | 0.00007 | 0.00095 | — | 0.00095 | 0.00088 | — | 0.00088 | — | 7.95514 | 7.95514 | 0.00032 | 0.00006 | — | 7.98244 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00060 | 0.00050 | 0.00517 | 0.00954 | 0.00001 | 0.00017 | — | 0.00017 | 0.00016 | — | 0.00016 | — | 1.31706 | 1.31706 | 0.00005 | 0.00001 | — | 1.32158 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03922 | 0.03570 | 0.03125 | 0.38135 | 0.00000 | 0.00000 | 0.08457 | 0.08457 | 0.00000 | 0.01982 | 0.01982 | — | 87.7802 | 87.7802 | 0.00462 | 0.00352 | 0.00845 | 88.9534 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00053 | 0.00048 | 0.00043 | 0.00527 | 0.00000 | 0.00000 | 0.00115 | 0.00115 | 0.00000 | 0.00027 | 0.00027 | — | 1.21322 | 1.21322 | 0.00006 | 0.00005 | 0.00192 | 1.23110 |
| Vendor | 0.00011 | 0.00005 | 0.00179 | 0.00082 | 0.00001 | 0.00002 | 0.00035 | 0.00037 | 0.00002 | 0.00010 | 0.00011 | — | 1.34638 | 1.34638 | 0.00005 | 0.00019 | 0.00142 | 1.40690 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00010 | 0.00009 | 0.00008 | 0.00096 | 0.00000 | 0.00000 | 0.00021 | 0.00021 | 0.00000 | 0.00005 | 0.00005 | — | 0.20086 | 0.20086 | 0.00001 | 0.00001 | 0.00032 | 0.20382 |
| Vendor | 0.00002 | 0.00001 | 0.00033 | 0.00015 | < 0.000005 | < 0.000005 | 0.00006 | 0.00007 | < 0.000005 | 0.00002 | 0.00002 | — | 0.22291 | 0.22291 | 0.00001 | 0.00003 | 0.00024 | 0.23293 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.33. Phase 1: Trail Construction (2026) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipm | 0.43869 | 0.36806 | 2.95640 | 3.84642 | 0.00578 | 0.16010 | — | 0.16010 | 0.14729 | — | 0.14729 | — | 602.566 | 602.566 | 0.02444 | 0.00489 | — | 604.634 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03606 | 0.03025 | 0.24299 | 0.31614 | 0.00048 | 0.01316 | — | 0.01316 | 0.01211 | — | 0.01211 | — | 49.5260 | 49.5260 | 0.00201 | 0.00040 | — | 49.6960 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00658 | 0.00552 | 0.04435 | 0.05770 | 0.00009 | 0.00240 | — | 0.00240 | 0.00221 | — | 0.00221 | — | 8.19959 | 8.19959 | 0.00033 | 0.00007 | — | 8.22773 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03787 | 0.03253 | 0.02495 | 0.38908 | 0.00000 | 0.00000 | 0.07612 | 0.07612 | 0.00000 | 0.01784 | 0.01784 | — | 83.6552 | 83.6552 | 0.00396 | 0.00297 | 0.29276 | 84.9321 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00287 | 0.00261 | 0.00230 | 0.02848 | 0.00000 | 0.00000 | 0.00619 | 0.00619 | 0.00000 | 0.00145 | 0.00145 | — | 6.55137 | 6.55137 | 0.00034 | 0.00026 | 0.01038 | 6.64791 |
| Vendor | 0.00063 | 0.00027 | 0.01074 | 0.00490 | 0.00006 | 0.00011 | 0.00209 | 0.00220 | 0.00011 | 0.00058 | 0.00069 | — | 8.07830 | 8.07830 | 0.00031 | 0.00116 | 0.00854 | 8.44143 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00052 | 0.00048 | 0.00042 | 0.00520 | 0.00000 | 0.00000 | 0.00113 | 0.00113 | 0.00000 | 0.00026 | 0.00026 | — | 1.08465 | 1.08465 | 0.00006 | 0.00004 | 0.00172 | 1.10064 |
| Vendor | 0.00012 | 0.00005 | 0.00196 | 0.00090 | 0.00001 | 0.00002 | 0.00038 | 0.00040 | 0.00002 | 0.00011 | 0.00013 | — | 1.33745 | 1.33745 | 0.00005 | 0.00019 | 0.00141 | 1.39757 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.35. Phase 1: Job Site Management (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11927 | 0.09857 | 0.79008 | 0.52253 | 0.00145 | 0.03181 | — | 0.03181 | 0.02927 | — | 0.02927 | — | 103.844 | 103.844 | 0.00421 | 0.00084 | — | 104.201 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11927 | 0.09857 | 0.79008 | 0.52253 | 0.00145 | 0.03181 | — | 0.03181 | 0.02927 | — | 0.02927 | — | 103.844 | 103.844 | 0.00421 | 0.00084 | — | 104.201 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.07091 | 0.05860 | 0.46972 | 0.31065 | 0.00086 | 0.01891 | — | 0.01891 | 0.01740 | — | 0.01740 | — | 61.7375 | 61.7375 | 0.00250 | 0.00050 | — | 61.9494 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01294 | 0.01069 | 0.08572 | 0.05669 | 0.00016 | 0.00345 | — | 0.00345 | 0.00318 | — | 0.00318 | — | 10.2213 | 10.2213 | 0.00041 | 0.00008 | — | 10.2564 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01052 | 0.00904 | 0.00693 | 0.10808 | 0.00000 | 0.00000 | 0.02114 | 0.02114 | 0.00000 | 0.00496 | 0.00496 | — | 23.2375 | 23.2375 | 0.00110 | 0.00083 | 0.08132 | 23.5923 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00981 | 0.00893 | 0.00781 | 0.09534 | 0.00000 | 0.00000 | 0.02114 | 0.02114 | 0.00000 | 0.00496 | 0.00496 | — | 21.9450 | 21.9450 | 0.00116 | 0.00088 | 0.00211 | 22.2384 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00576 | 0.00524 | 0.00461 | 0.05723 | 0.00000 | 0.00000 | 0.01245 | 0.01245 | 0.00000 | 0.00292 | 0.00292 | — | 13.1634 | 13.1634 | 0.00069 | 0.00052 | 0.02086 | 13.3574 |
| Vendor | 0.00458 | 0.00195 | 0.07769 | 0.03548 | 0.00040 | 0.00080 | 0.01509 | 0.01589 | 0.00080 | 0.00417 | 0.00497 | — | 58.4330 | 58.4330 | 0.00223 | 0.00842 | 0.06178 | 61.0596 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00105 | 0.00096 | 0.00084 | 0.01044 | 0.00000 | 0.00000 | 0.00227 | 0.00227 | 0.00000 | 0.00053 | 0.00053 | — | 2.17935 | 2.17935 | 0.00011 | 0.00009 | 0.00345 | 2.21147 |
| Vendor | 0.00084 | 0.00036 | 0.01418 | 0.00647 | 0.00007 | 0.00015 | 0.00275 | 0.00290 | 0.00015 | 0.00076 | 0.00091 | — | 9.67425 | 9.67425 | 0.00037 | 0.00139 | 0.01023 | 10.1091 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.37. Phase 2: Pothole and Utility Locating (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01569 | 0.01428 | 0.01250 | 0.15254 | 0.00000 | 0.00000 | 0.03383 | 0.03383 | 0.00000 | 0.00793 | 0.00793 | — | 35.1121 | 35.1121 | 0.00185 | 0.00141 | 0.00338 | 35.5814 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00009 | 0.00008 | 0.00007 | 0.00084 | 0.00000 | 0.00000 | 0.00018 | 0.00018 | 0.00000 | 0.00004 | 0.00004 | — | 0.19411 | 0.19411 | 0.00001 | 0.00001 | 0.00031 | 0.19698 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00002 | 0.00001 | 0.00001 | 0.00015 | 0.00000 | 0.00000 | 0.00003 | 0.00003 | 0.00000 | 0.00001 | 0.00001 | — | 0.03214 | 0.03214 | < 0.000005 | < 0.000005 | 0.00005 | 0.03261 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.39. Phase 2: Concrete Vault Construction (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.47004 | 0.39304 | 3.48902 | 2.93780 | 0.00858 | 0.14192 | — | 0.14192 | 0.13057 | — | 0.13057 | — | 862.692 | 862.692 | 0.03499 | 0.00700 | — | 865.653 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00386 | 0.00323 | 0.02868 | 0.02415 | 0.00007 | 0.00117 | — | 0.00117 | 0.00107 | — | 0.00107 | — | 7.09062 | 7.09062 | 0.00029 | 0.00006 | — | 7.11495 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00071 | 0.00059 | 0.00523 | 0.00441 | 0.00001 | 0.00021 | — | 0.00021 | 0.00020 | — | 0.00020 | — | 1.17393 | 1.17393 | 0.00005 | 0.00001 | — | 1.17796 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03138 | 0.02856 | 0.02500 | 0.30508 | 0.00000 | 0.00000 | 0.06766 | 0.06766 | 0.00000 | 0.01586 | 0.01586 | — | 70.2241 | 70.2241 | 0.00370 | 0.00282 | 0.00676 | 71.1627 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00026 | 0.00023 | 0.00020 | 0.00253 | 0.00000 | 0.00000 | 0.00055 | 0.00055 | 0.00000 | 0.00013 | 0.00013 | — | 0.58234 | 0.58234 | 0.00003 | 0.00002 | 0.00092 | 0.59093 |
| Vendor | 0.00006 | 0.00003 | 0.00107 | 0.00049 | 0.00001 | 0.00001 | 0.00021 | 0.00022 | 0.00001 | 0.00006 | 0.00007 | — | 0.80783 | 0.80783 | 0.00003 | 0.00012 | 0.00085 | 0.84414 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00005 | 0.00004 | 0.00004 | 0.00046 | 0.00000 | 0.00000 | 0.00010 | 0.00010 | 0.00000 | 0.00002 | 0.00002 | — | 0.09641 | 0.09641 | 0.00001 | < 0.000005 | 0.00015 | 0.09783 |
| Vendor | 0.00001 | < 0.000005 | 0.00020 | 0.00009 | < 0.000005 | < 0.000005 | 0.00004 | 0.00004 | < 0.000005 | 0.00001 | 0.00001 | — | 0.13375 | 0.13375 | 0.00001 | 0.00002 | 0.00014 | 0.13976 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.41. Phase 2: Revegetation (2026) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23296 | 0.19575 | 1.85514 | 2.92652 | 0.00399 | 0.05858 | — | 0.05858 | 0.05389 | — | 0.05389 | — | 431.997 | 431.997 | 0.01752 | 0.00350 | — | 433.480 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00055 | 0.00046 | 0.00436 | 0.00687 | 0.00001 | 0.00014 | — | 0.00014 | 0.00013 | — | 0.00013 | — | 1.01448 | 1.01448 | 0.00004 | 0.00001 | — | 1.01796 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00010 | 0.00008 | 0.00080 | 0.00125 | < 0.000005 | 0.00003 | — | 0.00003 | 0.00002 | — | 0.00002 | — | 0.16796 | 0.16796 | 0.00001 | < 0.000005 | — | 0.16853 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02353 | 0.02142 | 0.01875 | 0.22881 | 0.00000 | 0.00000 | 0.05074 | 0.05074 | 0.00000 | 0.01189 | 0.01189 | — | 52.6681 | 52.6681 | 0.00277 | 0.00211 | 0.00507 | 53.3720 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00005 | 0.00005 | 0.00004 | 0.00054 | 0.00000 | 0.00000 | 0.00012 | 0.00012 | 0.00000 | 0.00003 | 0.00003 | — | 0.12479 | 0.12479 | 0.00001 | < 0.000005 | 0.00020 | 0.12663 |
| Vendor | 0.00002 | 0.00001 | 0.00031 | 0.00014 | < 0.000005 | < 0.000005 | 0.00006 | 0.00006 | < 0.000005 | 0.00002 | 0.00002 | — | 0.23081 | 0.23081 | 0.00001 | 0.00003 | 0.00024 | 0.24118 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00001 | 0.00001 | 0.00001 | 0.00010 | 0.00000 | 0.00000 | 0.00002 | 0.00002 | 0.00000 | 0.00001 | 0.00001 | — | 0.02066 | 0.02066 | < 0.000005 | < 0.000005 | 0.00003 | 0.02096 |
| Vendor | < 0.000005 | < 0.000005 | 0.00006 | 0.00003 | < 0.000005 | < 0.000005 | 0.00001 | 0.00001 | < 0.000005 | < 0.000005 | < 0.000005 | — | 0.03821 | 0.03821 | < 0.000005 | 0.00001 | 0.00004 | 0.03993 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.43. Phase 2: Revegetation (2027) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.22414 | 0.18834 | 1.80311 | 2.92880 | 0.00399 | 0.05125 | — | 0.05125 | 0.04715 | — | 0.04715 | — | 432.037 | 432.037 | 0.01753 | 0.00351 | — | 433.520 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01790 | 0.01504 | 0.14397 | 0.23385 | 0.00032 | 0.00409 | — | 0.00409 | 0.00376 | — | 0.00376 | — | 34.4953 | 34.4953 | 0.00140 | 0.00028 | — | 34.6137 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00327 | 0.00274 | 0.02627 | 0.04268 | 0.00006 | 0.00075 | — | 0.00075 | 0.00069 | — | 0.00069 | — | 5.71109 | 5.71109 | 0.00023 | 0.00005 | — | 5.73069 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02274 | 0.02063 | 0.01848 | 0.21600 | 0.00000 | 0.00000 | 0.05074 | 0.05074 | 0.00000 | 0.01189 | 0.01189 | — | 51.7801 | 51.7801 | 0.00277 | 0.00211 | 0.00460 | 52.4835 |
| Vendor | 0.00686 | 0.00311 | 0.12573 | 0.05819 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 96.2340 | 96.2340 | 0.00375 | 0.01349 | 0.00557 | 100.353 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00181 | 0.00164 | 0.00147 | 0.01746 | 0.00000 | 0.00000 | 0.00401 | 0.00401 | 0.00000 | 0.00094 | 0.00094 | — | 4.17128 | 4.17128 | 0.00021 | 0.00016 | 0.00613 | 4.22980 |
| Vendor | 0.00055 | 0.00026 | 0.00996 | 0.00464 | 0.00005 | 0.00011 | 0.00203 | 0.00213 | 0.00011 | 0.00056 | 0.00067 | — | 7.68066 | 7.68066 | 0.00030 | 0.00108 | 0.00741 | 8.01652 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00033 | 0.00030 | 0.00027 | 0.00319 | 0.00000 | 0.00000 | 0.00073 | 0.00073 | 0.00000 | 0.00017 | 0.00017 | — | 0.69060 | 0.69060 | 0.00003 | 0.00003 | 0.00101 | 0.70029 |
| Vendor | 0.00010 | 0.00005 | 0.00182 | 0.00085 | 0.00001 | 0.00002 | 0.00037 | 0.00039 | 0.00002 | 0.00010 | 0.00012 | — | 1.27162 | 1.27162 | 0.00005 | 0.00018 | 0.00123 | 1.32723 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.45. Phase 2: Job Site Managemnet (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11927 | 0.09857 | 0.79008 | 0.52253 | 0.00145 | 0.03181 | — | 0.03181 | 0.02927 | — | 0.02927 | — | 103.844 | 103.844 | 0.00421 | 0.00084 | — | 104.201 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11927 | 0.09857 | 0.79008 | 0.52253 | 0.00145 | 0.03181 | — | 0.03181 | 0.02927 | — | 0.02927 | — | 103.844 | 103.844 | 0.00421 | 0.00084 | — | 104.201 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10195 | 0.08426 | 0.67535 | 0.44665 | 0.00124 | 0.02719 | — | 0.02719 | 0.02502 | — | 0.02502 | — | 88.7655 | 88.7655 | 0.00360 | 0.00072 | — | 89.0701 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01861 | 0.01538 | 0.12325 | 0.08151 | 0.00023 | 0.00496 | — | 0.00496 | 0.00457 | — | 0.00457 | — | 14.6961 | 14.6961 | 0.00060 | 0.00012 | — | 14.7466 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07575 | 0.06506 | 0.04991 | 0.77816 | 0.00000 | 0.00000 | 0.15223 | 0.15223 | 0.00000 | 0.03568 | 0.03568 | — | 167.310 | 167.310 | 0.00792 | 0.00594 | 0.58552 | 169.864 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07060 | 0.06426 | 0.05624 | 0.68642 | 0.00000 | 0.00000 | 0.15223 | 0.15223 | 0.00000 | 0.03568 | 0.03568 | — | 158.004 | 158.004 | 0.00832 | 0.00634 | 0.01522 | 160.116 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05967 | 0.05425 | 0.04774 | 0.59248 | 0.00000 | 0.00000 | 0.12884 | 0.12884 | 0.00000 | 0.03018 | 0.03018 | — | 136.268 | 136.268 | 0.00711 | 0.00542 | 0.21599 | 138.277 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01089 | 0.00990 | 0.00871 | 0.10813 | 0.00000 | 0.00000 | 0.02351 | 0.02351 | 0.00000 | 0.00551 | 0.00551 | — | 22.5608 | 22.5608 | 0.00118 | 0.00090 | 0.03576 | 22.8933 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.47. Phase 2: Job Site Managemnet (2027) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11879 | 0.09817 | 0.78657 | 0.52116 | 0.00145 | 0.03137 | — | 0.03137 | 0.02886 | — | 0.02886 | — | 103.840 | 103.840 | 0.00421 | 0.00084 | — | 104.197 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00307 | 0.00254 | 0.02032 | 0.01346 | 0.00004 | 0.00081 | — | 0.00081 | 0.00075 | — | 0.00075 | — | 2.68237 | 2.68237 | 0.00011 | 0.00002 | — | 2.69158 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.00056 | 0.00046 | 0.00371 | 0.00246 | 0.00001 | 0.00015 | — | 0.00015 | 0.00014 | — | 0.00014 | — | 0.44410 | 0.44410 | 0.00002 | < 0.000005 | — | 0.44562 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06822 | 0.06188 | 0.05545 | 0.64800 | 0.00000 | 0.00000 | 0.15223 | 0.15223 | 0.00000 | 0.03568 | 0.03568 | — | 155.340 | 155.340 | 0.00832 | 0.00634 | 0.01379 | 157.451 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00175 | 0.00159 | 0.00142 | 0.01694 | 0.00000 | 0.00000 | 0.00389 | 0.00389 | 0.00000 | 0.00091 | 0.00091 | — | 4.04860 | 4.04860 | 0.00020 | 0.00015 | 0.00595 | 4.10540 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00032 | 0.00029 | 0.00026 | 0.00309 | 0.00000 | 0.00000 | 0.00071 | 0.00071 | 0.00000 | 0.00017 | 0.00017 | — | 0.67029 | 0.67029 | 0.00003 | 0.00003 | 0.00098 | 0.67970 |
| Vendor | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

## 3.49. Phase 2: Silent Sheet Pile Wall Construction (2026) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.86722 | 0.72870 | 6.46031 | 7.52741 | 0.02431 | 0.24609 | — | 0.24609 | 0.22640 | — | 0.22640 | — | 2,631.55 | 2,631.55 | 0.10675 | 0.02135 | — | 2,640.58 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.86722 | 0.72870 | 6.46031 | 7.52741 | 0.02431 | 0.24609 | — | 0.24609 | 0.22640 | — | 0.22640 | — | 2,631.55 | 2,631.55 | 0.10675 | 0.02135 | — | 2,640.58 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.16632 | 0.13975 | 1.23896 | 1.44361 | 0.00466 | 0.04720 | — | 0.04720 | 0.04342 | — | 0.04342 | — | 504.681 | 504.681 | 0.02047 | 0.00409 | — | 506.413 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03035 | 0.02550 | 0.22611 | 0.26346 | 0.00085 | 0.00861 | — | 0.00861 | 0.00792 | — | 0.00792 | — | 83.5557 | 83.5557 | 0.00339 | 0.00068 | — | 83.8424 |
| Onsite truck | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03156 | 0.02711 | 0.02079 | 0.32423 | 0.00000 | 0.00000 | 0.06343 | 0.06343 | 0.00000 | 0.01487 | 0.01487 | — | 69.7126 | 69.7126 | 0.00330 | 0.00248 | 0.24397 | 70.7768 |
| Vendor | 0.00780 | 0.00337 | 0.12660 | 0.05956 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.2601 | 98.2601 | 0.00375 | 0.01416 | 0.23958 | 102.814 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02942 | 0.02678 | 0.02343 | 0.28601 | 0.00000 | 0.00000 | 0.06343 | 0.06343 | 0.00000 | 0.01487 | 0.01487 | — | 65.8351 | 65.8351 | 0.00347 | 0.00264 | 0.00634 | 66.7151 |
| Vendor | 0.00762 | 0.00320 | 0.13173 | 0.06056 | 0.00067 | 0.00135 | 0.02560 | 0.02695 | 0.00135 | 0.00707 | 0.00842 | — | 98.3201 | 98.3201 | 0.00375 | 0.01416 | 0.00623 | 102.640 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00558 | 0.00507 | 0.00446 | 0.05539 | 0.00000 | 0.00000 | 0.01204 | 0.01204 | 0.00000 | 0.00282 | 0.00282 | — | 12.7388 | 12.7388 | 0.00066 | 0.00051 | 0.02019 | 12.9265 |
| Vendor | 0.00148 | 0.00063 | 0.02506 | 0.01144 | 0.00013 | 0.00026 | 0.00487 | 0.00513 | 0.00026 | 0.00135 | 0.00160 | — | 18.8494 | 18.8494 | 0.00072 | 0.00272 | 0.01993 | 19.6967 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.00102 | 0.00093 | 0.00081 | 0.01011 | 0.00000 | 0.00000 | 0.00220 | 0.00220 | 0.00000 | 0.00051 | 0.00051 | — | 2.10905 | 2.10905 | 0.00011 | 0.00008 | 0.00334 | 2.14013 |
| Vendor | 0.00027 | 0.00012 | 0.00457 | 0.00209 | 0.00002 | 0.00005 | 0.00089 | 0.00094 | 0.00005 | 0.00025 | 0.00029 | — | 3.12073 | 3.12073 | 0.00012 | 0.00045 | 0.00330 | 3.26101 |
| Hauling | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Phase 2: Removal asbestos cement and Water Main | Demolition | 1/6/2026 | 1/13/2026 | 6.00000 | 7.00000 | — |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Demolition | 1/6/2026 | 2/9/2026 | 6.00000 | 30.0000 | — |
| Phase1: Mass Grading | Grading | 2/24/2026 | 6/8/2026 | 6.00000 | 90.0000 | — |
| Phase 2: Mass Grading | Grading | 3/13/2026 | 6/25/2026 | 6.00000 | 90.0000 | — |
| Phase 2: Revetment | Grading | 7/17/2026 | 8/20/2026 | 6.00000 | 30.0000 | — |
| Phase 2: Public Works Building | Building Construction | 1/30/2026 | 3/5/2026 | 6.00000 | 30.0000 | — |
| Phase 2: Recreational Amenities | Building Construction | 2/11/2026 | 2/21/2026 | 6.00000 | 10.00000 | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| Phase 1: Restore Asphalt Concrete Pavement | Paving | 9/22/2026 | 10/26/2026 | 6.00000 | 30.0000 | — |
| Phase 2: Concrete Floodwall | Paving | 12/3/2026 | 12/25/2026 | 6.00000 | 20.0000 | — |
| Phase 2: Restore Asphalt Concrete Pavement | Paving | 2/25/2027 | 3/13/2027 | 6.00000 | 15.0000 | — |
| Restore Stripping | Architectural Coating | 3/17/2027 | 3/22/2027 | 6.00000 | 5.00000 | — |
| Phase 2: Water Main Construction | Trenching | 1/15/2026 | 1/22/2026 | 6.00000 | 7.00000 | — |
| Phase 2: Water Main Connection | Trenching | 1/24/2026 | 1/24/2026 | 6.00000 | 1.000000 | — |
| Phase 1: Revegetation | Trenching | 8/11/2026 | 9/14/2026 | 6.00000 | 30.0000 | — |
| Phase 1: Pothole and Utility Locating | Trenching | 1/2/2026 | 1/3/2026 | 6.00000 | 2.00000 | — |
| Phase 1: Erosion Control | Trenching | 2/17/2026 | 2/21/2026 | 6.00000 | 5.00000 | — |
| Phase 1: Trail Construction | Trenching | 6/30/2026 | 8/3/2026 | 6.00000 | 30.0000 | — |
| Phase 1: Job Site Management | Trenching | 1/2/2026 | 9/11/2026 | 6.00000 | 217.000 | — |
| Phase 2: Pothole and Utility Locating | Trenching | 1/2/2026 | 1/3/2026 | 6.00000 | 2.00000 | — |
| Phase 2: Concrete Vault Construction | Trenching | 1/27/2026 | 1/29/2026 | 6.00000 | 3.00000 | — |
| Phase 2: Revegetation | Trenching | 12/31/2026 | 2/3/2027 | 6.00000 | 30.0000 | — |
| Phase 2: Job Site Managemnet | Trenching | 1/2/2026 | 1/11/2027 | 6.00000 | 321.000 | — |
| Phase 2: Silent Sheet Pile Wall Construction | Trenching | 8/27/2026 | 11/16/2026 | 6.00000 | 70.0000 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 2: Removal asbestos cement and Water Main | Tractors/Loaders/Back | Diesel | Average | 2.00000 | 6.00000 | 84.0000 | 0.37000 |
| Phase 2: Removal asbestos cement and Water Main | Concrete/Industrial Saws | Diesel | Average | 1.000000 | 8.00000 | 33.0000 | 0.73000 |
| Phase 2: Removal asbestos cement and Water Main | Cranes | Diesel | Average | 1.000000 | 8.00000 | 150.000 | 0.29000 |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Tractors/Loaders/Backhoes | Diesel | Average | 3.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Concrete/Industrial Saws | Diesel | Average | 3.00000 | 8.00000 | 33.0000 | 0.73000 |
| Phase1: Mass Grading | Graders | Diesel | Average | 1.000000 | 6.00000 | 148.000 | 0.41000 |
| Phase1: Mass Grading | Rubber Tired Dozers | Diesel | Average | 1.000000 | 6.00000 | 367.000 | 0.40000 |
| Phase1: Mass Grading | Tractors/Loaders/Backhoes | Diesel | Average | 3.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase1: Mass Grading | Excavators | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Phase 2: Mass Grading | Graders | Diesel | Average | 1.000000 | 8.00000 | 148.000 | 0.41000 |
| Phase 2: Mass Grading | Rubber Tired Dozers | Diesel | Average | 1.000000 | 8.00000 | 367.000 | 0.40000 |
| Phase 2: Mass Grading | Tractors/Loaders/Backhoes | Diesel | Average | 3.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 2: Mass Grading | Excavators | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Phase 2: Revetment | Graders | Diesel | Average | 1.000000 | 8.00000 | 148.000 | 0.41000 |
| Phase 2: Revetment | Rubber Tired Dozers | Diesel | Average | 1.000000 | 8.00000 | 367.000 | 0.40000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 2: Revetment | Tractors/Loaders/Backhoes | Diesel | Average | 3.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 2: Revetment | Excavators | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Phase 2: Public Works Building | Cranes | Diesel | Average | 1.000000 | 4.00000 | 367.000 | 0.29000 |
| Phase 2: Public Works Building | Forklifts | Diesel | Average | 2.00000 | 6.00000 | 82.0000 | 0.20000 |
| Phase 2: Public Works Building | Tractors/Loaders/Backhoes | Diesel | Average | 2.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 2: Recreational Amenities | Cranes | Diesel | Average | 1.000000 | 4.00000 | 367.000 | 0.29000 |
| Phase 2: Recreational Amenities | Forklifts | Diesel | Average | 2.00000 | 6.00000 | 82.0000 | 0.20000 |
| Phase 2: Recreational Amenities | Tractors/Loaders/Backhoes | Diesel | Average | 2.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 1: Restore Asphalt Concrete Pavement | Cement and Mortar Mixers | Diesel | Average | 4.00000 | 6.00000 | 10.00000 | 0.56000 |
| Phase 1: Restore Asphalt Concrete Pavement | Pavers | Diesel | Average | 1.000000 | 7.00000 | 81.0000 | 0.42000 |
| Phase 1: Restore Asphalt Concrete Pavement | Rollers | Diesel | Average | 1.000000 | 7.00000 | 36.0000 | 0.38000 |
| Phase 2: Concrete Floodwall | Tractors/Loaders/Backhoes | Diesel | Average | 1.000000 | 7.00000 | 84.0000 | 0.37000 |
| Phase 2: Concrete Floodwall | Cement and Mortar Mixers | Diesel | Average | 4.00000 | 6.00000 | 10.00000 | 0.56000 |
| Phase 2: Restore Asphalt Concrete Pavement | Tractors/Loaders/Backhoes | Diesel | Average | 1.000000 | 7.00000 | 84.0000 | 0.37000 |
| Phase 2: Restore Asphalt Concrete Pavement | Cement and Mortar Mixers | Diesel | Average | 4.00000 | 6.00000 | 10.00000 | 0.56000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 2: Restore Asphalt Concrete Pavement | Pavers | Diesel | Average | 1.000000 | 7.00000 | 81.0000 | 0.42000 |
| Phase 2: Restore Asphalt Concrete Pavement | Rollers | Diesel | Average | 1.000000 | 7.00000 | 36.0000 | 0.38000 |
| Restore Stripping | Air Compressors | Diesel | Average | 1.000000 | 6.00000 | 37.0000 | 0.48000 |
| Phase 2: Water Main Construction | Trenchers | Diesel | Average | 1.000000 | 8.00000 | 40.0000 | 0.50000 |
| Phase 2: Water Main Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.000000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 2: Water Main Connection | Trenchers | Diesel | Average | 1.000000 | 8.00000 | 40.0000 | 0.50000 |
| Phase 1: Revegetation | Excavators | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Phase 1: Revegetation | Tractors/Loaders/Backhoes | Diesel | Average | 1.000000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 1: Erosion Control | Tractors/Loaders/Backhoes | Diesel | Average | 2.00000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 1: Trail Construction | Graders | Diesel | Average | 1.000000 | 8.00000 | 148.000 | 0.41000 |
| Phase 1: Trail Construction | Plate Compactors | Diesel | Average | 1.000000 | 8.00000 | 8.00000 | 0.43000 |
| Phase 1: Job Site Management | Generator Sets | Diesel | Average | 1.000000 | 8.00000 | 14.0000 | 0.74000 |
| Phase 2: Concrete Vault Construction | Cranes | Diesel | Average | 1.000000 | 6.00000 | 367.000 | 0.29000 |
| Phase 2: Concrete Vault Construction | Generator Sets | Diesel | Average | 1.000000 | 6.00000 | 14.0000 | 0.74000 |
| Phase 2: Concrete Vault Construction | Cement and Mortar Mixers | Diesel | Average | 1.000000 | 6.00000 | 10.00000 | 0.56000 |
| Phase 2: Revegetation | Excavators | Diesel | Average | 1.000000 | 8.00000 | 36.0000 | 0.38000 |
| Phase 2: Revegetation | Tractors/Loaders/Backhoes | Diesel | Average | 1.000000 | 8.00000 | 84.0000 | 0.37000 |
| Phase 2: Job Site Managemnet | Generator Sets | Diesel | Average | 1.000000 | 8.00000 | 14.0000 | 0.74000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Phase 2: Silent Sheet Pile Wall Construction | Bore/Drill Rigs | Diesel | Average | 1.000000 | 8.00000 | 350.000 | 0.42000 |
| Phase 2: Silent Sheet Pile Wall Construction | Cranes | Diesel | Average | 1.000000 | 8.00000 | 367.000 | 0.29000 |
| Phase 2: Silent Sheet Pile Wall Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.000000 | 8.00000 | 84.0000 | 0.37000 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Phase 2: Removal asbestos cement and Water Main | Worker | 10.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Removal asbestos cement and Water Main | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Removal asbestos cement and Water Main | Hauling | 6.57143 | 20.0000 | HHDT |
| Phase 2: Removal asbestos cement and Water Main | Onsite truck | — | — | HHDT |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Onsite truck | — | — | HHDT |
| Phase1: Mass Grading | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase1: Mass Grading | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase1: Mass Grading | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase1: Mass Grading | Onsite truck | — | — | HHDT |
| Phase 2: Mass Grading | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| Phase 2: Mass Grading | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Mass Grading | Hauling | 0.97778 | 20.0000 | HHDT |
| Phase 2: Mass Grading | Onsite truck | — | — | HHDT |
| Phase 2: Revetment | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Revetment | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Revetment | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Revetment | Onsite truck | — | — | HHDT |
| Phase 2: Public Works Building | Worker | 30.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Public Works Building | Vendor | 8.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Public Works Building | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Public Works Building | Onsite truck | — | — | HHDT |
| Phase 2: Recreational Amenities | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Recreational Amenities | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Recreational Amenities | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Recreational Amenities | Onsite truck | — | — | HHDT |
| Phase 1: Restore Asphalt Concrete Pavement | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 1: Restore Asphalt Concrete Pavement | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: Restore Asphalt Concrete Pavement | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: Restore Asphalt Concrete Pavement | Onsite truck | — | — | HHDT |
| Phase 2: Concrete Floodwall | Worker | 14.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Concrete Floodwall | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Concrete Floodwall | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Concrete Floodwall | Onsite truck | — | — | HHDT |
| Phase 2: Restore Asphalt Concrete Pavement | Worker | 18.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Restore Asphalt Concrete Pavement | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| Phase 2: Restore Asphalt Concrete Pavement | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Restore Asphalt Concrete Pavement | Onsite truck | — | — | HHDT |
| Restore Stripping | Worker | 10.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Restore Stripping | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Restore Stripping | Hauling | 0.00000 | 20.0000 | HHDT |
| Restore Stripping | Onsite truck | — | — | HHDT |
| Phase 2: Water Main Construction | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Water Main Construction | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Water Main Construction | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Water Main Construction | Onsite truck | — | — | HHDT |
| Phase 2: Water Main Connection | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Water Main Connection | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Water Main Connection | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Water Main Connection | Onsite truck | — | — | HHDT |
| Phase 1: Revegetation | Worker | 16.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 1: Revegetation | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: Revegetation | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: Revegetation | Onsite truck | — | — | HHDT |
| Phase 1: Pothole and Utility Locating | Worker | 10.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 1: Pothole and Utility Locating | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: Pothole and Utility Locating | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: Pothole and Utility Locating | Onsite truck | — | — | HHDT |
| Phase 1: Erosion Control | Worker | 10.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 1: Erosion Control | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: Erosion Control | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: Erosion Control | Onsite truck | — | — | HHDT |
| Phase 1: Trail Construction | Worker | 9.00000 | 11.9700 | LDA,LDT1,LDT2 |

| | | | | |
|---|---|---|---|---|
| Phase 1: Trail Construction | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: Trail Construction | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: Trail Construction | Onsite truck | — | — | HHDT |
| Phase 1: Job Site Management | Worker | 2.50000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 1: Job Site Management | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 1: Job Site Management | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 1: Job Site Management | Onsite truck | — | — | HHDT |
| Phase 2: Pothole and Utility Locating | Worker | 4.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Pothole and Utility Locating | Vendor | 0.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Pothole and Utility Locating | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Pothole and Utility Locating | Onsite truck | — | — | HHDT |
| Phase 2: Concrete Vault Construction | Worker | 8.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Concrete Vault Construction | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Concrete Vault Construction | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Concrete Vault Construction | Onsite truck | — | — | HHDT |
| Phase 2: Revegetation | Worker | 6.00000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Revegetation | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |
| Phase 2: Revegetation | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Revegetation | Onsite truck | — | — | HHDT |
| Phase 2: Job Site Managemnet | Worker | 18.0000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Job Site Managemnet | Vendor | — | 7.63000 | HHDT,MHDT |
| Phase 2: Job Site Managemnet | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Job Site Managemnet | Onsite truck | — | — | HHDT |
| Phase 2: Silent Sheet Pile Wall Construction | Worker | 7.50000 | 11.9700 | LDA,LDT1,LDT2 |
| Phase 2: Silent Sheet Pile Wall Construction | Vendor | 4.00000 | 7.63000 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| Phase 2: Silent Sheet Pile Wall Construction | Hauling | 0.00000 | 20.0000 | HHDT |
| Phase 2: Silent Sheet Pile Wall Construction | Onsite truck | — | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|
| Restore Stripping | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 60.0000 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (cy) | Material Exported (cy) | Acres Graded (acres) | Material Demolished (Building Square Footage) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Phase 2: Removal asbestos cement and Water Main | 0.00000 | 0.00000 | 0.00000 | 4,000.00 | 0.00000 |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | 0.00000 | 0.00000 | 0.00000 | — | 0.00000 |
| Phase1: Mass Grading | — | — | 67.5000 | 0.00000 | 0.00000 |
| Phase 2: Mass Grading | — | 700.000 | 90.0000 | 0.00000 | 0.00000 |
| Phase 2: Revetment | — | — | 30.0000 | 0.00000 | 0.00000 |

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

### 5.7. Construction Paving

### 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2026 | 0.00000 | 588.983 | 0.03300 | 0.00400 |
| 2027 | 0.00000 | 588.983 | 0.03300 | 0.00400 |

### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

#### 5.18.1. Biomass Cover Type

##### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

#### 5.18.2. Sequestration

##### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 9.66000 | annual days of extreme heat |
| Extreme Precipitation | 2.00000 | annual days with precipitation above 20 mm |
| Sea Level Rise | — | meters of inundation depth |
| Wildfire | 0.00000 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | N/A | N/A | N/A | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | 0 | 0 | 0 | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | N/A | N/A | N/A | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | 1 | 1 | 1 | 2 |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 37.5731 |
| AQ-PM | 36.0423 |
| AQ-DPM | 63.8830 |
| Drinking Water | 31.3975 |

| | |
|---|---|
| Lead Risk Housing | 9.47700 |
| Pesticides | 2.96552 |
| Toxic Releases | 10.2026 |
| Traffic | 43.2000 |
| Effect Indicators | — |
| CleanUp Sites | 46.0806 |
| Groundwater | 14.3118 |
| Haz Waste Facilities/Generators | 5.57247 |
| Impaired Water Bodies | 77.2995 |
| Solid Waste | 79.9542 |
| Sensitive Population | — |
| Asthma | 0.56082 |
| Cardio-vascular | 9.73330 |
| Low Birth Weights | 14.7806 |
| Socioeconomic Factor Indicators | — |
| Education | 0.00000 |
| Housing | 41.3815 |
| Linguistic | 0.00000 |
| Poverty | 11.4447 |
| Unemployment | 21.1088 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 96.04773515 |
| Employed | 95.85525472 |
| Median HI | 88.73347876 |

| | |
|---|---|
| Education | — |
| Bachelor's or higher | 96.93314513 |
| High school enrollment | 100 |
| Preschool enrollment | 95.7141024 |
| Transportation | — |
| Auto Access | 52.22635699 |
| Active commuting | 45.82317464 |
| Social | — |
| 2-parent households | 91.62068523 |
| Voting | 98.6141409 |
| Neighborhood | — |
| Alcohol availability | 64.64776081 |
| Park access | 81.35506224 |
| Retail density | 61.24727319 |
| Supermarket access | 13.11433338 |
| Tree canopy | 75.70896959 |
| Housing | — |
| Homeownership | 47.09354549 |
| Housing habitability | 79.27627358 |
| Low-inc homeowner severe housing cost burden | 81.0727576 |
| Low-inc renter severe housing cost burden | 63.01809316 |
| Uncrowded housing | 96.93314513 |
| Health Outcomes | — |
| Insured adults | 47.91479533 |
| Arthritis | 0.0 |
| Asthma ER Admissions | 97.3 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |

| | |
|---|---|
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 97.2 |
| Cognitively Disabled | 90.0 |
| Physically  Disabled | 91.7 |
| Heart Attack ER Admissions | 96.2 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 55.3 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 18.4 |
| SLR Inundation Area | 43.4 |
| Children | 94.5 |
| Elderly | 5.9 |
| English Speaking | 90.4 |
| Foreign-born | 36.9 |
| Outdoor Workers | 34.9 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 56.3 |

| | |
|---|---|
| Traffic Density | 20.5 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 0.8 |
| Other Decision Support | — |
| 2016 Voting | 98.3 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 3.00000 |
| Healthy Places Index Score for Project Location (b) | 96.0000 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

## 8.1. Justifications

| Screen | Justification |
|---|---|

| | |
|---|---|
| Construction: Construction Phases | Based on PD |
| Construction: Off-Road Equipment | Based on data provided by project Engineer |
| Construction: Trips and VMT | mod |

## 8.4. Construction

### 8.4.2. Off-Road Equipment

| Phase Name | Equipment Type | Model Parameter | Default Value | New Value |
|---|---|---|---|---|
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Tractors/Loaders/Backhoes | Number per Day | 2.00000 | 3.00000 |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Tractors/Loaders/Backhoes | Hours Per Day | 6.00000 | 8.00000 |
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Concrete/Industrial Saws | Number per Day | 1.000000 | 3.00000 |
| Phase1: Mass Grading | Tractors/Loaders/Backhoes | Number per Day | 1.000000 | 3.00000 |
| Phase1: Mass Grading | Tractors/Loaders/Backhoes | Hours Per Day | 7.00000 | 8.00000 |
| Phase 2: Mass Grading | Graders | Hours Per Day | 6.00000 | 8.00000 |
| Phase 2: Mass Grading | Rubber Tired Dozers | Hours Per Day | 6.00000 | 8.00000 |
| Phase 2: Mass Grading | Tractors/Loaders/Backhoes | Number per Day | 1.000000 | 3.00000 |
| Phase 2: Mass Grading | Tractors/Loaders/Backhoes | Hours Per Day | 7.00000 | 8.00000 |
| Phase 2: Revetment | Graders | Hours Per Day | 6.00000 | 8.00000 |
| Phase 2: Revetment | Rubber Tired Dozers | Hours Per Day | 6.00000 | 8.00000 |
| Phase 2: Revetment | Tractors/Loaders/Backhoes | Number per Day | 1.000000 | 3.00000 |
| Phase 2: Revetment | Tractors/Loaders/Backhoes | Hours Per Day | 7.00000 | 8.00000 |

### 8.4.6. Trips and VMT

| Phase Name | Trip Type | Model Parameter | Default Value | New Value |
|---|---|---|---|---|
| Phase 1: PAVEMENT DEMOLITION, CLEARING AND GRUBBING | Worker | One-Way Trips per Day | 15.0000 | 16.0000 |

| | | | | |
|---|---|---|---|---|
| Phase1: Mass Grading | Worker | One-Way Trips per Day | 15.0000 | 16.0000 |
| Phase 2: Mass Grading | Worker | One-Way Trips per Day | 15.0000 | 16.0000 |
| Phase 2: Revetment | Worker | One-Way Trips per Day | 15.0000 | 16.0000 |
| Phase 2: Public Works Building | Worker | One-Way Trips per Day | 0.00000 | 30.0000 |
| Phase 2: Public Works Building | Vendor | One-Way Trips per Day | 0.00000 | 8.00000 |
| Phase 2: Recreational Amenities | Worker | One-Way Trips per Day | 0.00000 | 16.0000 |
| Phase 2: Recreational Amenities | Vendor | One-Way Trips per Day | 0.00000 | 4.00000 |
| Phase 1: Restore Asphalt Concrete Pavement | Worker | One-Way Trips per Day | 15.0000 | 16.0000 |
| Phase 2: Concrete Floodwall | Worker | One-Way Trips per Day | 12.5000 | 14.0000 |
| Phase 2: Restore Asphalt Concrete Pavement | Worker | One-Way Trips per Day | 17.5000 | 18.0000 |
| Restore Stripping | Worker | One-Way Trips per Day | 0.00000 | 10.00000 |
| Phase 2: Water Main Construction | Worker | One-Way Trips per Day | 5.00000 | 16.0000 |
| Phase 2: Water Main Connection | Worker | One-Way Trips per Day | 2.50000 | 16.0000 |
| Phase 1: Revegetation | Worker | One-Way Trips per Day | 5.00000 | 16.0000 |
| Phase 1: Pothole and Utility Locating | Worker | One-Way Trips per Day | 0.00000 | 10.00000 |
| Phase 1: Erosion Control | Worker | One-Way Trips per Day | 5.00000 | 10.00000 |
| Phase 1: Trail Construction | Worker | One-Way Trips per Day | 5.00000 | 9.00000 |
| Phase 2: Pothole and Utility Locating | Worker | One-Way Trips per Day | 0.00000 | 4.00000 |
| Phase 2: Concrete Vault Construction | Worker | One-Way Trips per Day | 7.50000 | 8.00000 |
| Phase 2: Revegetation | Worker | One-Way Trips per Day | 5.00000 | 6.00000 |
| Phase 2: Job Site Managemnet | Worker | One-Way Trips per Day | 2.50000 | 18.0000 |

# Appendix C

Biological Resources Technical Report

Biological Resources Technical Report

# San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project

**MARCH 2026**

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# Acronyms and Abbreviations

| Acronym | Definition |
|---|---|
| ADA | Americans with Disabilities Act |
| Amsl | above mean sea level |
| CCC | California Coastal Commission |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CEQA Guidelines | State of California CEQA Guidelines |
| CESA | California Endangered Species Act |
| City | City of Del Mar |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| CRPR | California Rare Plant Rank |
| CWA | Clean Water Act |
| EFH | Essential Fish Habitat |
| ESRI | Environmental Systems Research Institute |
| ESHA | Environmentally Sensitive Habitat Areas |
| FESA | Federal Endangered Species Act |
| GIS | geographic information system |
| HAPC | Habitat Area of Particular Concern |
| HMMP | Habitat Mitigation and Monitoring Plan |
| LCP | Local Coastal Program |
| MBTA | Migratory Bird Treaty Act |
| MHPA | Multiple Habitat Planning Area |
| MLPA | California Marine Life Protection Act |
| MM | Mitigation Measure |
| MMPA | Marine Mammal Protection Act |
| MSCP | Multiple Species Conservation Program |
| NCTD | North County Transportation District |
| NOAA | National Oceanic and Atmospheric Administration |
| OHWM | ordinary high water mark |
| Project | San Dieguito Shoreline Protection Project |
| RWQCB | Regional Water Quality Control Board |
| SDMMP | San Diego Management and Monitoring Program |
| SLR | Sea Level Rise |
| SMCA | State Marine Conservation Area |
| SSC | Species of Special Concern |
| SWPPP | Stormwater Pollution Prevention Plan |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |
| WL | Watch List species |

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# Executive Summary

The City of Del Mar (City) is proposing shoreline protection and habitat enhancement, including living levees, flood walls, and trails along portions of the shoreline of the San Dieguito Lagoon/River (River) in Del Mar, San Diego County, California. The San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project (Project) involves three reaches of the shoreline, specifically: North Riverbank; Southeast Riverbank; and Southwest Riverbank. The Project proposes to use floodwall and living levee design concepts to improve resilience to sea level rise (SLR) flood risk protection, result in no rise to the floodplain, improve local water quality, enhance biodiversity, and increase and enhance coastal access.

The Project occurs approximately 0.7 mile west of Interstate 5, approximately 0.2 mile east of the Pacific Ocean, and immediately south of the Del Mar Fairgrounds (Figure 1 – Project Location). The 6.78-acre area of Project disturbance consists of a proposed 0.20-acre Southwest Riverbank, a 2.05-acre Southeast Riverbank, and a 4.52-acre North Riverbank (Figure 2: Site Plan) within an approximately 47.20-acre overall Project area (referred to as the "Project site") (Figure 1). The Project site overlaps a total of 278 Assessor's Parcel Numbers (APN's). The Project is located within the Coastal Development Zone and the San Diego Multiple Species Conservation Program (MSCP) (City of San Diego 1998). The City of Del Mar is in an enrollment agreement with the San Diego MSCP, and the City of Del Mar MSCP Subarea Plan is in progress at the time of this report and is not yet implemented. The Project site does not occur within the City of San Diego Multiple Habitat Preservation Area (MHPA); however, the Project is adjacent to MHPA lands such as the San Dieguito Lagoon approximately 0.4 mile to the east (SANGIS 2025) (Figure 3: SD MSCP).

The 6.78- acre area of Project disturbance, 47.20- acre overall Project site, plus a 25.06-acre 500-foot survey buffer (herein, study area) totals 79.04 acres. Dudek biologists conducted a field reconnaissance and vegetation mapping survey in addition to a formal jurisdictional aquatic resources delineation of the study area in September 2025. Based on species composition and general physiognomy, 23 vegetation communities (including disturbed forms) and/or land cover types are identified within the study area; 17 are considered sensitive by CDFW (CDFW 2025g) (Figure 5: Biological Resources).

The study area supports suitable habitats and/or substrates for special-status plant species and 10 special-status plants were identified in the study area. Specifically, San Diego marsh elder (*Iva hayesiana*), southwestern spiny rush (*Juncus acutus* spp. *leopoldii*), sea dahlia (*Leptosyne maritima*), Shaw's agave (*Agave shawii* var. *shawii*), Torrey pine (*Pinus torreyana*), California box thorn (*Lycium californicum*), coast barrel cactus (*Ferocactus viridescens* var. *viridescens*), California seablite (*Suada californica*), estuary seablite (*Suada esteroa*), and woolly seablite (*Suada taxifolia*) were incidentally detected during the biological reconnaissance (Figure 5 – Biological Resources). In addition, two special-status wildlife species, osprey (*Pandion haliaetus*) and double-breasted cormorant (*Nannopterum auritum*), were also detected within the study area, as well as an osprey nest was detected within the Project site during the biological reconnaissance. As such, the study area supports habitat for nesting birds protected by the Migratory Bird Treaty Act (MBTA). Due to its location within the San Dieguito Lagoon, the study area has potential to support marine mammal species protected by the Marine Mammal Protection Act (MMPA) to occur. Further, eelgrass (*Zostera marina*), which is designated as Essential Fish Habitat (EFH) by the National Oceanic Atmospheric Administration (NOAA) Fisheries, was detected within the portions of San Dieguito Lagoon below the high tide line that borders the Project areas of disturbance within the study area.

Jurisdictional resources within the study area total 38.34 acres/29,271 linear feet, encompassing 35.92 acres/27,337 linear feet of non-wetland waters of the United States and State regulated by the United States Army Corps of Engineers (USACE), San Diego Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW) and the California Coastal Commission (CCC), 2.05 acres/1,535 linear feet of non-wetland waters of the state under the jurisdiction of the RWQCB and CCC, and 0.37 acres/400 linear feet of wetlands under the jurisdiction of the CCC. The area of Project disturbance supports potentially jurisdictional aquatic resources totaling 0.67 acres/2,875 linear feet of non-wetland waters of the U.S and State regulated by each of the above regulatory agencies (Figure 8 – Jurisdictional Aquatic Resources) consisting of the San Diego Lagoon shoreline.

Direct impacts to potentially jurisdictional features within the Project area of disturbance to the southeast and north riverbanks include a total of approximately 0.67-acre that represents the high tide line of the shoreline, with 0.54 acres of non-wetland waters above the high tide line, and 0.06 acres of wetlands. A breakdown by type, location and jurisdiction is presented in Table 5 and shown in Figure 10 – Impacts to Jurisdictional Aquatic Resources.

Of the 6.78-acre area of Project disturbance, implementation of the proposed Project would result in a total of 0.88 acres of permanent impacts from establishment of developed areas, consisting of pedestrian pathways, picnic areas, and supporting infrastructure including floodwalls. This development impact would occur specifically to: 0.06 acres of disturbed southern coastal bluff scrub, less than 0.01 acre of coastal salt marsh, 0.02 acres of non-native woodland, 0.09 acre of non-native vegetation, 0.09 acres of disturbed habitat, and 0.62 acre of developed land (Figure 9 – Impacts to Biological Resources). Project impacts to non-native woodland, non-native vegetation, disturbed habitat, and developed land would not require mitigation because these land covers provide little native habitat value and foraging opportunities for wildlife. The remaining 5.89 acres within the areas of Project disturbance shall be temporally directly impacted from installation of shoreline protection and recontouring for the living levees, but will be entirely plantable in their finished state, allowing for revegetation with appropriate native plant species. The existing native high marsh and upland transitional plants occurring within those areas may be salvaged, maintained, and replanted in place at a minimum 1:1 re-establishment ratio to mitigate for temporal loss of native habitats and special-status plants within the area of Project disturbance.

Additional measures are included to reduce impacts to sensitive biological resources and include phasing construction to avoid the breeding season of birds and Crotch's bumble bee (*Bombus crotchii*), where feasible, and performing pre-construction surveys for nesting birds and Crotch's bumble bee if construction is to occur during their respective breeding seasons. In addition, due to the presence of multiple special-status plants in the area of Project disturbance and moderate potential for other special-status plants to occur, focused presence/absence botanical surveys are recommended to be conducted within the Project impact footprint prior to construction activities during the appropriate blooming period for target species. Furthermore, due to the presence of aquatic habitat that supports eelgrass adjacent to the currently proposed impact areas, eelgrass surveys are recommended if Project impacts encroach below the water line into the San Dieguito Lagoon. Regulatory resource permitting would be required from USACE, RWQCB, CDFW, and the CCC prior to implementation of the Project. A pre-application meeting between the Applicant and the respective jurisdictional resource agencies is highly recommended to ensure early Project coordination on mitigation strategy. Further, additional mitigation measures to avoid aquatic impacts to eelgrass and marine mammals including eelgrass surveys and marine mammal monitoring would also be required if in-water Project impacts cannot be avoided within the San Diego Lagoon/River channel.

# 1 Introduction

This BTR documents the existing biological resources present on site and provides an analysis of potential biological resource impacts associated with the San Dieguito Lagoon Levee, Habitat Enhancement, and Trail Project (Project). The Project occurs along the shoreline of the San Dieguito River channel in the City of Del Mar, immediately south of the Del Mar Fairgrounds, in San Diego County, California (Figure 1 – Project Location).

This BTR provides an introduction, a Project description, a summary of the pertinent biological resource regulations, the Project setting, survey methods, existing biological resources, special-status biological resources, Project impacts (direct and indirect), and Project mitigation. The Project impacts, avoidance, and mitigation measures (MMs) are discussed in accordance with the California Environmental Quality Act (CEQA), Clean Water Act (CWA), Federal and State Endangered Species Acts (ESA), Migratory Bird Treaty Act (MBTA), Marine Mammal Protection Act (MMPA), California Fish and Game Code, California Coastal Commission (CCC), and the *City of Del Mar Multiple Species Conservation Program (MSCP) Subarea Plan* (City Subarea Plan; City of San Diego 1997).

## 1.1 Project Location

The Project occurs approximately 0.7 mile west of Interstate 5, approximately 0.2 mile east of the Pacific Ocean, and immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River (Figure 1 – Project Location). The Project occurs within the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle in Section 11, Township 14 South, Range 4 West. The 6.78-acre area of Project disturbance consists of a proposed 0.20-acre Southwest Riverbank, a 2.05-acre Southeast Riverbank, and a 4.53-acre North Riverbank (Figure 2: Site Plan) within an approximately 47.2-acre overall Project area (referred to as the "Project site") (Figure 1). The Project site overlaps a total of 278 APN's. The Project occurs within the CCC Coastal Development Zone and a considerable amount of the Project would be undertaken within the floodway regulated by the Federal Emergency Management Agency (FEMA). The Project is within the San Diego Multiple Species Conservation Program (MSCP) (City of San Diego 1998). The Project is not mapped within San Diego MSCP Multiple Habitat Planning Area (MHPA) lands; however, the Project is approximately 0.2 mile west of San Diego MSCP MHPA lands (San Dieguito Lagoon) (SANGIS 2025).

## 1.2 Project Background

Project purpose and need are based on the results of the City of Del Mar Coastal Hazards Vulnerability and Risk Assessment and City of Del Mar Sea Level Rise Adaptation Plan (City of Del Mar 2018a,b). These studies determined that the past and current vulnerability of the City of Del Mar and the Del Mar Fairgrounds to flooding from the San Dieguito River has the potential to increase in frequency and intensity due to sea level rise, deposition of sand in the River channel in response to sea level rise, and projected future changes in extreme rainfall with climate change (City of Del Mar 2018b). With sea level rise, existing and restored wetland habitats in the San Dieguito River Lagoon will be inundated more frequently and vegetated wetland habitats will be "drowned out" and convert to intertidal mudflats and subtidal habitat, such that almost all of the San Dieguito Lagoon would be converted to intertidal mudflat and subtidal open water. Lagoon wetland habitats could also potentially migrate to higher elevation areas around the lagoon and upstream along the San Dieguito River with sea level rise (SLR). In the absence of suitable areas for wetland habitats to migrate to or other adaptation measures, vegetated wetland habitats, functions, and species could potentially be lost within the San Dieguito Lagoon (City of Del Mar 2018c).

Southern California Edison (SCE) currently maintains the San Dieguito Lagoon Wetland Restoration as part of the mitigation program for the San Onofre Nuclear Generating Station (SONGS); however, SCE is not currently required to address the potential effects of sea-level rise and at some point in the future, the management of the restoration may be transferred to another entity. The SLR Adaptation Plan was prepared to improve the resiliency of the entire San Dieguito Lagoon wetland ecosystem to sea-level rise, including the San Dieguito Lagoon Restoration.

Since the completion of the San Dieguito Lagoon Restoration by SCE and San Diego Gas and Electric (SDG&E) for the SONGS Mitigation in 2011 and associated mouth maintenance dredging by SCE/SDG&E has been implemented, high tides within San Dieguito Lagoon have generally matched ocean high tides, while low tides have been damped (elevated) to varying degrees based on the varying amount of sand accumulation in the lagoon mouth (City of Del Mar Coastal Sediment Management Plan, ESA 2018).

This proposed Project incorporates one of the several adaptation strategies outlined within the SLR Adaptation Plan (City of Del Mar 2018a); specifically, levees (engineered earth embankments).

## 1.3 Project Description

The Project is a nature-based flood adaptation, ecological enhancement, and public trail project that seeks to minimize the effects of river flooding along the riverbanks of the River within the City west of the Jimmy Durante Boulevard Bridge between the Del Mar Fairgrounds and the City's Public Works Facility. The Project focus is shoreline protection, including installation of living levees along portions of the shoreline of the River channel. Living levees are created by gently sloping upland, transition, and wetland habitats between the levee and the River to enhance habitat diversity and provide wetland buffers and high tide refuge. The Project involves three reaches of the river channel shoreline that encompass the area of Project disturbance, specifically North Riverbank, Southeast Riverbank, and Southwest Riverbank (Figure 2 - Site Plan). The Project proposes to use living levee design concepts to improve resilience to SLR, provide flood protection, meet FEMA's No Rise certification standard for the floodplain, improve local water quality, increase public access, and enhance biodiversity. Details on each of the three reaches proposed for the Project are provided below. Project components include a combination of floodwalls, pedestrian trails, a gravel maintenance road, ADA-compliant ramps and stairs, high marsh habitat plantings, and upland transitional habitat plantings. A conservation easement is planned to be placed over the areas of Project disturbance by the City of Del Mar, which will provide protection for the natural habitats, including mitigation areas. As such, no additional mitigation-specific easements will be necessary for in-perpetuity protection.

### 1.3.1 North Riverbank

The North Riverbank Project design utilizes the entire 100-foot-wide easement defined by the CCC, resulting in a substantial encroachment onto the existing Del Mar Fairgrounds property. An approximately 50-foot-wide levee would be established along this approximately 1,500-foot-long reach, at the back edge of the easement with a crest elevation of 10 feet NAVD88 (North American Vertical Datum of 1988) (Figure 2 - Site Plan).

The crest would be about 15 feet wide in order to support a pedestrian trail on top of it. The Project would include a new 15-foot-wide pedestrian path within the existing 100-foot-wide easement and would provide a new westerly trail connection between the Del Mar Fairgrounds and Coast to Crest Trail.

A gradual transitional slope of 7:1 (horizontal:vertical) would lead down for about 25 feet before shifting to a very gentle foreshore slope of 37:1 until it reaches the levee toe along the San Dieguito River at about 5.13 feet (NAVD88). The width of the front slope may vary based on the available upland space alongside the shoreline, and for natural consistency with the context of the surrounding terrain. It is anticipated that the very gradual transitional and foreshore slopes would be capable of supporting marsh and/or riverine habitat, using the slope for naturally blended transitions. Additionally, it is likely that these transition zones would allow for marsh transition with SLR, thereby increasing the habitat's SLR resiliency. This reach would require approximately 8,200 Cubic Yard (CY) of cut and 4,520 CY of fill. These volume estimates are based on the cross sections taken during the No Rise Analysis Report and should be considered as representative of the magnitude of work rather than exact volume of material.

### 1.3.2 Southeast Riverbank

The southeast reach of the Project is approximately 1,030 feet long. A combination of trail realignment, a levee that would promote vegetation propagation, and a cantilever floodwall is proposed. The cantilever floodwall would have crest elevation of 14 feet (NAVD88) alongside the existing Public Works Facility boundaries and parking lot to provide flood protection along the west side of the South Riverbank. Where the floodway extends into the Public Works Facility's remaining structure, the floodwall will follow the limits of this flood zone for approximately 820 feet. The primary Public Works Facility structure would be demolished and relocated outside of the flood zone to the southwestern portion of the Public Works Facility property. The existing trail would be realigned to set back from the shoreline, taking advantage of the additional space made available with the relocation of the Public Works Facility structure. High marsh, upland transitional, and upland habitat vegetation planting would be included over approximately 0.8 acres of this reach.

Directly in front of the trail, a varying transitional slope between 2:1 and 4:1 would lead down for about 12 to 20 feet until it reaches the foreshore toe along the San Dieguito Lagoon/River at about 5.13 feet (NAVD88). Unlike the North Riverbank, an enhancement to the existing revetment along the foreshore would be implemented to prevent damage during storm events (Figure 2). This shoreline is unlikely to support significant marsh and/or riverine habitat.

Along the eastern side of the Southeast Riverbank, the northern end of the existing public park would be excavated to cut a front transitional slope ranging from 5:1 to 13:1, varying in width from 20 to 50 feet at elevations ranging from about 8 feet to 5.13 feet (NAVD88). Along the southern end of the public park, the existing public access trail would be elevated in place to 14 feet high (NAVD88) on top of a 40-foot-wide berm with side slopes of 3:1. The crest of this berm would be about 10 feet wide to support an improved trail. This would be integrated into the end of the cantilevered floodwall near the parking lot to create a contiguous flood protection feature for the Public Works Facility. This reach would require approximately 2,200 CY of cut and 1,300 CY of fill. In addition, approximately 7,850 square feet of asphalt would be removed, and an approximately 3,740-square-foot structure would be demolished. These estimates are based on the cross-sections taken during the No Rise Study and should be considered as representative of the magnitude of work rather than exact volume of material for this Project.

### 1.3.3 Southwest Riverbank

The Southwest Riverbank consists of installation of a sheet pile floodwall adjacent to the North Beach neighborhood parking lot and extending a total of approximately 438 feet east to the limits of proposed railroad doubletracking. The sheet pile floodwall would have a crest elevation of 14 feet (NAVD88) and would be driven to a depth of

approximately 24 feet (−10 feet NAVD88). To maintain pedestrian and vehicular access from the 28th Street access path, approximately 50 CY of fill would be used to establish a berm structure with a crest elevation of 14 feet (NAVD88) through the middle section of the sheet pile wall. The southern side of this berm would extend across 52 feet with a 20:1 slope to reach this crest elevation. The northern side of this berm would come down from this crest at a 10:1 slope across about 27 feet to meet the existing trail elevation. No other modifications would be made to this existing trail due to the limited amount of space available in this narrow segment. A passive tide gate would be needed for the existing culvert, bisecting the alignment of the proposed sheet pile floodwall, to prevent elevated tidal water levels from backing up into the existing drainage swale and causing flooding behind the floodwall structure. During normal tidal conditions, the tide gate would allow for regular drainage operations. A small area, approximately 310 square feet, of existing concrete would be removed, and approximately 3,300 square feet of vegetation would be cleared and grubbed. A small area, approximately 300 square feet, would be planted with upland transitional habitat vegetation.

# 2 Regional Resource Planning Context

## California Coastal Commission Environmentally Sensitive Habitat Areas (ESHA)

The California Coastal Commission (CCC) designates ESHA to protect rare or valuable habitats from disruption by human activities. ESHA designations are made based on the presence of specific habitats such as wetlands, coastal streams, and habitats with rare species. ESHA is defined as "any area where plant or animal life or their habitats are 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 (California Public Relations Code, Section 30107.5)." Projects occurring within the coastal zone shall be evaluated for the presence of ESHA.

ESHA typically includes the associated riparian habitat of creeks, streams, and rivers; sensitive vegetation communities; dune habitats; and habitat that supports rare species. ESHA can also include areas that are especially valuable because of their special nature or role in an ecosystem, such as a stand of non-native trees serving as a monarch overwintering site or a biogeographic boundary area that harbors unique genetic diversity. Coastal Commission designations of specific ESHA types may differ from those of other agencies. While there is no single map/description of ESHA statewide, many LCPs contain detailed policies and some mapping of ESHA for specific sections of the coast, which often identify ESHA categorically (e.g., an LCP may designate all dunes or all monarch roost sites as ESHA). However, ESHA determinations are often made in areas where they are not otherwise mapped, based on on-the-ground conditions and other information that must be made available at the time that a project is being considered (CCC 2022).

## County of San Diego Multiple Species Conservation Program (MSCP)

The City of Del Mar is in an enrollment agreement with the Final MSCP for the County of San Diego, a comprehensive, regional long-term habitat conservation program designed to provide permit issuance authority for take of covered species to the local regulatory agencies. The MSCP addresses habitat and species conservation within approximately 900 square miles in the southwestern portion of San Diego County (County of San Diego 1998). It serves as an approved habitat conservation plan pursuant to an approved Natural Communities Conservation Plan in accordance with the state Natural Communities Conservation Planning Act (County of San Diego 1998). The City of Del Mar MSCP Subarea Plan is in progress at the time of this report and has not been finalized or implemented.

The MSCP establishes a preserve system designed to conserve large blocks of interconnected habitat having high biological value that are delineated in the Multiple Habitat Planning Area (MHPA). The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997).

The MSCP identifies 85 plants and animals to be "covered" under the plan ("Covered Species"). Many of these Covered Species are subject to one or more protective designations under state and/or federal law, and some are endemic to San Diego County. The MSCP seeks to provide adequate habitat in the preserve to maintain ecosystem functions and persistence of extant populations of the 85 Covered Species while also allowing participating landowners "take" of Covered Species on lands located outside of the preserve. The purpose of the MSCP is to address species conservation on a regional level and thereby avoid project-by-project biological mitigation, which tends to fragment habitat.

The Project is located adjacent to MHPA lands consisting of San Dieguito Lagoon (Figure 3: SD MSCP). The MHPA is considered an urban preserve that is constrained by existing or approved development and is comprised of habitat linkages connecting several large core areas of habitat. The criteria used to define core and linkage areas involves maintaining ecosystem function and processes, including large animal movement. Each core area is connected to other core areas or to habitat areas outside of the MSCP either through common boundaries or through linkages. Core areas have multiple connections to help ensure that the balance in the ecosystem will be maintained (City of San Diego 1997). Critical habitat linkages between core areas are conserved in a functional manner with a minimum of 75% of the habitat within identified linkages conserved (City of San Diego 1997). The Project study area is not mapped as a habitat linkage, however, the study area falls within one designated biological core: San Dieguito Lagoon (Figure 3: SD MSCP). Although the Project is located adjacent to MHPA lands (San Dieguito River), as the purpose of the Project is shoreline protection of the San Dieguito Lagoon, implementation of the proposed is not expected to result in land use that would negatively affect San Dieguito Lagoon (the adjacent City of San Diego MSCP MHPA lands). Therefore, the Project is consistent with MSCP Land Use Adjacency Guidelines (LUAG).

## County of San Diego MSCP - City of Del Mar Draft Subarea Plan

The City of Del Mar Subarea Plan for the County of San Diego MSCP (Subarea Plan) (City of San Diego 1997) is in progress at the time of this report, although no draft has been circulated to the public or to resource agencies for review. While no draft Subarea Plan is available, it can be assumed that the Project would not conflict with a potential Subarea Plan because the City of Del Mar is in an enrollment agreement with the County of San Diego MSCP.

## City of Del Mar Local Coastal Program (LCP) Land Use Plan

Under the California Coastal Act, the CCC regulates the “coastal zone” and requires a Coastal Development Permit for development within this zone. The act also directs each coastal city or county to prepare a Local Coastal Program (LCP) to guide development in the coastal zone, which is certified by the CCC (California Public Resources Code, Section 30500). After an LCP has been approved, the permitting authority of the CCC is transferred to the local government. The City’s Land Use Plan (City of Del Mar 1993) is an approved LCP.

Del Mar’s LCP includes regulations in the Del Mar Municipal Code (DMMC) for the Floodway Zone (Chapter 30.29), Public Access (Chapter 30.61), Coastal Development Permits (Chapter 30.75), Setback Seawall Permits (Chapter 30.51), and the following overlay zones: Beach Overlay Zone (Chapter 30.50), Coastal Bluff Overlay Zone (Chapter 30.55), Floodplain Overlay Zone (Chapter 30.56), Bluff, Slope, and Canyon Overlay Zone (Chapter 30.52), and Lagoon Overlay Zone (Chapter 30.53)

The proposed Project is located within the boundaries of the coastal zone and is consistent with the applicable zoning and the City of Del Mar’s approved LCP (City of Del Mar 2018b). Applicable LCP regulations include the Floodway zone, Coastal Bluff Overlay Zone, Floodplain Overlay Zone, and Lagoon Overlay Zone.

**Coastal Bluff Overlay Zone (Land Use Plan, Chapter III, Implementing Ordinances, DMMC Chapter 30.55:** The purpose of this zone is to protect Del mar’s fragile coastal bluffs as a visual resources and avoid the risks to life and property associated with bluff failure and shoreline erosion.

**Floodplain Overlay Zone (Land Use Plan, Chapter III, Implementing Ordinances, DMCC Chapter 30.56):** The purpose of this zone is to promote public health, safety, and general welfare by ensuring that new development is appropriately sited and constructed so as to avoid hazards to those who will occupy the development, and to avoid damage or hazards to the surrounding area. The purpose is also to ensure development will not obstruct flood flow; will be designed to reduce the need for construction of flood control facilities that would be required if unregulated development were to occur; and to minimize the cost of flood insurance to Del Mar's residents.

**Lagoon Overlay Zone (Land Use Plan, Chapter III, Implementing Ordinances, DMCC Chapter 30.56):** The purpose of this zone is to protect the wetland resources of the Los Peñasquitos and San Dieguito Lagoons and their sensitive upland habitats by requiring that all development activities are designed and implemented in a manner that is consistent with wetland habitat protection and enhancement

### City of Del Mar Municipal Code

The City of Del Mar addresses the preservation of trees in its Tree Protection Ordinance, Chapter 23.50 (City of Del Mar 2004). The Public Tree Policy Manual establishes technical regulations, standards, and specifications needed to implement the tree ordinance.

Protected trees in City include the Torrey Pine and the Monterey Cypress (*Cupressus macrocarpa*), along with all tree species located within the Central Commercial (CC) Zone and the environmentally sensitive Open Space (OS) Overlay Zone, provided they are over a certain size. The Project site is not within the CC or OS zones (City of Del Mar 2004); therefore, the only protected trees are the Torrey Pine and the Monterey Cypress. While the Project site contains Torrey pines, some are planted, and all occur outside the area of Project disturbance. No Torrey pines shall be removed for the Project; as such, the proposed Project would not conflict with any local policies or ordinances protecting biological resources.

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# 3 Methods

Data regarding biological resources present within the Project study area, which includes the Project site plus a 500-foot buffer, were obtained through a review of pertinent literature, field reconnaissance, and jurisdictional delineation, which are described in detail as follows. The large survey buffer was implemented due to the proximity of the Project to MHPA lands.

## 3.1 Literature Review

The following data sources were reviewed to assist with the biological resources analysis:

- U.S. Department of Agriculture (USDA) Web Soil Survey (USDA 2025a)
- CDFW Natural Diversity Database – Biogeographic Information Observation System (CDFW 2025b)
- CDFW Natural Diversity Database – RareFind (CDFW 2025c)
- City of Del Mar Coastal Hazards, Vulnerability, and Risk Assessment; Coastal Resiliency/Sea Level Rise Adaptation Plan; Local Coastal Program; and Public Map GIS Viewer (City of Del Mar 2016; 2018a,b,c).
- CDFW Sensitive Natural Communities List (CDFW 2025g)
- California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2025)
- County of San Diego Final MSCP (County of San Diego 1998)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (USFWS 2025a)
- USFWS Critical Habitat data (USFWS 2025b)
- National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service Critical Habitat Data and Essential Fish Habitat (EFH) Data (NOAA Fisheries 2025a, 2025b)
- San Diego Geographic Information Source (SanGIS) database (SanGIS 2025)
- San Diego Natural History Museum (SDNHM 2012)
- Aerial maps from the San Diego Association of Governments (SANDAG 2025) and Bing (Microsoft 2025)
- USFWS National Wetlands Inventory (USFWS 2025c)
- City of Del Mar Community General Plan (City of Del Mar 2004) and Public Map GIS Viewer (2025)
- U.S. Geological Survey (USGS) National Hydrography Dataset (USGS 2025)
- Topographic maps (Google Earth 2025)

## 3.2 Field Survey

Dudek biologists conducted a biological reconnaissance that included vegetation mapping as well as a formal jurisdictional aquatic resources delineation on September 15, 2025. No focused special-status species surveys were conducted. Table 1 lists the survey dates, times, surveying biologists, and weather conditions during the survey.

**Table 1. Survey Conditions**

| Date | Biologists | Survey Type | Times | Weather Conditions |
|---|---|---|---|---|
| 09/15/2025 | Anna Touchstone, Olivia Koziel | Biological Reconnaissance, Vegetation Mapping, Jurisdictional Delineation | 8:45 A.M. – 3:45 P.M. | 70-77°F; 100-0% cloud cover; 0–3 mph wind |

## 3.3 Flora and Fauna

All plant species encountered during the surveys were recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR) follow the California Native Plant Society Rare Plant Inventory (CNPS 2025). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2025), and common names follow the U.S. Department of Agriculture Natural Resources Conservation Service PLANTS Database (USDA 2025b).

All wildlife species observed or detected during the surveys were recorded. Binoculars (10 × 50 magnification) were used to aid in the identification of wildlife. Latin and common names of animals follow Crother (2017) for reptiles and amphibians, American Ornithological Society (AOS 2018) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA 2016) or San Diego Natural History Museum (SDNHM 2002) for butterflies. In addition to species actually detected during the surveys, expected wildlife use of the study area was determined by known habitat preferences of local species and knowledge of their relative distributions in the area.

## 3.4 Vegetation Community and Land Cover Mapping

Dudek biologists conducted vegetation mapping to characterize natural vegetation communities, including habitats for special-status species, within the study area. The vegetation community and land cover mapping follow the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008), which is based on the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). Vegetation communities and land covers within the survey area were mapped in the field with Collector and digitized using ArcGIS, and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present within the Project site was determined. Native vegetation communities were crosswalked to the CNPS Manual of California Vegetation, 2nd Edition (CNPS 2025b), which is based on CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018).

## 3.5 Jurisdictional Delineation

The formal aquatic resources delineation was conducted to identify and map existing aquatic resources potentially subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act (33 USC 1344), waters of the state potentially subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act and the Porter–Cologne Water Quality Control Act, stream and riparian habitats potentially subject to the jurisdiction of CDFW pursuant to Section 1602 of the California Fish and Game Code, and wetlands potentially subject to the jurisdiction of the CCC pursuant to the California Coastal Act and CCC Code of Regulations

(collectively defined as jurisdictional aquatic resources). The study area included the Project site plus a 500-foot buffer to account for upstream and downstream resources.

Prior to conducting the delineation, USFWS National Wetlands Inventory data (USFWS 2025) was reviewed to determine if the study area contains any features mapped by the USFWS. Site-specific topographical data was reviewed in conjunction with aerials, both current and historical, to determine the potential presence of aquatic resources. Current vegetation mapping was reviewed to assess whether the study area supports hydrophytic vegetation and potential wetlands; several areas supporting hydrophytic vegetation were also assessed for the presence of wetland hydrology and hydric soils to determine whether they were three-parameter wetlands. Hydrophytic vegetation classifications follow Lichvar et al. (2016). The extent of wetland features was determined in the field by collecting data on Esri Field Maps paired with a GPS receiver with sub-meter accuracy; these shapes were transferred to topographic base, and a geographic information system (GIS) coverage was created.

### 3.5.1 USACE Jurisdiction

The delineation was conducted in accordance with the 1987 USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). Wetland Determination Forms were completed for certain points within drainages or vegetation communities where a predominance of hydrophytic vegetation was present; hydrology, vegetation, and soils were assessed to determine whether three-parameter wetlands were present. The National Ordinary High Water Mark (OHWM) Field Delineation Manual for Rivers and Streams: Final Version (USACE 2025) was used to determine the limits of non-tidal waters. An OHWM form was completed at a representative cross-section within the San Dieguito River to capture the feature's characteristics and widths.

For tidal waters, tidal elevation data provided by the nearest National Oceanic and Atmospheric Administration tidal station (La Jolla, Station ID 9410230, located on Scripps Pier) was utilized along with topographic mapping (NOAA Fisheries 2025c). The extent of waters of the U.S., as defined by Section 10 of the Rivers and Harbors Act, was determined to extend up to the mean high water (+4.41 feet above MSL, North American Vertical Datum 88). The extent of waters of the U.S., as defined by Section 404 of the CWA, was determined to include all Section 10 waters and additional land up to the highest astronomical tide (+7.01 feet above MSL, North American Vertical Datum 88). In some locations, the OHWM indicators observed in the field extended beyond the modeled HTL, and were used to define the upper extent of waters of the U.S. as defined by Section 404 of the CWA.

### 3.5.2 RWQCB Jurisdiction

Waters of the state regulated by the RWQCB were mapped in accordance with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021). As described in these procedures, wetland waters of the state are mapped based on the procedures in USACE's 1987 Manual and the 2008 Regional Supplement for the Arid West. Non-wetland waters are mapped in accordance with the National OHWM Field Delineation Manual for Rivers and Streams: Final Version (USACE 2025).

### 3.5.3 CDFW Jurisdiction

CDFW jurisdictional areas were mapped to include the top of bank of the streambed and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602. Streambeds under the

jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

### 3.5.4 CCC Jurisdiction

CCC jurisdictional areas were mapped to include one-parameter wetlands to the upland limit per the California Coastal Act and CCC Code of Regulations. Specifically, the California Coastal Act of 1976 protects resources within the coastal zone, including wetlands. The CCC has planning, regulatory, and permitting authority over the coastal zone, which consists of waters from the shoreline to three miles offshore, and extends inland to varying distances. Section 30121 of the California Coastal Act defines the term wetland as: "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

CCC Code of Regulations Title 14 (14 CCR) establishes a one-parameter definition of wetlands 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. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats."

The CCC's regulations define the upland limit of a wetland as "the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or in the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not (14 CCR Section 13577)."

## 3.6 Survey Limitations

The field survey, which consisted of the biological reconnaissance and formal aquatic resources delineation, was conducted during daylight hours during low tide. Complete inventories of biological resources present on a site often require numerous focused surveys at different times of day during different seasons. Some species such as annual plants are blooming and identifiable only in the spring or summer, and nocturnal animals are difficult to detect during the day. Other species may be present in such low numbers that they could be missed. Due to such timing and seasonal variations, survey results are not an absolute list of all species that the study area may support.

# 4 Results

## 4.1 Physical Characteristics

The physical characteristics and quantification of biological resources described herein pertains to the Project study area, which is comprised of the 6.78-acre area of Project disturbance, the 47.2- acre overall Project site, plus a 500-foot survey buffer, totaling 79.04 acres.

### 4.1.1 Topography and Land Use

Within the study area, the topography is relatively flat, with San Dieguito Lagoon/River representing the lowest point; The San Dieguito River likely collects run-off occurring within the study area and discharges into the Pacific Ocean from the where the mouth of the San Dieguito River meets Del Mar Beach. The elevation in the study area ranges from sea level to approximately 40 feet above mean sea level (AMSL).

Current land uses within and immediately surrounding the study area include the Del Mar Fairgrounds to the north, the San Dieguito Lagoon/River which bisects the study area, the NCTD railway to the west, pedestrian trails, public rights-of-way, residential and commercial development, and the Pacific Ocean to the west. Portions of the San Dieguito Lagoon in the eastern and southern study area buffers are within the boundaries of San Dieguito River Park (San Dieguito River Park 2025). Pedestrian trails within the study area include the Coast to Crest Trail, as well as trails associated with the San Dieguito River Park, and the San Dieguito Lagoon Ecological Reserve immediately east of the study area (CDFW 2025h, San Dieguito Lagoon 2025, San Dieguito River Park 2025).

### 4.1.2 Watershed and Hydrology

#### 4.1.2.1 Watershed

The study area occurs within the central portion of the San Diego subbasin, Hydrologic Unit Code [HUC] 18070304 (Figure 6: Watershed). The San Dieguito River/Lagoon bisects the central portion of the study area. The San Diego subbasin comprises approximately 1,390 square miles and is almost entirely within San Diego County (U.S. Geological Survey [USGS] 2025). The primary geographic and surface hydrologic feature of the watershed is the San Diego River.

The study area primarily occurs within the San Dieguito River subwatershed (HUC 180703040302) of the San Dieguito watershed (HUC 1807030403) (Figure 6). The southwestern portion of the study area occurs within the Mission Beach- Frontal Pacific Ocean subwatershed (HUC 1807030413). The San Dieguito watershed comprises approximately 346 square miles (221,440 acres) (USGS 2025). The main hydrologic feature of this watershed is the San Dieguito River.

The headwaters of the San Dieguito River begin in the Volcan Mountains in San Diego County, approximately 53 miles east of the study area. The San Dieguito River officially begins at the confluence of two streams, Santa Ysabel Creek and Santa Maria Creek, near the town of San Pasqual. Santa Ysabel Creek rises in the northeastern corner of the San Dieguito River watershed and flows west, creating Lake Sutherland. It then flows out of the lake's dam and westwards for the rest of its course. Santa Maria Creek, the smaller of the two streams, begins near the

city of Ramona and flows northwards through the Ramona Grasslands and Bandy Canyon. A third fork, Temescal Creek, rises in the Cleveland National Forest near Lake Henshaw and flows south into Santa Ysabel Creek. From there the San Dieguito river flows west past the city of Escondido, and under Interstate 15 before being impounded by Lake Hodges Dam to form Lake Hodges. From the dam to its mouth, the river flows through San Dieguito River Park past Del Mar, and broadens into a tidal waterway and the 150-acre San Dieguito lagoon as it crosses under Interstate 5 and past the Del Mar Fairgrounds where the study area occurs, to empty into the Pacific Ocean at Del Mar, California.

#### 4.1.2.2 Hydrology

A desktop review of the USFWS National Wetland Inventory dataset indicates the presence of four types of features within the study area: estuarine and marine deepwater (E1UBL), estuarine and marine wetland, freshwater emergent wetland (PEM1Ch), and riverine (R2UBHx) (USFWS 2025). Figure 6: Hydrology, depicts the National Wetland Inventory and National Hydrography Dataset data within the study area and vicinity.

##### Estuarine

**E1UBL (Estuarine; 1=subtidal; UB= unconsolidated bottom; L=subtidal [saltwater]):** This type of feature includes estuarine and marine deepwater habitats with a subtidal water regime, and is characterized by the open water associated with San Dieguito Lagoon/River that bisects the study area.

**E1UBLx (Estuarine; 1=subtidal; UB= unconsolidated bottom; L=subtidal [saltwater]; x= excavated):** This type of feature includes estuarine and marine deepwater habitats with a subtidal water regime that have been modified by excavation, and is characterized by the open water channel in the western study area buffer bordering the Del Mar Fairgrounds.

**E2EM1P (Estuarine; 2=intertidal; EM= emergent; 1=persistent; P=irregularly flooded [saltwater tidal]):** This type of feature includes estuarine brackish-water marsh habitats with persistent vegetation and is characterized by San Dieguito Lagoon in the eastern study area buffer.

##### Palustrine

**PEM1Ch (Palustrine; EM= emergent; 1=persistent; C=seasonally flooded; h=diked/impounded):** This type of feature includes freshwater emergent wetlands or interior marshes with persistent vegetation, and is characterized by the emergent riparian basin that occurs in the southern study area buffer.

##### Riverine

**R2UBHx (Riverine; 2=lower perennial; UB= unconsolidated bottom; H=permanently flooded; x=excavated):** This type of water feature includes slow-moving river with sandy or muddy substrate that is permanently covered with water. Areas mapped with the 'permanently flooded' water regime classification often meet the definition of a wetland due to presence of hydric soils, hydrology, or hydrophytic vegetation (USFWS 2025). This type of feature is mapped in the western study area buffer and is characterized by an excavated channel that parallels the western side of the NCTD railway.

In addition, based on a review of the USGS National Hydrography Dataset, there is a mapped 'blue-line' artificial stream/waterway that bisects the Project site and is characterized by the Dan Dieguito River/Lagoon (USGS 2025) (Figure 7: Hydrology).

### 4.1.3 Soils

According to the San Diego County Soil Survey Area USDA Web Soil Survey (USDA 2025a), six soil types are mapped within the study area: made land, terrace escarpments, Tujunga sand (0-5% slopes), Loamy alluvial land- Huerhuero complex (9-50% slopes, severely eroded), tidal flats, and Lagoon water. Tidal flats are considered hydric soils in the Arid West; Lagoon water is not considered hydric as it is a land type, not a soil series, used to describe areas such as lagoons where the soil substrate is permanently submerged (USDA 2025b).

## 4.2 Biological Resources

The following discussion describes the existing biological conditions within the study area based on the results of the field surveys, which included a field reconnaissance, vegetation mapping, and jurisdictional delineation.

### 4.2.1 Vegetation Communities and Land Cover Types

The vegetation communities and land covers were mapped according to the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *the Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), with few exceptions for vegetation communities or land cover types observed which did not match either classification system. A total of 23 vegetation communities (including disturbed forms) and two land cover types were mapped within the study area. Of the 23 vegetation communities/land cover types, 14 (including disturbed forms) are considered to be sensitive (S1-S3) by CDFW (CDFW 2025g). The vegetation communities and land cover types recorded in the study area are described in detail as follows, their acreages are presented in Table 2, and their spatial distributions are presented on the Biological Resources Map (Figure 5). The area of Project disturbance within the study area consists of 11 vegetation communities and/or land cover types, of which 4 are considered sensitive by CDFW; arrowweed (*Pluchea sericea*) scrub, southern coastal salt marsh, disturbed southern coastal bluff scrub, eelgrass beds, and open water are considered riparian/wetland habitats that are typically under the jurisdiction of aquatic resource agencies including but not limited to CDFW and the CCC (Table 2). The Project site and study area buffer are included in Table 2 to show adjacent resources to the areas of Project disturbance. The Project site and study area buffer are outside the areas of Project disturbance where impacts will occur.

**Table 2. Vegetation Communities and Land Cover Types in the Study Area**

| Vegetation Community or Land Cover Type | Area of Project Disturbance (Acres) | Project Site (Acres) | 500-foot Study Area Buffer (Acres) | Total (Acres) |
|---|---|---|---|---|
| **Riparian Scrubs** | | | | |
| Arrowweed (*Pluchea sericea*) Scrub* | 0.04 | 0.00 | 0.00 | 0.04 |
| Southern Willow Scrub* | 0.00 | 0.03 | 0.17 | 0.20 |
| Non-Native Riparian | 0.00 | 0.58 | 0.10 | 0.68 |

## Table 2. Vegetation Communities and Land Cover Types in the Study Area

| Vegetation Community or Land Cover Type | Area of Project Disturbance (Acres) | Project Site (Acres) | 500-foot Study Area Buffer (Acres) | Total (Acres) |
|---|---|---|---|---|
| **Seagrasses** | | | | |
| Eelgrass Beds* | 0.03 | 0.42 | 0.19 | 0.63 |
| **Bogs and Marshes** | | | | |
| Southern Coastal Salt Marsh* | 0.25 | 0.59 | 1.40 | 2.25 |
| Disturbed Southern Coastal Salt Marsh* | 0.01 | 0.82 | 0.45 | 1.28 |
| Emergent Wetland* | 0.00 | 0.07 | 0.20 | 0.27 |
| **Unvegetated Riparian and Bottomland Habitats** | | | | |
| Saltpan/Mudflats | 0.00 | 0.43 | 0.86 | 1.29 |
| Disturbed Saltpan/Mudflats | 0.00 | 0.50 | 0.09 | 0.59 |
| Open Water | 0.34 | 10.14 | 4.24 | 14.73 |
| **Coastal Scrubs** | | | | |
| Coastal Sage Scrub* | 0.00 | 0.01 | 0.00 | 0.01 |
| Disturbed Coastal Sage Scrub* | 0.00 | 0.60 | 0.29 | 0.89 |
| Diegan Coastal Sage Scrub: Coastal Form* | 0.00 | 0.09 | 0.06 | 0.14 |
| Disturbed Diegan Coastal Sage Scrub: *Baccharis*-dominated | 0.05 | <0.01 | 0.00 | 0.05 |
| Southern Coastal Bluff Scrub* | 0.00 | 0.12 | 0.00 | 0.12 |
| Disturbed Southern Coastal Bluff Scrub* | 0.77 | 0.11 | 0.00 | 0.88 |
| Maritime Succulent Scrub* | 0.00 | 0.16 | 0.00 | 0.16 |
| Disturbed Maritime Succulent Scrub* | 0.00 | 0.10 | <0.01 | 0.10 |
| **Woodlands and Forests** | | | | |
| Torrey Pine Forest* | 0.00 | 0.40 | 0.13 | 0.53 |
| Non-Native Woodland | 0.07 | 0.00 | 0.00 | 0.07 |
| **Disturbed or Developed Areas** | | | | |
| Non-Native Vegetation | 0.69 | 1.85 | 0.87 | 3.41 |
| Disturbed Habitat | 0.88 | 2.42 | 0.50 | 3.79 |
| Developed Land | 3.65 | 27.74 | 15.50 | 46.89 |
| **Total[1]** | **6.78** | **47.20** | **25.06** | **79.04** |

**Note:** *Considered a sensitive vegetation community by CDFW (CDFW 2025g, NOAA Fisheries 2025a).
[1] Totals may not sum exactly due to rounding.

The area of Project disturbance consists of 11 vegetation communities and/or land cover types, of which 4 are considered sensitive by CDFW: arrowweed scrub, southern coastal salt marsh, disturbed southern coastal bluff scrub, and eelgrass beds (Table 2). The Southwest Riverbank is entirely composed of non-native vegetation communities and land cover types. However, the North Riverbank and Southeast Riverbanks contain native vegetation communities including arrowweed scrub, southern coastal salt marsh, disturbed southern coastal bluff

scrub, eelgrass beds, and open water, which are considered riparian/wetland habitats that are typically under the jurisdiction of aquatic resource agencies including but not limited to CDFW and the CCC.

#### 4.2.1.1 Riparian Scrubs

##### 4.2.1.1.1 Arrowweed Scrub

According to Oberbauer et al. 2008, arrowweed scrub consists of moderate to dense streamside thickets strongly dominated by arrowweed. Other riparian species including cattails (*Typha* spp.), rushes (*Juncus* spp.), bulrushes (*Scirpus* spp.), and saltgrass (*Distichlis spicata*) may occur as scattered individuals, especially around the margins.

Arrowweed scrub occurs within the Project site along the banks of the San Dieguito Lagoon, within areas of Project disturbance (Figure 5). Arrowweed is the dominant species, with scattered coyote brush (*Baccharis pilularis*), alkali heath (*Frankenia salina*), brittle bush (*Encelia californica*), and California buckwheat (*Eriogonum fasciculatum*). Arrowweed scrub in the CDFW Natural Communities List and is considered a sensitive vegetation community (S3) by CDFW (CDFW 2025g).

##### 4.2.1.1.2 Southern Willow Scrub

According to Oberbauer et al. 2008, southern willow (*Salix* spp.) scrub consists of dense, broad-leafed, winter-deciduous riparian thickets dominated by several willow species, with scattered emergent Fremont's cottonwood (*Populus fremontti*) and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. Characteristic species include arrowweed, Fremont's cottonwood, and willows.

Southern willow scrub dominated by arroyo willow (*Salix lasiolepis*) occurs outside the Project site but within the 500-foot study area buffer, associated with a basin within the southern study area buffer (Figure 5). Arroyo willow scrub, the closest CDFW vegetation community to the Oberbauer et al. 2008 southern willow scrub vegetation community, is considered sensitive by CDFW (CDFW 2025g).

##### 4.2.1.1.3 Non-Native Riparian

According to Oberbauer et al. 2008, non-native riparian habitat consists of densely vegetated riparian thickets dominated by non-native, invasive species that account for greater than 50% of the total vegetative cover. Characteristic species include giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), castor bean (*Ricinus communis*), and pampas grasses (*Cortaderia* spp.), along with natives such as arrowweed, Fremont's cottonwood, and willows.

Non-native riparian habitat occurs within the Project site boundary and borders the basin within the southern portion of the study area buffer (Figure 5). It is dominated by palms (*Washingtonia* spp.) and tamarisk, with an understory of Menzie's goldenbush (*Isocoma menziesii*) and lemonade berry (*Rhus integrifolia*). This Oberbauer vegetation community crosswalked to CDFW is *Tamarix* semi-natural stands, which is not considered sensitive by CDFW.

#### 4.2.1.2 Seagrasses

##### 4.2.1.2.1 Eelgrass Beds

Seagrasses are one of the only flowering plants, or angiosperms, that can grow in a marine environment. These plants support a diversity of life and can form extensive beds in shallow, protected, estuarine, or other nearshore environments. Two common seagrasses that occur in the west coast region are eelgrass (genus *Zostera*) and surfgrass (genus *Phyllospadix*), with eelgrass being the most prevalent in California. Eelgrass (*Zostera marina* and *Z. pacifica*) beds are located in soft, sandy, sheltered seafloor environments, typically in shallow bays and estuaries. Eelgrass beds function as nursery grounds and provide habitat for juvenile fish, snails, sea stars, anemones, crabs, and clams, and further serve as potential foraging habitat for sea turtles (NOAA Fisheries 2025). Eelgrass beds are recognized by federal and state statutes as highly valuable and sensitive habitats. Eelgrass has been designated as EFH for various fish species managed under the Magnuson-Stevens Act and has been listed as a Habitat Area of Particular Concern (HAPC), identifying it as rare, especially vulnerable to human impacts, particularly important ecologically, and/or located in environmentally stressed areas. This designation requires federal agencies to consult with NOAA Fisheries on ways to avoid or minimize the adverse effects of their actions on eelgrass. The San Dieguito Lagoon is mapped as a HAPC by NOAA (NOAA Fisheries 2025).

Eelgrass beds were detected within the open water vegetation community (San Dieguito Lagoon) along the north and south banks of the Project site (Figure 5).

#### 4.2.1.3 Bogs and Marshes

##### 4.2.1.3.1 Southern Coastal Salt Marsh (including disturbed)

According to Oberbauer et al. 2008, southern coastal salt marsh habitat is characterized by salt-tolerant plants that grow in tidal areas, with characteristic species including sea-blite, pickleweed (*Salicornia* spp.), saltbushes (*Atriplex* spp.), saltwort (*Batis maritima),* and salt grass (*Distichlis spicata*). This vegetation community occurs in bays, lagoons, and estuaries.

Southern coastal salt marsh habitat is present along the banks of the San Dieguito Lagoon, both within the Project site as well as the surrounding study area buffer. The disturbed variety of this vegetation community is intermixed with non-native ruderal species and is present in the southern study area buffer in an ephemeral basin (Figure 5). Dominant species detected within the vegetation community in the study area include saltbushes (*Atriplex* spp.), pickleweed, salt grass, and alkali heath; the disturbed variety includes co-dominance of California sea lavender (*Limonium californicum*) and ice plants (*Mesembryanthemum* spp.). Southern coastal salt marsh crosswalked from Oberbauer et al. 2008 to the CDFW Natural Communities list is alkali heath-saltgrass association, which is considered sensitive by CDFW (CDFW 2025g). The disturbed form of this sensitive vegetation community is still considered sensitive by CDFW due to its vulnerability to further disruption (CDFW 2025g).

##### 4.2.1.3.2 Emergent Wetland

According to Oberbauer et al. 2008, emergent wetland characterizes generally persistent wetland dominated by low growing, perennial wetland species. Emergent wetlands may be alkaline or freshwater and are often in previously disturbed areas where wetlands are emerging, but have not yet established a full suite of species.

Characteristic species include sedges (*Carex* spp.), rushes (*Juncus* spp.), and curly docks (*Rumex* spp.), among others.

Emergent wetland is present in the southern study area buffer, associated with a riparian basin (Figure 5). It is co-dominated by California bulrush (*Schoenoplectus californicus*) and saltmarsh bulrush (*Bolboschoenus maritimus*). Crosswalked from Oberbauer et al. 2008 to the CDFW Natural Communities List, this emergent wetland vegetation community would be considered hardstem and California bulrush marshes, a CDFW sensitive natural vegetation community (CDFW 2025g).

#### 4.2.1.4 Unvegetated Riparian and Bottomland Habitats

##### 4.2.1.4.1 Saltpan/Mudflats (including disturbed)

According to Oberbauer et al. 2008, saltpan/mudflats habitat consists of coastal wetlands that form when mud is deposited by the tides or rivers, commonly in sheltered areas such as bays and estuaries. For a majority of the time, saltpans are expanses of ground covered in salt or other minerals formed from evaporated water. Saltpans generally pool water when it rains, forming mudflats.

Mudflats are present in the eastern study area buffer along the San Dieguito Lagoon (Figure 5). The disturbed variety of this vegetation community supports scattered ruderal non-native species and is present in the southern study area buffer, associated with a riparian basin. Saltpan/mudflats are not considered a natural vegetation community by CDFW.

##### 4.2.1.4.2 Open Water

According to Oberbauer et al. 2008, open water consists of submerged aquatic communities with minimal vegetative cover. Variable water lines inhibit the growth of vegetation and aquatic species including eelgrass may persist, especially in shallow and estuarine habitats where light penetrates to the sea floor.

Open water in the study area describes the San Dieguito Lagoon, which bisects the Project site and supports eelgrass beds communities (Figure 5). Open water is not considered a natural vegetation community by CDFW.

#### 4.2.1.5 Coastal Scrubs

##### 4.2.1.5.1 Coastal Sage Scrub (including disturbed)

Coastal sage scrub is a native vegetation community that, according to Oberbauer et al. (2008), is composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species—such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.)—with scattered evergreen shrubs, including lemonade sumac (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*).

An isolated patch of coastal sage scrub dominated by Menzie's goldenbush is present outside of the Project boundary but within the study area buffer, along the north bank of the San Dieguito Lagoon. The disturbed variety of coastal sage scrub also occurs outside of the Project site boundary but within the study area buffer, along the edges of development (Figure 5). Oberbauer et al. 2008 coastal sage scrub dominated by Menzie's goldenbush would be characterized by the CDFW Natural Communities List as Menzie's goldenbush association, which is

considered a sensitive natural community by CDFW (S3) (CDFW 2025g). The disturbed form of this sensitive vegetation community is still considered sensitive by CDFW due to its vulnerability to further disruption (CDFW 2025g).

#### 4.2.1.5.2 Diegan Coastal Sage Scrub: *Baccharis-dominated* (disturbed)

Coastal sage scrub (*Baccharis*-dominated) is a native vegetation community that, according to Oberbauer et al. (2008), typically occurs in nutrient-poor soils and is composed primarily of broom baccharis (*Baccharis sarothroides*) or coyote bush (*Baccharis pilularis*). Other drought-deciduous species may also be sparsely intermixed—such as California sagebrush, California buckwheat, and saw toothed goldenbush (*Hazardia squarrosa*).

The disturbed variety of coastal sage scrub (*Baccharis*-dominated) occurs within the Project site along the banks of the San Dieguito Lagoon, in the northern riverbank area of Project disturbance (Figure 5). It is co-dominated by coyote brush and Menzie's goldenbush (*Isocoma menziesii*), with a scattered understory of sour fig (*Carpobrotus edulis*). Oberbauer et al. 2008 coastal sage scrub dominated by *Baccharis* and Menzie's goldenbush would be characterized by the CDFW Natural Communities List as coyote brush scrub, which is not considered sensitive by CDFW (CDFW 2025g).

#### 4.2.1.5.3 Diegan Coastal Sage Scrub: Coastal Form

According to Oberbauer et al. 2008, the coastal form of Diegan coastal sage scrub is similar to coastal sage scrub, but at elevations below 1,000 feet. California sagebrush is more dominant in coastal forms; other associated species may include California buckwheat, laurel sumac, lemonade sumac, and black sage (*Salvia mellifera*).

The coastal variety of Diegan coastal sage scrub is present in the eastern study area buffer along the southern bank of the San Dieguito Lagoon, co-dominated by Menzie's goldenbush and California sagebrush, with scattered coyote brush and California buckwheat (Figure 5). Oberbauer et al. 2008 coastal sage scrub: coastal form, co-dominated by Menzie's goldenbush and California sagebrush, would be characterized by the CDFW Natural Communities List as Menzie's goldenbush-California sagebrush association, a sensitive vegetation community (S3) (CDFW 2025g).

#### 4.2.1.5.4 Southern Coastal Bluff Scrub (including disturbed)

According to Oberbauer et al. 2008, southern coastal bluff scrub consists of low scrub up to 6 feet tall, forming continuous mats or more scattered, with dwarf shrubs, herbaceous perennials, and annuals as well as varying succulents. Most plants in this vegetation community are woody and/or succulent, with growth and flowering occurring from late winter through spring. Characteristic species include saltbushes, dudleyas (*Dudleya* spp.), brittle bush (*Encelia californica*), morning-glories (*Calystegi*a spp.), lemonade berry, and coast prickly pear (*Opuntia littoralis*), among others. The City of Del Mar LCP Land Use Plan defines coastal bluff as "a steep escarpment with a slope gradient equal to or greater than an average of one foot vertical to one foot horizontal and vertical rise of 15 feet or more, and which is located in an area that is periodically subject to ocean wave action" (City of Del Mar 2018b).

Southern coastal bluff scrub is present within the Project site along the banks of the San Dieguito lagoon (Figure 5). It consists of saltbushes, California buckwheat, Menzie's goldenbush, lemonade berry, and coast prickly pear. The disturbed variety of southern coastal bluff scrub is intermixed with non-native ruderal species including Acacias, crown daisy (*Glebionis coronaria*), and crystalline ice plant, located within the southeast area of Project disturbance, along the southern bank of the San Dieguito Lagoon. Oberbauer et al. 2008 southern coastal bluff scrub dominated

by saltbushes, California buckwheat, and Menzie's goldenbush, would be most closely characterized by the CDFW Natural Communities List as the coast prickly pear Association as coast prickly pear is co-dominant with other coastal sage scrub species and coastal bluff scrub is described as supporting more succulents than coastal sage scrub (CNPS 2025b). This vegetation community is considered sensitive by CDFW (CDFW 2025g). The disturbed form of this sensitive vegetation community is still considered sensitive by CDFW due to its vulnerability to further disruption (CDFW 2025g).

#### 4.2.1.5.5 Maritime Succulent Scrub (including disturbed)

According to Oberbauer et al. 2008, maritime succulent scrub is a low (knee to waist high) open (25-75% cover) scrub dominated by drought deciduous, malacophyllous, woody shrubs with a rich admixture of stem and leaf succulents, with a higher proportion of cacti towards the south or inland areas. The ground is more or less bare between the shrubs. Growth and flowering are concentrated in the spring. Often on thin, rocky or sandy soils, as well as steep slopes of coastal headlands and bluffs. Characteristic species include Shaw's agave, California sagebrush, brittle bush, coast barrel cactus (*Ferocactus prolifera*), lemonade berry, and cliff spurge (*Euphorbia misera*), among others.

Maritime succulent scrub is present in the southeast study area buffer and supports four special-status species including sea dahlia (*Leptosyne maritima*), Shaw's agave, coast barrel cactus, and California desert thorn (*Lycium californicum*) (Figure 5) (Appendix A: Species Compendium). It was noted during the biological reconnaissance that the maritime succulent scrub vegetation community may be a recent habitat restoration area due to evidence of planting. The disturbed form of this vegetation community is co-dominated by ice plant and is present in the northeast study area buffer, within the San Dieguito lagoon. Oberbauer et al. 2008 maritime succulent scrub dominated would be most closely characterized by the CDFW Natural Communities List as California desert thorn scrub, which is considered sensitive by CDFW (CDFW 2025g). The disturbed form of this sensitive vegetation community is still considered sensitive by CDFW due to its vulnerability to further disruption and presence of special-status plants (CDFW 2025g).

### 4.2.1.6 Woodlands and Forests

#### 4.2.1.6.1 Torrey Pine Forest

According to Oberbauer et al. 2008, Torrey pine forest consists of open to moderately dense forest up to 65 feet, dominated by Torrey pines. The understory varies from almost nothing on the driest, rockiest sites to an open mixture of grasses and shrubs on better-developed soils. With a dense tree canopy, needles accumulate on the ground, and few understory plants occur.

Torrey pine forest is present in the southeast study area buffer and borders residential development (Figure 5). There are also stands of planted Torrey pines throughout the study area (Figure 5). Torrey pine woodland/forest is considered sensitive (S1) by CDFW (CDFW 2025g).

#### 4.2.1.6.2 Non-Native Woodland

According to Oberbauer et al. 2008, non-native woodland is dominated by exotic trees which are not maintained or artificially irrigated, usually dominated by Eucalyp*tus species, tamarisk species, and other non-natives.*

*Non-native woodland dominated* by Aleppo pine *(Pinus halepensis)* is present within the southeast area of Project disturbance along the southern bank of the San Dieguito Lagoon (Figure 5). This Oberbauer et al. 2008 vegetation community is not recognized by the CDFW Natural Communities List as a natural community and is not considered sensitive (CDFW 2025g).

#### 4.2.1.7 Disturbed or Developed Areas

##### 4.2.1.7.1 Non-Native Vegetation

Non-native vegetation is described by Oberbauer et al. (2008) as a type of disturbed or developed area that is characterized by predominantly non-native species introduced and established through human action.

Non-native vegetation is present within the southeast area of Project disturbance along the southern bank of the San Dieguito lagoon (Figure 5). It supports a variety of non-native annual and perennial species including crystalline ice plant, Perez's sea lavender (*Limonium perezii*), mousehole tree (*Myoporum laetum*), palms, and Acacias. This Oberbauer et al. 2008 vegetation community is not recognized by the CDFW Natural Communities List as a natural community and is not considered sensitive (CDFW 2025g).

##### 4.2.1.7.2 Disturbed Habitat

Disturbed Habitat includes areas which have experienced physical anthropogenic disturbance and as a result cannot be identified as a native or naturalized vegetation association. However, these areas do have a recognizable soil substrate. The existing vegetation is typically composed of non-native ornamental or exotic species (Oberbauer et al. 2008).

Disturbed Habitat on the study area consists of dirt pedestrian access paths (Figure 5). Disturbed habitat is not considered a natural community or sensitive by CDFW (CDFW 2025g).

##### 4.2.1.7.3 Urban/Developed Land

According to Oberbauer et al. 2008, urban/developed land represents areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are not supported. This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated or supports a variety of ornamental plants and landscaping.

This land cover type on the study area predominantly consists of mixed commercial and residential development as well as asphalt-paved public rights-of-way (Figure 5). Developed land is not considered a natural community or sensitive by CDFW (CDFW 2025g).

### 4.2.2 CCC ESHA

Coastal Act Section 30107.5 defines ESHA 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." The Project occurs within CCC jurisdiction and Commission staff shall make the final recommendations as to which resources qualify as ESHA.

Based on 1) the location of the Project within the San Dieguito River channel; 2) the Project's mapped location within a County of San Diego MSCP biological core (San Dieguito Lagoon) (Figure 3); 3) presence of sensitive vegetation communities; 4) presence of rare plants; 5) located within a designated Habitat Area of Particular Concern (San Dieguito Lagoon) (NOAA Fisheries 2025a); 6) and proximity to a state marine protected area (San Dieguito Lagoon Ecological Reserve) that is also mapped as a San Diego MHPA, the San Dieguito River channel qualifies as an ESHA. Specifically, the sensitive vegetation communities as well as vegetation communities supporting rare plants within the study area are considered ESHA due to the presence of rare plants and sensitive vegetation communities as well as the overall function of the San Dieguito River channel, which provides wildlife movement/connectivity between the San Dieguito Lagoon to the east and the San Dieguito River channel outlet to the west. Note that although disturbed Diegan coastal sage scrub: Baccharis dominated is not considered a CDFW sensitive vegetation community and no special-status species were observed within it during the biological reconnaissance, CCC may still consider it ESHA due to its location within the coastal zone and proximity to San Dieguito Lagoon. Eelgrass may also be considered ESHA by the CCC.

### 4.2.3 Floral Diversity

Based on the results of biological reconnaissance, a total of 74 species of vascular plants, 49 native (67%) and 25 non-native (33%), were recorded in the study area. Of the total 74 wildlife species observed during field survey, seven are considered special status (see Section 3.2.4). A cumulative list of all plant species observed in the study area is provided in Appendix A: Species Compendium.

### 4.2.4 Wildlife Diversity

The study area supports a variety of native habitats suitable for aquatic, coastal, estuarine, riparian, and upland wildlife due to the presence of multiple riparian, scrub, and marsh habitats associated with San Dieguito Lagoon. Estuarine, coastal, riparian, and upland habitats also provide foraging and nesting habitat for migratory and resident bird species and other wildlife species. Some suitable habitat for sensitive riparian species is present within riparian scrubs in the study area (arrowweed scrub, southern willow scrub, emergent wetland, coastal salt marsh); however, it is limited to a narrow area along the banks of the San Dieguito Lagoon floodway cannel that bisects the Project site (Figure 5). The range of upland, riparian, estuarine, and aquatic vegetated communities within the study area also likely provides cover and foraging opportunities for wildlife species, including birds, reptiles, invertebrates, and mammals.

As previously mentioned in Section 2.2, wildlife species that were detected during the field survey by sight, calls, tracks, scat, or other signs were recorded digitally. Binoculars (10x42) were used to aid in the identification of wildlife. A total of 20 wildlife species, including 19 birds and one invertebrate, were recorded in the study area during the biological reconnaissance. Of the total 20 wildlife species observed during field surveys, two are considered special status (see Section 3.2.5). A cumulative list of all wildlife species observed in the study area during the field survey is provided in Appendix A.

### 4.2.5 Special-Status Plants

Plant species are considered sensitive if they have been listed or proposed for listing by the federal or state government as rare, endangered, or threatened ("listed species"); have a California Rare Plant Rank (CRPR) of 1–4; are listed as MSCP-covered species; and/or have been classified by the MSCP as narrow endemic. An evaluation

of known records in the Del Mar quadrangle, and the surrounding six quadrangles including Poway, Encinitas, Escondido, Rancho Santa Fe, La Mesa, and La Jolla (CDFW 2025c; CNPS 2025; USFWS 2025) was conducted to determine which species have been recorded in the Project vicinity, which includes the study area plus a 5-mile radius. In addition, Dudek's knowledge of biological resources and regional distribution of each species, as well as elevation, habitat, and soils present within the study area, were evaluated to determine the potential for various special-status species to occur.

Sensitive plant species directly observed during surveys or known to occur in the surrounding region are described in Appendix B: Special-Status Plant Species Potential to Occur with the study area. Ten rare plant species were directly observed within the study area during the field reconnaissance: San Diego marsh elder, southwestern spiny rush, sea dahlia, Shaw's agave, Torrey pine, California box thorn, coast barrel cactus, California seablite, estuary seablite, and woolly seablite. These special-status plant species are described in further detail below.

In addition, based on a review of known records, a total of 107 special-status plant species are known to occur within the Del Mar quadrangle in which the study area resides and the surrounding six quadrangles (Appendix B). Of the 107 species evaluated, a total of 10 are present, and 29 have a moderate to high potential to occur. The remaining 68 special-status plants are not expected to occur or have a low potential to occur due to lack of suitable habitats and substrates present within the study area, and are not discussed further (Appendix B).

### San Diego marsh elder (*Iva hayesiana*)

San Diego marsh elder is a California native perennial herb that is not covered under MSCP, has a CRPR 2B.2, and occurs in southern and central California (Calflora 2025). This species is found in marshes and swamps as well as playas at elevations ranging from sea level to 1,640 feet AMSL. It blooms from April to October. San Diego marsh elder is on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

Patches of San Diego marsh elder are present in disturbed southern coastal bluff scrub, as well as individually scattered in arroweed scrub, in the Project site (Figure 5). Each patch includes several individuals; an exact count was not recorded.

### Southwestern spiny rush (*Juncus acutus* spp. *leopoldii*)

Southwestern spiny rush is a native perennial rhizomatous herb that is not covered under MSCP, has a CRPR 4.2, and occurs in San Diego and Orange counties (Calflora 2025). This species is found in mesic coastal dunes, coastal scrub, coastal salt marshes, and alkaline seeps at elevations of 10 to 2,955 feet AMSL. Southwestern spiny rush blooms from May to June. This species is on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

Southwestern spiny rush was detected in emergent wetland within the study area buffer (Figure 5). An exact count was not recorded.

### Sea Dahlia (*Leptosyne maritima*)

Sea dahlia is a California native perennial herb that is not covered under MSCP, has a CRPR 2B.2, and occurs in San Diego county (Calflora 2025). This species is found in coastal sage and bluff scrub habitats at elevations of 15 to 490 feet AMSL. Sea dahlia blooms from March-May. This species is on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

Sea dahlia was detected within the maritime succulent scrub in the southern study area buffer (Figure 5). It was mapped in the biological resources figure because it did not seem to be recently planted as part of habitat restoration efforts, while the other rare plants detected within that vegetation community were.

### Shaw's agave (*Agave shawii* var. *shawii*)

Shaw's agave is a California native shrub that is covered by the MSCP and is considered a Narrow Endemic. It has a CRPR 2B.1, and occurs in San Diego and Riverside counties (Calflora 2025). This species is found in coastal sage scrub and coastal bluff scrub habitats at elevations of 10 to 395 feet AMSL. Shaw's agave blooms from September to May. This species is listed on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

Shaw's agave was detected within the planted maritime succulent scrub in the southern study area buffer. As evidence of recent planting was noted and it may occur within a restoration area, this species was not mapped in the biological resources figure.

### Torrey pine (*Pinus torreyana*)

Torrey pine is a California native tree that is covered under MSCP, has a CRPR 1B.2, and occurs along the coast of California (Calflora 2025). This species is found in chaparral and closed cone coniferous forests with sandstone substrates at elevations of 100 to 525 feet AMSL. Torrey pine is considered a sensitive plant according to the County of San Diego MSCP; the sensitive designation only applies to coastal mixed chaparral at Del Mar as well as naturally occurring trees (County of San Diego 2010).

Both planted individual Torrey pines as well as Torrey pine forest were detected within the survey area (Figure 5). An exact count was not recorded.

### California box-thorn (*Lycium californicum*)

California box-thorn is a California native shrub that is not covered under MSCP, has a CRPR 4.2, and occurs in southern California (Calflora 2025). This species is found in coastal sage and coastal bluff scrub habitats at elevations of 15 to 490 feet AMSL. California box-thorn blooms from March to August. This species is on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

California box-thorn was detected within the maritime succulent scrub habitat in the southern study area buffer. As evidence of recent planting was noted and it may occur within a restoration area, this species was not mapped in the biological resources figure.

### Coast barrel cactus (*Ferocactus viridescens*)

Coast barrel cactus is a California stem succulent shrub that is covered under MSCP, has a CRPR 2B.1, and occurs in San Diego and Riverside counties (Calflora 2025). This species is found in chaparral, grassland, and coastal sage scrub habitats as well as vernal pools, at elevations of 10 to 1,475 feet AMSL. It blooms from May to June. This species is on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

Coast barrel cactus was detected within the maritime succulent scrub habitat in the southern study area buffer. As evidence of recent planting was noted and it may occur within a restoration area, this species was not mapped in the biological resources figure.

### California sea-blite (*Suaeda californica*)

California sea-blite is a California native shrub that is not covered under MSCP, has a CRPR 1B.1, and occurs along the coast of California (Calflora 2025). This species is found in coastal salt marsh habitats and swamps at elevations of sea level to 50 feet AMSL. California sea-blite blooms from July to October. This species is not on the County of San Diego MSCP sensitive plant list (County of San Diego 2010).

California sea-blite individuals were observed within disturbed southern coastal bluff scrub in the Project site as well as within disturbed maritime succulent scrub in the northeastern study area buffer (Figure 5). An exact count was not recorded.

### Estuary sea-blite (*Suaeda esteroa*)

Estuary sea-blite is a California native shrub that is not covered under MSCP, has a CRPR 1B.2, and occurs along the coast of California from Santa Barbara to San Diego Counties (Calflora 2025). This species is found in coastal salt marsh habitats and swamps at elevations of sea level to 15 feet AMSL. Estuary sea-blite blooms from July to October. This species is considered a sensitive plant according to the County of San Diego MSCP (County of San Diego 2010).

Estuary sea-blite was observed in the Project site within coastal salt marsh habitat as well as in the eastern study area buffer in saltpan/mudflats (Figure 5). An exact count was not recorded.

### Woolly sea-blite (*Suaeda taxifolia*)

Woolly sea-blite is a California native shrub that is not covered under MSCP, has a CRPR 4.2, and occurs along the coast of central and southern California (Calflora 2025). This species is found in coastal bluff scrub, coastal dunes, coastal salt marsh and swamps at elevations of sea level to 165 feet AMSL. Woolly sea-blite blooms year-round. This species is considered a sensitive plant according to the County of San Diego MSCP (County of San Diego 2010).

Woolly sea-blite was detected within the Project site and eastern study area buffer within coastal salt marsh habitat and disturbed southern coastal bluff scrub (Figure 5). An exact count was not recorded.

## 4.2.6 Special-Status Wildlife

Special-status wildlife species are those listed as federally or state endangered or threatened, proposed for listing, fully protected by CDFW, CDFW Watch List (WL), CDFW Species of Special Concern (SSC), species protected by the MMPA, and San Diego MSCP-Covered species. An evaluation of known records in the Del Mar quadrangle, and the surrounding six quadrangles including Poway, Encinitas, Escondido, Rancho Santa Fe, La Mesa, and La Jolla was conducted (CDFW 2025c; CNPS 2025; USFWS 2025). In addition, Dudek's knowledge of biological resources and regional distribution of each species, as well as habitats and soils present within the study area, were evaluated to determine the potential for various special-status wildlife to occur.

Three special-status wildlife species directly observed during biological reconnaissance: osprey (WL), double-breasted cormorant (WL), and wandering skipper (*Panoquina errans*). Appendix C, Special-Status Wildlife Potential to Occur in the study area, details the special-status wildlife known to occur within the region, including their habitat requirements, listing status, and potential to occur determinations. A total of 62 special-status wildlife species are

known to occur in the region based on occurrence records and three were incidentally observed during the biological reconnaissance (Figure 5). A total of 48 special-status wildlife species are not expected to occur or were determined to have a low potential to occur based on lack of suitable habitats in the study area. The remaining 14 special-status wildlife species were determined to have a moderate to high potential to occur within the study area including southern California legless lizard (*Aniella stebbinsi*), orange-throated whiptail (*Aspidoscelis hyperythra*), California black rail (*Laterallus jamaicensis colurniculus*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), light-footed Ridgeway's rail (*Rallus obsoletus levipes*), California least tern (*Sturnula antillarum browni*), western snowy plover (*Charadrius nivosus nivosus*), least bittern (*Botaurus exilis*), coastal California gnatcatcher (*Polioptila californica californica*), San Diego desert woodrat (*Neotoma lepida intermedia*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), Pacific harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californicus*), and Crotch's bumble bee (*Bombus crotchii*). Of these, all but the California legless lizard, orange-throated whiptail, Pacific harbor seal, California sea lion, and Crotch's bumble bee are on the County of San Diego MSCP sensitive animals list (County of San Diego 2010). Descriptions of special-status species with a high potential to occur and those observed on site are provided below.

Note that due to the Project's avoidance of in-water impacts, marine mammals are not discussed further. In addition, the lack of California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum californicum*) scrub in the disturbed Diegan coastal sage scrub: *Baccharis*-dominated habitat and disturbed coastal bluff scrub habitats located within the area of Project disturbance reduces the potential for those coastal scrub communities to support the federally and state listed coastal California gnatcatcher.

### Osprey

Osprey (nesting) is a state Watch List species that is not Covered by the MSCP. Osprey inhabit large waters such as lakes, reservoirs, and rivers that support fish. It is usually near forest habitats but is also widely observed along the coast. Foraging habitat requires open, clear waters. Breeding occurs from March to September. Osprey is on the County of San Diego MSCP sensitive animals list (County of San Diego 2010).

Multiple osprey individuals were incidentally observed within the western portion of Project site, carrying nest materials to two light post platforms north of the Project area of disturbance (Figure 5). Therefore, osprey nesting activity was detected.

### Double-Breasted Cormorant

Double-breasted cormorant (nesting colony) is a state Watch List species that is not Covered by the MSCP. Double-breasted cormorant nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, and estuaries. Winter habitat includes lakes, rivers, and coastal areas. It is a yearlong resident in California, preferring waters less than 30 feet deep to forage on fish. Double-breasted cormorant rests in the daytime and roosts overnight beside water on offshore rocks, islands, steep cliffs, wharfs, jetties, and other perching sites barren of vegetation. Nesting sites must be within 5-10 miles of dependable food supply beside water. It breeds from April to August, nesting in colonies of a few to hundreds of pairs. Double-breasted cormorant is on the County of San Diego MSCP sensitive animals list (County of San Diego 2010).

Double-breasted cormorant was observed within the western study area buffer, foraging over and swimming in the open water channel (Figure 5). No nesting behavior was observed, however, the biological reconnaissance was

conducted near the end of the nesting bird season (Figure 1), and quality roosting habitat is present in the study area.

### Wandering Skipper

Wandering (saltmarsh) skipper is ranked as a CDFW S2 species that is not Covered by the MSCP. Wandering skipper occurs along the coast of central and southern California (CDFW 2025c). It is restricted to coastal salt marshes and coastal bluffs with its only known larval foodplant/host plant, saltgrass. Adults nectar at various flowers, with a preference for *Heliotropium*, *Frankenia*, and *Cakile* species (Greer 2014). Wandering skipper flies from July to September, with one annual brood. It is on the County of San Diego MSCP sensitive animal list (County of San Diego 2010).

Wandering skipper was observed incidentally within coastal salt marsh habitat in the Project site, foraging on saltgrass, alkali heliotrope (*Heliotropium currasavicum*), and alkali heath (*Frankenia salina*). Saltgrass, the suitable larval host plant, is present; no larval activity was incidentally detected during the biological reconnaissance.

### Light-Footed Ridgeway's Rail

Light-footed Ridgeway's rail is a federal and state-endangered species as well as a CDFW Fully-Protected species known to inhabit coastal wetlands, brackish areas, and coastal saline emergent wetlands. It uses southern California coastal salt marshes and lagoons to nest in the lower littoral zone where dense stands of cordgrass (*Spartina* spp.) are present. They require shallow water and mudflats for foraging, with adjacent higher elevation for cover during high water. Light-footed Ridgeway's rail is on the County of San Diego MSCP sensitive animals list (County of San Diego 2010).

Light-footed Ridgeway's rail was determined to have a high potential to nest and forage in the study area due to the presence of suitable habitats and known occurrence records from 2007 that overlap the Project site (CDFW 2025c). In addition, the San Diego Management and Monitoring Program (SDMMP) notes that San Dieguito Lagoon supported this species in 2001, and San Dieguito River Park approximately one mile northeast of the study area supported this species from 2004-2015 (SDMMP 2025). No nesting behavior was observed during the biological reconnaissance; however, the habitats on-site are appropriate for nesting activity.

## 4.2.7 Potentially Jurisdictional Aquatic Resources

Hydrology, vegetation, and soils were examined at two representative wetland sampling locations, and results were recorded on wetland determination data forms to determine the presence or absence of wetland field indicators. One representative OHWM form was taken within the San Dieguito River (NWW-02). Figure 8, Potentially Jurisdictional Aquatic Resources, includes the wetland sampling point and OHWM transect locations, and the associated data forms are included as Appendix D: Data Forms.

### 4.2.7.1 U.S. Army Corps of Engineers

The Project study area includes aquatic resources that are anticipated to be regulated by the USACE, including non-wetland waters and wetlands. Potentially jurisdictional aquatic resources mapped within the Project study area are shown on Figure 8, and Table 3a provides a summary of these resources under the jurisdiction of USACE.

## Table 3a. Potentially USACE Jurisdictional Resources within the Project Study Area

| Feature ID | Aquatic Resource Type | Vegetation Community/ Land Cover Type | Acres |
|---|---|---|---|
| **Non-Wetland Waters** | | | |
| **Non-Tidal** | | | |
| NWW-01 | Ditch/Canal | Coastal Salt Marsh | 0.13 |
| **Below High Tide Line** | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | Coastal Salt Marsh | 0.85 |
| | | Developed | 0.25 |
| | | Open Water | 2.30 |
| | | Saltpans/Mudflats | 0.98 |
| | | Southern Coastal Bluff Scrub | 0.02 |
| | | Eelgrass Beds | 0.06 |
| **Below Mean High Water Mark** | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | Coastal Salt Marsh | 0.77 |
| | | Open Water | 12.39 |
| | | Over Water (Developed) | 0.44 |
| | | Saltpan/Mudflats | 0.10 |
| | | Southern Coastal Bluff Scrub | <0.01 |
| | | Eelgrass Beds | 0.58 |
| | | *Non-Wetland Waters Subtotal* | *18.87* |
| **Wetlands** | | | |
| WET-04 | Salt Marsh | Coastal Salt Marsh | 0.12 |
| WET-05 | Disturbed Salt Marsh | Disturbed Coastal Salt Marsh | 0.09 |
| WET-06 | Mudflat | Saltpan/Mudflats | 0.21 |
| | | *Wetlands Subtotal* | *0.43* |
| | | **Grand Total** | **19.30** |

**Note:** OHWM= Ordinary High Water Mark; NWW= Non-Wetland Water; WET= Wetland.

The San Dieguito River is a tidally influenced body of water within the Project study area with a direct connection to the Pacific Ocean. Therefore, the San Dieguito River is considered a Traditional Navigable Water (TNW) subject to the regulatory authority of USACE up to the Mean High Water Mark under Section 10 of the Rivers and Harbors Act, and up to the High Tide Line under Section 404 of the CWA. Three-parameter wetlands directly abutting the San Dieguito River, including coastal salt marsh and saltpan/mudflats, are anticipated to be regulated by the USACE as adjacent wetlands (WET-04, -05, and -06). A drainage ditch/canal (NWW-01) flows from south to north into the San Dieguito River via a relic culvert which will be replaced as part of the Project. This ditch was inundated at the time of the delineation, and is anticipated to have a continuous, relatively permanent surface connection to the San Dieguito River. Therefore, this ditch/canal is anticipated to be a waters of the U.S regulated by the USACE below OHWM.

There are four isolated wetlands (FEW-01, WET-01, -02, and -03) located outside of the San Dieguito River to the south that are not anticipated to meet the current definition of waters of the U.S., due to their lack of continuous

surface connection to the San Dieguito River or other TNW. Therefore, these isolated wetland features are not anticipated to be regulated by the USACE.

#### 4.2.7.2 Regional Water Quality Control Board

All of the previously described USACE-jurisdictional waters of the U.S. have also been identified as waters of the state. In addition, the RWQCB asserts jurisdiction over isolated surface waters under the Porter-Cologne Water Quality Control Act and any artificial wetland that "resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape" (SWRCB 2021). Therefore, isolated features not regulated by the USACE are anticipated to be regulated by the RWQCB. Potentially jurisdictional aquatic resources mapped within the Project study area are shown on Figure 8, and Table 3b provides a summary of these resources under the jurisdiction of RWQCB.

**Table 3b. Potentially RWQCB Jurisdictional Resources within the Project Study Area**

| Feature ID | Aquatic Resource Type | Vegetation Community/ Land Cover Type | Acres |
|---|---|---|---|
| **Non-Wetland Waters** | | | |
| **Non-Tidal** | | | |
| NWW-01 | Ditch/Canal | Coastal Salt Marsh | 0.13 |
| **Below High Tide Line** | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | Coastal Salt Marsh | 0.85 |
| | | Developed | 0.25 |
| | | Open Water | 2.30 |
| | | Saltpans/Mudflats | 0.98 |
| | | Southern Coastal Bluff Scrub | 0.02 |
| | | Eelgrass Beds | 0.06 |
| **Below Mean High Water Mark** | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | Coastal Salt Marsh | 0.77 |
| | | Open Water | 12.39 |
| | | Over Water (Developed) | 0.44 |
| | | Saltpan/Mudflats | 0.10 |
| | | Southern Coastal Bluff Scrub | <0.01 |
| | | Eelgrass Beds | 0.58 |
| | | *Non-Wetland Waters Subtotal* | *18.87* |
| **Wetlands** | | | |
| FEW-01 | Freshwater Emergent Wetland | Emergent Wetland | 0.27 |
| WET-02 | Disturbed Mudflat | Disturbed Saltpan/Mudflats | 0.60 |
| WET-03 | Salt Marsh | Disturbed Coastal Salt Marsh | 1.19 |
| WET-04 | Salt Marsh | Coastal Salt Marsh | 0.12 |
| WET-05 | Disturbed Salt Marsh | Disturbed Coastal Salt Marsh | 0.09 |
| WET-06 | Mudflat | Saltpan/Mudflats | 0.21 |

**Table 3b. Potentially RWQCB Jurisdictional Resources within the Project Study Area**

| Feature ID | Aquatic Resource Type | Vegetation Community/ Land Cover Type | Acres |
|---|---|---|---|
| | | *Wetlands Subtotal* | *2.49* |
| | | **Grand Total** | **21.36** |

**Note:** NWW= Non-Wetland Water; WET= Wetland; FEW = Freshwater Emergent Wetland.

In addition to the USACE-jurisdictional resources described in Section 4.2.7.1, four isolated wetlands are anticipated to be regulated by the RWQCB. One freshwater emergent wetland (FEW-01) is located at the base of a slope along San Dieguito Drive. Three additional wetlands (WET-01, -02, and -03) are located within what appears to be a constructed basin immediately east of the Amtrak Coaster tracks.

### 4.2.7.3 California Department of Fish and Wildlife

The Project study area includes aquatic resources that are anticipated to be regulated by the CDFW, including non-tidal streambed and adjacent wetland and riparian areas. Tidally influenced features and wetlands not associated with a lake or streambed are excluded from CDFW jurisdiction by regulation. Within the Project study area, the extent of CDFW jurisdiction were determined to be above the High Tide Line. Future consultation with CDFW staff may be required to determine the exact limits of CDFW jurisdiction in these areas, taking into consideration riverine and tidal hydrology. Potentially jurisdictional aquatic resources mapped within the Project study area are shown on Figure 8, and Table 3c provides a summary of these resources under the jurisdiction of CDFW.

**Table 3c. Potentially CDFW Jurisdictional Resources in the Project Study Area**

| Feature ID | Aquatic Resource Type | Vegetation Community/ Land Cover Type | Acres |
|---|---|---|---|
| **Streambed** | | | |
| NWW-01 | Ditch/Canal | Coastal Salt Marsh | 0.13 |
| NWW-02 (San Dieguito River above HTL) | Channel—natural, perennial | Open Water | 0.04 |
| | | *Streambed Subtotal* | *0.17* |
| **Wetlands** | | | |
| WET-04 | Salt Marsh | Coastal Salt Marsh | 0.50 |
| WET-05 | Disturbed Salt Marsh | Disturbed Coastal Salt Marsh | 0.09 |
| WET-06 | Mudflat | Saltpan/Mudflats | 0.21 |
| | | *Wetlands Subtotal* | *0.80* |
| **Riparian** | | | |
| RIP-03 | Riparian | Arrowweed Scrub | 004 |
| | | *Riparian Subtotal* | *0.04* |
| | | **Grand Total** | **1.01** |

**Note:** TOB= Top of Bank; OHWM= Ordinary High Water Mark; NWW= Non-Wetland Water; RIP = Riparian; WET= Wetland; FEW = Freshwater Emergent Wetland.

CDFW jurisdictional areas within the Project study area include the San Dieguito River (NWW-02) above High Tide Line to the TOB and adjacent wetland (WET-04, -05, and -06) and riparian areas (RIP-03) and a tributary ditch/canal (NWW-01) to the TOB,

#### 4.2.7.4 California Coastal Commission

Hydrophytic vegetation communities and land cover types in Table 2 are regulated by the CCC as wetlands within the coastal zone, which encompasses the entire Project study area. CCC jurisdictional resources are identified in Figure 8 and listed in Table 3d. These areas may constitute environmentally sensitive habitat areas (ESHA's), as defined by CCC. A determination of ESHA status would be made by CCC staff during the Coastal Development Permit review process.

**Table 3d. Potentially CCC Jurisdictional Resources in the Project Study Area**

| Feature ID | Aquatic Resource Type | Vegetation Community/ Land Cover Type | Acres |
|---|---|---|---|
| NWW-01 | Ditch/Canal | Coastal Salt Marsh | 0.13 |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | Coastal Salt Marsh | 1.62 |
| | | Developed | 0.25 |
| | | Open Water | 14.73 |
| | | Open Water (Developed) | 0.44 |
| | | Saltpan/Mudflats | 1.08 |
| | | Southern Coastal Bluff Scrub | 0.02 |
| | | Eelgrass Beds | 0.63 |
| FEW-01 | Freshwater Emergent Wetland | Emergent Wetland | 0.27 |
| WET-02 | Disturbed Saltpan/Mudflats | Disturbed Saltpan/Mudflats | 0.60 |
| WET-03 | Salt Marsh | Disturbed Southern Coastal Salt Marsh | 1.19 |
| WET-04 | Salt Marsh | Coastal Salt Marsh | 0.50 |
| WET-05 | Disturbed Salt Marsh | Disturbed Coastal Salt Marsh | 0.09 |
| WET-06 | Mudflat | Saltpan/Mudflats | 0.21 |
| RIP-01 | Riparian | Southern Willow Scrub | 0.20 |
| RIP-02 | Riparian | Non-Native Riparian | 0.68 |
| RIP-03 | Riparian | Arrowweed Scrub | 0.04 |
| | | **Grand Total** | **22.69** |

**Note:** TOB= Top of Bank; OHWM= Ordinary High Water Mark; NWW= Non-Wetland Water; RIP = Riparian; WET= Wetland; FEW = Freshwater Emergent Wetland.

The CCC is anticipated to regulate NWW-01 and NWW-02 to the TOB in addition to adjacent wetland and riparian areas. The CCC is also anticipated to regulate all isolated wetland and riparian features.

### 4.2.8 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability by (1) assuring the continual exchange of genes between populations, which helps maintain genetic diversity; (2) providing access to adjacent habitat areas, representing additional territory for foraging and mating; (3) allowing for a greater carrying capacity; and (4) providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires).

Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage does represent a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as "stepping stones" for dispersal.

The San Diego MSCP identifies core and linkage areas that includes large movement areas such as the San Diego and Otay River. The study area is located within the MSCP biological core: San Dieguito Lagoon/San Diego River (Figure 3). MSCP Biological 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 (County of San Diego 1998). In addition, the study area is adjacent to San Diego MHPA conserved lands (San Dieguito Lagoon) (Figure 3). As the study area overlaps a MSCP biological core and is adjacent to MHPA conserved lands, the Project shall comply with the City's Land Use Adjacency Guidelines to conserve habitat function (City of San Diego 1997). The Project's purpose is shoreline protection of the San Dieguito Lagoon; the living levees to be installed are not expected to result in land use that would negatively affect adjacent City of San Diego MSCP MHPA.

In addition, the BSA is immediately northwest of the portion of the San Dieguito lagoon mapped as a State Marine Conservation Area (SMCA). The San Dieguito Lagoon SMCA is a Marine Protected Area under the California Marine Life Protection Act of 1999 (MLPA). The San Dieguito Lagoon SMCA functions as an ecological reserve, providing critical habitat for migrating waterfowl, nesting sites for special-status bird species, and a nursery ground for local fisheries (CA State Parks 2025). The lagoon is an important stop for migratory birds that migrate along the Pacific Flyway and use it as a place to rest. The San Dieguito Lagoon SMCA specifically encompasses waters below the mean high tide line; approximately a tenth of a square mile of brackish estuary and marsh habitat between the San Dieguito Lagoon Ecological Reserve and the main reach of the San Dieguito River. Some ocean fish, such as topsmelt, California halibut, and striped mullet use the tidal wetlands as a nursery, and the salt marsh provides nesting areas for birds like the California least tern (CDFW 2025e).

The study area is located at the San Dieguito River outlet, and therefore functions as a wildlife corridor/habitat linkage from the San Dieguito River and associated lagoon to the east of the study area to the Pacific ocean west of the study area. The study area likely provides refuge and cover for coastal aquatic and terrestrial wildlife species and their local movement between the ocean shore and San Dieguito lagoon to the east. However, the study area is surrounded by mixed developments to the north, south, and west (Del Mar Fairgrounds, residential development, Del Mar beach), hindering wildlife movement from increased human activity.

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# 5 Impacts Analysis

The purpose of Section 5 is to describe the direct, indirect, and cumulative impacts of the proposed areas of Project disturbance (North Riverbank, Southwest Riverbank, Southeast Riverbank) on special-status biological resources. The significance determinations for proposed or potential impacts are described in this Section.

## 5.1 Definition of Impacts

Based upon the Project description (Section 1.3), direct impacts, indirect (short-term and long-term), and cumulative impacts are defined as follows.

Direct Impacts include both the permanent loss of on-site habitat and the plant and wildlife species that it contains and the temporary loss of on-site habitat. Direct permanent impacts associated with the Project would occur from construction of the built environment portions (pedestrian trails, picnic area, ADA ramps and stairs, floodwalls, fencing) of the living levees. Impacts were quantified by overlaying the proposed permanent impact footprint onto the biological resources present in the areas of Project disturbance. Direct temporary impacts include installation of the shoreline protection features, grading and contouring. While these activities will impact the existing vegetation communities, the final built conditions will be suitable for revegetation with native vegetation communities and rare plant species within the upland transitional and high marsh habitat plantings, which will result in an improved ecological condition that what is currently present. Note that the CCC has generally considered temporary impacts to be only those where 1) there is no significant ground disturbance (i.e., earthwork including grading); and 2) vegetation recovers to comparable size/age class within 12 months from the initial disturbance, so that functional recovery is also restored (CCC 2022). For the purposes of this impacts analysis, the proposed upland transitional habitat plantings and high marsh habitat plantings that occur outside the built environmental components are considered temporary direct impacts since a functional lift will occur through replacing generally in place at a 1:1 ratio, with the addition of proposed mitigation plantings to offset temporal loss during Project implementation. No off-site impacts are proposed and staging areas shall occur within the areas of Project disturbance.

Indirect Impacts refer to off-site and on-site effects that are short-term impacts (i.e., temporary) due to the Project construction or long-term (i.e., permanent) design of the Project and the effects it may have to adjacent resources. For this Project, it is assumed that the potential short-term indirect impacts resulting from construction activities may include dust, noise, and general human presence that may temporarily disrupt species and habitat vitality and construction-related soil erosion and runoff. Long-term indirect impacts associated with Project activities include sediment transport disruption. However, these impacts would be intermittent and confined to the developed area of the living levees which is separated from open space by walls, grading, and landscaping, reducing adverse impacts to native habitat in the adjacent San Dieguito Lagoon MHPA lands. As such, they are not considered to be significant due to the aforementioned Project features. Ultimately, implementation of this Project will result in a functional lift of ecological functions and services, compared with baseline, pre-Project conditions.

Cumulative impacts refer to the combined environmental effects of the proposed Project and other relevant projects. In some cases, the impact from a single project may not be significant, but when combined with other projects, the cumulative impact may be significant.

## 5.2 Direct Impacts

Implementation of the Project shall result in 0.88 acres of permanent direct impacts from construction of developed features of the North Riverbank, Southwest Riverbank, and Southeast Riverbank. The remaining 9.46 acres within the areas of Project disturbance shall be temporarily directly impacted from installation of the shoreline features, grading and recontouring, but replanted with upland transitional and high marsh habitat plantings (all impacts are outside SD MSCP MHPA lands). The Project has been designed to avoid adverse impacts to native habitat to the maximum extent feasible and when completed, will restore the areas of Project disturbance to biologically equivalent or superior conditions. The overall outcome of the Project is shoreline protection of the San Dieguito River through installation of flood structures and living levees that would restore and enhance the quality and functionality of the existing coastal wetland habitat while providing erosion and flood control protection for the San Dieguito Lagoon/River channel shoreline.

### 5.2.1 Direct Impacts to Vegetation Communities / Land Covers

The area of Project disturbance consists of 11 vegetation communities and/or land cover types, of which four are considered sensitive by CDFW: arrowweed scrub, southern coastal salt marsh, disturbed southern coastal bluff scrub, and eelgrass beds. These vegetation communities in addition to open water are also considered riparian/wetland habitats that are anticipated to be regulated by USACE, RWQCB, CDFW, and/or CCC (Table 2). Of the 11 vegetation communities and land cover types encompassing the area of Project disturbance, implementation of the Project would result in direct permanent impacts to a total of six vegetation communities and/or land cover types totaling 0.88 acres (Figure 9: Impacts to Biological Resources). Direct permanent impacts to two sensitive vegetation communities consisting of 0.06 acres of disturbed southern coastal bluff scrub and less than 0.01 acre of coastal salt marsh are anticipated to occur from Project implementation. Direct temporary impacts would occur to 11 vegetation communities and land cover types from restoration activities including grading and the installation of upland transitional and high marsh habitat plantings for the living levees. Table 4 provides the acreages of direct permanent impacts within the Project area of disturbance, separated by each Riverbank. Direct impacts to sensitive natural vegetation communities would be considered significant absent mitigation.

**Table 4. Direct Impacts to Vegetation Communities and Land Cover Types in the Area of Project Disturbance**

| Vegetation Community or Land Cover Type | North Riverbank Impacts (Acres) | | Southwest Riverbank Impacts (Acres) | | Southeast Riverbank Impacts (Acres) | |
|---|---|---|---|---|---|---|
| | Perm | Temp | Perm | Temp | Perm | Temp |
| **Native Vegetation Communities** | | | | | | |
| Disturbed Diegan Coastal Sage Scrub: Baccharis-dominated | 0 | 0.05 | 0 | 0 | 0 | 0 |
| Disturbed Southern Coastal Bluff Scrub* | 0 | 0.12 | 0 | 0 | 0.06 | 0.65 |
| *Subtotal Native Upland Vegetation Communities* | *0* | *0.17* | *0* | *0* | *0.05* | *0.65* |

**Table 4. Direct Impacts to Vegetation Communities and Land Cover Types in the Area of Project Disturbance**

| Vegetation Community or Land Cover Type | North Riverbank Impacts (Acres) | | Southwest Riverbank Impacts (Acres) | | Southeast Riverbank Impacts (Acres) | |
|---|---|---|---|---|---|---|
| | Perm | Temp | Perm | Temp | Perm | Temp |
| **Native Wetland Vegetation Communities** | | | | | | |
| Arrowweed Scrub* | 0 | 0.04 | 0 | 0 | 0 | 0 |
| Southern Coastal Salt Marsh* | 0 | 0.22 | <0.01 | <0.01 | 0 | 0.03 |
| Disturbed Southern Coastal Salt Marsh* | 0 | <0.01 | 0 | 0 | 0 | 0 |
| Open Water | 0 | 0.22 | 0 | 0 | 0 | 0.13 |
| Eelgrass Beds* | 0 | 0.02 | 0 | 0 | 0 | <0.01 |
| *Subtotal Native Wetland Vegetation Communities* | *0* | *0.50* | *<0.01* | *<0.01* | *0* | *0.16* |
| **Non-Native Vegetation Communities/Land Covers** | | | | | | |
| Developed | 0.54 | 3.24 | <0.01 | 0.02 | 0.08 | 0.38 |
| Disturbed Habitat | 0 | 0.36 | 0.02 | 0.09 | 0.07 | 0.42 |
| Non-Native Woodland | 0 | 0 | 0 | 0 | 0.02 | 0.07 |
| Non-Native Vegetation | 0 | 0.25 | 0.03 | 0.09 | 0.06 | 0.35 |
| *Subtotal Non-Native Vegetation Communities/Land Covers* | *0.54* | *3.85* | *0.05* | *0.20* | *0.17* | *1.22* |
| **Total[1]** | **0.54** | **4.53** | **0.05** | **0.20** | **0.29** | **2.05** |

**Note:** *Considered a CDFW vegetation community.
[1] Totals may not sum exactly due to rounding.

### 5.2.1.1 Direct Impacts to CCC ESHA

The Project area of disturbance supports native habitats regulated as ESHA by the CCC including eelgrass beds, disturbed southern coastal bluff scrub, southern coastal salt marsh, Disturbed Diegan Coastal Sage Scrub: Baccharis-dominated, and arrowweed scrub. Open water and eelgrass beds in the area of Project disturbance would also be regulated by the CCC as wetlands. In addition, four rare plants (San Diego marsh-elder, California seablite, estuary seablite, and woolly seablite) are present within the Project area of disturbance. Sensitive vegetation communities and vegetation communities supporting rare plants are considered CCC ESHA. The purpose of the Project is to improve bank erosion stability along the shoreline of the San Dieguito Lagoon/River, resulting in functional uplift of the riverine resource through bank stability, improving fluvial action and reducing bank sediment erosion into the San Dieguito Lagoon. Any native vegetation communities within the remaining area of Project disturbance shall be salvaged to the greatest extent feasible, maintained, and re-planted as part of the upland transitional and high marsh habitat plantings (methodology outlined in an HMMP). A total of 0.06 acre of permanent direct impacts to disturbed coastal bluff scrub and less than 0.01 acre of coastal salt marsh from construction of the Southeast Riverbank and Southwest Riverbank impact footprint would be considered significant absent mitigation and would be regulated by the CCC (BIO-1).

BIO-1 The Project would result in permanent direct impacts to CDFW sensitive vegetation communities (disturbed southern coastal bluff scrub, coastal salt marsh) that qualify as CCC ESHA from

construction of the Southeast and Southwest Riverbanks (Table 4). The Project shall result in temporal direct impacts to additional ESHA including arrowweed scrub, disturbed Diegan coastal sage scrub: *Baccharis*-dominated, and disturbed coastal bluff scrub, as well as open water and eelgrass beds. Permanent direct impacts to sensitive vegetation communities including ESHA would be considered significant absent mitigation under CEQA and would be regulated by the CCC.

### 5.2.2 Direct Impacts to Potentially Jurisdictional Aquatic Resources

Direct impacts to potentially jurisdictional aquatic resources are based on an overlay of the area of Project disturbance (Figure 10, Impacts to Potential Jurisdictional Aquatic Resources). Project implementation will result in direct temporary impacts to potentially jurisdictional aquatic resources within all three Impact Areas. Table 5 summarizes the direct impacts to potentially jurisdictional aquatic resources within each area.

**Table 5. Direct Temporary Impacts to Potentially Jurisdictional Aquatic Resources in the Area of Project Disturbance**

| Feature ID | Aquatic Resource Type | Jurisdiction (USACE/RWQCB/ CDFW/CCC) | North Riverbank (Acres) | Southwest Riverbank (Acres) | Southeast Riverbank (Acres) | Total Impacts (Acres) |
|---|---|---|---|---|---|---|
| **Non-Wetland Waters** | | | | | | |
| **Non-Tidal** | | | | | | |
| NWW-01 (below OHWM) | Ditch/canal | USACE/RWQCB/ CDFW/CCC | 0 | <0.01 | 0 | 0 |
| **Below High Tide Line** | | | | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | USACE/RWQCB/CCC | 0.18 | 0 | 0.13 | 0.31 |
| **Below Mean High Water Mark** | | | | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | USACE/RWQCB/CCC | 0.20 | 0 | <0.01 | 0.21 |
| **Below TOB** | | | | | | |
| NWW-02 (San Dieguito River) | Channel – natural, perennial | CDFW/CCC | 0.01 | 0 | 0.01 | 0.02 |
| | | *Non-Wetland Waters Subtotal* | *0.39* | *0* | *0.14* | *0.53* |
| **Wetlands** | | | | | | |
| WET-04 | Salt Marsh | USACE/RWQCB/CCC | 0.06 | 0 | 0.03 | 0.06 |
| | | CDFW/CCC | 0 | <0.01 | 0 | <0.01 |
| WET-05 | Disturbed Salt Marsh | USACE/RWQCB/CCC | 0.01 | 0 | 0 | 0.01 |
| | | *Wetlands Subtotal* | *0.07* | *<0.01* | *0.03* | *0.10* |

**Table 5. Direct Temporary Impacts to Potentially Jurisdictional Aquatic Resources in the Area of Project Disturbance**

| Feature ID | Aquatic Resource Type | Jurisdiction (USACE/RWQCB/ CDFW/CCC) | North Riverbank (Acres) | Southwest Riverbank (Acres) | Southeast Riverbank (Acres) | Total Impacts (Acres) |
|---|---|---|---|---|---|---|
| **Riparian** | | | | | | |
| RIP-03 | Riparian | CDFW/CCC | 0.04 | 0 | 0 | 0.04 |
| | | *Riparian Subtotal* | *0.04* | *0* | *0* | *0.04* |
| | | **Grand Total** | **0.51** | **<0.01** | **0.17** | **0.68** |

**Note:** Totals may not sum exactly due to rounding.

### 5.2.3 Direct Impacts to Special-Status Plants

Four special-status plants (San Diego marsh-elder, California seablite, estuary seablite, and woolly seablite) present in the Project area of disturbance shall be temporally direct impacted from installation of the high marsh and upland transitional habitat plantings. San Diego marsh-elder is present in the permanent impact footprint and will be directly impacted from construction of the Southeast Riverbank. San Diego marsh-elder is a San Diego County MSCP sensitive plant and CRPR 2B.2 species (Figure 9, Impacts to Biological Resources). An exact count of special-status plant species was not recorded during the biological reconnaissance surveys. Vegetation communities that support special-status plants the Project area of disturbance are considered to be CCC ESHA habitat. There is also a moderate to high potential for a total of 29 additional rare-plants to occur in the study area (Appendix B), per BIO-2. Special-status plants are expected to benefit from improved wetland function and habitat restoration through installation of the upland transitional and high marsh habitat plantings proposed for the North and Southeast Riverbank living levees.

BIO-3 The Project would result in permanent direct impacts to one special-status plant species from construction of the Project area of disturbance. Permanent direct impacts to special-status plants would be considered significant under CEQA and the habitat it occupies would be considered ESHA habitat regulated by the CCC. Temporal impacts to three additional special-status plant species shall occur from installation of the high marsh habitat plantings in the Southeast and North Riverbanks. Further, impacts to special-status plant species with a moderate potential to occur cannot be discounted and if present, direct impacts to those species would be considered significant absent mitigation.

### 5.2.4 Direct Impacts to Special-Status Wildlife

Potential direct impacts to special-status wildlife species that may occur as a result of construction of the Project include wildlife entrapment, killed or injured wildlife, nest failure, and unauthorized grading or vegetation removal. There are 3 special-status wildlife present on the study area: osprey, double-breasted cormorant, and wandering skipper. Additionally, osprey nesting activity was detected within the study area buffer. Further, a total of 21 special-status wildlife species (federal, state, or local status) were determined to have a moderate or high potential to occur within the study area. No special-status wildlife were identified within the areas of Project disturbance during the biological reconnaissance surveys. However, no special-status aquatic or terrestrial wildlife surveys were conducted for the Project. Osprey and double breasted cormorant do not forage or nest in any of the vegetation communities

directly impacted by the Project. Double breasted cormorant nesting colonies are considered special-status; if nesting colonies of this species are adversely impacted from Project implementation, impacts would be considered significant. No nesting activity was detected within the areas of Project disturbance. However, osprey nesting activity is considered sensitive and osprey nesting activity was detected in the surrounding study area buffer during the biological reconnaissance. The wandering skipper is a Covered species under the San Diego MSCP and is also not known to occur in southern coastal bluff scrub habitat proposed for impact; therefore direct impacts to this species are not anticipated. No direct impacts to marine mammals are expected to occur due to Project avoidance of in-water impacts to the San Dieguito Lagoon. In addition, the lack of California sagebrush and California buckwheat within the coastal scrubs in the area of Project disturbance reduces the habitat suitability for coastal California gnatcatcher in the area of Project disturbance.

Compliance with the MBTA (16 USC 703–712) and California Fish and Game Code (Sections 3503 and 3503.5) is a standard permit condition and required as part of Project. This measure would ensure that direct impacts to nesting birds would be avoided.

Direct impacts to the disturbed southern coastal bluff scrub habitat in the Project area of disturbance could result in direct impacts to special-status species that were determined to have a moderate potential to occur in that habitat including southern California legless lizard, orange-throated whiptail, San Diego desert woodrat, and Crotch's bumble bee (Appendix C).

BIO-4 The Project may result in permanent direct impacts to southern California legless lizard, orange-throated whiptail, San Diego desert woodrat, and Crotch's bumble bee which have a moderate potential to occur within the disturbed southern coastal bluff scrub in the southeast riverbank area of Project disturbance. Further, nesting osprey that are present in the immediate vicinity of the Project have a moderate potential to be directly impacted by Project implementation if construction activities are conducted during the nesting bird season. Nesting colonies of double-breasted cormorant also have a moderate potential to occur due to the presence of individuals and suitable nesting habitat, which may be directly impacted from Project implementation if a nesting colony is present and Project activities occur during the avian nesting season. Direct permanent impacts to special-status wildlife would be considered significant absent mitigation.

### 5.2.5 Direct Impacts to Wildlife Corridors and Habitat Connectivity

The Project purpose is shoreline protection along the San Dieguito Lagoon/River and installation of the living levees along the northern and southern banks of the river channel in the Project area of disturbance are not anticipated to reduce the width of the San Dieguito Lagoon/River channel or its overall function as a wildlife corridor. Furthermore, implementation of the Project would avoid direct impacts to the main flow channel of the San Dieguito River channel. Implementation of the Project would not alter the function of the Project site as a wildlife movement corridor (San Diego MSCP biological core) or constrain movement of wildlife from the Project east towards mapped San Diego MSCP MHPA lands. No direct impacts to wildfire corridors and habitat connectivity are anticipated from Project implementation.

### 5.2.6 Direct Impacts to Regional Resource Planning

The Project is not in conflict with the requirements of the San Diego MSCP and City of Del Mar Subarea Plan. The Project is mapped entirely within a San Diego MSCP biological core (San Diego Lagoon) and is adjacent to MSCP MHPA lands (San Dieguito Lagoon) (CDFW 2025h, SanGIS 2025). The Project's purpose is shoreline protection and it is not expected to result in land use that would negatively affect the adjacent San Diego MSCP MHPA lands. Shoreline protection of the San Dieguito Lagoon/River within the Project site shall not adversely impact its overall function as a San Diego MSCP biological core as it will retain use as a wildlife corridor and not alter the land use. No direct impacts to regional resource planning would result from Project implementation.

## 5.3 Indirect Impacts

### 5.3.1 Vegetation Communities and Land Covers

A total of 7 native vegetation communities were mapped within the Project site boundary, outside the area of Project disturbance (Table 2)– arrowweed scrub, coastal salt marsh (including disturbed), Diegan coastal sage scrub: *Baccharis*-dominated (disturbed), coastal bluff scrub (including disturbed), open water, and eelgrass. Indirect impacts to non-native vegetation communities within the Project site boundary are not considered significant. Short-term indirect impacts that may affect adjacent native vegetation communities include dust, erosion, invasive plant species, temporary access impacts, and increased human presence. These short-term indirect impacts would be reduced to less than significant through implementation of standard construction stormwater pollution prevention requirements as described in Section 6.1.

### 5.3.2 Indirect Impacts to Potentially Jurisdictional Aquatic Resources

The Project site boundary contains a portion of the San Dieguito River which is regulated by the USACE, RWQCB, CDFW, and/or CCC. Additional areas of wetland and riparian habitat above the high tide line would be regulated by CDFW and the CCC. Impacts to jurisdictional resources will require permitting, which is outlined in MM-BIO-2. With regulatory agency permitting, as well as implementation of BMPs and SWPPP, direct temporary impacts to jurisdictional resources would be reduced to a less than significant level.

Potentially jurisdictional aquatic resources may be indirectly affected in the short-term by dust, invasive plant species, and increased human presence and in the long term by minor changes in the velocity of runoff during and following construction, which could adversely affect the integrity of downstream resources causing erosion and sedimentation. Long-term or permanent indirect impacts could result from the proximity of the development to jurisdictional aquatic resources after construction. Permanent indirect impacts that could affect these resources include the introduction of non-native invasive species and increased human activity. These indirect impacts to adjacent aquatic resources would be reduced to less than significant through implementation of standard construction stormwater pollution prevention requirements, and restoration of non-developed areas with native vegetation communities as described in Section 6.1.

The purpose of the Project is shoreline protection of the San Dieguito Lagoon, and long-term indirect impacts to potentially jurisdictional aquatic resources re anticipated to be functionally beneficial due to the bank erosion

stabilization proposed from the installation of the living levees. To reduce potentially significant indirect impacts to potentially jurisdictional aquatic resources from Project implementation, BMPs and a SWPPP shall be incorporated as Project design features. With implementation of BMPs and the SWPPP, implementation of the Project would have a less than significant long-term indirect impact to potentially jurisdictional aquatic resources.

### 5.3.3 Indirect Impacts to Special-Status Plant Species

Potential indirect impacts to special-status plant species that are present in the Project site boundary but outside the Project area of disturbance would be similar to those previously described for vegetation communities (increased human presence, dust, etc.). Therefore, short-term indirect impacts to adjacent special-status plants would be avoided by adherence to standard construction stormwater pollution prevention requirements as described in Section 6.1.

### 5.3.4 Indirect Impacts to Special-Status Wildlife Species

Most of the indirect impacts to vegetation communities previously described can also affect special-status wildlife. Wildlife may also be indirectly affected in the short-term by construction-related noise, which can disrupt normal activities and subject wildlife to higher predation risks. Adverse edge effects can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be significantly affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities.

The Project consists of the installation of living levees and would not produce lighting, noise, or discharge that would result in adverse indirect effects to special-status wildlife. The surrounding Project site supports multiple native sensitive vegetation communities that may provide suitable habitat for bird nesting. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15). Special-status species whose breeding/nesting have potential to be affected by noise include all raptor species (regardless of location relative to San Diego MHPA lands), and coastal California gnatcatcher (within MHPA lands only). The Project site occurs entirely outside MHPA lands. Indirect impacts to most species would be reduced to less than significant through compliance with standard permit conditions as described in Section 6. However, nesting raptors (specifically nesting osprey) were detected in the Project site boundary and have the potential to be significantly indirectly impacted from construction activities if conducted during the breeding season.

BIO-5 The Project may result in significant indirect impacts to nesting raptors (osprey) which were detected in the Project site boundary adjacent to areas of Project disturbance. Excessive noise in proximity to active raptor nests may result in nest failure which can be consider take, which is not authorized under the San Diego MSCP and therefore would be significant, absent mitigation.

### 5.3.5 Indirect Impacts to Wildlife Corridors and Habitat Connectivity

Short-term, construction-related, or temporary indirect impacts to wildlife movement would primarily result from construction activities. These indirect impacts are similar to those discussed for special-status wildlife and include generation of fugitive dust, construction-related noise, introduction of chemical pollutants, increased human activity, and the potential to attract predators and non-native species. Potential long-term or permanent indirect

impacts to wildlife movement include increases in non-native, invasive plant and animal species; increased human activity; and lighting.

The Project purpose is shoreline protection along the San Dieguito River and installation of the living levees along the northern and southern banks of the river channel in the Project area of disturbance are not anticipated to reduce the width of the San Dieguito Lagoon/River channel to significantly constrain local movement from the San Dieguito Lagoon west to the Pacific Ocean. Furthermore, implementation of the Project would not constrain movement of wildlife from the Project east towards mapped San Diego MSCP MHPA and biological core lands (San Dieguito River Park and San Dieguito Ecological Reserve portions of the San Dieguito Lagoon). Therefore, no significant indirect impacts to wildlife corridors and habitat linkages are anticipated from Project implementation.

### 5.3.6 Indirect Impacts to Regional Resource Planning

The Project is not in conflict with the requirements of the San Diego MSCP and Del Mar Subarea Plan. The Project is adjacent to MSCP MHPA lands (San Dieguito Lagoon); the Project's purpose is shoreline protection and it is not expected to result in land use that would negatively affect the adjacent City of San Diego MSCP MHPA lands. Therefore, no significant indirect impacts to regional resource planning are expected from Project implementation.

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# 6 Mitigation

This section describes proposed mitigation that would reduce significant impacts to biological resources resulting from Project activities to a level that is less than significant, where feasible. As identified in Section 5, significant impacts to vegetation communities, special-status plants, special-status wildlife, and jurisdictional resources would occur from implementation of the Project A total of five significant impacts (BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5) are identified in Section 5; with implementation of the measures proposed below, these identified direct and indirect impacts would be reduced to a level below significant.

## 6.1 Mitigation Measures for Direct Impacts

### 6.1.1 Mitigation for Direct Impacts to Vegetation Communities

The proposed Project would result in direct permanent impacts (i.e., removal/loss) to one sensitive upland vegetation community within the area of Project disturbance: disturbed southern coastal bluff scrub. CDFW sensitive vegetation communities are considered ESHA under the jurisdiction of the CCC. Proposed mitigation ratios for permanent impacts to sensitive vegetation communities are in accordance with the City of San Diego Biology Guidelines (City of San Diego 2018). Table 6 outlines the mitigation requirements for permanent impacts to coastal bluff scrub within the Project impact footprint.

Direct temporary impacts to arrowweed scrub, coastal salt marsh, disturbed Diegan coastal sage scrub: *Baccharis*-dominated, disturbed southern coastal bluff scrub, and open water from restoration activities will be restored to pre-Project conditions or better per the HMMP. Additionally, the Project proposes on-site compensatory mitigation at a 3:1 ratio to mitigate for the temporal loss of sensitive vegetation communities and ESHA's through the construction of the upland transitional and high marsh habitat plantings within the area of Project disturbance would be reduced to a less than significant level through compensatory mitigation via on-site habitat restoration of a total of 5.02 acres at varying mitigation ratios (per MM BIO-1). Table 6 below outlines the mitigation ratios and total mitigation acreage for the vegetation communities directly impacted from Project implementation.

**Table 6. Mitigation for Direct Impacts to Vegetation Communities/Land Cover Types in the Area of Project Disturbance**

| Vegetation Community or Land Cover Type | North Riverbank (Acres) | Southwest Riverbank (Acres) | Southeast Riverbank (Acres) | Total (Acres) | Mitigation Ratio** | Total Mitigation Acreage |
|---|---|---|---|---|---|---|
| **Native Vegetation Communities** | | | | | | |
| Arrowweed Scrub* | 0.04 | 0.00 | 0.00 | 0.04 | 3:1 | 0.12 |
| Southern Coastal Salt Marsh* | 0.22 | <0.01 | 0.03 | 0.25 | 4:1 | 1.00 |
| Disturbed Diegan Coastal Sage Scrub: *Baccharis*-dominated | 0.05 | 0.00 | 0.00 | 0.05 | 3:1 | 0.15 |
| Disturbed Southern Coastal Bluff Scrub* | 0.12 | 0.00 | 0.65 | 0.77 | 3.5:1 | 2.70 |
| Open Water | 0.22 | 0.00 | 0.13 | 0.35 | 3:1 | 1.05 |

## Table 6. Mitigation for Direct Impacts to Vegetation Communities/Land Cover Types in the Area of Project Disturbance

| Vegetation Community or Land Cover Type | North Riverbank (Acres) | Southwest Riverbank (Acres) | Southeast Riverbank (Acres) | Total (Acres) | Mitigation Ratio** | Total Mitigation Acreage |
|---|---|---|---|---|---|---|
| *Subtotal* | *0.65* | *<0.01* | *0.81* | *1.46* | — | *5.02* |
| **Non-Native Vegetation Communities/Land Covers** | | | | | | |
| Non-Native Woodland | 0.00 | 0.00 | 0.05 | 0.05 | 0:1 | — |
| Non-Native Vegetation | 0.24 | 0.04 | 0.28 | 0.56 | 0:1 | — |
| Disturbed Habitat | 0.34 | 0.07 | 0.35 | 0.77 | 0:1 | — |
| Urban/Developed Land | 2.64 | 0.02 | 0.29 | 2.95 | 0:1 | — |
| *Subtotal* | *3.22* | *0.13* | *0.97* | *4.33* | *0:1* | — |
| **Total** | **3.87** | **0.13** | **1.78** | **5.79** | **—** | **5.02** |

**Notes:**

* Considered a sensitive vegetation community by CDFW and ESHA by the CCC.

** Mitigation Ratios according to the San Diego MSCP (County of San Diego 2010). To adequately address impacts to ESHA, a total mitigation ratio of 3.5:1 for southern coastal bluff scrub is proposed rather than the 3:1 ratio outlined in the San Diego MSCP. Actual mitigation ratios for coastal sage scrub may vary from 1:1 to 3:1 depending on habitat value for long-term conservation.

BIO-1 The Project would result in permanent direct impacts to two CDFW sensitive vegetation communities (disturbed southern coastal bluff scrub, coastal salt marsh) that qualify as CCC ESHA from construction of the Southeast and Southwest Riverbanks. The Project would result in temporal direct impacts to other CDFW sensitive vegetation communities including arrowweed scrub, coastal salt marsh, disturbed coastal bluff scrub, and eelgrass beds that would also be considered ESHA by the CCC (Table 6). Permanent direct impacts to sensitive vegetation communities including ESHA would be considered significant absent mitigation under CEQA and would be regulated by the CCC.

MM-BIO-1 On-Site Habitat Restoration. To compensate for the permanent loss of 0.06 acres of disturbed southern coastal bluff scrub, less than 0.01 acre of coastal salt marsh, and San Diego marsh-elder (*Iva hayesiana*) individuals inside the Project impact footprint, mitigation shall be provided at a 3.5:1 ratio totaling 0.21 acres, accomplished through on-site habitat restoration via reestablishment and enhancement of the existing native vegetation communities within the areas of Project disturbance proposed for upland transitional habitat plantings and high marsh habitat plantings. Preparation and implementation of a wetlands habitat mitigation and monitoring plan (HMMP) shall provide the planting layout. The planting layout of vegetation shall be based on appropriate elevation gradients and distance to open water. In addition, to compensate for the temporal loss of 1.48 acres of native wetland and upland sensitive vegetation communities in the areas of Project disturbance from installation of the upland transitional and high marsh habitats, on-site habitat restoration to reestablish wetland/riparian habitats and sensitive vegetation communities shall be incorporated at varying ratios (3:1–4:1) per the mitigation ratios outlined in Appendix C, Table 6 of the 2010 San Diego Multiple Species Conservation Program, totaling 5.02 acres. The combined habitat restoration through reestablishment and enhancement provide an overall on-site mitigation acreage of 5.02 acres. Existing native vegetation communities and special-status plants within the areas of Project disturbance that overlap the upland and high

marsh habitat plantings shall be salvaged to the maximum extent feasible for use as upland and high marsh habitat plantings for the living levees, with a minimum 1:1 reestablishment. Special-status plants that cannot be salvaged are proposed to be offset by replacing those individuals through in-kind planting of container stock and/or seeding onsite with locally harvested seed from the River. A wetlands HMMP shall be prepared and implemented to specify the methods of habitat restoration and monitoring success criteria for the on-site habitat restoration. Upon approval, a 5-year maintenance and monitoring effort shall follow, including topographic reconstruction, weed control, seeding, replanting of salvaged individuals, container plantings, irrigation, invasive species control, and a program of monitoring and reporting. No non-native species shall be used in the on-site habitat restoration effort. It is acknowledged that type conversions of habitat may occur, but that the wetlands HMMP and upland transitional and high marsh habitat plantings design are optimized to balance the ecological benefits and sustainability of the Project.

The wetlands HMMP shall be prepared by persons with expertise in Southern California ecosystems and native plant revegetation techniques. The plan shall include, at a minimum (1) a description of the mitigation site; (2) the plant species to be used, container sizes, and seeding rates; (3) a schematic depicting the mitigation area; (4) a planting schedule; (5) a description of the irrigation methodology; (6) measures to control exotic vegetation on site; (7) specific success criteria; (8) a detailed monitoring program; (9) contingency measures should the success criteria not be met; and (10) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

Impacts to sensitive vegetation communities would be reduced to less than significant through on-site restoration and enhancement of the impacted native vegetation community. With implementation of **MM BIO-1: Onsite Habitat Restoration**, direct impacts to sensitive vegetation communities are reduced to a **less than significant** level.

## 6.1.2 Mitigation for Direct Impacts to Special-Status Plants

Installation of the upland transitional and high marsh plantings for construction of the North and Southeast Riverbank living levees would restore sensitive habitats and hydrologic function to support wetland and upland special-status plant species at a biologically equivalent or superior level compared to existing conditions. However, the proposed Project may result in significant direct impacts during t grading to one special-status plant species that shall be removed for installation of the walkway at the Southeast Riverbank: San Diego marsh-elder (BIO-2).

BIO-2 The Project shall result in permanent direct impacts to one special-status plant (San Diego marsh-elder). In addition San Diego marsh-elder, estuary seablite, California seablite, and wooly seablite shall be temporally directly impacted from installation of the high marsh and upland transitional habitat plantings in the North and Southeast Riverbanks. Permanent direct impacts to special-status plants would be considered significant absent mitigation under CEQA and habitats occupied by special-status plants would be considered ESHA habitat regulated by the CCC. Further, direct impacts to 21 special-status plant species with a moderate to high potential to occur cannot be discounted and direct impacts to those species would be considered significant absent mitigation.

As such, **Mitigation Measure BIO-2 (Focused Botanical Surveys)** shall be implemented within the Project area of disturbance prior to the start of construction activities during the blooming period for the 10 rare species

incidentally observed within the study area as well as those with a moderate to high potential to occur (Appendix B) to determine their presence/absence and quantify populations of special-status plants which are present. **MM BIO-1 (On-Site Habitat Restoration)** shall be implemented for any special-status plants detected within the Project area of disturbance. San Diego marsh-elder, California seablite, estuary seablite, and woolly seablite individuals and populations of any other special-status plants identified within the Project area of disturbance shall be flagged prior to the start of Project activities and removed for salvage, maintenance, and replanting, as feasible. Those that cannot be salvaged shall be revegetated via onsite habitat restoration from seed and/or container stock. To ensure that the Project results in no-net loss of these species, the onsite habitat restoration will include replacement of the removed individuals at a 1:1 ratio. With implementation of **MM BIO-1 (Onsite Habitat Restoration)** and **MM BIO-2 (Focused Botanical Surveys)** direct permanent Project impacts to special-status plants shall be avoided.

For temporary direct impacts to special-status plants (San Diego marsh-elder, California seablite, woolly seablite, and estuary seablite), **MM BIO-1 (On-Site Habitat Restoration)** shall be implemented through planting replacement species at a 1:1 re-establishment ratio within in-kind habitat in the high marsh planting areas of the North and Southeast Riverbank, resulting in less than significant direct impacts to special-status plants.

MM BIO-2 Focused Botanical Surveys. Prior to initiation of construction activities, a focused botanical survey shall be conducted during the appropriate blooming period for target species, including those known to occur in the Project area of disturbance (San Diego marsh-elder [*Iva hayesiana*], estuary seablite [*Suaeda esteroa*], California seablite [*Suaeda californica*], and woolly seablite[*Suaeda taxifolia*]) and those determined to have a moderate potential to occur on the Project site (Appendix B). Any observed individuals or populations shall be flagged for salvage and replanting for on-site habitat restoration (**MM BIO-1**) to the greatest extent feasible.

Through implementation of **MM BIO-1 (Onsite Habitat Restoration) and MM BIO-2 (Focused Botanical Surveys),** direct impacts to special-status plants are reduced to a **less than significant** level.

### 6.1.3 Mitigation for Direct Impacts to Special-Status Wildlife

BIO-3 The Project may result in permanent direct impacts to southern California legless lizard, orange-throated whiptail, San Diego desert woodrat, and Crotch's bumble bee which have a moderate potential to occur within the disturbed southern coastal bluff scrub in the southeast riverbank area of Project disturbance. Further, nesting osprey that are present in the immediate vicinity of the Project have a moderate potential to be directly impacted by Project implementation if construction activities are conducted during the nesting bird season. Nesting colonies of double-breasted cormorant also have a moderate potential to occur due to the presence of individuals and suitable nesting habitat, which may be directly impacted from Project implementation if a nesting colony is present and Project activities occur during the avian nesting season.

Direct impacts to special-status wildlife species would be reduced through implementation of **MM BIO-3 (Pre-Construction Special-Status Wildlife Survey).** In addition, the potential for direct impacts to nesting Crotch's bumble bee is considered a potentially significant impact that shall be reduced through implementation of **MM BIO-4 (Crotch's Bumble Bee Pre-Construction Survey**).

MM BIO-3 Pre-Construction Special-Status Wildlife Survey. Prior to initiation of construction activities, the area of Project disturbance shall be surveyed by a qualified biologist with experience conducting pre-construction surveys to ensure special-status wildlife species are absent from the area. If any special-status wildlife species are present, the qualified biologist shall safely relocate the species outside the Project area of disturbance. If the species cannot be moved, an avoidance buffer around the species shall be flagged by the qualified biologist (avoidance buffers vary based on the species), and construction activities shall not commence inside the avoidance buffer until the species has left the Project area of disturbance.

MM-BIO-4 Crotch's Bumble Bee Pre-Construction Survey. Prior to the Notice to Proceed for any construction permits, including but not limited to, the first grading permit, demolition plans/permits and building plans/permits, the City of Del Mar (City) shall verify the following Project requirements regarding the Crotch's bumble bee (*Bombus crotchii*) are shown on the construction plans:

A. To avoid impacts to Crotch's bumble bee, removal of habitat in the proposed area of disturbance must occur outside of the colony active period from April 1 through August 31. If removal of habitat in the proposed area of disturbance must occur during the colony active period, a qualified biologist shall conduct a pre-construction survey to determine the presence or absence of Crotch's bumble bee nesting within the proposed area of disturbance and follow the methodology developed consistent with the 2023 CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species.

B. A qualified biologist shall demonstrate the following qualifications: at least 40 hours of experience surveying for bee or other co-occurring aerial invertebrate species (such as Quino checkerspot butterfly) and who have completed a Crotch's bumble bee detection/identification training by an expert Crotch's bumble bee entomologist; or the biologist must have at least 20 hours of experience directly observing Crotch's bumble bee.

C. The pre-construction survey shall be conducted by the qualified biologist within 30 calendar days prior to the start of construction activities (including removal of vegetation) and shall include a minimum of three visits, a minimum of 1 week apart.

D. The qualified biologist/owner/permittee shall submit the results of the pre-construction survey to the City Development Services Department (Mitigation Monitoring and Coordination), City Planning Department (MSCP) staff, and CDFW for review and written approval prior to initiating any construction activities.

E. If Crotch's bumble bees are determined to be present, then a photographic survey following CDFW guidance (i.e., CDFW Survey Considerations for CESA Candidate Bumble Bee Species) shall be required. If additional activities (e.g., capture or handling) are deemed necessary based on photographic surveys, then the qualified biologist shall obtain required authorization via a Memorandum of Understanding or Scientific Collecting Permit pursuant to CDFW Survey Considerations for CESA Candidate Bumble Bee Species. Survey methods that involve lethal take of species are not acceptable.

F. If pre-construction surveys identify active Crotch's bumble bee nest colonies, the qualified biologist shall notify CDFW in writing and establish, monitor, and maintain no-work buffers around the nest(s) and any associated floral resources. The size and configuration of the no-work buffer shall be based on best professional judgment of the qualified biologist in

consultation with CDFW. At a minimum, the buffer shall provide at least 50 feet of clearance from construction activities around any nest entrances and maintain disturbance-free airspace between the nest and nearby floral resources. Construction activities shall not occur within the no-work buffers until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for three consecutive days), indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony.

Implementation of the above mitigation measures (**MM BIO-3**, **and MM BIO-4**,) would reduce impacts to special-status wildlife to a **less than significant** level.

## 6.1.4 Mitigation for Direct Impacts to Jurisdictional Resources

BIO-5 The Project would directly impact potentially jurisdictional aquatic resources anticipated to be regulated by USACE, RWQCB, CDFW, and/or CCC. Specifically, Project implementation would result in the temporary impacts to non-tidal streambed associated with the San Dieguito River and adjacent wetland and riparian areas. The Project will not result in direct permanent impacts to potentially jurisdictional aquatic resources. Direct temporary impacts to potentially jurisdictional aquatic resources would be considered significant absent mitigation under CEQA.

MM-BIO-5[1] Regulatory Permitting. In-water marine surveys are recommended to be conducted to assess potential Project impacts to eelgrass within the Impact Area footprints. The marine surveys shall map eelgrass beds and compile an aquatic species list. The results of the marine survey shall be intersected with the Project impact footprint to quantify impacts and mitigation needs prior to impacts occurring to U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and California Coastal Commission (CCC) (collectively, the Resource Agencies) jurisdictional aquatic resources, as a necessary step to obtain permits from the Resource Agencies. Temporary impacts to aquatic resources would occur with activities within the disturbance limits, as shown in this report, and project impacts would need to be quantified prior to permitting based on the methods and means of construction. If impacts are anticipated, an eelgrass mitigation and monitoring plan (Mitigation Plan) shall be prepared in consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service and CDFW to describe the approach for compensatory mitigation for loss of eelgrass. Preference in the Mitigation Plan shall be given to in-kind replacement of the eelgrass habitat. Such mitigation shall be implemented in accordance with the 2014 NOAA California Eelgrass Mitigation Policy and Implementing Guidance, including site selection; initial and long-term habitat area replacement ratios; methods for and timing of transplantation activities; and monitoring, performance, and reporting requirements.

The Project applicant or its designee shall obtain the following permits from the Resource Agencies prior to impacts occurring to aquatic resources: USACE Section 404 Clean Water Act permit, RWQCB Section 401 Water Quality Certification, and CDFW Fish and Game Code Section 1600 Streambed Alteration Agreement. Mitigation requirements shall follow City of San Diego Biology

[1] Mitigation measure numbering in this Biological Resources Technical Report may differ from the numbering used in the Draft Initial Study/Mitigated Negative Declaration (IS/MND). The project's Mitigation Monitoring and Reporting Program (MMRP) will use the mitigation measure numbering presented in the IS/MND.

Guidelines but may be revised during discussions with the agencies. There shall be no net loss of wetlands, and any impacts to wetlands shall be mitigated at a minimum ratio of 3:1 (this shall include a minimum 1:1 creation component, while restoration/enhancement of existing wetlands may be used to make up the remaining requirements for a total 3:1 ratio). On-site habitat restoration is proposed for compensatory mitigation to offset impacts to potentially jurisdictional aquatic resources through functional uplift of the San Dieguito River shoreline along the areas of Project disturbance.

Compensatory mitigation for potentially jurisdictional aquatic resources may include on-site or off-site improvement or enhancement of water resources. Wetland mitigation shall include a minimum 1:1 reestablishment component, while restoration/enhancement through native planting and invasive species control for existing wetlands may be used to make up the remaining requirements for a total 3:1 ratio. For mitigation to occur within the Project site, a wetlands mitigation and monitoring plan shall be prepared. Prior to issuance of land development permits, including clearing, grubbing, and grading permits for activities that would impact jurisdictional aquatic resources, the Project applicant shall prepare a wetlands mitigation and monitoring plan to the satisfaction of USACE, RWQCB, CDFW, and CCC. The conceptual wetlands mitigation and monitoring plan shall, at a minimum, prescribe site preparation, planting, irrigation, and a 5-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. Removal of any non-native vegetation within the existing riparian/wetland vegetation communities shall be incorporated to enhance habitat quality. This can be developed in concert with the habitat mitigation and monitoring plan per MM BIO-1.

Temporary impacts to potentially jurisdictional aquatic resources include grading and re-planting during the creation of gradual slopes that would support upland, transitional, and wetland habitat along the San Dieguito River. As previously described in Section 1.3, the Project is anticipated to result in a net increase in functions and values within and adjacent the San Dieguito River. Temporary impacts to wetland and riparian vegetation communities within potentially jurisdictional aquatic resources would be restored in place at a ratio of 1:1 with additional on-site compensatory mitigation provided at a 3:1 ratio in accordance with a Wetlands Mitigation and Monitoring Plan that will be prepared for the Project. Therefore, additional off-site mitigation for impacts to potentially aquatic resources are not anticipated to be required. With regulatory agency permitting and proposed on-site restoration of temporary impacts to potentially jurisdictional aquatic resources and on-site compensatory mitigation (**MM BIO-1**), as well as implementation of BMPs and SWPPP, direct temporary impacts to jurisdictional resources would be reduced to a **less than significant** level.

## 6.2 Mitigation Measures for Indirect Impacts

### 6.2.1 Special-Status Wildlife

The following potentially significant indirect impact to special-status wildlife would occur, absent mitigation.

BIO-6 The Project may result in significant indirect impacts to nesting osprey which have a high potential to occur adjacent to Project construction areas. Excessive noise in proximity to active osprey nests

may result in nest failure which can be considered take, which is not authorized under the Sab Diego MSCP and therefore would be significant, absent mitigation.

To address potentially significant indirect impacts to nesting birds (including osprey), **MM BIO-6 (Avoidance of Osprey Take)** and **MM BIO-7 (Noise Reduction)** shall be implemented.

MM-BIO-6 Avoidance of Osprey Take. Prior to the issuance of a grading permit, the City of Del Mar shall verify that the requirements regarding the osprey (*Pandion haliaetus*), as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur during the breeding season (February 1 through September 15) until the following requirements have been met to the satisfaction of the City of Del Mar:

> A qualified biologist with experience conducting nesting bird surveys shall survey those habitat areas for nesting osprey. If nesting osprey are present, a 500-foot avoidance buffer shall be implemented around the nest until the nest has fledged. Areas restricted from construction activities shall be staked or fenced under the supervision of a qualified biologist. Construction activities shall not encroach within the buffer until the nest has fledged and the qualified biologist has determined the nest is no longer active.

MM BIO-7 Noise Reduction. Construction-related activities that are excessively noisy (e.g., clearing, grading, or grubbing) adjacent to breeding/nesting areas shall incorporate noise-reduction measures (described below) or be curtailed during the breeding/nesting season of sensitive bird species.

- Trucks and other engine-powered equipment shall be equipped with noise-reduction features, such as mufflers and engine shrouds, which are no less effective than those originally installed by the manufacturer.
- Trucks and other engine-powered equipment shall be operated in accordance with posted speed limits and limited engine idling requirements.
- Usage of truck engine exhaust compression braking systems shall be limited to emergencies.
- Backup beepers for all construction equipment and vehicles shall be adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and the California Occupational Safety and Health Administration safety requirements are not violated. These settings shall be retained for the duration of construction activities.
- Vehicle horns shall be used only when absolutely necessary, as specified in the contractor's specifications.
- Radios and other noise-generating "personal equipment" shall be prohibited.
- If construction-related activities that are excessively noisy (e.g., clearing, grading, grubbing, or blasting) occur during the period of January 15 through September 15, a qualified biologist shall conduct a pre-construction nesting bird survey to determine the location of any active nests in the area of Project disturbance and provide either work modifications to reduce hourly average noise levels or other sound attenuation options.

### 6.2.2 Jurisdictional Aquatic Resources

Potentially significant indirect impacts to jurisdictional aquatic resources shall be reduced to a less than significant level through implementation of a SWPPP and construction best management practices. Sediment and erosion control measures are included as Project design features. With implementation of BMPs, SWPPP, sediment and erosion control measures, potentially significant indirect impacts to potentially jurisdictional aquatic resources in the vicinity of the Project shall be reduced to a less than significant level.

### 6.2.3 Wildlife Corridors and Habitat Linkages

Potentially significant indirect impacts to wildlife corridors and habitat linkages are not expected to occur as the Project purpose is to functionally uplift the shoreline of the San Dieguito lagoon for erosion and flood control. Any lighting for the Project shall be directed away from the San Dieguito Lagoon wherever feasible and consistent with public safety. No nightwork is proposed and no night lighting is anticipated for implementation of the Project. Where necessary, adequate shielding through berms or other methods to protect against night lighting In addition, standard construction best management practices and implementation of the SWPPP would ensure no indirect adverse impacts to water quality within the San Dieguito Lagoon wildlife corridor from increased sedimentation or runoff would occur from Project implementation.

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# 7 Conclusion

The proposed San Dieguito Lagoon shoreline protection Project shall result in the installation of living levees, floodwalls, native vegetation plantings and built environment at the North Riverbank, Southwest Riverbank, and Southeast Riverbank along the San Dieguito Lagoon in the coastal zone of the City of Del Mar, San Diego County, California. Implementation of the Project would ultimately provide shoreline protection through erosion and flood control and improve the overall habitat and hydrologic quality of the San Dieguito Lagoon/River channel shoreline. The area of Project disturbance supports multiple sensitive vegetation communities, rare plant species, and potentially jurisdictional resources under the jurisdiction of the USACE, RWQCB, CDFW, and/or the CCC. CCC would also regulate CDFW sensitive vegetation communities and native vegetation supporting special-status plants as ESHA's. Direct and indirect impacts to sensitive biological resources from implementation of the Project shall be reduced to a less than significant level through mitigation measures MM BIO-1 though MM BIO-7, including BMPs and preparation and implementation of a SWPPP. Regulatory resource permitting and on-site habitat restoration though preparation and implementation of an HMMP and Wetlands Mitigation and Monitoring Plan are proposed as compensatory mitigation for permanent and temporary impacts to sensitive biological resources in the area of Project disturbance.

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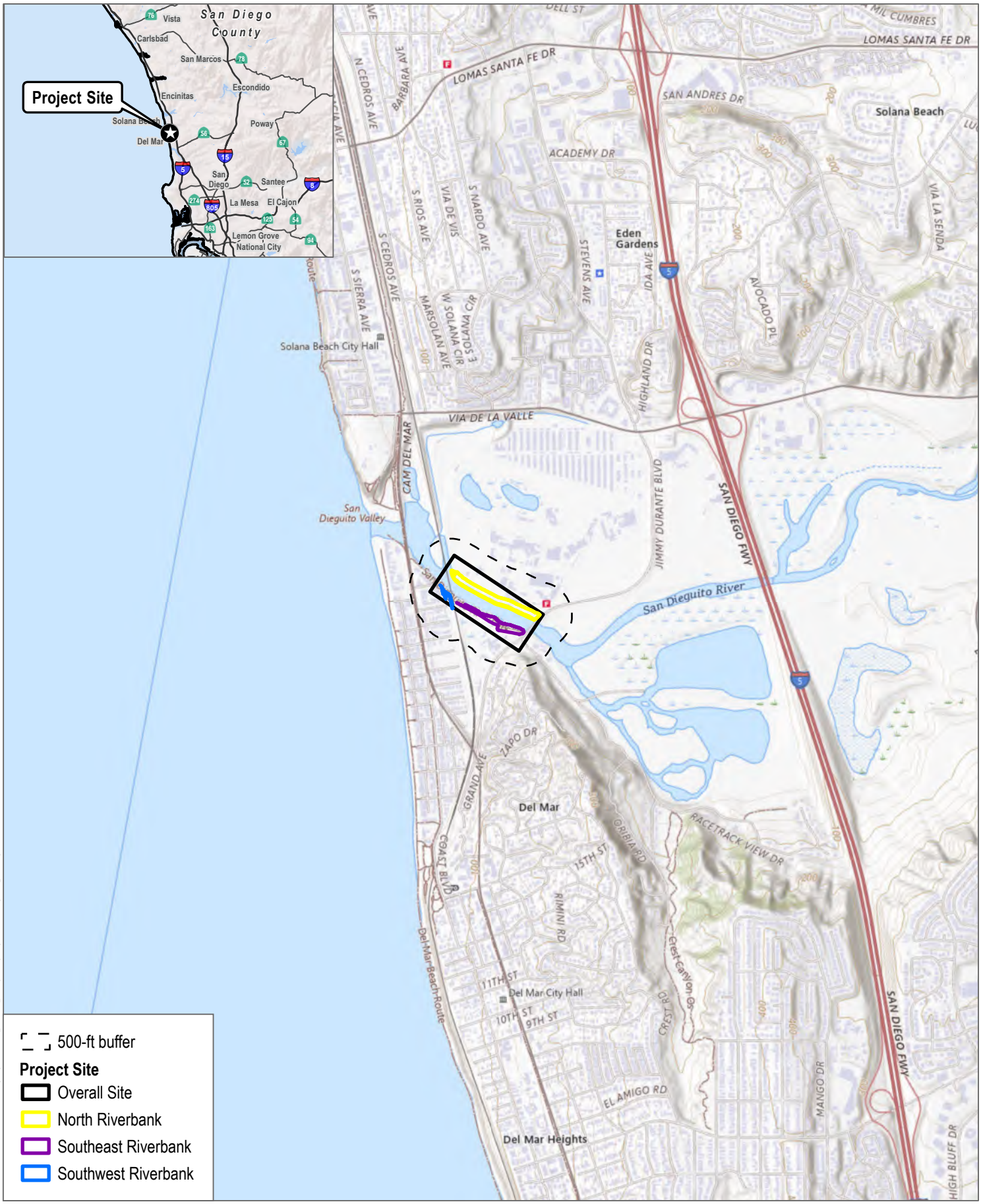
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SOURCE: USGS National Map 2026

DUDEK

0 1,000 2,000 Feet

**FIGURE 1**

Project Location

SDL Shoreline Protection BTR

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SOURCE: MAXAR, 2024

DUDEK

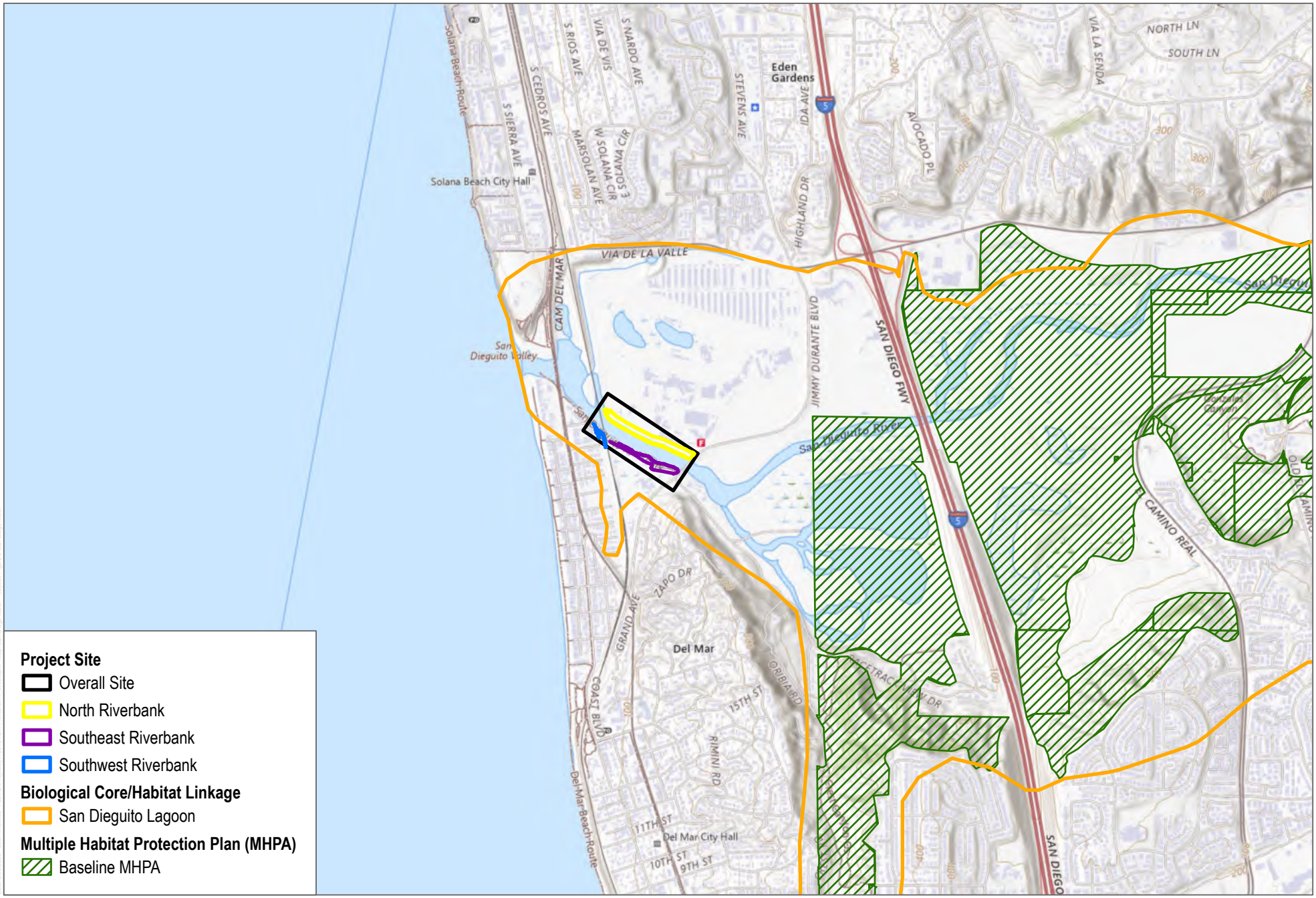
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**FIGURE 2**

Site Plan

SDL Shoreline Protection BTR

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SOURCE: County of San Diego; USGS National Map, 2026

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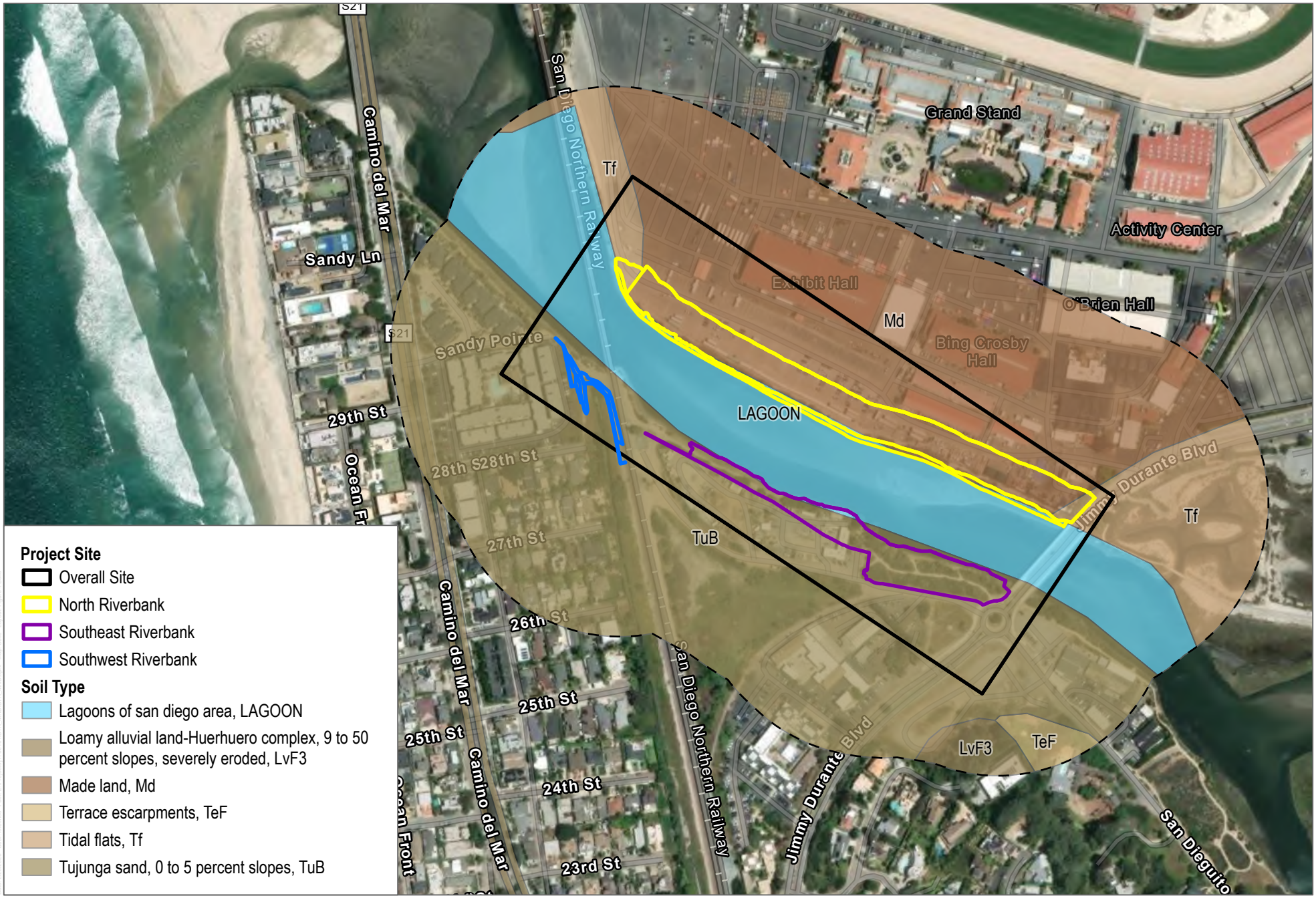
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**FIGURE 3**

San Diego MSCP

SDL Shoreline Protection BTR

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SOURCE: MAXAR, 2024; USDA

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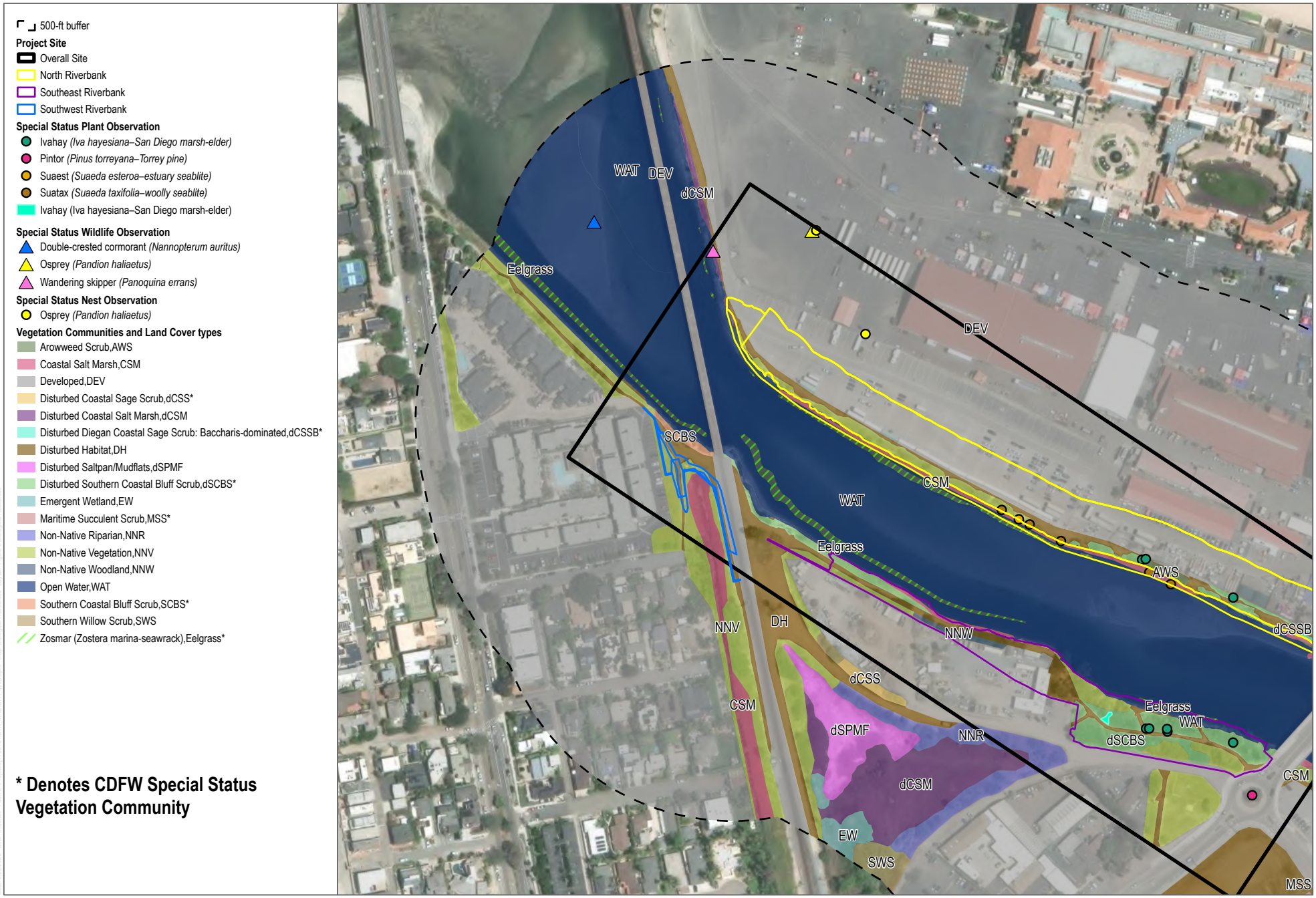
0 185 370 Feet

**FIGURE 4**

Soils

SDL Shoreline Protection BTR

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SOURCE: MAXAR, 2024

DUDEK

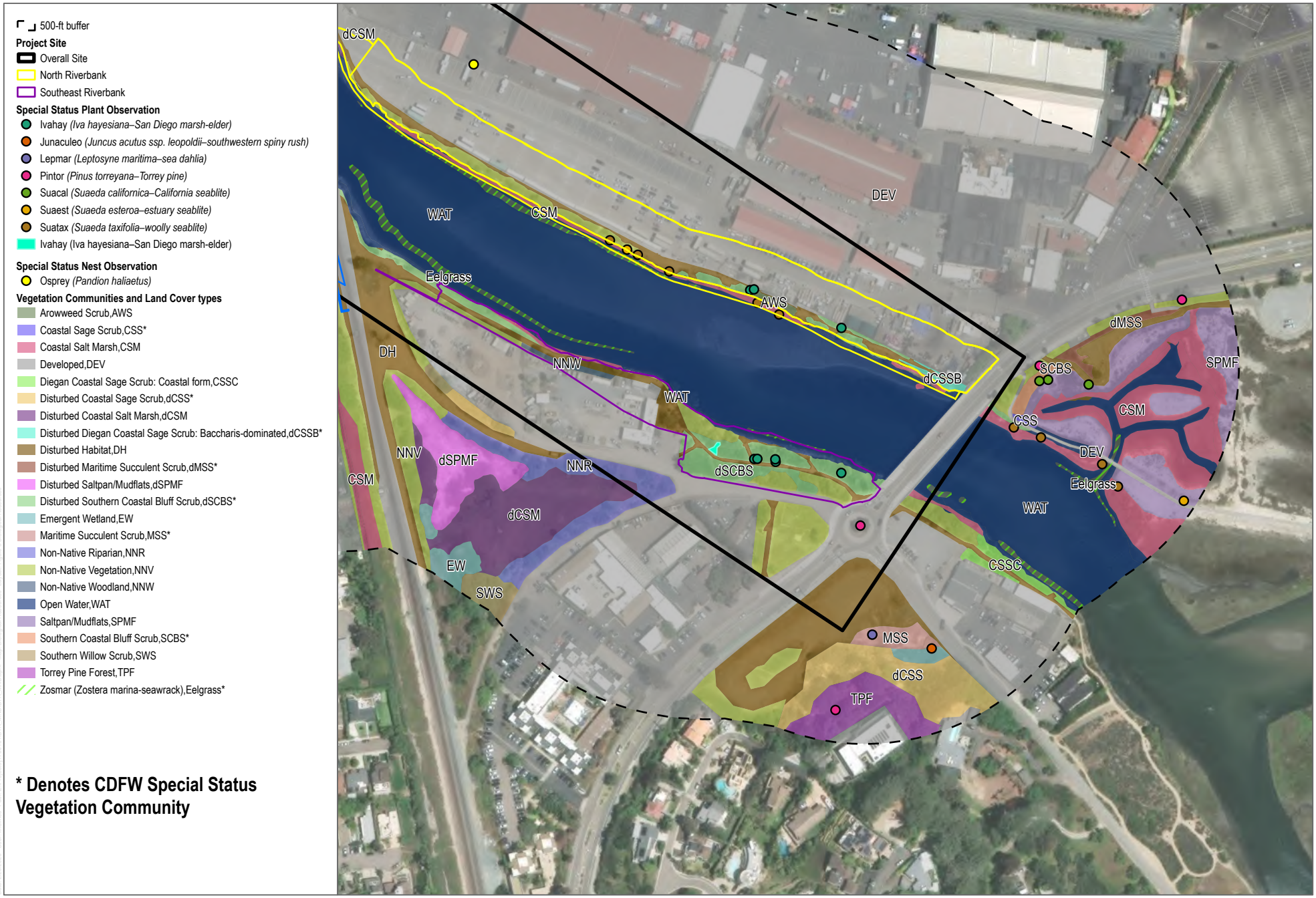
0 135 270 Feet

**FIGURE 5-1**

Biological Resources

SDL Shoreline Protection BTR

INTENTIONALLY LEFT BLANK




SOURCE: MAXAR, 2024

DUDEK

0 135 270 Feet

**FIGURE 5-2**

Biological Resources

SDL Shoreline Protection BTR

INTENTIONALLY LEFT BLANK




SOURCE: MAXAR, 2024; USGS

DUDEK

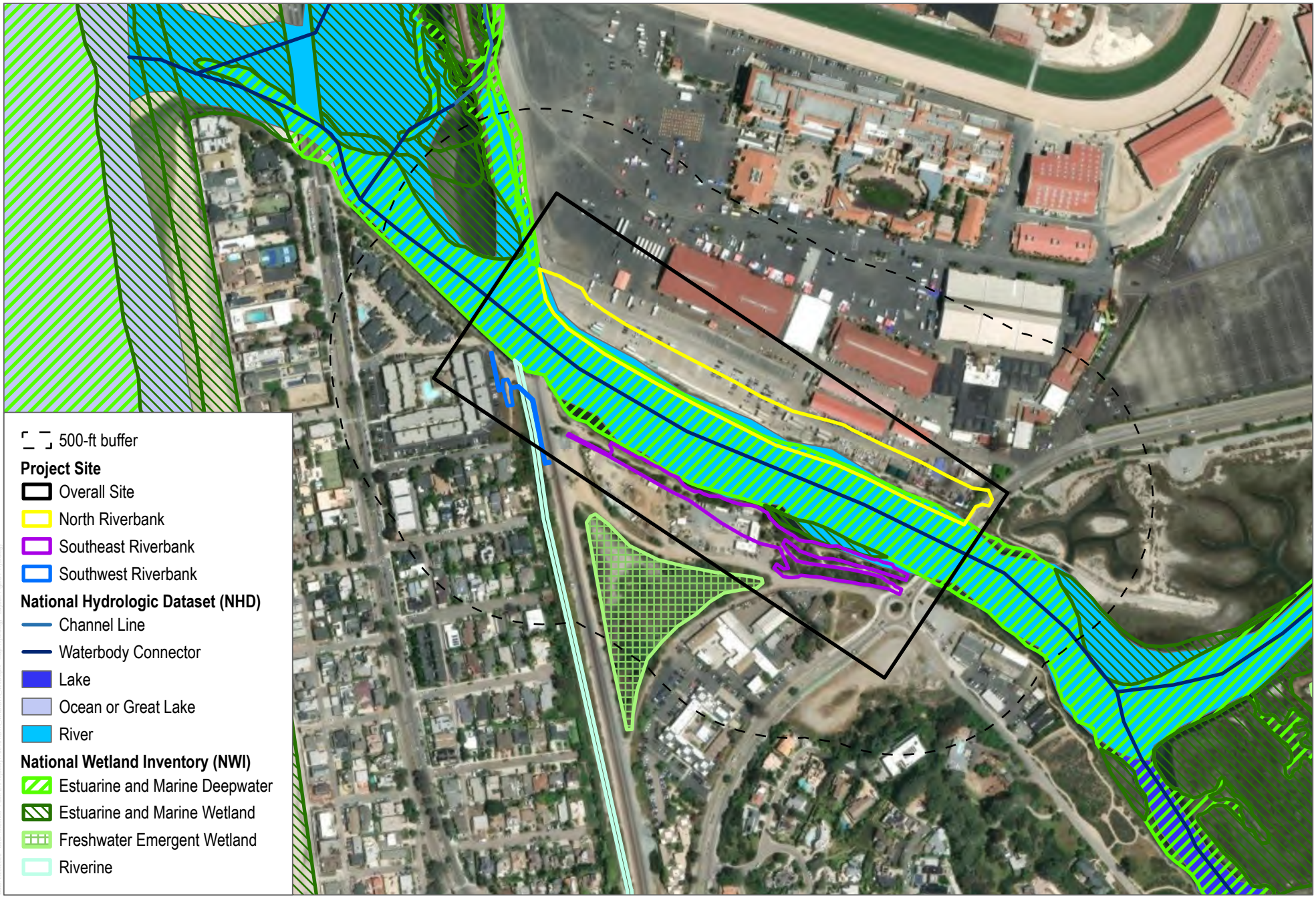
0 495 990 Feet

**FIGURE 6**

Watershed

SDL Shoreline Protection BTR

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SOURCE: USGS; USFWS; MAXAR, 2024

DUDEK

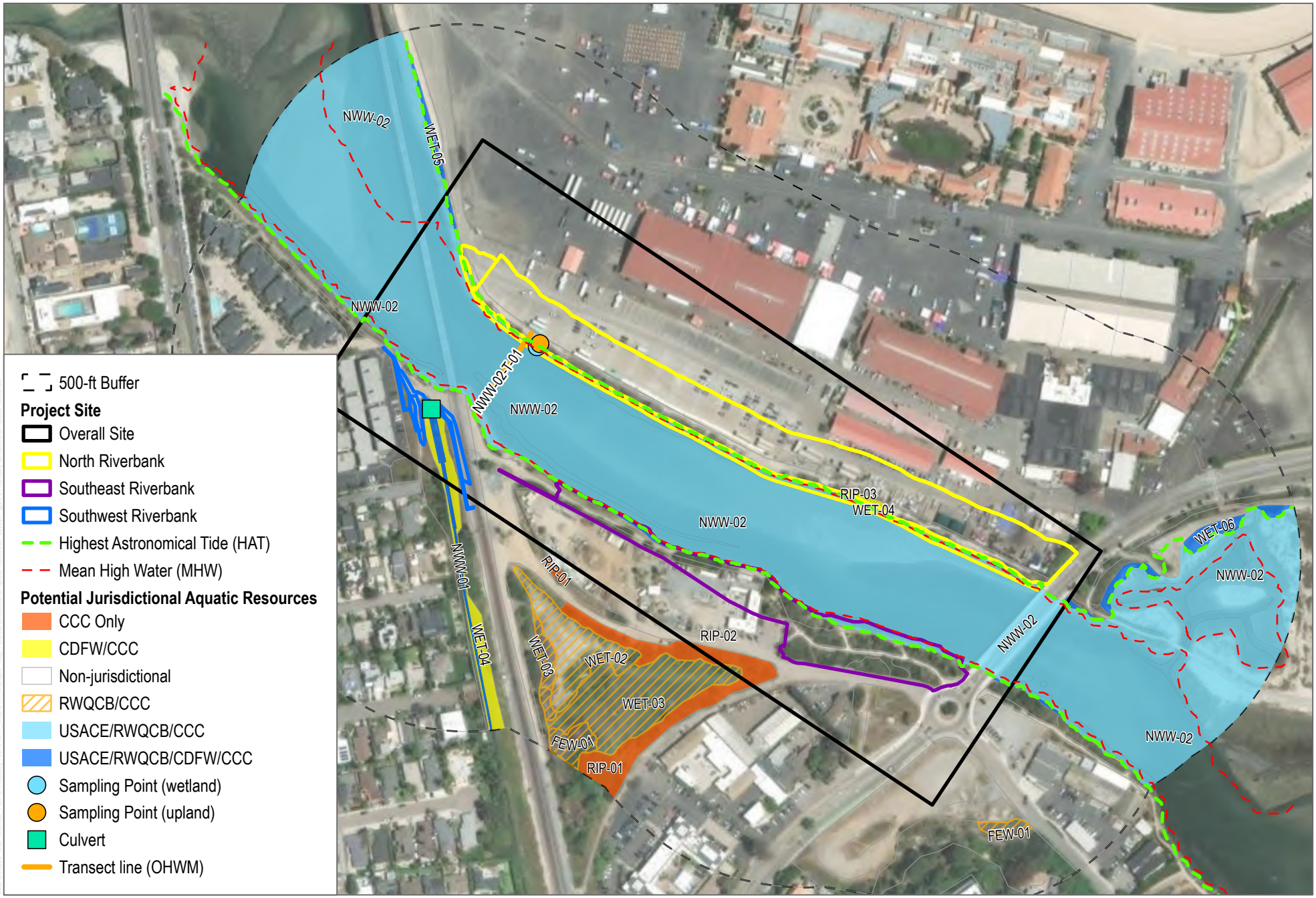
0 200 400 Feet

**FIGURE 7**

Hydrology

SDL Shoreline Protection BTR

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SOURCE: USACE; CDFW; CCC; MAXAR, 2024

DUDEK

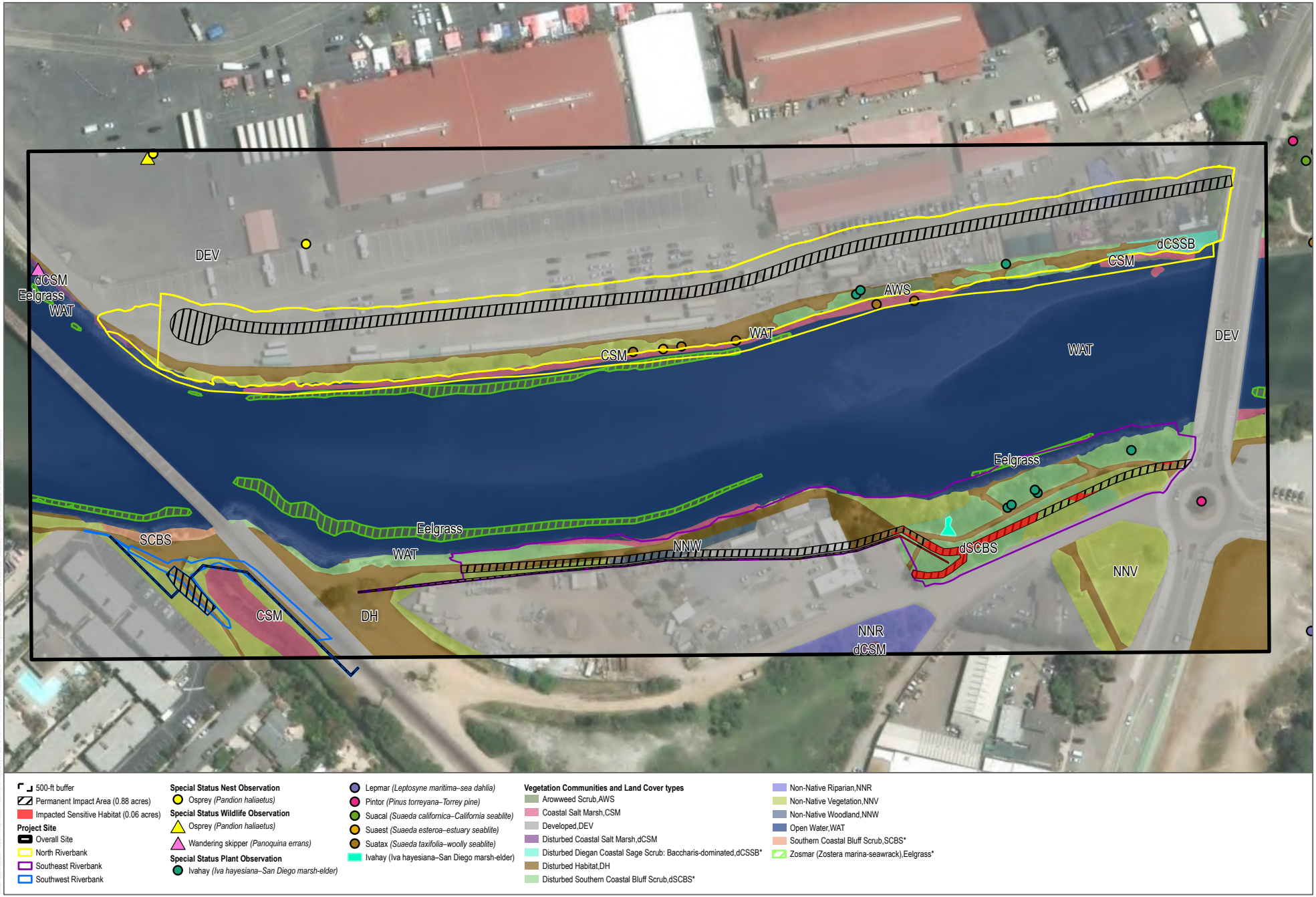
0 145 290 Feet

**FIGURE 8**

Potential Jurisdictional Aquatic Resources

SDL Shoreline Protection BTR

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SOURCE: MAXAR, 2024

DUDEK

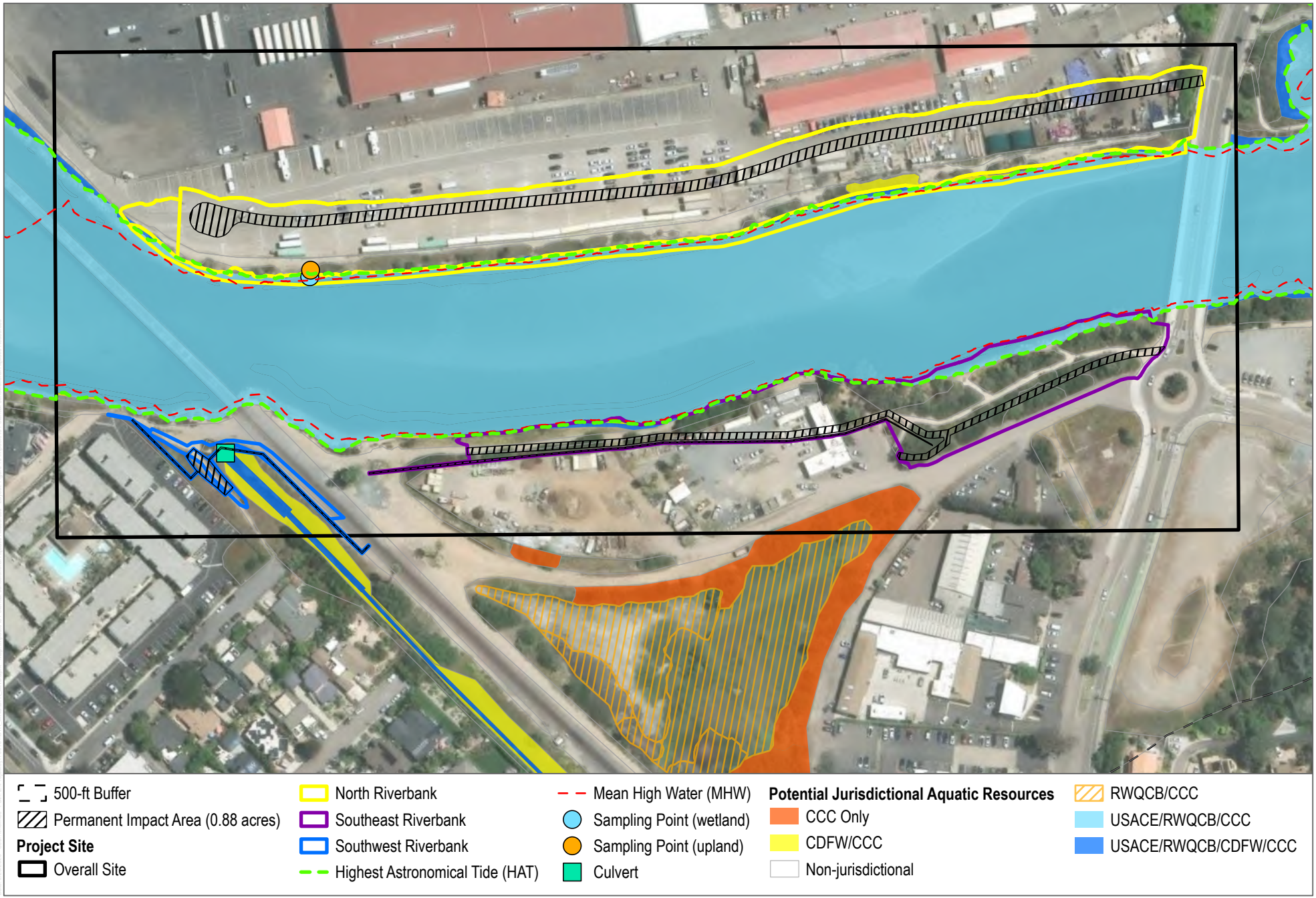
0 85 170 Feet

**FIGURE 9**

Impacts to Biological Resources

SDL Shoreline Protection BTR

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SOURCE: MAXAR, 2024

DUDEK

0 90 180 Feet

**FIGURE 10**

Impacts to Potential Jurisdictional Aquatic Resources

SDL Shoreline Protection BTR

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# Appendix A
Species Compendium

# Plant Species

## Angiosperms (Dicots)

### AIZOACEAE—FIG MARIGOLD FAMILY

*Sesuvium verrucosum*—western sea-purslane
*Trianthema portulacastrum*—horse-purslane
* *Carpobrotus chilensis*—sea-fig
* *Carpobrotus edulis*—hottentot-fig
* *Mesembryanthemum crystallinum*—crystalline iceplant
* *Mesembryanthemum nodiflorum*—slender-leaf iceplant
* *Malephora crocea* var. *crocea*—crocea iceplant

### AMARANTHACEAE—AMARANTH FAMILY

*Malosma laurina*—laurel sumac
*Rhus integrifolia*—lemonadeberry
* *Schinus molle*—Peruvian pepper tree
* *Schinus terebinthifolius*—Brazilian pepper tree

### APIACEAE—CARROT FAMILY

* *Conium maculatum*—common poison hemlock
* *Foeniculum vulgare*—sweet fennel

### ASTERACEAE—SUNFLOWER FAMILY

*Ambrosia psilostachya*—western ragweed
*Artemisia californica*—California sagebrush
*Baccharis pilularis*—coyote brush
*Baccharis salicifolia*—mulefat, seep-willow, water-wally
*Baccharis sarothroides*—desert broom, broom baccharis
*Encelia californica*—California brittle bush
* *Glebionis coronaria*—garland/crown daisy
* *Helminotheca echioides*—bristly oxtongue
*Isocoma menziesii*—coastal goldenbush
*Iva hayesiana*—San Diego marsh elder
*Jaumea carnosa*—salty susan, fleshy jaumea
* *Leptosyne maritima*—San Diego sea-dahlia
*Pluchea odorata* var. odorata—salt marsh fleabane
*Pluchea sericea*—arrowweed
*Xanthium strumarium*—cocklebur

## BATACEAE—SALTWORTH FAMILY

*Batis maritima*—saltwort, beachwort

## BORAGINACEAE—BORAGE FAMILY

*Heliotropium curassavicum* var. *oculatum*—salt heliotrope

## BRASSICACEAE—MUSTARD FAMILY

* *Brassica nigra*—black mustard

## CACTACEAE—CACTUS FAMILY

*Cylindropuntia prolifera*—coast cholla

*Opuntia littoralis*—coast prickly-pear

*Ferocactus viridescens* var. *viridescens*—coast barrel cactus

## CARYOPHYLLACEAE—PINK FAMILY

*Spergularia macrotheca*—sticky sand-burry

## CHENOPODIACEAE—GOOSEFOOT FAMILY

*Arthrocnemum subterminale*—Parish's pickleweed

*Atriplex lentiformis*—big saltbush

*Atriplex prostrata*—prostrate spearscale

*Atriplex watsonii*—Watson's saltbush

*Salicornia pacifica*—Pacific pickleweed

*Suaeda californica*—California sea-blite

*Suaeda esteroa*—estuary sea-blite

*Suaeda taxifolia*—woolly sea-blite

* *Bassia hyssopifolia*—five-hook bassia

* *Salsola tragus*—prickly russian-thistle, tumbleweed

## CONVULVULACEAE—MORNING GLORY FAMILY

*Cressa truxillensis*—alkali weed

*Cuscuta californica*—dodder

## EUPHORBIACEAE—SPURGE FAMILY

* *Ricinus communis*—castor bean

## FABACEAE—LEGUME FAMILY

* *Acacia* spp.—wattle sp.

## FRANKENIACEAE—FRANKENIA FAMILY

*Frankenia salina*—alkali heath

### MYRTACEAE—MYRTLE FAMILY

* *Eucalyptus* spp.—Eucalyptus species

### PLUMBAGINACEAE—LEADWORT FAMILY

*Limonium californicum*—western marsh-rosemary

* *Limonium perezii*—Perez's marsh-rosemary
* *Limonium sinuatum*—notch-leaf marsh-rosemary

### POLYGONACEAE—BUCKWHEAT FAMILY

*Eriogonum fasciculatum*—California buckwheat

### SALICACEAE—WILLOW FAMILY

*Salix lasiolepis*—arroyo willow

### SCROPHULARIACEAE—FIGWORT FAMILY

* *Myoporum acuminatum*—mangrove myoporum
* *Myoporum montanum*—waterbush, boobialla

### SOLANACEAE—NIGHTSHADE FAMILY

*Datura wrightii*—western jimson weed

*Lycium californicum*—California desert thorn

* *Nicotiana glauca*—tree tobacco

## Angiosperms (Monocots)

### AGAVACEAE—AGAVE FAMILY

*Agave shawii* var. *shawii*—Shaw's agave

### ARECACEAE—PALM FAMILY

*Washingtonia filifera*—California fan palm

* *Phoenix canariensis*—Canary Island fan palm

### CYPERACEAE—SEDGE FAMILY

*Bolboschoenus maritimus* ssp. *paludosus*—prairie bulrush

*Schoenoplectus californicus*—California bulrush

### JUNCACEAE—RUSH FAMILY

*Juncus acutus* spp. *Leopoldii*—southwestern spiny rush

### POACEAE—GRASS FAMILY

*Distichlis spicata*—salt grass

*Spartina foliosa*—California cord grass

* *Arundo donax*—giant reed

### TYPHACEAE—CATTAIL FAMILY

*Typha latifolia*—broad-tail cattail

### ZOSTERACEAE—EELGRASS FAMILY

*Phyllospadix torreyi*—Torrey's surfgrass

*Zostera marina*—eelgrass

## Gymnosperms (Monocots)

### PINACEAE—PINE FAMILY

*Pinus torreyana* spp. *torreyana*—Torrey pine

* *Pinus halapensis*—Aleppo pine

# Wildlife Species

## Vertebrates

### Birds

#### ACCIPITRIDAE—HAWKS

*Buteo jamaicensis*—red-tailed hawk

#### ARDEIDAE—HERONS

*Ardea alba*—great egret

*Ardea herodias*—great blue heron

*Butorides virescens*—green heron

*Nyctanassa violacea*—yellow-crowned night heron

#### COLUMBIDAE—PIGEONS AND DOVES

*Zenaida macroura*—mourning dove

#### CORVIDAE—JAYS AND CROWS

*Corvus brachyrhynchos*—American crow

#### LARIDAE—GULLS

*Larus occidentalis*—western gull

#### MIMIDAE—MIMIDS

*Toxostoma redivivum*—California thrasher

#### PANDIONIDAE—OSPREYS

*Pandion haliaetus*—osprey

#### PARADOXORNITHIDAE—PARROTBILLS

*Chamaea fasciata*—wrentit

#### PASSERALLIDAE—NEW WORLD SPARROWS

*Melospiza melodia*—song sparrow

*Melozone crissalis*—California towhee

#### PHALACROCORACIDAE—CORMORANTS

*Nannopterum auritum*—double-crested cormorant

#### PICIDAE—WOODPECKERS

*Dryobates nuttallii*—Nuttall's woodpecker

#### STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

#### TYRANNIDAE—TYRANT FLYCATCHERS

*Sayornis nigricans*—black phoebe

#### ZOSTEROPIDAE—WHITE-EYES

* *Zosterops simplex*—Swinhoe's white eye

### Fish

#### MUGILIDAE—MULLETS

*Mugil cephalus*—striped mullet

#### UROTRYGONIDAE—ROUND RAYS

*Urobatis* spp.—stingray species

## Invertebrates

### Arthropods

#### CANCRIDAE—CRABS

*Cancer, Metacarcinus,* or *Romaleon* spp.—rock crab species

### Insects

#### HESPERIIDAE—SKIPPERS

*Panoquina errans*—wandering skipper

### Mollusks

#### OCTOPODIDAE—OCTOPUSES

*Octopoda* spp.—Octopus species

* signifies introduced (non-native) species

# Appendix B

Special-Status Plant Species Potential to Occur

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Abronia maritima* | red sand-verbena | None/None/4.2 | None | Coastal dunes/perennial herb/ Feb–Nov/0–330 | Not expected to occur. No suitable vegetation present. |
| *Acanthomintha ilicifolia* | San Diego thorn-mint | FT/SE/1B.1 | Narrow Endemic | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay, Openings/annual herb/ Apr–June/35–3,150 | Low potential to occur. Coastal scrub is present but clay soils and vernal pools are absent. Closest CNDDB occurrence record is from 2006 and possibly extirpated, located approximately 3.5 miles north of the project. |
| *Acmispon prostratus* | Nuttall's acmispon | None/None/ 1B.1 | Covered | Coastal dunes, Coastal scrub (sandy)/annual herb/ Mar–June(July)/0–35 | **High potential to occur.** Suitable habitats and substrates are present within the project site. In addition, there are nearby CNDDB occurrence records from 2010 approximately 0.8 miles east of the study area. |
| *Adolphia californica* | California adolphia | None/None/ 2B.1 | None | Chaparral, Coastal scrub, Valley and foothill grassland; Clay/perennial deciduous shrub/Dec–May/ 35–2,430 | Low potential to occur. Coastal scrub is present but lacks clay soils. This species is conspicuous and was not detected during the biological reconnaissance. Nearby CNDDB occurrence records from 2015 are approximately 3 miles north at San Elijo lagoon. |
| *Agave shawii* var. *shawii* | Shaw's agave | None/None/ 2B.1 | Covered, Narrow Endemic | Coastal bluff scrub, Coastal scrub/ perennial leaf/Sep–May/10–395 | **Present.** Incidentally observed in the study area during the biological reconnaissance, within the maritime succulent scrub restoration area. |
| *Ambrosia monogyra* | singlewhorl burrobrush | None/None/ 2B.2 | None | Chaparral, Sonoran desert scrub; Sandy/perennial shrub/Aug–Nov/ 35–1,640 | Not expected to occur. No suitable vegetation present. |
| *Ambrosia pumila* | San Diego ambrosia | FE/None/1B.1 | Covered, Narrow Endemic | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Alkaline (sometimes), Clay (sometimes), Disturbed areas | Low potential to occur. Although coastal scrub, disturbed areas, and suitable substrates (alkaline, sandy, loam) are present, there are no vernal |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | (often), Loam (sometimes), Sandy (sometimes)/perennial rhizomatous herb/Apr–Oct/65–1,360 | pools or clay soils. There are no occurrence records within 4 miles of the project. |
| *Aphanisma blitoides* | aphanisma | None/None/ 1B.2 | Covered | Coastal bluff scrub, Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/annual herb/ Feb–June/5–1,000 | **High potential to occur**. Coastal bluff scrub and sandy soils present. In addition, historic (1893) CNDDB occurrence records overlap the project site, presumed extant. |
| *Aphyllon parishii* ssp. *brachylobum* | short-lobed broomrape | None/None/4.2 | None | Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy/annual/ perennial herb (parasitic)/Apr–Oct/ 10–1,000 | **Moderate potential to occur**. Coastal scrub and coastal bluff scrub with sandy soils are present. Nearest CNDDB occurrence record is historic from the 1980s, approximately 3.5 miles south of the project. |
| *Arctostaphylos glandulosa* ssp. *crassifolia* | Del Mar manzanita | FE/None/1B.1 | Covered | Chaparral (maritime, sandy)/ perennial evergreen shrub/ June–Apr/0–1,200 | Not expected to occur. No chaparral present. |
| *Artemisia palmeri* | San Diego sagewort | None/None/4.2 | None | Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Mesic, Sandy/perennial deciduous shrub/(Feb)May–Sep/ 15–3,000 | **Moderate potential to occur.** Coastal scrub and mesic habitats with sandy soils present. Nearest occurrence record is from 2015, approximately 3 miles east in Carmel Valley open space (SDNHM 2025) |
| *Asplenium vespertinum* | western spleenwort | None/None/4.2 | None | Chaparral, Cismontane woodland, Coastal scrub; Rocky/perennial rhizomatous herb/Feb–June/ 590–3,280 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Astragalus tener* var. *titi* | coastal dunes milk-vetch | FE/SE/1B.1 | Covered | Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie (mesic); Mesic (often), Vernally Mesic (often)/annual herb/Mar–May/ 5–165 | Low potential to occur**.** Sandy coastal bluff scrub and mesic habitats present. No occurrence records within 4 miles of the project. The nearest record is in Chula Vista (CCH 2025). |
| *Atriplex coulteri* | Coulter's saltbush | None/None/ 1B.2 | None | Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill | **Moderate potential to occur.** Coastal bluff scrub and coastal scrub with |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | grassland; Alkaline (sometimes), Clay (sometimes)/perennial herb/ Mar–Oct/10–1,510 | alkaline soils are present. Nearby occurrence records from 2015 are approximately 2.75 miles north of the project. |
| *Atriplex pacifica* | south coast saltscale | None/None/ 1B.2 | None | Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/ Mar–Oct/0–460 | **Moderate potential to occur.** Coastal bluff scrub and coastal scrub present. Nearby CNDDB occurrence records from 2017 are approximately 1.5 miles northeast of the project. |
| *Baccharis vanessae* | Encinitas baccharis | FT/SE/1B.1 | Covered, Narrow Endemic | Chaparral (maritime), Cismontane woodland; Sandstone/perennial deciduous shrub/Aug–Nov/ 195–2,360 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Bahiopsis laciniata* | San Diego County viguiera | None/None/4.3 | None | Chaparral, Coastal scrub/perennial shrub/Feb–June(Aug)/195–2,460 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Bergerocactus emoryi* | golden-spined cereus | None/None/ 2B.2 | None | Chaparral, Closed-cone coniferous forest, Coastal scrub; Sandy/ perennial stem/May–June/ 10–1,295 | **Moderate potential to occur.** Coastal scrub and sandy soils present. Nearby historic CNDDB occurrence records (1982) approximately 3.5 miles south of the project. |
| *Bloomeria clevelandii* | San Diego goldenstar | None/None/ 1B.1 | Covered | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/perennial bulbiferous herb/ Apr–May/165–1,525 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Brodiaea filifolia* | thread-leaved brodiaea | FT/SE/1B.1 | Covered, Narrow Endemic | Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)/perennial bulbiferous herb/Mar–June/ 80–3,675 | Low potential to occur. Coastal scrub present but lacks vernal pools and clay soils. No CNDDB occurrence records within 4 miles of the project. |
| *Brodiaea orcuttii* | Orcutt's brodiaea | None/None/ 1B.1 | Covered | Chaparral, Cismontane woodland, Closed-cone coniferous forest, Meadows and seeps, Valley and | Not expected to occur. No suitable vegetation present. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | foothill grassland, Vernal pools; Clay, Mesic/perennial bulbiferous herb/May–July/100–5,550 | |
| *Calandrinia breweri* | Brewer's calandrinia | None/None/4.2 | None | Chaparral, Coastal scrub; Burned areas, Disturbed areas, Loam (sometimes), Sandy (sometimes)/ annual herb/(Jan)Mar–June/ 35–4,005 | Low potential to occur. Coastal scrub and disturbed areas present with loam and sandy soils. Nearest occurrence record is from 2008 along Los Penasquitos creek, 10 miles south of the project (SDNHM 2025). |
| *Calochortus plummerae* | Plummer's mariposa-lily | None/None/4.2 | None | Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Granitic, Rocky/perennial bulbiferous herb/May–July/ 330–5,580 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Camissoniopsis lewisii* | Lewis' evening-primrose | None/None/3 | None | Cismontane woodland, Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Clay (sometimes), Sandy (sometimes)/annual herb/ Mar–May(June)/0–985 | **Moderate potential to occur.** Coastal bluff scrub and coastal scrub with sandy soils present. No CNDDB occurrence records within 4 miles of the project. |
| *Ceanothus cyaneus* | Lakeside ceanothus | None/None/ 1B.2 | Covered, Narrow Endemic | Chaparral, Closed-cone coniferous forest/perennial evergreen shrub/Apr–June/770–2,475 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Ceanothus otayensis* | Otay Mountain ceanothus | None/None/ 1B.2 | None | Chaparral (gabbroic, metavolcanic)/ perennial evergreen shrub/ Jan–Apr/1,970–3,610 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Ceanothus verrucosus* | wart-stemmed ceanothus | None/None/ 2B.2 | Covered | Chaparral, Coastal scrub/perennial evergreen shrub/Dec–May/ 5–1,245 | **High potential to occur.** Coastal scrub present. Nearby CNDDB occurrence records from 2017 are approximately 1 mile north of the project. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Centromadia parryi* ssp. *australis* | southern tarplant | None/None/ 1B.1 | None | Marshes and swamps (margins), Valley and foothill grassland (*vernally mesic*), Vernal pools/ annual herb/May–Nov/0–1,575 | **High potential to occur.** Marsh margins present. Nearby occurrence records from 2005 are approximately 1 mile east of the project site along the San Dieguito River. |
| *Centromadia pungens* ssp. *laevis* | smooth tarplant | None/None/ 1B.1 | None | Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; Alkaline/annual herb/Apr–Sep/ 0–2,100 | Not expected to occur. No suitable vegetation present. |
| *Chaenactis glabriuscula* var. *orcuttiana* | Orcutt's pincushion | None/None/ 1B.1 | None | Coastal bluff scrub (sandy), Coastal dunes/annual herb/Jan–Aug/ 0–330 | **Moderate potential to occur**. Coastal bluff scrub with sandy soils present. Nearby CNDDB occurrence records from 2014 are approximately 1.5 miles northeast of the project. |
| *Chamaebatia australis* | southern mountain misery | None/None/4.2 | None | Chaparral (*gabbroic*, *metavolcanic*)/perennial evergreen shrub/Nov–May/985–3,345 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Chloropyron maritimum* ssp. *maritimum* | salt marsh bird's-beak | FE/SE/1B.2 | Covered | Coastal dunes, Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/ 0–100 | **Moderate potential to occur**. Coastal salt marsh present. No CNDDB occurrence records within 4 miles of the project, but the site is within the species' geographic range (CDFW 2025; CCH 2025). |
| *Chorizanthe orcuttiana* | Orcutt's spineflower | FE/SE/1B.1 | None | Chaparral (maritime), Closed-cone coniferous forest, Coastal scrub; Openings, Sandy/annual herb/ Mar–May/10–410 | **High potential to occur.** Coastal scrub and sandy soils present. In addition, there are historic CNDDB occurrence records (1962) immediately south of the project, possibly extirpated. |
| *Chorizanthe polygonoides* var. *longispina* | long-spined spineflower | None/None/ 1B.2 | None | Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay (often)/annual herb/Apr–July/ 100–5,020 | Low potential to occur. Coastal scrub is present but clay soils and vernal pools are absent. Nearby CNDDB occurrence records from 2003 are |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | | approximately 1 mile northeast of the project. |
| *Cistanthe maritima* | seaside cistanthe | None/None/4.2 | None | Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Sandy/annual herb/ (Feb)Mar–June(Aug)/15–985 | **Moderate potential to occur.** Coastal bluff scrub and coastal scrub with sandy soils present. The nearest occurrence is at Torrey Pines Stat Natural Reserve (CCH 2025). |
| *Clarkia delicata* | delicate clarkia | None/None/ 1B.2 | None | Chaparral, Cismontane woodland; Gabbroic (often)/annual herb/ Apr–June/770–3,280 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Comarostaphylis diversifolia* ssp. *diversifolia* | summer holly | None/None/ 1B.2 | None | Chaparral, Cismontane woodland/ perennial evergreen shrub/ Apr–June/100–2,590 | Not expected to occur. No suitable vegetation present. |
| *Convolvulus simulans* | small-flowered morning-glory | None/None/4.2 | None | Chaparral (openings), Coastal scrub, Valley and foothill grassland; Clay, Seeps, Serpentine/annual herb/ Mar–July/100–2,430 | Not expected to occur. Although coastal scrub is present, there are no suitable microhabitats present (clay, seeps, serpentine). Nearest occurrence records are from 2001, more than 10 miles away in Lusardi Creek County Preserve (SDNHM 2025) |
| *Corethrogyne filaginifolia* var. *incana* | San Diego sand aster | None/None/ 1B.1 | None | Chaparral, Coastal bluff scrub, Coastal scrub/perennial herb/ June–Sep/10–375 | Not expected to occur. Coastal bluff scrub and coastal scrub are present. However, this variety is known from south of SR-52, more than 15 miles south (SDNHM 2025). |
| *Corethrogyne filaginifolia* var. *linifolia* | Del Mar Mesa sand aster | None/None/ 1B.1 | Covered | Chaparral (maritime, openings), Coastal bluff scrub, Coastal scrub; Sandy/perennial herb/May–Sep/ 15–490 | **High potential to occur.** Coastal bluff scrub and coastal scrub are present. In addition, nearby CNDDB occurrence records from 2020 are approximately 0.75 miles southeast the project site, presumed extant. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Cryptantha wigginsii* | Wiggins' cryptantha | None/None/ 1B.2 | None | Coastal scrub; Clay (often)/annual herb/Feb–June/65–900 | Low potential to occur. Coastal scrub present but lacks clay soils. No CNDDB occurrence records within 4 miles. |
| *Cylindropuntia californica* var. *californica* | snake cholla | None/None/ 1B.1 | Covered, Narrow Endemic | Chaparral, Coastal scrub/perennial stem/Apr–May/100–490 | Not expected to occur. Coastal scrub present including maritime succulent scrub. However, this species generally occurs in southern San Diego County south of I-8 (CCH 2025). In addition, this is a conspicuous species and no cactus species were detected during the biological reconnaissance. |
| *Dichondra occidentalis* | western dichondra | None/None/4.2 | None | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/165–1,640 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Diplacus aridus* | low bush monkeyflower | None/None/4.3 | None | Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/ Apr–July/2,460–3,935 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Dudleya blochmaniae* ssp. *blochmaniae* | Blochman's dudleya | None/None/ 1B.1 | None | Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Clay (often), Rocky, Serpentine/perennial herb/ Apr–June/15–1,475 | Low potential to occur. Coastal bluff scrub and coastal scrub present but lacks suitable substrates. No CNDDB occurrence records within 4 miles. |
| *Dudleya brevifolia* | short-leaved dudleya | None/SE/1B.1 | Covered, Narrow Endemic | Chaparral (maritime, openings), Coastal scrub; Sandstone/perennial herb/Apr–May/100–820 | Low potential to occur. Coastal scrub present but lacks sandstone substrate. Nearby historic CNDDB occurrence records (1990) are approximately 1 mile south of the project site but are extirpated. |
| *Dudleya variegata* | variegated dudleya | None/None/ 1B.2 | Covered, Narrow Endemic | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; | Low potential to occur. Although coastal sage scrub is present, lacks |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | Clay/perennial herb/Apr–June/ 10–1,905 | clay soils or vernal pools. No CNDDB occurrence records within 4 miles. |
| *Dudleya viscida* | sticky dudleya | None/None/ 1B.2 | Covered | Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub; Rocky/perennial herb/May–June/ 35–1,805 | **Moderate potential to occur.** Coastal bluff scrub and coastal scrub present. Nearby historic CNDDB occurrence records from 1987 are approximately 3 miles south of the project. |
| *Ericameria palmeri* var. *palmeri* | Palmer's goldenbush | None/None/ 1B.1 | Covered, Narrow Endemic | Chaparral, Coastal scrub; Mesic/perennial evergreen shrub/ (July)Sep–Nov/100–1,970 | Low potential to occur. Mesic coastal scrub present. There is an historic (1990) occurrence record in Carmel Valley approximately 6 miles south from the project (CCH 2025, SDNHM 2025) |
| *Eriodictyon sessilifolium* | sessile-leaved yerba santa | None/None/ 2B.1 | None | Coastal scrub; Volcanic/perennial shrub/July/560–560 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Eryngium aristulatum* var. *parishii* | San Diego button-celery | FE/SE/1B.1 | Covered | Coastal scrub, Valley and foothill grassland, Vernal pools; Mesic/ annual/perennial herb/Apr–June/ 65–2,035 | Not expected to occur. This species is restricted to vernal pools which are absent. No CNDDB occurrence records within 4 miles of the project. |
| *Erysimum ammophilum* | sand-loving wallflower | None/None/ 1B.2 | Covered | Chaparral (maritime), Coastal dunes, Coastal scrub; Openings, Sandy/perennial herb/ Feb–June(July–Aug)/0–195 | **High potential to occur.** Coastal scrub and sandy soils present. In addition, there are CNDDB occurrence records from 2016 located approximately 0.75 miles southeast of the project. |
| *Erythranthe diffusa* | Palomar monkeyflower | None/None/4.3 | None | Chaparral, Lower montane coniferous forest; Gravelly (sometimes), Sandy (sometimes)/ annual herb/Apr–June/ 4,005–6,005 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Euphorbia misera* | cliff spurge | None/None/ 2B.2 | None | Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; Rocky/ perennial shrub/(Oct)Dec–Aug/ 35–1,640 | **High potential to occur.** Coastal bluff scrub and coastal scrub are present. In addition, nearby historic (1888) |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | | CNDDB occurrence records overlap the project site, presumed extant. |
| *Ferocactus viridescens* | San Diego barrel cactus | None/None/ 2B.1 | Covered | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/ perennial stem/May–June/ 10–1,475 | **Present.** Incidentally observed in the study area during the biological reconnaissance, within the maritime succulent scrub restoration area. |
| *Geothallus tuberosus* | Campbell's liverwort | None/None/ 1B.1 | None | Coastal scrub (mesic), Vernal pools/ephemeral liverwort/ N.A./35–1,970 | **Moderate potential to occur.** Mesic coastal scrub present. Nearby CNDDB occurrence records from 2017 are approximately 1.75 miles south of the project. |
| *Githopsis diffusa* ssp. *filicaulis* | Mission Canyon bluecup | None/None/3.1 | None | Chaparral (disturbed areas, mesic)/ annual herb/Apr–June/ 1,475–2,295 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Grindelia hallii* | San Diego gumplant | None/None/ 1B.2 | None | Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland/ perennial herb/May–Oct/ 605–5,725 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Harpagonella palmeri* | Palmer's grapplinghook | None/None/4.2 | None | Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Openings/ annual herb/Mar–May/65–3,135 | Low potential to occur. Coastal scrub present but lacks clay soils. Occurrence records from 2015 are present in Carmel Valley, approximately 3 miles east of the project (SDNHM 2025). |
| *Hazardia orcuttii* | Orcutt's hazardia | None/ST/1B.1 | None | Chaparral (maritime), Coastal scrub; Clay (often)/perennial evergreen shrub/Aug–Oct/260–280 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Heterotheca sessiliflora* ssp. *sessiliflora* | beach goldenaster | None/None/ 1B.1 | None | Chaparral (coastal), Coastal dunes, Coastal scrub/perennial herb/ Mar–Dec/0–4,020 | **High potential to occur.** Coastal scrub is present. Nearby CNDDB occurrence records from 2016 are approximately 0.75 miles southeast of the project. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Holocarpha virgata* ssp. *elongata* | graceful tarplant | None/None/4.2 | None | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/annual herb/May–Nov/ 195–3,610 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Hordeum intercedens* | vernal barley | None/None/3.2 | None | Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools/annual herb/Mar–June/15–3,280 | Not expected to occur. This species is restricted to vernal pools which are absent. No CNDDB occurrence records within 4 miles of the project. |
| *Horkelia truncata* | Ramona horkelia | None/None/ 1B.3 | None | Chaparral, Cismontane woodland; Clay, Gabbroic/perennial herb/ May–June/1,310–4,265 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Isocoma menziesii* var. *decumbens* | decumbent goldenbush | None/None/ 1B.2 | None | Chaparral, Coastal scrub (often disturbed areas, sandy)/perennial shrub/Apr–Nov/35–820 | **Moderate potential to occur.** Coastal scrub is present. Nearby CNDDB occurrence records from 1996 are approximately 2 miles northeast of the project. |
| *Iva hayesiana* | San Diego marsh-elder | None/None/ 2B.2 | None | Marshes and swamps, Playas/ perennial herb/Apr–Oct/0–1,640 | **Present.** This species was incidentally observed within the project boundary during the biological reconnaissance in multiple areas. |
| *Juglans californica* | Southern California black walnut | None/None/4.2 | None | Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/ perennial deciduous tree/Mar–Aug/ 165–2,955 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Juncus acutus* ssp. *leopoldii* | southwestern spiny rush | None/None/4.2 | None | Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps (alkaline seeps)/perennial rhizomatous herb/(Mar)May–June/ 10–2,955 | **Present.** This species was incidentally observed within the project boundary during the biological reconnaissance in the 500 foot buffer. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Lasthenia glabrata* ssp. *coulteri* | Coulter's goldfields | None/None/ 1B.1 | None | Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/ Feb–June/5–4,005 | **High potential to occur**. Coastal salt marsh present. Nearby CNDDB occurrence records from 1999 are approximately 0.5 miles east of the project in San Dieguito lagoon. |
| *Lathyrus splendens* | pride-of-California | None/None/4.3 | None | Chaparral/perennial herb/ Mar–June/655–5,005 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Lepechinia cardiophylla* | heart-leaved pitcher sage | None/None/ 1B.2 | Covered, Narrow Endemic | Chaparral, Cismontane woodland, Closed-cone coniferous forest/ perennial shrub/Apr–July/ 1,705–4,495 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Lepidium virginicum* var. *robinsonii* | Robinson's pepper-grass | None/None/4.3 | None | Chaparral, Coastal scrub/annual herb/Jan–July/5–2,905 | **Moderate potential to occur**. Coastal scrub present. Nearby CNDDB occurrence records from 2012 are approximately 2.5 miles northwest of the project. |
| *Leptosyne maritima* | sea dahlia | None/None/ 2B.2 | None | Coastal bluff scrub, Coastal scrub/ perennial herb/Mar–May/15–490 | **Present.** This species was incidentally observed within the project boundary during the biological reconnaissance in the 500 foot buffer. |
| *Lycium californicum* | California box-thorn | None/None/4.2 | None | Coastal bluff scrub, Coastal scrub/ perennial shrub/Mar–Aug(Dec)/ 15–490 | **Present.** Incidentally observed in the study area during the biological reconnaissance, within the maritime succulent scrub restoration area. |
| *Microseris douglasii* ssp. *platycarpha* | small-flowered microseris | None/None/4.2 | None | Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/annual herb/ Mar–May/50–3,510 | Not expected to occur. This species is restricted to vernal pools which are absent. There are occurrence records 3 miles north and south of the site from 2015 and 2025, respectively, in San Elijo lagoon and Torrey Pines Preserve (SDNHM 2025). |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Mobergia calculiformis* | light gray lichen | None/None/3 | None | Coastal scrub (rocky)/crustose lichen (saxicolous)/N.A./35–35 | **Moderate potential to occur.** Coastal scrub present. No CNDDB occurrence records within 4 miles of the project. |
| *Monardella hypoleuca* ssp. *Lanata* | felt-leaved monardella | None/None/ 1B.2 | Covered | Chaparral, Cismontane woodland/ perennial rhizomatous herb/ June–Aug/985–5,170 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Monardella viminea* | willowy monardella | FE/SE/1B.1 | Covered, Narrow Endemic | Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Alluvial Terraces, Washes/perennial herb/June–Aug/ 165–740 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Myosurus minimus* ssp. *apus* | little mousetail | None/None/3.1 | Covered | Valley and foothill grassland, Vernal pools (alkaline)/annual herb/ Mar–June/65–2,100 | Not expected to occur. No suitable vegetation present. |
| *Navarretia fossalis* | spreading navarretia | FT/None/1B.1 | Covered | Chenopod scrub, Marshes and swamps (shallow freshwater), Playas, Vernal pools/annual herb/ Apr–June/100–2,150 | Not expected to occur. This species is restricted to vernal pools which are absent. No CNDDB occurrence records within 4 miles of the project. |
| *Navarretia prostrata* | prostrate vernal pool navarretia | None/None/ 1B.2 | None | Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools; Mesic/ annual herb/Apr–July/10–3,970 | Not expected to occur. This species is restricted to vernal pools which are absent. No CNDDB occurrence records within 4 miles of the project. |
| *Nemacaulis denudata* var. *denudata* | coast woolly-heads | None/None/ 1B.2 | None | Coastal dunes/annual herb/ Apr–Sep/0–330 | Not expected to occur. No coastal dunes present. |
| *Ophioglossum californicum* | California adder's-tongue | None/None/4.2 | None | Chaparral, Valley and foothill grassland, Vernal pools (margins); Mesic/perennial rhizomatous herb/Jan–June(Dec)/195–1,725 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Orcuttia californica* | California Orcutt grass | FE/SE/1B.1 | Covered | Vernal pools/annual herb/Apr–Aug/ 50–2,165 | Not expected to occur. No suitable vegetation present. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Pentachaeta aurea* ssp. *aurea* | golden-rayed pentachaeta | None/None/4.2 | None | Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/annual herb/Mar–July/ 260–6,070 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Phacelia ramosissima* var. *austrolitoralis* | south coast branching phacelia | None/None/3.2 | None | Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); Rocky (sometimes), Sandy/perennial herb/Mar–Aug/ 15–985 | **Moderate potential to occur.** Coastal scrub and coastal salt marsh present with sandy substrate. No occurrence records within 4 miles |
| *Phacelia stellaris* | Brand's star phacelia | None/None/ 1B.1 | None | Coastal dunes, Coastal scrub/ annual herb/Mar–June/5–1,310 | **Moderate potential to occur.** Suitable habitats present. Nearby CNDDB occurrence records from a unknown date are approximately 3 miles south of the project. |
| *Pinus torreyana* ssp. *torreyana* | Torrey pine | None/None/ 1B.2 | Covered | Chaparral, Closed-cone coniferous forest; Sandstone/perennial evergreen tree/N.A./100–525 | **Present.** This species was incidentally observed within the project boundary during the biological reconnaissance, in the center of a turnabout in the project boundary as well as within the 500-foot buffer. Some individuals are planted. |
| *Piperia cooperi* | chaparral rein orchid | None/None/4.2 | None | Chaparral, Cismontane woodland, Valley and foothill grassland/ perennial herb/Mar–June/ 50–5,200 | Not expected to occur. No suitable vegetation present. |
| *Pogogyne abramsii* | San Diego mesa mint | FE/SE/1B.1 | Covered | Vernal pools/annual herb/ Mar–July/295–655 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Pogogyne nudiuscula* | Otay Mesa mint | FE/SE/1B.1 | Covered | Vernal pools/annual herb/ May–July/295–820 | Not expected to occur. The site is outside of the species' known |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | | elevation range and there is no suitable vegetation present. |
| *Quercus dumosa* | Nuttall's scrub oak | None/None/ 1B.1 | None | Chaparral, Closed-cone coniferous forest, Coastal scrub; Clay, Loam, Sandy/perennial evergreen shrub/ Feb–Apr(May–Aug)/50–1,310 | Low potential to occur. Coastal scrub is present with sandy soils. This species is conspicuous and no oaks were detected during the biological reconnaissance. However, there are nearby CNDDB occurrence records from 2009 approximately 1 mile north of the project site. |
| *Quercus engelmannii* | Engelmann oak | None/None/4.2 | None | Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/perennial deciduous tree/Mar–June/ 165–4,265 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Rupertia rigida* | Parish's rupertia | None/None/4.3 | None | Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Pebble (Pavement) plain, Valley and foothill grassland/perennial herb/ June–Aug/2,295–8,205 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Salvia munzii* | Munz's sage | None/None/ 2B.2 | None | Chaparral, Coastal scrub/perennial evergreen shrub/Feb–Apr/ 375–3,495 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Selaginella cinerascens* | ashy spike-moss | None/None/4.1 | None | Chaparral, Coastal scrub/perennial rhizomatous herb/N.A./65–2,100 | **Moderate potential to occur**. Coastal scrub present. There are CCH records at Torrey Pines State Reserve Extension (CCH 2025). |
| *Senecio aphanactis* | chaparral ragwort | None/None/ 2B.2 | None | Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)/annual herb/ Jan–Apr(May)/50–2,625 | **High potential to occur.** Coastal scrub and alkaline substrate present. In addition, historic (1894) CNDDB occurrence records overlap the project site and are presumed extant. |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| *Sidalcea neomexicana* | salt spring checkerbloom | None/None/ 2B.2 | None | Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; Alkaline, Mesic/perennial herb/ Mar–June/50–5,020 | **Moderate potential to occur.** Coastal scrub with alkaline and mesic substrates present. No occurrence records within 4 miles of the project, but the site is within the species' geographic range (CDFW 2025; CCH 2025). |
| *Sphaerocarpos drewiae* | bottle liverwort | None/None/ 1B.1 | None | Chaparral, Coastal scrub; Openings/ ephemeral liverwort/N.A./ 295–1,970 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Stemodia durantifolia* | purple stemodia | None/None/ 2B.1 | None | Sonoran desert scrub (often mesic, sandy)/perennial herb/ (Jan)Apr–Dec/590–985 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Stipa diegoensis* | San Diego County needle grass | None/None/4.2 | None | Chaparral, Coastal scrub; Mesic (often), Rocky/perennial herb/ Feb–June/35–2,625 | Not expected to occur. Mesic coastal scrub present. However, this species occurs in southern San Diego County, south of State Route 52, more than 10 miles south of the project (CCH 2025, SDNHM 2025). |
| *Stylocline citroleum* | oil neststraw | None/None/ 1B.1 | None | Chenopod scrub, Coastal scrub, Valley and foothill grassland; Clay/ annual herb/Mar–Apr/165–1,310 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Suaeda californica* | California sea-blite | None/None/ 1B.1 | None | Marshes and swamps (coastal salt)/shrub/July–Oct/0–50 | **Present.** This species was incidentally observed during the biological reconnaissance within the project boundary and 500-foot buffer. |
| *Suaeda esteroa* | estuary seablite | None/None/ 1B.2 | None | Marshes and swamps (coastal salt)/perennial herb/ (Jan–May)July–Oct/0–15 | **Present.** This species was incidentally observed during the biological reconnaissance within the project boundary and 500-foot buffer. |
| *Suaeda taxifolia* | woolly seablite | None/None/4.2 | None | Coastal bluff scrub, Coastal dunes, Marshes and swamps (coastal | **Present.** This species was incidentally observed during the biological |

| Scientific Name | Common Name | Status* (Federal/ State/CRPR) | MSCP* County Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur |
|---|---|---|---|---|---|
| | | | | margins)/perennial evergreen shrub/Jan–Dec/0–165 | reconnaissance within the project boundary and 500-foot buffer. |
| *Texosporium sancti-jacobi* | woven-spored lichen | None/None/3 | None | Chaparral (openings)/crustose lichen (terricolous)/N.A./ 195–2,165 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Xanthisma junceum* | rush-like bristleweed | None/None/4.3 | None | Chaparral, Coastal scrub/perennial herb/Jan–Oct/785–3,280 | Not expected to occur. The site is outside of the species' known elevation range. |

***Status Legend:**
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
SE: State listed as endangered
ST: State listed as threatened
SC: State Candidate for listing
SR: State Rare
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% 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 (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
MSCP= Multiple Species Conservation Program

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# Appendix C

Special-Status Wildlife Species Potential to Occur

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| **Amphibians** | | | | | |
| *Spea hammondii* | western spadefoot | FPT/SSC | None | Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture | Not expected to occur. No suitable breeding or upland habitats present. |
| **Reptiles** | | | | | |
| *Anniella stebbinsi* | southern California legless lizard | None/SSC | None | Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils | **Moderate potential to occur.** Beach habitat with sandy, moist, loose loamy soils present. Historic CNDDB occurrence records (1950) overlap the project boundary and are presumed extant. |
| *Arizona elegans occidentalis* | California glossy snake | None/SSC | None | Arid scrub, rocky washes, grasslands, chaparral, open areas with loose soil | Not expected to occur. No suitable vegetation present. |
| *Aspidoscelis hyperythra* | orange-throated whiptail | None/WL | Covered | Low-elevation coastal scrub, chaparral, and valley–foothill hardwood | **Moderate potential to occur.** Low-elevation coastal scrub present. Multiple CNDDB occurrence records from 1987-2017 within 2 miles of the project. |
| *Aspidoscelis tigris stejnegeri* | San Diegan tiger whiptail | None/SSC | None | Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas. | Not expected to occur. No suitable habitats present. |
| *Chelonia mydas* (east Pacific DPS) | green sea turtle | FE/None | None | offshore; bays, lagoons, coastal inlets, beaches | Low potential to occur. San Dieguito lagoon could provide foraging habitat as their main food source, eelgrass, is present in San Dieguito lagoon. No nesting habitat (beaches) present. Known to occur in San Diego Bay and La Jolla. There is critical habitat for this species along the Pacific Coast at Del Mar Beach immediately west of the project. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| *Crotalus ruber* | red diamondback rattlesnake | None/SSC | None | Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats | Low potential to occur. Coastal scrub present. However, this species is likely to occur in arid inland areas as opposed to coastal areas. |
| *Phrynosoma blainvillii* | coast horned lizard | None/SSC | Covered | Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats | Low potential to occur. Coastal scrub with sandy soils on site is fragmented and within an urban area. Nearest CNDDB occurrence record is from 1998, approximately 2 miles south of the project. |
| *Plestiodon skiltonianus interparietalis* | Coronado skink | None/WL | None | Woodlands, grasslands, pine forests, and chaparral; rocky areas near water | Not expected to occur. No suitable vegetation present. |
| *Salvadora hexalepis virgultea* | coast patch-nosed snake | None/SSC | None | Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites | Not expected to occur. Although shrub communities are present, no animal burrows were detected during the biological reconnaissance. No CNDDB occurrence records within 5 miles of the project. |
| *Thamnophis hammondii* | two-striped gartersnake | None/SSC | None | Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools | Not expected to occur. No suitable habitats present. |
| *Actinemys pallida* | southwestern pond turtle | FPT/SSC | Covered | Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter | Not expected to occur. No suitable aquatic or upland habitats for nesting or wintering. |
| **Birds** | | | | | |
| *Accipiter cooperii* (nesting) | Cooper's hawk | None/WL | Covered | Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water | Not expected to occur. No nesting or foraging habitats present. |
| *Agelaius tricolor* (nesting colony) | tricolored blackbird | BCC/SSC, ST | Covered | Nests near freshwater, emergent wetland with cattails or tules, but also | Not expected to occur. No suitable nesting or foraging habitat present. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| | | | | in Himalayan blackberrry; forages in grasslands, woodland, and agriculture | |
| *Aimophila ruficeps canescens* | Southern California rufous-crowned sparrow | None/WL | Covered | Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches | Not expected to occur. Coastal sage scrub on site is fragmented and lacks grassy/rocky patches; no foraging or nesting habitat present. Nearest CNDDB occurrence record is from 1998, 4 miles south of the project. |
| *Artemisiospiza belli belli* | Bell's sparrow | None/WL | None | Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter | Not expected to occur. Coastal sage scrub on site is fragmented and lacks chamise; no foraging or nesting habitat present. |
| *Athene cunicularia* (burrow sites and some wintering sites) | burrowing owl | BCC/SSC, SC | Covered | Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows | Low potential to occur. Although no animal burrows were detected during the biological reconnaissance, there are disturbed scrub habitats present that could provide foraging and nesting habitat for this species. Nearest CNDDB occurrence record is from 2021, approximately 3 miles north in San Elijo lagoon. |
| *Buteo swainsoni* (nesting) | Swainson's hawk | None/ST | Covered | Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture | Not expected to occur. No suitable vegetation present for nesting or foraging. |
| *Campylorhynchus brunneicapillus sandiegensis* (San Diego and Orange Counties only) | coastal cactus wren | None/SSC | Covered | Southern cactus scrub patches | Not expected to occur. No cactus scrub patches present for nesting or foraging. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| *Coccyzus americanus occidentalis* (nesting) | western yellow-billed cuckoo | FT/SE | None | Nests in dense, wide riparian woodlands and forest with well-developed understories | Not expected to occur. No nesting or foraging habitats present. |
| *Elanus leucurus* (nesting) | white-tailed kite | None/FP | None | Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands | Low potential to occur. No nesting habitat present. May forage in emergent wetlands and disturbed habitats on site. No CNDDB occurrence records within 5 miles of the project. |
| *Empidonax traillii extimus* (nesting) | southwestern willow flycatcher | FE/SE | Covered | Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration | Not expected to occur. No suitable nesting or foraging habitats present. |
| *Eremophila alpestris actia* | California horned lark | None/WL | None | This subspecies of horned lark occurs on the state's southern and central coastal slope and in the San Joaquin Valley. Nests and forages in grasslands, disturbed lands, agriculture, and beaches. | Low potential to occur. Disturbed lands and beaches present can provide nesting and foraging habitat. No occurrence records within 5 miles of the project. |
| *Falco mexicanus* (nesting) | prairie falcon | None/WL | None | Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs | Not expected to occur. No suitable nesting or foraging habitats present. |
| *Icteria virens* (nesting) | yellow-breasted chat | None/SSC | None | Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush | Not expected to occur. No suitable nesting or foraging habitats present. |
| *Laterallus jamaicensis coturniculus* | California black rail | None/FP, ST | None | Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations | **Moderate potential to occur.** Suitable nesting and foraging habitat present. Multiple CNDDB occurrence records within 3 miles of the project. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| *Passerculus sandwichensis beldingi* | Belding's savannah sparrow | BCC/SE | Covered | Nests and forages in coastal saltmarsh dominated by pickleweed (*Salicornia* spp.) | **Moderate potential to occur.** Salt marsh habitat with pickleweeds present for nesting and foraging. CNDDB occurrence records from 2001 overlap the project site. |
| *Plegadis chihi* (nesting colony) | white-faced ibis | None/WL | Covered | Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries | Low potential to occur. Suitable nesting and foraging habitat present. No CNDDB occurrence records within 5 miles of the project. |
| *Polioptila californica californica* | coastal California gnatcatcher | FT/SSC | Covered | Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level | **Moderate potential to occur.** Suitable nesting and foraging habitat present consisting of coastal sage scrub dominated by California sagebrush and California buckwheat present. CNDDB occurrence records within 1 mile of the project from 1994 and 2017. |
| *Rallus obsoletus levipes* | light-footed Ridgway's rail | FE/FP, SE | Covered | Coastal wetlands, brackish areas, coastal saline emergent wetlands | **High potential to occur**. Suitable nesting and foraging habitat present and there are CNDDB occurrence records from 2007 that overlap the project. |
| *Setophaga petechia* (nesting) | yellow warbler | None/SSC | None | Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats | Not expected to occur. No suitable nesting or foraging habitats present. |
| *Sternula antillarum browni* (nesting colony) | California least tern | FE/FP, SE | Covered | Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats | **Moderate potential to occur.** Suitable nesting and foraging habitats present. Nearby historic CNDDB occurrence records from 1992 overlap the project. |
| *Nannnopterum auritum* (nesting colony) | double-breasted cormorant | None/WL | None | Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and | **Present.** Incidentally observed in the western study area buffer during the biological reconnaissance over the open |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| | | | | open coastlines; winter habitat includes lakes, rivers, and coastal areas | water channel. Suitable nesting habitat present. |
| *Vireo bellii pusillus* (nesting) | least Bell's vireo | FE/SE | Covered | Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season | Low potential to occur. Arrowweed scrub and southern willow scrub on site are small (less than 1 acre total) and fragmented along San Dieguito lagoon shoreline and unlikely to support nesting or foraging for this species. There is a CNDDB occurrence record from an unknown date immediately east of the project in San Dieguito Lagoon. The next nearest occurrence record is from 2008 in San Elijo lagoon approximately 5 miles north of the project. |
| *Anarhynchus nivosus nivosus* (nesting) | western snowy plover | FT, BCC/ SSC | Covered | On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds | **Moderate potential to occur.** Suitable nesting and foraging habitats present. Historic CNDDB occurrence records from 1954 overlap the project but it is possibly extirpated. |
| *Pandion haliaetus* (nesting) | osprey | None/WL | None | Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast | **Present.** Incidentally detected within the project boundary during the biological reconnaissance, nesting on a platform in the Del Mar fairgrounds parking lot behind the northern project boundary. |
| *Botaurus exilis* (nesting) | least bittern | None/SSC | None | Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation | **Moderate potential to occur.** Suitable nesting and foraging habitats present. |
| **Mammals** | | | | | |
| *Antrozous pallidus* | pallid bat | None/SSC | None | Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for | Low potential to occur. Shrublands, man-made structures and trees are present that could provide roosting and foraging |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| | | | | roosting, but also roosts in man-made structures and trees | habitat. No CNDDB occurrence records within 5 miles of the project. |
| *Choeronycteris mexicana* | Mexican long-tongued bat | None/SSC | None | Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings | Not expected to occur. No roosting or foraging habitats present. |
| *Corynorhinus townsendii* | Townsend's big-eared bat | None/SSC | None | Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels | Low potential to occur. Mesic habitats and man-made structures present could provide roosting and foraging habitats. No CNDDB occurrence records within 5 miles of the project. |
| *Dasypterus xanthinus* | western yellow bat | None/SSC | None | Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms | Not expected to occur. No roosting or foraging habitats present. |
| *Euderma maculatum* | spotted bat | None/SSC | None | Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes | Low potential to occur. No roosting habitat present. Low potential to forage over water in the project site. No CNDDB occurrence records within 5 miles of the project (CDFW 2025a). |
| *Eumops perotis californicus* | western mastiff bat | None/SSC | None | Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels | Low potential to occur. Coastal scrub and trees present could provide roosting or foraging habitats. Nearest CNDDB occurrence record is from 2003, approximately 4.5 miles east of the project. |
| *Neotoma lepida intermedia* | San Diego desert woodrat | None/SSC | None | Coastal scrub, desert scrub, chaparral, cacti, rocky areas | **Moderate potential to occur.** Coastal scrub present. No woodrat middens incidentally detected during the biological reconnaissance. Nearby CNDDB occurrence records from 1994 |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| | | | | | approximately 1 mile southeast of the project. |
| *Nyctinomops femorosaccus* | pocketed free-tailed bat | None/SSC | None | Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings | **Moderate potential to occur.** Buildings present could provide roosting habitat. No foraging habitat present. Nearby CNDDB occurrence records from 2000 are located approximately 0.5 mile west of the project. |
| *Nyctinomops macrotis* | big free-tailed bat | None/SSC | None | Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water | Low potential to occur. May forage over water in the project site and there are trees and buildings that could provide roosting habitat. No CNDDB occurrence records within 5 miles of the project. |
| *Perognathus longimembris pacificus* | Pacific pocket mouse | FE/SSC | None | fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium | Not expected to occur. No suitable habitats present. The only extant populations of this species in Southern California are in Dana Point and Camp Pendleton, more than 5 miles north of the project. |
| *Phoca vitulina* | Pacific harbor seal | MMPA/ None | None | near-shore coastal waters, rocky coastlines, sandy beaches, mudflats, islands, and estuaries | **Moderate potential to occur**. Suitable habitats present. Known to rear pups in la Jolla at Children's pool. |
| *Taxidea taxus* | American badger | None/SSC | Covered | Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils | Low potential to occur. Coastal scrub present with sandy soils, but lacks dry/arid climate. No CNDDB occurrence records within 5 miles of the project. |
| *Zalophus californicus* | California sea lion | MMPA/ None | None | offshore; coastal waters, sandy and rocky beaches, coves, piers, jetties, docks. Sandy beaches or rocky coves for breeding and haul-out sites. | **Moderate potential to occur.** May forage and rest in project site along San Dieguito lagoon; no breeding habitat present. Known to breed in La Jolla Cove approximately 10 miles south of the site. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| *Lasiurus frantzii* | western red bat | None/SSC | None | Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy | Not expected to occur. No suitable roosting or foraging habitats present. |
| **Invertebrates** | | | | | |
| *Bombus crotchii* | Crotch's bumble bee | None/SCE | None | Open grassland and scrub communities supporting suitable floral resources. | Moderate potential to occur. Scrub communities with floral resources in Asteraceae family present.. Nearest occurrence record is historic (1983) approximately 4.5 miles south of the project. |
| *Branchinecta sandiegonensis* | San Diego fairy shrimp | FE/None | Covered | Vernal pools, non-vegetated ephemeral pools | Not expected to occur. No ephemeral pools or vernal pools present. |
| *Euphydryas editha quino* | quino checkerspot butterfly | FE/None | None | Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, P. patagonica, and Antirrhinum coulterianum, among others | Not expected to occur. No suitable substrates or host plant species present. |
| *Lycaena hermes* | Hermes copper | FT/None | None | Mixed woodlands, chaparral, and coastal scrub | Low potential to occur. Coastal scrub present. Host plant (Ramnus crocea) not detected in the project site. However, California buckwheat is present and is a known nectar plant of this species. No CNDDB occurrence records within 5 miles of the project. |
| *Panoquina errans* | wandering skipper | None/None | Covered | Saltmarsh | Present. Incidentally detected within the project boundary during the biological reconnaissance. |
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/None | Covered | Vernal pools, non-vegetated ephemeral pools | Not expected to occur. No vernal pools or ephemeral pools present. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| *Danaus plexippus plexippus* pop. 1 | monarch - California overwintering population | FPT/None | None | Wind-protected tree groves with nectar sources and nearby water sources | Not expected to occur. Although there are stands of Eucalyptus trees in the project as well as nearby occurrence records on CNDDB from 2021, the nearest mapped overwintering sites within 5 miles of the project have not had observations since 1997 and is possibly extirpated. (Xerces 2025) |
| **Fishes** | | | | | |
| *Catostomus santaanae* | Santa Ana sucker | FT/SSC | None | Small, shallow, cool, clear streams less than 7 meters (23 feet) in width and a few centimeters to more than a meter (1.5 inches to more than 3 feet) in depth; substrates are generally coarse gravel, rubble, and boulder | Not expected to occur. Only known in the San Gabriel, Los Angeles, and Santa Ana River basins. No suitable habitat present. |
| *Entosphenus tridentatus* | Pacific lamprey | None/SSC | None | Freshwater habitat includes lakes, rivers, and creeks; soft substrates in shallow areas along banks; in Goose Lake, Klamath and Shasta Rivers, and Copco Lake | Not expected to occur. No suitable habitat present |
| *Eucyclogobius newberryi* | tidewater goby | FE/SSC | None | Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River | Low potential to occur. The project is 14 miles south of this species' southernmost range; there is brackish water present. |
| *Gila orcuttii* | arroyo chub | None/SSC | None | Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud | Not expected to occur. No suitable habitat present. Water depth greater than 16 inches in project site associated with lagoon. Known to occur in the Santa Margarita River and near Vista Irrigation District, more than 10 miles away from the project. |

| Scientific Name | Common Name | Status* (Federal/ State) | San Diego MSCP | Habitat | Potential to Occur |
|---|---|---|---|---|---|
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/None | Covered | Vernal pools, non-vegetated ephemeral pools | Not expected to occur. No vernal pools or ephemeral pools present. |

***Status Abbreviations:**
FE: Federally listed as endangered
FT: Federally listed as threatened
FPE: Federally proposed for listing as endangered
FPT: Federally proposed for listing as threatened
FC: Federal candidate species (former Category 1 candidates)
FD: Federally delisted
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
BLM: Bureau of Land Management Sensitive Species
USFS: U.S. Forest Service Sensitive Species
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State listed as endangered
ST: State listed as threatened
SC: State candidate for listing as threatened or endangered
SCE: State candidate for listing as endangered
SCT: State candidate for listing as threatened
SD: State delisted
CDF: California Department of Forestry Sensitive Species
MMPA: Marine Mammal Protection Act
MSCP: Multiple Species Conservation Program

## References

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# Appendix D
Jurisdictional Delineation Forms

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET - Arid West Region**
See ERDC/EL TR-08-28; the proponent agency is CECW-COR

*OMB Control #: 0710-0024, Exp: 09/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Del Mar Levee | City/County: Del Mar/San Diego | Sampling Date: 09/15/2025
Applicant/Owner: | State: CA | Sampling Point: WSP-ALT-01
Investigator(s): Anna Touchstone | Section, Township, Range:
Landform (hillslope, terrace, etc): | Local relief (concave, convex, none): concave | Slope (%):
Subregion (LRR): | Lat: 32.972769 | Long: -117.2660165 | Datum: WSG-84
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | |
| Hydric Soil Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes X No ____ |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks: Pit taken within SCSM along San Dieguito River, below OHWM

## VEGETATION - Use scientific names of plants.

| Tree Stratum (Plot size: 30-ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15-ft)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 | = Total Cover | |
| **Herb Stratum (Plot size: 5-ft)** | | | |
| 1. *Frankenia salina* / Yerba reuma, Alkali heath | 30 | Yes | FACW |
| 2. *Jaumea carnosa* / Marsh jaumea | 30 | Yes | OBL |
| 3. *Zostera marina* / Eel grass | 15 | Yes | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 75 | = Total Cover | |
| **Woody Vine Stratum (Plot size: 30-ft)** | | | |
| 1. | | | |
| 2. | | | |
| | 0 | = Total Cover | |

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 45 | x 1 = | 45 |
| FACW species | 30 | x 2 = | 60 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 75 (A) | | 105 (B) |

Prevalence Index = B/A = 1.4

**Hydrophytic Vegetation Indicators:**
X Dominance Test is >50%
X Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:

## SOIL

Sampling Point: WSP-ALT-01

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 12 | 5Y 4/2 | 90 | 5YR 4/6 | 10 | C | M | Fine Sand | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: ___

Depth (inches): ___

**Hydric Soil Present?** Yes X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- X Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- X 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (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)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | | | |
|---|---|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): | ___ | |
| Water Table Present? | Yes X | No ___ | Depth (inches): | 8 | |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): | 0 | |

**Wetland Hydrology Present?** Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET - Arid West Region**
See ERDC/EL TR-08-28; the proponent agency is CECW-COR

*OMB Control #: 0710-0024, Exp: 09/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Del Mar Levee | City/County: Del Mar/San Diego | Sampling Date: 09/15/2025
Applicant/Owner: | State: CA | Sampling Point: WSP-ALT-02
Investigator(s): Anna Touchstone | Section, Township, Range:
Landform (hillslope, terrace, etc): | Local relief (concave, convex, none): none | Slope (%):
Subregion (LRR): | Lat: 32.972773 | Long: -117.266019 | Datum: WSG-84
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ___ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ___
Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ___ | No X | |
| Hydric Soil Present? | Yes ___ | No X | **Is the Sampled Area within a Wetland?** Yes ___ No X |
| Wetland Hydrology Present? | Yes ___ | No X | |

Remarks: Upland point to WSP-01

## VEGETATION - Use scientific names of plants.

| Tree Stratum (Plot size: 30-ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15-ft) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 | = Total Cover | |

| Herb Stratum (Plot size: 5-ft) | | | |
|---|---|---|---|
| 1. *Carpobrotus edulis* / Iceplant, Freeway iceplant | 50 | Yes | NI |
| 2. *Cressa truxillensis* / Alkali weed | 5 | No | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 55 | = Total Cover | |

| Woody Vine Stratum (Plot size: 30-ft) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| | 0 | = Total Cover | |

% Bare Ground in Herb Stratum 45 | % Cover of Biotic Crust

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 5 | x 2 = | 10 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 50 | x 5 = | 250 |
| Column Totals: | 55 (A) | | 260 (B) |

Prevalence Index = B/A = 4.73

**Hydrophytic Vegetation Indicators:**
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ___ No X

Remarks:

## SOIL

Sampling Point: WSP-ALT-02

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 12 | 10YR 4/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ___ No X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (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)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

**Wetland Hydrology Present?** Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

# RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

*OMB Control No. 0710-XXXX*

*Approval Expires:*

Project ID #: 17001 | Site Name: San Dieguito River | Date and Time: 9/15/21

Location (lat/long): | Investigator(s):

**Step 1** Site overview from remote and online resources

**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [ ] Other: _____

**Describe land use and flow conditions from online resources.** Were there any recent extreme events (floods or drought)?

Perennial, tidally-influenced waterway

**Step 2** Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

OHWM was delineated during low tide (approx 10:00 AM). Both riverbanks were armoured w/ rip-rap.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**

**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

**OHWM.** Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

### Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* A
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [x] **Shelving:**
  - [x] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

### Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [x] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

### Vegetation Indicators

- [x] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* Saltmarsh veg
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [x] **Exposed roots below intact soil layer:**

### Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [x] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators?**

**Describe:**

**Step 4** Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

Print Form | Save As | E-mail

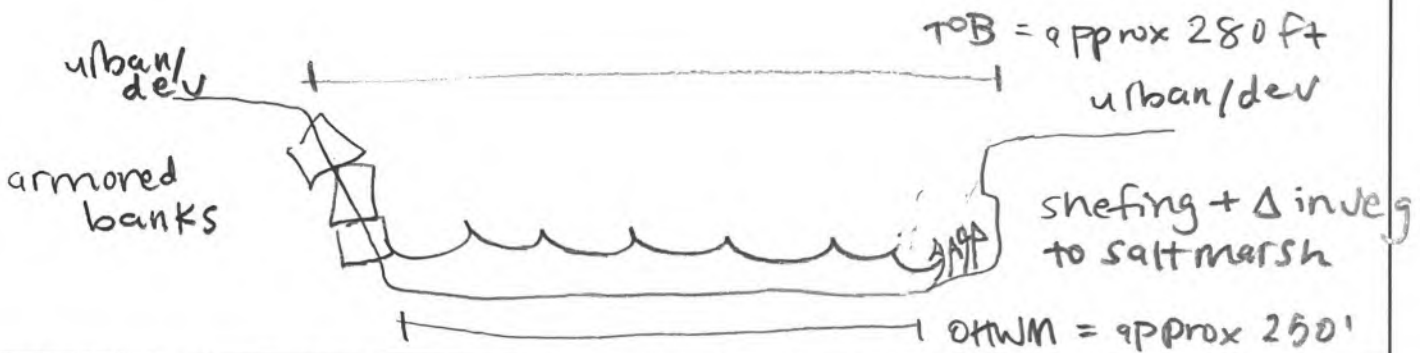
Project ID #: 17001

**Step 5** Describe rationale for location of OHWM

OHWM was mapped by the extent of waterstaining (i.e. whitish salt crust), and saturation, where present. Distinct change in veg from barren / ruderal at top of bank to coastal salt marsh below OHWM. Evidence of shelfing / erosion on banks where not armored by rip-rap. Exposed roots of ornamental trees.

**Additional observations or notes**

Looking E at San Dieguito River




Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
|---|---|
| | see photoappendix |
| | |
| | |
| | |
| | |
| | |
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# Appendix D

Cultural Resources Assessment Report

# CULTURAL RESOURCES ASSESSMENT REPORT

**for the**

**San Dieguito Lagoon Shoreline Protection Planning Project**

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## 1.0 EXECUTIVE SUMMARY

The City of Del Mar (City) and the San Dieguito River Park Joint Powers Authority (JPA) are coordinating a joint effort to execute the San Dieguito Lagoon Shoreline Protection Project (Project). The Project is a nature-based flood adaptation, ecological enhancement, and public trail project that seeks to minimize the effects of river flooding along the riverbanks of the San Dieguito River within the City of Del Mar west of the Jimmy Durante Boulevard Bridge between the Del Mar Fairgrounds and the City's Public Works Facility, in San Diego County, California. Project improvements would maximize flood protection that achieves the Federal Emergency Management Agency's (FEMA) "No-Rise" certification standard, support ecological enhancements along the riverbanks, and improve coastal trail access and recreational amenities. The Project requires a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and is subject to Section 106 of the National Historic Preservation Act (NHPA). USACE is the federal lead agency responsible for implementation of Section 106.

The purpose of the Project is to minimize the risk of future river flooding along the San Dieguito Lagoon/River along both sides of the river between the San Dieguito Railroad Trestle (bridge) and the Jimmy Durante Boulevard bridge through nature-based adaptation improvements that achieve increased flood protection in compliance with FEMA's "No Rise" standard, increase native vegetation and habitat, and improve public trail access and recreational amenities along the riverbank slopes. This would be accomplished by remediation of slopes on the north and south banks of the river to maximize flood protection by constructing a series of vegetated earthen berms or levees and flood walls in strategic locations along portions of the riverbank and adjacent areas located outside of the floodway, replacing existing revetments at the toe of the river bank slopes, and removing/relocating various existing structures out of the floodway. The Project's ecological enhancements would be provided along the riverbank slopes to enhance and increase existing salt marsh and native vegetation and create space for habitat to migrate and adapt to changing environmental conditions (i.e., projected sea level rise). In addition, new public access trail and recreational amenity enhancements would be provided including a new public trail access along the north riverbank and improved public access along the south riverbank, which would provide for public access connections to the Del Mar River path Trail and Coast to Crest Trail segments located east of Jimmy Durante Boulevard. The Project would also improve access and flood protection between 28th Street and the existing trail along the south riverbank west of the existing railroad bridge.

The Area of Potential Effects (APE) was delineated pursuant to Section 106 of the NHPA. The APE includes discontiguous geographic areas where historic properties may be directly or indirectly affected by Project. The APE encompasses the federally permitted, 5.74-acre construction footprint wherein all ground-disturbing activities will occur, as well as a portion of the southwestern end of the Del Mar Fairgrounds that contains five historic age buildings that are situated directly adjacent to the Project footprint where construction activities could cause adverse visual, vibratory, auditory, or atmospheric effects on historic properties.

A records search was conducted by Dudek staff at the South Coastal Information Center (SCIC), located on the campus of San Diego State University (SDSU) on January 7, 2026, for the Project APE and 1.0-mile search radius of the Project APE. The SCIC records search results did not identify any previously recorded cultural resources within the Project APE. However, 31 previously recorded cultural resources were identified within the 1.0-mile search radius of the Project APE and one previously recorded historic age resource, P-37-034956 (San Dieguito River Railroad Bridge) is located immediately adjacent to the Project APE. P-37-034956 was recommended not eligible for listing in the National Register of Historic Places (NRHP) (ASM Affiliates, Inc. 2009).

The Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File (SLF), which contains sites of traditional, cultural, or religious value to the Native American community. Dudek requested a NAHC search of its SLF on December 30, 2025. The NAHC responded on January 14, 2026, stating the results were negative. As part of Section 106, USACE will consult with Native American groups and representatives associated with the Project APE and its vicinity.

Historical aerial photographs were examined to provide historic land use information about the Project APE and general vicinity over time. Approximately 85% of the Project APE has been disturbed by the San Dieguito River/Lagoon and the previous development of residential properties and urban development since 1953.

An intensive-level cultural resources pedestrian survey was performed on January 16, 2026. Dudek archaeologist, Makayla Murillo, MA, RPA under the direction of Principal Investigator Keshia Montifolca, MA, RPA, who meets the Secretary of the Interior's Professional Qualification Standards, surveyed for archaeological resources within the Project APE. No archaeological resources were identified as a result of this survey. Dudek architectural historian Katie Ahmanson, MHC, conducted an intensive-level survey of the Project APE for historic-era built environment resources.

Six historic-age built environment properties (Map IDs 1 and 2A-2E) were recorded within the APE. Of the six, five resources (Map IDs 2A-2E) were previously evaluated and recommended ineligible for the NRHP, California Register of Historical Resources (CRHR), and local designation. Dudek reevaluated these properties under NRHP and CRHR and concurred with the previous ineligibility findings for the Exhibition Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse Building (Map ID 2E). These five resources were found to be ineligible under all applicable historic significance criteria. Dudek prepared a Department of Parks and Recreation (DPR) update form that included all five resources. Dudek also inventoried and evaluated the newly recorded property, the Public Works Building (Map ID 1), and recommended it as not eligible due to a lack of significant associations and architectural merit and assigned a status code of 6Z. The property was recorded on a DPR form set. Therefore, no historic properties have been identified within the APE, and a finding of No Historic Properties Affected is recommended.

Based on available information and in consideration of the topography and presence of cultural resources within the Project vicinity, Dudek recommends that a cultural resources mitigation program be implemented during Project-related ground-disturbing activities

within the APE. Cultural resources monitoring efforts should be determined by a qualified archaeologist meeting the Secretary of the Interior's Standards and Guidelines: Professional Qualifications Standards.

## 2.0 INTRODUCTION

The City of Del Mar (City) contracted Dudek to prepare a cultural resources assessment for the San Dieguito Lagoon Shoreline Protection Project (Project). The Project proposes public trail improvements, rip-rap replacement, set back of infrastructure, and nature-based shoreline protection, including living levee vegetated berms and related shoreline treatments with ecological enhancements, along three portions of the shoreline of the San Dieguito Lagoon (Lagoon) in the City of Del Mar, San Diego County. The Project requires a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and is subject to Section 106 of the National Historic Preservation Act (NHPA). The USACE is the lead federal agency responsible for implementation of Section 106.

Dudek personnel involved in the preparation of this report are as follows: archaeologists Makayla Murillo, MA, RPA, Keshia Montifolca, MA, RPA, and Micah Hale, PhD, RPA, and architectural historians Katie Ahmanson, MHC, Andrea Dumovich Heywood, MHC, and Monte Kim, PhD. Resumes of key personnel are included in **Appendix A**.

### 2.1 Project Location

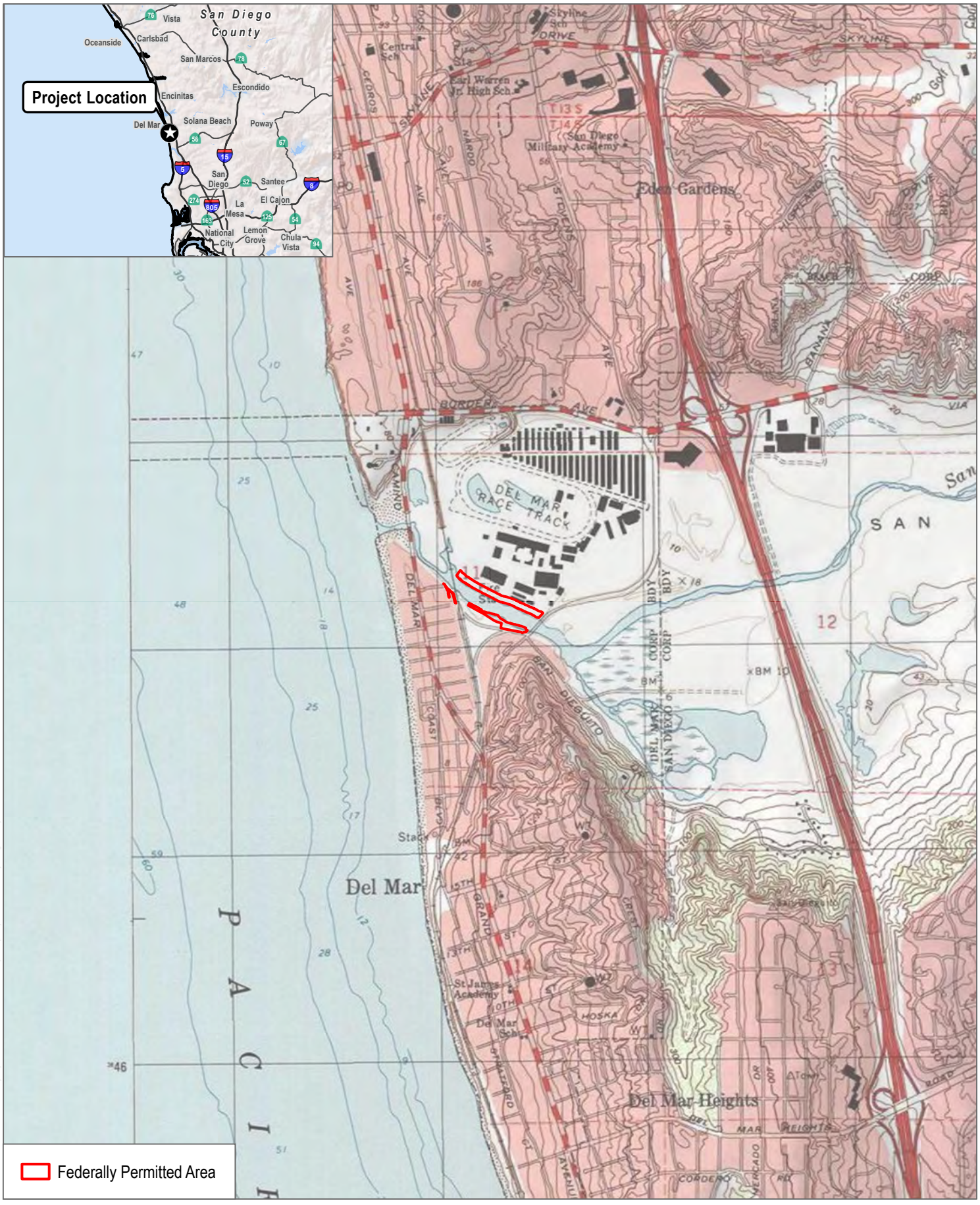
The Project is located within the City of Del Mar, a small coastal city, approximately 2.2 square miles, located in the San Diego region (**Figure 1, Project Location**). Del Mar is located south of the City of Solana Beach and generally west of properties in the City of San Diego and County of San Diego.

The Pacific Ocean runs along the entire length of the City's westerly boundary, and the San Dieguito River/Lagoon watershed intersects with the ocean in the northern portion of Del Mar, which provides a large floodplain that is significant to the environmental setting in the City of Del Mar and is the location of the Project.

The Project site includes portions of the shoreline along the north and south riverbanks of the San Dieguito Lagoon located within the City. The State-owned Del Mar Fairgrounds property makes up one third of the City's land area and is located north of the San Dieguito Lagoon. Current land uses within and immediately surrounding the Project site include the Del Mar Fairgrounds to the north, the Lagoon which bisects the Project sites, the railway, pedestrian trails, public rights-of-way, residential and commercial development, and the Pacific Ocean to the west. The Del Mar Fairgrounds is a regional attraction that hosts the annual Del Mar Fair, large-scale expositions, events, concerts, and includes a horse park that is home to major horserace meetings. The beaches, Lagoon, and Coast to Crest Trail are also major attractions for local and regional residents as well as visitors from throughout the state, county, and world. The railway is part of the Los Angeles-San Diego-San Lusi Obispo (LOSSAN) corridor regional rail infrastructure providing for passenger rail transit and freight rail services with the line extending through Del Mar and north to south along the coast.

The Project site is located approximately 0.2 miles inland of the Pacific Ocean, near the mouth of the Lagoon outlets into the Pacific Ocean. 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. A portion of the Coast to Crest Trail (maintained by the San Dieguito River Park JPA) runs through the Southeast and Southwest Riverbanks. The Project site (Southwest Riverbank) is adjacent to the San Dieguito Railway Bridge that extends north-south across the lagoon.

The Project is within Township 14 South, Range 4 West, Sections 11 of the Del Mar 7.5-minute U.S. Geological Survey (USGS) Quadrangle Map. Federally permitted areas are shown in **Figure 2.**




SOURCE: USGS 7.5' Series

DUDEK

0 1,000 2,000 Feet

**FIGURE 1**

Project Location

SDL Shoreline Project




SOURCE: ESRI Basemap, 2024

DUDEK

0 125 250 Feet

**FIGURE 2**

Federally Permitted Area

SDL Shoreline Project

### 2.2 Project Description

The Project is a nature-based flood adaptation, ecological enhancement, and public trail project that seeks to minimize the effects of river flooding along the riverbanks of the (River within the City west of the Jimmy Durante Boulevard Bridge between the Del Mar Fairgrounds and the City Public Works Facility. Project improvements would maximize flood protection that achieves FEMA's "No-Rise" certification standard, support ecological enhancements along the riverbanks, and improve coastal trail access and recreational amenities.

The Project site, located within the 100-year floodplain, is downstream of the Lake Hodges Reservoir, about 1,400 feet (ft) east of the San Dieguito Inlet and extends between the San Dieguito River Railway Bridge from the west to the Jimmy Durante Boulevard bridge to the east. Improvements are proposed on the north and south riverbanks in three distinct project reaches; North Riverbank, Southeast Riverbank, and Southwestern Riverbank.

The Project involves multiple project proponents and property ownership stakeholders. The City and the San Dieguito River Park JPA are coordinating a joint effort as project proponents who respectively obtained State grant funding administered by State Parks. Property ownership in the Project area includes the City of Del Mar, California 22nd District Agricultural Association, North County Transit District (NCTD), and privately owned lots adjacent to southwest Project area.

The shoreline reach along the north side of the channel (North Riverbank) consists of the Del Mar Fairgrounds, which is owned and operated by the California 22nd District Agricultural Association, a state institution. An existing 100 ft wide easement on the North Riverbank between Jimmy Durante Boulevard and railroad tracks is reserved for shoreline and trail improvements.

The shoreline reaches along the south side of the channel (Southeast Riverbank and Southwest Riverbank) consists of land owned by the City including the City's Public Works Facility (Southeast Riverbank directly across the river from the Fairgrounds). The Public Works Facility consists of one International Style building (c. 1978) at 2240 Jimmy Durante Boulevard that is proposed to be demolished as part of the Project. The Southwest Riverbank also includes land adjacent to the San Dieguito Railway Bridge that is owned and managed by the NCTD and used by north-south railway traffic and associated operations including NCTD's COASTER, Amtrak's Pacific Surfliner, and Burlington Northern Santa Fe (BNSF) freight trains. Privately owned property in the North Beach neighborhood is located adjacent to this property in the area southwest of the San Dieguito Railway Bridge.

## 3.0 AREA OF POTENTIAL EFFECTS

According to Section 106 of the NHPA, the APE is:

*the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be*

*different for different kinds of effects caused by the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]).*

The APE was delineated pursuant to Section 106 of the NHPA. The APE includes the area where historic properties may be directly or indirectly affected by Project-related activities. The area of direct physical effects encompasses the area where archaeological resources could potentially be affected by the Project. The area of direct physical effects also includes the 5.74-acre construction footprint for the activities requiring a USACE 404 permit. All ground-disturbing and staging activities will occur within the federally permitted area. The assessment of visual, vibratory, auditory, and atmospheric effects includes the federally permitted area (construction footprint), as well as areas containing historic age built resources extend beyond the construction footprint and, therefore, the APE was delineated to encompass five buildings within the Del Mar Fairgrounds as shown in **Figure 3, Area of Potential Effects**.




Parcels
Federally Permitted Area
Area of Potential Effects (APE)
Del Mar Fairgrounds

**MapID #, Name**
1, Public Works Building
2, Del Mar Fairgrounds
2A,Exhibit Hall
2B, Bing Crosby Hall
2C, Maintenance Building South
2D, Maintenance Building
2E,Warehouse
2F, Laundry & Restrooms (not of age)

SOURCE: San Diego County, 2026

DUDEK

0 325 650 Feet

**FIGURE 3**

Area of Potential Effects

SDL Shoreline Project

## 4.0 ENVIRONMENTAL SETTING AND BACKGROUND

The Project APE encompasses three locations (North Riverbank, Southeast Riverbank, and Southwestern Riverbank), situated along the shoreline of the San Dieguito River/Lagoon. The Project is located in the western portion of the Peninsular Ranges geomorphic province (Abbott 1999). The elevation of the Project APE ranges from sea level to approximately 17 feet above mean sea level (AMSL).

The Project APE primarily lies on Pleistocene marine and non-marine sediments (Kennedy and Peterson 1975). The Project APE lies on an alluvium and slope wash derived from granite. Soil in the area consists of a dark brown silty sand-loam overlying reddish brown sands. During this period, the San Dieguito lagoon and all other San Diego County tidal marshes and coastal bluffs experienced major shifts and changes. The fluctuating sea levels correspond to changes in the location of the shoreline during prehistoric occupation of the area and as the sea level rose and then stabilized, the bays continued to fill with sediments and slowly becoming the lagoons environments of today.

The majority of vegetation in the Project APE is comprised of coastal sage scrub, riparian scrubs, Southern coastal salt marsh, succulent scrubs, and Torrey pine trees, eucalyptus, and palm trees.

Common animals within this area may include coyote (*Canis latrans*), California ground squirrel (*Spermophilus beecheyi*), Virginia opossum (*Didelphis virgin*ica), cottontail (*Sylvilagus audubonit*), deer mouse (*Peromyscus maniculatus*) sparrow (*Melospiza melodi*a), lesser goldfinch (*Cardeulis psaltria*), common yellowthroat (*Geothlypis trichas*), osprey, double breasted cormorant, as well as a number of other species of birds, mammals, reptiles and amphibians.

### 4.1 Prehistoric Setting

Evidence for continuous human occupation in the San Diego region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769).

#### PALEOINDIAN PERIOD (PRE-5500 BC)

Evidence for Paleoindian occupation in coastal Southern California is tenuous, especially considering the fact that the oldest dated archaeological assemblages look nothing like the Paleoindian artifacts from the Great Basin. One of the earliest dated archaeological assemblages in coastal Southern California (excluding the Channel Islands) derives from CA-SDI-4669/W-12, in La Jolla. A human burial from CA-SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2007). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of groundstone,

battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on China Lake Naval Air Weapons Station near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (CA-MNO-679)—a multicomponent fluted point site, and CA-MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002). At CA-MNO-679 and CA-MNO-680, groundstone tools were rare while finely made projectile points were common.

Turning back to coastal Southern California, the fact that some of the earliest dated assemblages are dominated by processing tools runs counter to traditional notions of mobile hunter–gatherers traversing the landscape for highly valued prey. Evidence for the latter—that is, typical Paleoindian assemblages—may have been located along the coastal margin at one time, prior to glacial desiccation and a rapid rise in sea level during the early Holocene (pre-7500 BP) that submerged as much as 1.8 kilometers of the San Diego coastline. If this were true, however, it would also be expected that such sites would be located on older landforms near the current coastline. Some sites, such as CA-SDI-210 along Agua Hedionda Lagoon, contained stemmed points similar in form to Silver Lake and Lake Mojave projectile points (pre-8000 BP) that are commonly found at sites in California's high desert (Basgall and Hall 1990). CA-SDI-210 yielded one corrected radiocarbon date of 8520–9520 BP (Warren et al. 2004). However, sites of this nature are extremely rare and cannot be separated from large numbers of milling tools that intermingle with old projectile point forms.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (CA-SDI-149) is representative of typical Paleoindian occupation in the San Diego region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004, p. 26). Termed San Dieguito (Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in the San Diego region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the San Diego region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that

typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1993).

ARCHAIC PERIOD (8000 BC–AD 500)

The more than 1,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the San Diego region. If San Dieguito is the only recognized Paleoindian component in the San Diego region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the San Diego region (Hale 2001, 2009).

The Archaic pattern is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the San Diego region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped groundstone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

LATE PREHISTORIC PERIOD (AD 500–1769)

The period of time following the Archaic and prior to Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. In northern San Diego County, the post-AD 1450 period is called the San Luis Rey Complex (True 1980), while the same period in southern San Diego County is called the Cuyamaca Complex and is thought to extend from AD 500 until Ethnohistoric times (Meighan 1959). Rogers (1929) also subdivided the last 1,000 years into the Yuman II

and III cultures, based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey and Cuyamaca complexes difficult. For this reason, the term Late Prehistoric is well-suited to describe the last 1,500 years of prehistory in the San Diego region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric period are poorly understood. This is partly due to the fact that the fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces; bowl mortars are actually rare in the San Diego region. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400. True (1980) argued that acorn processing and ceramic use in the northern San Diego region did not occur until the San Luis Rey pattern emerged after approximately AD 1450. For southern San Diego County, the picture is less clear. The Cuyamaca Complex is the southern counterpart to the San Luis Rey pattern, however, and is most recognizable after AD 1450 (Hector 1984). Similar to True (1980), Hale (2009) argued that an acorn economy did not appear in the southern San Diego region until just prior to Ethnohistoric times, and that when it did occur, a major shift in social organization followed.

### 4.2 Ethnographic Setting

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the San Diego region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the San Diego region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as “salvage ethnography,” was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his “memory culture” approach (Lightfoot 2005, p. 32) by recording languages and oral histories within the San Diego region. Kroeber’s 1925 assessment of the impacts of Spanish missionization on local Native American populations supported Kumeyaay traditional cultural continuity (Kroeber 1925):

> San Diego was the first mission founded in upper California; but the geographical limits of its influence were the narrowest of any, and its effects on the natives comparatively light. There seem to be two reasons for this: first, the stubbornly resisting temper of the natives; and second, a failure of the rigorous concentration policy enforced elsewhere.

In some ways this interpretation led to the belief that many California Native American groups simply escaped the harmful effects of contact and colonization all together. This, of course, is untrue. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities. These accounts supported, and were supported by, previous governmental decisions that made San Diego County the location of more federally recognized tribes than anywhere else in the United States: 18 tribes on 18 reservations that cover more than 116,000 acres (CSP 2009).

The traditional cultural boundaries between the Luiseño and Kumeyaay Native American tribal groups have been well defined by anthropologist Florence C. Shipek:

> In 1769, the Kumeyaay national territory started at the coast about 100 miles south of the Mexican border (below Santo Tomas), thence north to the coast at the drainage divide south of the San Luis Rey River including its tributaries. Using the U.S. Geological Survey topographic maps, the boundary with the Luiseño then follows that divide inland. The boundary continues on the divide separating Valley Center from Escondido and then up along Bear Ridge to the 2240 contour line and then north across the divide between Valley Center and Woods Valley up to the 1880-foot peak, then curving around east along the divide above Woods Valley. [1993 summarized by the San Diego County Board of Supervisors 2007:6]

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007, p. 71). Based on the Project location, the Native American inhabitants of the region would have likely spoken both the Tipai language subgroup of the Yuman language family. Ipai and Tipai, spoken respectively by the northern and southern Kumeyaay communities, are mutually intelligible. For this reason, these two are often treated as dialects of a larger Kumeyaay tribal group rather than as distinctive languages, though this has been debated (Luomala 1978; Laylander 2010).

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative “time depth” of the speaking populations (Golla 2007, p. 80) A large amount of variation within the language of a group represents a greater time depth then a group’s language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the “absolute chronology of the internal diversification within a language family” can be correlated with archaeological dates (2007, p. 71). This type of interpretation is modeled

on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

Golla suggested that there are two language families associated with Native American groups who traditionally lived throughout the San Diego County region. The northern San Diego tribes have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007, p. 74). These groups include the Luiseño, Cupeño, and Cahuilla. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic-speaking San Diego tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010). The majority of Native American tribal groups in southern San Diego region have traditionally spoken Yuman languages, a subgroup of the Hokan Phylum. Golla has suggested that the time depth of Hokan is approximately 8,000 years (Golla 2007, p. 74). The Kumeyaay tribal communities share a common language group with the Cocopa, Quechan, Maricopa, Mojave, and others to east, and the Kiliwa to the south. The time depth for both the Ipai (north of the San Diego River, from Escondido to Lake Henshaw) and the Tipai (south of the San Diego River, the Laguna Mountains through Ensenada) is approximated to be 2,000 years at the most. Laylander has contended that previous research indicates a divergence between Ipai and Tipai to have occurred approximately AD 600–1200 (Laylander 1985). Despite the distinct linguistic differences between the Takic-speaking tribes to the north, the Ipai-speaking communities in central San Diego, and the Tipai southern Kumeyaay, attempts to illustrate the distinctions between these groups based solely on cultural material alone have had only limited success (Pigniolo 2004; True 1966).

The Kumeyaay generally lived in smaller family subgroups that would inhabit two or more locations over the course of the year. While less common, there is sufficient evidence that there were also permanently occupied villages, and that some members may have remained at these locations throughout the year (Owen 1965; Shipek 1982; Shipek 1985; Spier 1923). Each autonomous triblet was internally socially stratified, commonly including higher-status individuals such as a tribal head (Kwaaypay), shaman (Kuseyaay), and general members with various responsibilities and skills (Shipek 1982). Higher-status individuals tended to have greater rights to land resources, and owned more goods, such as shell money and beads, decorative items, and clothing. To some degree, titles were passed along family lines; however, tangible goods were generally ceremonially burned or destroyed following the deaths of their owners (Luomala 1978). Remains were cremated over a pyre and then relocated to a cremation ceramic vessel that was placed in a removed or hidden location. A broken metate was commonly placed at the location of the cremated remains, with the intent of providing aid and further use after death. At maturity, tribal members often left to other bands in order to find a partner. The families formed networks of communication and exchange around such partnerships.

Areas or regions, identified by known physical landmarks, could be recognized as band-specific territories that might be violently defended against use by other members of the Kumeyaay. Other areas or resources, such as water sources and other locations that were rich in natural resources, were generally understood as communal land to be shared

amongst all the Kumeyaay (Loumala 1978). The coastal Kumeyaay exchanged a number of local goods, such as seafood, coastal plants, and various types of shell for items including acorns, agave, mesquite beans, gourds, and other more interior plants of use (Luomala 1978). Shellfish would have been procured from three primary environments, including the sandy open coast, bay and lagoon, and rocky open coast. The availability of these marine resources changed with the rising sea levels, siltation of lagoon and bay environments, changing climatic conditions, and intensity of use by humans and animals (Gallegos and Kyle 1988; Pigniolo 2005; Warren and Pavesic 1963). Shellfish from sandy environments included Donax, Saxidomus, Tivela, and others. Rocky coast shellfish dietary contributions consisted of Pseudochama, Megastraea, Saxidomus, Protothaca, Megathura, and others. Lastly, the bay environment in the immediate vicinity of the project site would have provided Argopecten, Chione, Ostrea, Neverita, Macoma, Tagelus, and others. While marine resources were obviously consumed, terrestrial animals and other resources likely provided a large portion of sustenance. Game animals consisted of rabbits, hares (*Leporidae*), birds, ground squirrels, woodrats (*Neotoma*), deer, bears, mountain lions (*Puma concolor*), bobcats (*Lynx rufus*), coyotes (*Canus latrans*), and others. In lesser numbers, reptiles and amphibians may have been consumed.

A number of local plants were used for food and medicine. These were exploited seasonally and were both traded between regional groups and gathered as a single triblet moved between habitation areas. Some of the more common of these that might have been procured locally or as higher elevation varieties would have included buckwheat (*Eriogonum fasciculatum*), Agave, Yucca, lemonade berry (*Rhus integrifolia*), sugar brush (*Rhus ovata*), sage scrub (*Artemisia californica*), yerba santa (*Eriodictyon*), sage (*Salvia*), Ephedra, prickly pear (*Opuntia littoralis*), mulefat (*Baccharis salicifolia*), chamise (*Adenostoma fasciculatum*), elderberry (*Sambucus nigra*), oak (*Quercus sp.*), willow (*Salix*), and Juncus grass among many others (Wilken 2012).

### 4.3 Historic Setting: San Diego County

The written history of the State of California is generally divided into three periods: the Spanish Period (1769–1821), Mexican Period (1821–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American Period when California became a territory of the United States.

#### SPANISH PERIOD (1769–1821)

Spanish explorers made sailing expeditions along the coast of Southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabríllo stopped in 1542 at present-day San Diego Bay. With his crew, Cabríllo explored the shorelines of present-day Catalina Island and San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in

the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrílllo and Vizcaíno (Bancroft 1884: 1-3).

San Diego was first recorded in 1602 by Spanish explorer, Sebastián Vizcaíno, who explored the coast of California with a galleon of three ships, the San Diego, his flagship, the Santo Tomas and Tres Reyes. Vizcaíno and his crew landed on the coast on November 10, 1602, which was also the Catholic feast day of San Diego Alcalá. Thus, they renamed the area, San Diego, in honor of the day and the ship that got them there. However, they only stayed for ten days before departing and it would be over hundred years before their return (Mills 1985: 1-20).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July 1769, while Portolá was exploring Southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Bancroft 1884: 4-31).

The Spanish colonization of Alta California began in 1769 with the founding of Mission San Diego de Alcalá by Father Junípero Serra. Concerns over Russian and English interests in California motivated the Spanish government to send an expedition of soldiers, settlers, and missionaries to occupy and secure the northwestern borderlands of New Spain through the establishment of a Presidio, Mission, and Pueblo (Smythe 1908: 58). The site for the Mission was chosen because of its proximity to Kumeyaay villages which were known to be a reliable source of fertile land and water. Members of the local tribes were gathered and required to build Mission San Diego and a presidio structure on the hill near the river. Additionally, they cultivated wheat, barley, corn, and beans in the fields, and maintained orchards and vegetable gardens at the Mission with over 50,000 acres of land cultivated by 1797 (NPS 2023). Spanish soldiers primarily garrisoned the forts as well as guarded the mission and its resources. They lived on small house lots in house made from wood, rushes, tule, and adobe with garden plots, and by 1821, their residences spread to the base of the Presidio Hill and across Mission Valley (Smythe 1908: 47-59).

## MEXICAN PERIOD (1821–1848)

In the early 1820s, Spanish control over its expansive subjugated territories began unraveling, which greatly affected the political and national identity of the Southern California territory. Mexico established independence from Spain in 1821, secured California as a Mexican territory in 1822, and became a federal republic in 1824. After Mexican independence and the 1833 confiscation of former mission lands, Juan B.

Alvarado became governor of the territory. Secularization of the mission system began in 1834, and in 1836, Alvarado commenced with subdividing the former mission lands into large land grants called ranchos (Brown and Boyd 1922: 15).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico (Brown and Boyd 1922: 26-28). By 1834 the presidio, once the center of life in Spanish San Diego, had been abandoned and lay in ruins (NPS 2023). San Diego's official Pueblo (town) status was removed by 1838, and it was made a subprefecture of the Los Angeles Pueblo (SD 2007: 17). In 1841, the area comprising present-day Del Mar was granted to Don Jaun Maria Osuna as part of the San Dieguito Ranch (DMUSD 2026).

## AMERICAN PERIOD (1848–PRESENT)

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident Californios and Americans in the San Bernardino area. The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories. Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but were also desired as a source of meat and other goods. During the 1850s there was a significant cattle boom in the Los Angeles basin and Southern California at large, and rancho vaqueros drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Old Spanish Trail, then were transported by trains when available. The cattle boom ended for Southern California as neighbor states and territories drove herds to Northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Brown and Boyd 1922: 30-36).

After the Panama Canal was opened in 1914, San Diego County's economic focus on agriculture and fishing expanded to include manufacturing and shipping. Additionally, military presence in the area increased with the establishment of Naval Base Point Loma in 1898, Marine Corps Recruit Depot in 1911, Marine Corps Air Station Miramar and the Naval Air Station North Island in 1917, Naval Base San Diego in 1919, Naval Amphibious Base Coronado in 1943, and Marine Corps Base Pendleton in 1942 (Britannica 2023). World War II accelerated the economic and population growth that lasted until the end of the Cold War in 1990 (Mills 1985: 1-20). Post World War II-era growth included the establishment of cities within San Diego County, such as the City of Del Mar (incorporated

in 1959), and the City of Solana Beach (incorporated in 1986) (City of Del Mar 2026a; Solana Beach Civic and Historical Society 2022).

During the twenty-first century, San Diego County established itself as one of the largest counties in California with its main industries focused on defense and tourism. Examples of every major period and style remain in San Diego County. Among the recognized styles are Spanish Colonial, Pre-Railroad New England, National Vernacular, Victorian Italianate, Stick, Queen Anne, Colonial Revival, Neoclassical, Shingle, Folk Victorian, Mission, Craftsman, Prairie, French Eclectic, Italian Renaissance, Spanish Eclectic, Egyptian Revival, Tudor Revival, Modernistic, and International (SD 2007: 53).

### 4.4 Historical Overview of the Del Mar Fairgrounds

The 22nd District Agricultural Association hired LSA Associates, Inc. (LSA) to complete a Historic Resources Assessment of the Del Mar Fairgrounds, which was published in November 2006 (LSA 2006). The report provides an in-depth study of the fairground's history. The text below is excerpted from LSA's historic context of the Del Mar Fairgrounds, providing a generalized overview of the property's history.

> In 1933, Assembly Bill 1115, the Horse Racing Act, was passed legalizing pari-mutuel wagering on horse races at private tracks and district, county, and State fairs. A portion of the revenues received by the State were to be used for the support of agricultural fairs as well as to establish institutions for training youth in agricultural and animal husbandry fields. Prior to 1933, the state had eight fairs that were partially financed by the State's General Fund. In 1946, there were 76 fairs in California (LSA 2006: 8).
>
> In September 1933, eight people were appointed to the 22nd DAA Board of Directors (Board). The Board received financial support from the State Division of Fairs and Expositions and immediately began its search for a permanent location for the fair. While many places throughout the County were considered, the board ultimately settled on the Del Mar golf course. The Board's choice of Del Mar was largely influenced by real estate developer E.C. Batchelder, who promised his assistance in obtaining a grant from the Works Progress Administration (WPA) for construction of the Fairgrounds. The Del Mar site consisted of approximately 184 acres, bound by State Highway 101 to the east, the Santa Fe Railroad to the west, a two-lane road to the north, and the San Dieguito River channel to the south. The location was easily accessible from both San Diego and Los Angeles, making it a logical place for a permanent home for the fair. In 1935, the board approved Del Mar as the site and proceeded to purchase the golf course from the South Coast Land Company for $25,000. An additional 57.2 acres were later purchased for $10,868 with funds from the State Division of Fairs and Expositions, making the Fairgrounds a total 241.2 acres in size (LSA 2006: 8).

The Board immediately filed an application with the WPA for a grant of $500,666 to construct the Fairgrounds. Following State and federal approval, construction of the first buildings began. An estimated 500,000 hours and a labor force of 380 workers were required to complete the project in a nine-month period (LSA 2006: 8).

Architects Joe and Sam Hamill and Herbert Louis Jackson were chosen to design the Fairgrounds. The buildings were designed in the Spanish Colonial Revival Style and were constructed of adobe bricks, which were made on site. Each of the buildings was designed to represent one of the California missions. All of the buildings are believed to have been made of native adobe, which was mixed and dried on site. The first buildings erected were the main exhibit building and auditorium, a combination grandstand and utility building, 10 livestock buildings, an equipment shed, a main entrance building, a bell tower, and stables to house 600 horses. In addition, a one-mile-long oval-shaped racetrack, used for harness racing, was created. The entire property was enclosed within an 8-foot-high adobe wall, a portion of which still stands. An aerial photograph taken shortly after the first buildings were constructed (1939) depicts the original WPA-constructed buildings and features: the racetrack, the grandstand, stables, barns, and maintenance buildings, all located on the original 180-acre property (LSA 2006: 8-9).

The Del Mar Fair's opening day was Thursday, October 8, 1936. As opening day grew near, an unexpectedly large number of exhibits began arriving. This resulted in the assembly of many temporary tent structures. Through a combination of permanent buildings and tents, the exhibit area exceeded 200,000 square feet. The Fair ran for 10 days and had an overall attendance of 50,000. The inaugural ceremony featured the Governor; WPA administrators; State, County, and City officials; and ranking Army, Navy, and Marine officers. A plaque was laid on the bell tower that indicated that it was constructed by the WPA. (The tower burned down in October of 1969 and was rebuilt.) In addition to politicians and government officials, many recognized entertainers were present for the opening festivities, including Bing Crosby, Elizabeth Russell, Barbara Stanwyck, Robert Taylor, and Bette Davis (LSA 2006: 9).

Shortly after the first buildings were constructed, stockbroker William Quigley of La Jolla approached the DAA with a proposal to host thoroughbred races at the Fairgrounds. The DAA approved the idea, and Quigley in turn secured the support and leadership of Bing Crosby to build the Del Mar Turf Club (Turf Club). The singer and actor was a resident in nearby Rancho Santa Fe and was a noted horse enthusiast. In May 1936, Crosby filed articles of incorporation and formed a board that included Pat O'Brien, Bill Quigley, C.S. Howard, Kent Allen, and Everett Crosby. A 10-year lease agreement between the Turf Club and the DAA was signed. The

agreement called for the DAA to build a clubhouse, paddock, jockey's quarters, and additional horse stables to accommodate horse racing. In order to raise the necessary funds to contribute to the project, the Turf Club spent its first year selling stock in the venture (LSA 2006: 9).

The friendly agreement between the Turf Club and the DAA was temporarily disrupted in early 1937, when the WPA halted construction at the Fairgrounds with $200,000 in unfinished work remaining on the project. According to the WPA, it withdrew from the project because it had not intended to fund construction of a horse racing enterprise. Together, Crosby and O'Brien were able to raise the funds to complete the necessary construction for the race track; however, the design of the buildings was scaled back. The Turf Club opened to the public on July 3, 1937, with Crosby himself greeting the first guests through the turnstiles. Crosby's passion for the race track he began was even commemorated in the lyrics of a song, as he sang: Where the surf meets the turf, Down at Del Mar, Take a plane, take a train, take a car…There's a smile on every face, And a winner in each race, Where the turf meets the surf at Del Mar. The tune ultimately became the official anthem of the racetrack, and is still played today at the beginning and end of each racing day (LSA 2006: 9).

The opening of the Turf Club marked the beginning of a change in the small seaside community of Del Mar. Throughout the 1930s and early 1940s countless celebrities flocked to the quiet seaside community to enjoy the races and the town's relaxed atmosphere. Other regulars to Del Mar included Jimmy Durante, Douglas Fairbanks, Mickey Rooney, W.C. Fields, Dorothy Lamour, and Ann Miller. Durante was also an ardent fan of horse racing and a mainstay in Del Mar until his death in 1980. So loved was the entertainer that in 1963 he was declared the honorary mayor of Del Mar, and the street on which the Fairgrounds is located was renamed Jimmy Durante Boulevard (LSA 2006: 11).

During World War II, the activities at the fair were temporarily suspended. Instead of hosting races and fairs, the fairgrounds were used as a training facility and temporary quarters for military personnel. The horse stalls became temporary housing for paratroopers who trained on nearby beaches. A Marine Corps detachment from Camp Pendleton also used the facility. Some 500,000 square feet of space was transformed into assembly lines to manufacture wing ribs for the production of Douglas B-17 bomber planes. The fair was reopened to the public in 1946, and the expansion of the Fairgrounds commenced following the end of the war (LSA 2006: 11).

In 1951, Bing Crosby Hall was built, commemorating the actor's long relationship with the Turf Club and Fairgrounds. Architect Harry Hayden Whiteley was commissioned to design the large exhibit building. Whiteley designed a number of residential buildings throughout Los Angeles and San

Diego Counties between the 1920s and the 1950s. Shortly after building Bing Crosby Hall, Whiteley moved to Las Vegas, where he continued to work, designing public buildings for local municipalities such as schools, hospitals, and jails (LSA 2006: 11).

Also during the 1950s, several new additions were made to the Fairgrounds, including the Stable Dining Hall and Office (1950s), additional stables (1950s), the Clock Tower Building (1953), the Exhibit Hall (1955), and several maintenance buildings (ca. 1950s). In contrast to the first buildings erected at the Fairgrounds, most of these buildings were constructed in very simple and utilitarian design. A notable exception was the Clock Tower Building, which was designed in the Googie style that became popular during the 1950s and 1960s (LSA 2006: 11).

During this time, the DAA embarked on a promotional campaign to attract people to the fair and the racetrack. Its campaign was inspired by Don Diego Alvarado, a ranchero from California's Mexican period, who was locally recognized for his renowned hospitality. In 1834, Alvarado was granted the 8,400-acre Los Penasquitos Rancho by the Mexican Governor of California, which included the town of Del Mar. The DAA utilized the stories of Alvarado to create its own character, who promoted the Fairgrounds each year and greeted the guests with "Bienvenidos, Amigos" (LSA 2006: 11).

Del Mar's Don Diego would remain the most-recognized symbol of the County Fair for four decades. In 1954, a tile likeness of Don Diego was constructed on the facade of the Clock Tower along the main fair avenue. In 1985, a 16-foot statue of Don Diego was placed at the front entrance to the fair (LSA 2006: 11).

Throughout the 1950s and 1960s, Del Mar continued to be a playground for celebrities who purchased oceanfront homes and attended the races daily to watch their horses compete. Countless stories exist detailing the exploits of Hollywood stars such as Gregory Peck, Lucille Ball, and Desi Arnaz (LSA 2006: 11).

By the 1960s, the Fairgrounds returned to their pre-war success, scoring record attendance. In 1963, the D. Robert Jones Administration Building was constructed. By 1964, the Fairgrounds property was expanded to include an additional 57.2 acres located east of the original property. Jimmy Durante

Boulevard was constructed, which wrapped around the property's new eastern boundary. No new buildings were constructed on the property addition; it was used for parking. Also by 1964, the Exhibit Hall had been constructed, as well as the maintenance buildings and additional stables (LSA 2006: 13).

In 1970, the Del Mar Thoroughbred Club (DMTC) took over racing operations for the Turf Club. Since the 1970s, the Fairgrounds has undergone many alterations. The first major renovation occurred between 1972 and 1978 at a cost of $2.5 million. During this effort, alterations and upgrades were made, including the addition of several ancillary buildings, improvements to the grandstand, and the addition of the DMTC offices. However, it was reported that the improvements did not alter the Spanish Colonial characteristics of the original buildings (LSA 2006: 13).

Additional renovations and improvements followed during the 1980s (Figure 7). Longtime Turf Club member and Del Mar resident Pat O'Brien was recognized for his commitment to the community and, in 1980, the new exhibition hall was named after him. Also during the 1980s, a smaller training track known as the Stephens Track was constructed to the northwest of the racetrack. In 1989, the historic Alvarado House was moved to the Fairgrounds. This modest one-story Folk Victorian residence was built in 1885 by Jacob Taylor and sold the same year to Don Diego. During the 1980s, the property where the house was originally located was sold to developers, and the house was donated to the historical society and moved to the Fairgrounds (LSA 2006: 13).

During the 1990s the Fairgrounds underwent the most extensive improvements to date. In 1991, the Fairgrounds were expanded to include the new Surfside Race Place, an off-track wagering facility that offers satellite horse racing. The Infield Pavilion, located in the racetrack infield, was added in 1991. Between 1992 and 1993, an $80 million renovation was completed that replaced the original Spanish Colonial grandstand with the new modern grandstand, constructed in a contemporary interpretation of the Mission Revival Style (LSA 2006: 13).

The two most recent buildings, Wyland Hall and Expo Center, were completed in June 2006. These two buildings are located east of the grandstand, next to the race track. The east wall of Wyland Hall has a mural depicting gray whales at sunset that was painted by the famed marine-life artist Wyland at the 2006 San Diego County Fair. This mural is visible from nearby I-5 (LSA 2006: 13).

Since the 1970s, numerous improvements have occurred that have gradually altered the character of the Fairgrounds from its original 1930s design. Aerial photographs of the property taken during the last four decades clearly show the evolution of the Fairgrounds. Additional land was acquired to facilitate additional expansions, bringing the total of the property to approximately 300 acres. An additional 65-acre property, the Horsepark, was acquired in 1993, bringing the total acreage owned by the DAA to approximately 365 acres. Most of the original adobe-style Fairgrounds buildings from the 1930s were torn down and replaced, including the

grandstand, maintenance sheds, exhibit buildings, and offices. There are five remaining buildings and features that were constructed during the Fairgrounds' period of significance. However, the large modern buildings constructed post-1970s dominate the Fairgrounds setting (LSA 2006: 13).

### 4.5 Development of the Del Mar Public Works Department

Archival research indicates that the Del Mar Public Works Department was established by the mid-1960s (CD 1964: 15). The Department maintains essential public infrastructure such as the distribution of potable water, wastewater collection, street maintenance, open spaces, and city facilities. Such programs are facilitated in conjunction with the city engineering services firm, city traffic consultant, and citizen-led committees (City of Del Mar 2026b). Historic newspapers reported on several Public Works Department projects over the years including, the development of two stormwater sewers in 1964, road improvements to the alley east of Camino del Mar in 1988, and sewage spill repairs in 1974 and 1988 (CD 1964: 15; DMC 1988a: 3; DMC 1988b: 12). According to historic aerial photographs, the Public Works Building at 2240 Jimmy Durante Boulevard (Map ID 1) was built in c. 1978 along the south shore of the San Dieguito Lagoon and has not undergone any significant alterations since its construction (NETR 2026). The Del Mar Public Works Department has continued to own and operate the property to the present.

### 4.6 Typology: Public Utility Buildings

Public Utility Buildings, such as the Public Works Building (Map ID 1), are comprised of an administration building and service yard. Administrative buildings are typically conventional in form with architectural styles reflective of the periods in which they were built. Service yards sited to the rear of administrative buildings feature heavy machinery, workshops, and sheds. Such properties may be significant for their associations with changes in maintenance machinery and technical procedures, for their architectural style, or are designed by a notable architect, or for their association with significant trends in community planning related to publicly-owned utilities (Survey LA 2017: 52-61).

Character Defining Features for Public Utility Buildings include the following:

- Administration buildings have significant lobby spaces and prominent signage; may have significant landscape features
- May also be significant within themes of the Architecture and Engineering context, particularly administration buildings
- Of an engineering and/or architectural form/style
- May be designed by noted architects
- Reflects significant trends in community planning relating to the expansion of publicly-owned utilities
- Associated with the physical growth of a city

### 4.7 Typology: Event Halls

The Event Halls at the Del Mar Fairgrounds include the Exhibit Hall (Map ID 2A), constructed in 1955, and the Bing Crosby Hall (Map ID 2B), constructed in 1951. Buildings of this type are defined as buildings that house public gatherings for congregation with the intent of deliberation, instruction, entertainment, drinking, and dining, or other similar purposes. Buildings of this type on the fairgrounds tend to be larger in size, accessible from pedestrian walkways, and surrounded by parking lots. These buildings do not have a uniform design.

Character Defining Features for the Event Halls include the following:

- Simple rectangular form
- Double-height
- Front-gable roofs
- Moderate or slight eave openings
- Public entrances and circulation patterns
- Metal sash windows
- Replacement storefront entrances or metal-framed, glazed doors
- Mass-produced and cost-effective materials
- Concrete and concrete masonry units
- Minimal exterior ornamentation

### 4.8 Typology: Storage and Maintenance Buildings

The Storage and Maintenance Buildings on the fairgrounds were originally constructed between the early 1950s and 1960s. The buildings that fall under this category include the Maintenance Building (Map ID 2C), Metal & Manufactured Building (Map ID 2D), and Warehouse Building (Map ID 2E). These buildings are in the southeastern portion of the Del Mar Fairgrounds and are used to store tools, mechanical equipment, and maintenance supplies. Buildings of this type on the property include industrial materials, a horizontal orientation, and are not centrally located. Because of their purpose-built utilitarian design, none of these buildings exhibit an architectural style.

Character Defining Features for the Storage and Maintenance Buildings include the following:

- Simple rectangular form
- Single story
- Corrugated metal front-gable roofs
- Moderate or slight eave openings
- Corrugated metal cladding
- Limited fenestration openings
- Metal doors and metal sash windows
- Large bay doors
- Truck pull-ups and garage doors
- Minimal exterior ornamentation

### 4.9 Architectural Style: International Style (c. 1925-present)

The International Style came to the United States in the 1930s after gaining popularity in Germany, Holland, and France through architects such as Walter Gropius and Ludwig Mies van der Rohe. The style spread in part because of Henry-Russell Hitchcock and Philip Johnson's 1932 book titled *The International Style: Architecture Since 1922* for the New York Museum of Modern Art's exhibition. In their book, Hitchcock and Johnson introduced the term International and identified the three principles as architecture as volume, regularity, and avoiding the application of ornament. These three principals have been the baseline for American International Style (SFPD 2011: 168; McAlester 2019: 616-621).

The main difference between International Style buildings and their predecessors was their lack of exterior support of solid masonry. They often depended on a metal interior skeleton and utilized the curtain wall to clad walls in glass. This dependency on the metal frame resulted in windows being hung in repeating patterns which brought another level of order to these already stripped-down buildings. Mies's designs specifically focused on perfection through mathematics, generating rectangular curtail wall designs displaying strong roots in the philosophy of the Bauhaus. This movement incorporated simple and precise designs and incorporated mass-produced materials such as concrete, steel, and glass paired with functionality in design (SFPD 2011: 168; McAlester 2019: 616-621).

The International Style remained popular after World War II through the 1970s, as the clean and geometric characteristics of the style provided efficient construction for large buildings. Architects began to divert from the formulaic constraints inherent in the International Style by including asymmetrical features such as cantilevered projections, although the style's easily replicable forms, materials, and minimal ornamentation continued to make it a popular choice for utilitarian and corporate buildings. In the 1960s, the style became the dominant style for skyscrapers, emphasizing volume over mass with the use of lightweight, mass-produced materials. By the 1970s, it was the most common style for corporate offices, with aspects of the style still being applied today (Hitchcock and Johnson 1995: 33-37; Britannica 2020; McAlester 2019: 620).

Characteristics of the International style:

- Vertical box
- Often set on "pilotis" or stilts, giving the appearance of floating
- Asymmetry
- Windows and wall surfaces are on the same plane, providing the look of a taut skin
- Tinted and/or mirrored glass
- Repeating pattern of fenestration
- Flat roof structure often with cantilevered projections
- Little decoration or ornamentation
- Open interior spaces
- Smooth wall surfaces, usually clad with stucco
- Large concrete expanses
- Use of modern materials such as metal windows, concrete, and steel

## 5.0 REGULATORY FRAMEWORK

### 5.1 Federal

NATIONAL HISTORIC PRESERVATION ACT

The principal federal law addressing historic properties is the NHPA, as amended (54 United States Code of Laws [USC] 300101 et seq.), and its implementing regulations (36 CFR Part 800). Section 106 requires a federal agency with jurisdiction over a proposed federal action (referred to as an "undertaking" under the NHPA) to take into account the effects of the undertaking on historic properties, and to provide the AdvisoryCouncil on Historic Preservation (ACHP) an opportunity to comment on the undertaking.The term "historic properties" refers to "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register" (36 CFR Part 800.16(*l*)(1)). The implementing regulations (36 CFR Part 800) describe the process for identifying and evaluating historic properties, for assessing the potential adverse effects of federal undertakings on historic properties, and for seeking to develop measures to avoid, minimize, or mitigate adverse effects. The Section 106 process does not require the preservation of historic properties; instead, it is a procedural requirement mandating that federal agencies take into account effects to historic properties from an undertaking prior to approval.

The steps of the Section 106 process are accomplished through consultation with the State Historic Preservation Officer (SHPO), federally recognized Indian tribes, local governments, and other interested parties. The goal of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties. The agency also must provide an opportunity for public involvement (36 CFR 800.1(a)). Consultation with Indian tribes regarding issues related to Section 106 and other authorities (such as the National Environmental Policy Act and Executive Order No. 13007) must recognize the government-to-government relationship between the federal government and Indian tribes, as set forth in Executive Order 13175, 65 FR 87249 (Nov. 9, 2000), and Presidential Memorandum of Nov. 5, 2009.

NATIONAL REGISTER OF HISTORIC PLACES

The NHPA of 1966 established the National Register as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The National Register recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the National Register is considered "historic property" under NHPA Section 106.

To be eligible for listing in the National Register, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

A. Are associated with events that have made a significant contribution tothe broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method ofconstruction 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; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as “the ability of a property to convey its significance.” The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the National Register unless they meet one of the Criteria Considerations (A-G), in addition to meeting at least one of the four significance criteria and possessing integrity.

## 6.0 ARCHIVAL RESEARCH

### 6.1 Records Search

A records search for the Project APE and 1.0-mile radius around the Project APE was conducted on January 7, 2026, at the SCIC, located at San Diego State University. The records search included review of mapped prehistoric, historical, and built-environment resources; DPR site records; technical reports; archival resources; and ethnographic references. Additional consulted sources included historical maps of the Project site, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. Results from the SCIC records search are provided in **Confidential Appendix B.**

PREVIOUS CULTURAL RESOURCES STUDIES

The SCIC records search results indicate that 88 previous cultural resources studies have been conducted within 1.0-mile of the Project APE between 1959 and 2023 (Table 1). Of the 88 studies, 12 intersect the Project APE and consist of four archaeological resources survey reports, three cultural resources survey reports, two cultural and historical resources reports, one archaeological monitoring report, one cultural resources records search, and one environmental impact report.

These studies did not identify any cultural resources within the Project APE. Based on the previous cultural resource studies, approximately the entire Project APE (100%) has been previously studied. The complete results of the SCIC records search results are attached as **Confidential Appendix B.**

**Table** 1. Previously Conducted Cultural Resources Studies Intersecting Project APE

| Report Number | Authors/Publication | Date | Title |
|---|---|---|---|
| SD-04177 | SCIENCE APPLICATION INTERNATIONAL CORPORATION | 2000 | ARCHAEOLOGICAL INVESTIGATIONS FOR THE SAN DIEGUITO WETLAND RESTORATION PROJECT EIR/EIS |
| SD-06440 | SCIENCE APPLICATION INTERNATIONAL CORPORATION | 1999 | DRAFT ARCHAEOLOGICAL INVESTIGATIONS FOR THE SAN DIEGUITO WETLANDS RESTORATION PROJECT EIR/EIS |
| SD-06444 | U.S. FISH & WILDLIFE | 2000 | ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT (EIR/EIS) FOR THE SAN DIEGUITO WETLANDS RESTORATION PROJECT |
| SD-09361 | ASM AFFILIATES, INC. | 2002 | ARCHAEOLOGICAL SURVEY REPORT FOR THE PHASE I ARCHAEOLOGICAL SURVEY ALONG INTERSTATE 5 SAN DIEGO COUNTY, CA. |
| SD-10415 | LSA ASSOCIATES, INC. | 2006 | CULTURAL RESOURCES ASSESSMENT DEL MAR FAIRGROUNDS PROJECT CITIES OF DEL MAR AND SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA |
| SD-11623 | ASM AFFILIATES, INC. | 2002 | SAN DIEGUITO RIVER VALLEY INVENTORY OF ARCHAEOLOGICAL RESOURCES |
| SD-12117 | RECON ENVIRONMENTAL INC. | 2009 | RESULTS OF THE ARCHAEOLOGICAL MONITORING PROGRAM FOR THE SAN DIEGUITO WETLANDS RESTORATION PROJECT, SAN DIEGO COUNTY, CALIFORNIA |
| SD-14049 | ASM AFFILIATES, INC. | 2011 | CULTURAL RESOURCE SURVEY UPDATE BRIDGE 243.0 REVETMENT PROJECT, DEL MAR, CALIFORNIA |
| SD-14086 | ASM AFFILIATES, INC. | 2012 | CULTURAL AND HISTORICAL RESOURCES CONSTRAINTS REPORT FOR THE SAN DIEGUITO BRIDGE REPLACEMENT AND SECOND TRACK PROJECT; DEL MAR TUNNEL ALTERNATIVES ANALYSIS |
| SD-14092 | ASM AFFILIATES, INC. | 2009 | CULTURAL AND HISTORICAL RESOURCE INVENTORY AND EVALUATION REPORT FOR THE SAN DIEGUITO RIVER BRIDGE REPLACEMENT AND SECOND TRACK PROJECT, DEL MAR, SNA DIEGO COUNTY, CALIFORNIA |

| | | | |
|---|---|---|---|
| SD-16877 | HELIX Environmental Planning | 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 |
| SD-17103 | AECOM | 2017 | CULTURAL RESOURCES SURVEY REPORT FOR THE PROPOSED SAN DIEGO GAS & ELECTRIC TL674A RECONFIGURATION & TL666D REMOVAL PROJECT, SAN DIEGO COUNTY, CALIFORNIA |

**Note**: APE = Area of Potential Effects.

**SD-4177**

The Science Application International Corporation conducted an archaeological investigation for the San Dieguito Wetland Restoration Project EIR/EIS in 2000 (Berryman and Woodman 2000). The study covers approximately 50% of the current Project APE. The study consisted of a cultural resources pedestrian survey, which resulted in the recordation of the historic U.S. Navy Auxiliary Air Facility, Del Mar (Del Mar Airport). However, this historic age resource is not located within the Project APE.

**SD-10415**

LSA conducted a cultural resources assessment for the Del Mar Fairgrounds Project in 2006. The study covers approximately 50% of the current Project APE (Fulton 2006). The study consisted of a cultural resources pedestrian survey, which resulted in the recordation of two cultural resources, CA-SDI-014971 and CA-SDI-016695. However, both of these resources do not intersect the current Project APE.

**SD-12117**

RECON Environmental, Inc. conducted an archaeological monitoring program for the San Dieguito Wetlands Restoration Project in 2009 (Zepeda-Herman and Price 2009). The study covers approximately 25% of the current Project APE. The study consisted of an archaeological monitoring program, which resulted in the recordation and collection of artifacts from two previously recorded resources, CA-SDI-007300/7301 and CA-SDI-10,118. These resources do not intersect the current Project APE.

**SD-14086**

ASM Affiliates conducted a cultural and historical resources constraints report for the San Dieguito Bridge Replacement and Second Track Project in 2012 (Pham and Ghabhlain 2012). The study covers approximately 20% of the current Project APE. This study included a records search. No cultural resources intersect the current Project APE.

## PREVIOUS CULTURAL RESOURCES

The records search results did not identify any cultural resources within the Project APE; however, the records search did identify 31 cultural resources within a 1.0-mile radius of the Project APE, and one resource, P-37-034956, a historic age bride, is mapped as adjacent to the Project APE(Table 2). The results of the records search and all associated DPR forms are attached as **Confidential Appendix B.**

**Table** 2. Previously Recorded Cultural Resources within the 1.0-Mile Radius of the Project APE

| Primary Number | Trinomial | Age | Type | Significance Criteria | Intersect Project APE |
|---|---|---|---|---|---|
| P-37-000191 | SDI-000191 | Prehistoric | Hearths, shell midden, lithic scatter | Not evaluated | NO |
| P-37-000192 | SDI-000192 | Prehistoric | Shell midden | Not evaluated | NO |
| P-37-000193 | SDI-000193 | Prehistoric | Shell midden | Not evaluated | NO |
| P-37-005957 | SDI-005957 | Prehistoric | Bedrock milling, lithic scatter, ceramic scatter, shell scatter (site is destroyed) | Not eligible | NO |
| P-37-007290 | SDI-007290 | Prehistoric | Lithic scatter, shell scatter | Not evaluated | NO |
| P-37-007298 | SDI-007298 | Prehistoric | Shell scatter | Not evaluated | NO |
| P-37-007979 | SDI-007979 | Prehistoric | Lithic scatter, shell scatter (data recovery) | Eligible | NO |
| P-37-010238 | SDI-010238 | Prehistoric | Hearth, human remains (burials), lithic scatter, habitation debris (data recovery) | Eligible | NO |
| P-37-010940 | SDI-010940 | Prehistoric | Habitation site with midden deposit, human remains (burials) | Eligible | NO |
| P-37-014785 | - | Prehistoric | Isolate: flake | Not eligible | NO |
| P-37-016324 | SDI-014795 | Prehistoric | Shell scatter | Not evaluated | NO |
| P-37-017025 | SDI-015065 | Historic | Remnants of U.S. Naval Auxiliary Air Facility | Not eligible | NO |

| | | | | | |
|---|---|---|---|---|---|
| P-37-017450 | - | Historic | Powerhouse Building and Smokestack | Not evaluated | NO |
| P-37-024194 | - | Historic | Retaining walls, culverts, and storm drains associated with the Atchison, Topeka, and Santa Fe Railroad | Not evaluated | NO |
| P-37-024195 | - | Historic | Retaining wall and chute associated with the Atchison, Topeka, and Santa Fe Railroad | Not evaluated | NO |
| P-37-026493 | SDI-017389 | Prehistoric | Hearths, midden remnants | Not evaluated | NO |
| P-37-033561 | - | Prehistoric | Isolate: bowl/mortar fragment | Not eligible | NO |
| P-37-033562 | - | Prehistoric | Isolate: mortar | Not eligible | NO |
| P-37-034886 | - | Historic | Ocean Ranch Estates Landscape improvements | Not evaluated | NO |
| P-37-034956 | - | Historic | San Dieguito River Railroad Bridge | Not eligible | Adjacent |
| P-37-035935 | - | Historic | Del Mar Infield Pavilion | Not evaluated | NO |
| P-37-035936 | - | Historic | Del Mar Thoroughbred Club Grandstand and Racetrack complex | Not eligible | NO |
| P-37-036412 | - | Historic | Single-family property | Not eligible | NO |
| P-37-036413 | - | Historic | Single-family property | Not eligible | NO |
| P-37-036415 | - | Historic | TL666 within Del Mar Project corridor (transmission line) | Not eligible | NO |

| | | | | | |
|---|---|---|---|---|---|
| P-37-036418 | - | Historic | Del Mar Substation | Not eligible | NO |
| P-37-036420 | - | Historic | Refuse dump (concrete blocks and pillars of historic lamp posts) | Not eligible | NO |
| P-37-036421 | - | Historic | Isolate: glass insulator fragment | Not eligible | NO |
| P-37-036422 | - | Historic | Commercial Building: Del Blue Print Co/Del Mar Automotive | Not eligible | NO |
| P-37-036423 | - | Historic | Old Grand Avenue Bridge | Not eligible | NO |
| P-37-036525 | - | Historic | Isolate: glass bottle | Not eligible | NO |

P-37-034956

P-37-034956 is located adjacent to the Project APE. P-37-034956 is the San Dieguito River Railroad Bridge, constructed in 1916, and consists of a ballast-deck timber pile trestle bridge approximately 1,100 feet long and 19 feet wide with a maximum height of 30 feet, recorded by ASM Affiliates, Inc. in 2009 (ASM Affiliates, Inc. 2009). The bridge was constructed to replace an earlier bridge that was severely damaged in the 1916 flood. ASM Affiliates, Inc. recommended the bridge not eligible for listing in the NRHP as it was not associated with any significant historical events or trends, not part of the original infrastructure of the Santa Fe Los Angeles to San Diego line, representative of the common timber trestle bridges used by the Santa Fe and other railroad companies in the 19th and 20th centuries, and is not unique or exceptional any way (ASM Affiliates, Inc. 2009).

### 6.2 Review of Geomorphological Context

According to the U.S. Department of Agriculture Natural Resources Conservation Services (USDA 2026), three soil types are mapped in the Project APE, consisting of Tujunga sand, 0 to 5 percent slopes, Tidal flats, Made land, and Lagoon water (USDA 2026). The Tujunga sand soil series generally occurs in flood plains at elevations ranging from 10 to 2,500 feet and consist of alluvium derived from granite. Tidal flats are considered hydric soils, made land is not considered a soils series and consists of disturbed or filled area, and lagoon water is not a soil series.

### 6.3 Native American Heritage Commission Sacred Lands File Search and Tribal Coordination

Dudek requested a NAHC SLF search on December 30, 2025, for the Project APE. The

SLF consists of a database of known Native American resources. These resources may not be included in the SCIC database. The NAHC SLF results were received on January 14, 2026, and the results were negative (**Appendix C**). The NAHC additionally provided a list of Native American tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in this area (**Appendix C**).

In compliance with Section 106, USACE, as the federal lead agency, is responsible for conducting government-to-government consultation with tribes that have requested to consult under Section 106.

Outreach letters were mailed on January 16, 2026 to all Native American group representatives included on the NAHC contact list (**Appendix C**). These letters attempted to solicit additional information relating to Native American resources that may be impacted by the Project. Native American representatives were requested to define a general area where known resources intersect the Project APE. Follow up calls and emails were made on January 30, 2026. Three responses have been received to date. The Pauma Band of Mission Indians responded on January 30, 2026 and requests that their office be immediately notified of any inadvertent discoveries and recommend a tribal monitor be present during all ground disturbing activities. The Iipay Nation of Santa Ysabel responded on January 30, 2026 and requests a tribal monitor be present during all ground disturbing activities. The Rincon Band of Luiseno Indians responded on January 30, 2026 and recommend tribal monitoring and working closely with the Kumeyaay Nation as they may have more information to provide. The NAHC tribal correspondence is included in **Appendix C**.

### 6.4 Historical Maps and Aerial Photographs

Dudek consulted historic maps and aerial photographs to understand development within the Project APE and the general vicinity. Historic aerial photographs of the Project were available between 1953 and 2022 (NETR 2025). The Project APE encompasses three locations (North Riverbank, Southeast Riverbank, and the Southwest Riverbank).

The 1953 aerial photograph reveals that portions of the Project APE have been disturbed by the development of buildings associated with the Del Mar Fairgrounds and parking lot in the North Riverbank, the Jimmy Durante Boulevard Bridge, the Coast to Crest Trail and Public Works Facility in the Southeast Riverbank, the NCTC San Diego Railroad and construction activity for residential properties in the Southwest Riverbank, and the San Dieguito River/Lagoon traversing the Project APE. Additionally, the 1953 aerial photograph shows the development of Coast Highway 101 and residential properties to the west and construction activity for the Del Mar Fairgrounds Racetrack to the north. The 1964 aerial photograph reveals construction activity in the Southeast Riverbank for the Public Works Facility and an unpaved road/trail that bridged the North Riverbank and the Southeast Riverbank. Additionally, the 1964 aerial imagery reveals development for the Interstate-5 (I-5) to the east of the Project, within the general vicinity. The 1966 aerial photograph reveals the development for the Del Mar Fairgrounds parking lot in the North Riverbank and additional grading activity for access roads and commercial development in the Southeast Riverbank. The 1967 aerial imagery does not reveal substantial changes to the Project APE or within the general vicinity of the Project APE. The 1978 aerial

photograph shows the unpaved road/trail that bridged the North Riverbank and the Southeast Riverbank as partially damaged. Additionally, the 1978 aerial imagery reveals there is a steady increase in urban and residential development. The 1980 aerial photograph shows the unpaved road/trail that bridged the North Riverbank and the Southeast Riverbank as demolished. Between 1981 and 1984, the aerial imagery does not reveal substantial changes to the Project APE or within the general vicinity. By 1985, the aerial imagery reveals construction activity in the Southeastern Riverbank, including grading activity to the west of the Public Works Facility and vegetation removal to the east of the Public Works Facility. No substantial changes to the Project APE are revealed in the aerial photographs between 1986 to 1989. The 1990 aerial imagery reveals development in the eastern portion of the North Riverbank for the Del Mar Fairgrounds. Between 1991 and 2018, the aerial imagery did not reveal substantial changes to the Project APE. However, by 2018, a cul-de-sac developed east of the Southeast Riverbank. The aerial imagery from 2018 of the Project APE looks similar to the present-day conditions.

The historic topographic (topo) maps of the Project APE were reviewed (the earliest map available is 1954). The 1954 topo map reveals the development of buildings associated with the Del Mar Fairgrounds and parking lot in the North Riverbank, the Jimmy Durante Boulevard Bridge, the Coast to Crest Trail and Public Works Facility in the Southeast Riverbank, and the NCTC San Diego Railroad and construction activity for residential properties in the Southwest Riverbank. The topo map from 1970 shows the unpaved road/trail that bridged the North Riverbank and the Southeast Riverbank.

Overall, the review of historic topographic maps and historic aerial photographs indicates that a majority of the Project APE (85%) has been disturbed by the San Dieguito River/Lagoon and the previous development of residential properties and urban development since 1953.

### 6.5 Caltrans Structure Maintenance and Investigations, Historical Significance – Local Agency Bridges

Dudek reviewed the Caltrans Structure Maintenance and Investigations, Historical Significance - Local Agency Bridges for District 11. The inventory included San Dieguito River Bridge (Bridge 57C0043), located outside of the APE and adjacent to the Project. It is identified as a Category 5 bridge, meaning it is not eligible for the NRHP (included in **Appendix E**). Therefore, San Dieguito River Bridge is not addressed further in this report.

## 7.0 CULTURAL RESOURCES SURVEY

### 7.1 Survey Methods

ARCHAEOLOGICAL SURVEY METHODS

Dudek archaeologist Makayla Murillo accompanied by Red Tail Environmental Kumeyaay Native American Monitor, Justin Linton conducted an intensive-level pedestrian survey of the Project APE on January 16, 2026.

Archaeological survey staff meet the applicable Secretary of Interior Professional Qualifications Standards for archaeological survey. The Project APE was subject to pedestrian survey with transects spaced no more than 15 meters apart and oriented in cardinal directions.

The ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials.

All fieldwork was documented using field notes and an Apple iPad equipped with Esri Field Maps. Location-specific photographs were taken using an Apple 11th Generation iPad equipped with eight mega-pixel resolution and georeferenced PDF maps of the APE. All field notes, photographs, and records related to the current study are on file at Dudek's office in Encinitas, California.

BUILT ENVIRONMENT SURVEY METHODS

On January 16, 2026, Dudek architectural historian Katie Ahmanson, MHC, conducted an intensive-level survey of the APE for historic-era built environment resources. Six resources were documented using digital photography and field notes, which are on file at Dudek's Pasadena, California, office.

### 7.2 Survey Results

ARCHAEOLOGICAL SURVEY RESULTS

Dudek archaeologist Makayla Murillo accompanied by Red Tail Environmental Kumeyaay Native American Monitor, Justin Linton conducted an intensive-level pedestrian survey of the Project APE on January 16, 2026. The Project APE topography is situated along the shoreline of the San Dieguito River/Lagoon and encompasses three locations (North Riverbank, Southeastern Riverbank, and the Southwestern Riverbank).

The North Riverbank is the most northern portion of the Project APE and begins at Jimmy Durante Boulevard and ends near the San Dieguito River Railroad/NCTC Railroad (Photograph 1). The topography of this area consists of the San Dieguito River/Lagoon shoreline and Del Mar Fairgrounds parking lot. Ground visibility was poor (0-20%), obscured by moderate vegetation. Vegetation consists of ice plant and various shrubs. The soil consists of sand and clay with light content of river cobble. Disturbances observed within the Project APE include the Del Mar Fairgrounds and parking lot, the Jimmy Durante Boulevard bridge, the Coast to Crest Trailhead, and light modern debris (i.e., food and beverage waste).

The Southwestern Riverbank is the most southwestern portion of the Project APE and begins at the northeastern corner of the Beach Colony apartments and ends near the Coast to Crest Trail, near the San Dieguito River Railroad/NCTC Railroad (Photograph

2). The topography of this area consists of the San Dieguito River/Lagoon shoreline and the NCTC Railroad. Ground visibility was poor (0%), obscured by imported gravel and the NCTC Railroad. Vegetation consists of ice plant and various shrubs. The soil consists of sand and clay with light content of river cobble. Disturbances observed within the Project APE include the NCTC Railroad and the Beach Colony apartments, imported gravel, and light modern debris (i.e., food and beverage waste).

The Southeastern Riverbank is the most southeastern portion of the Project APE and begins at Jimmy Durante Boulevard and ends near the San Dieguito River Railroad/NCTC Railroad (Photograph 3). The topography of this area consists of the San Dieguito River/Lagoon shoreline. Ground visibility was fair (50%), obscured by moderate vegetation. Vegetation consists of various shrubs. The soil consists of sand and clay with light content of river cobble. Disturbances observed within the Project APE include the Public Work's buildings and parking lot, the Coast to Crest Trail head, the Jimmy Durante Boulevard Bridge, and light modern debris (i.e., food and beverage waste) (Photograph 4).

No cultural resources were identified within the Project APE during the survey.

**Photograph 1.** North Riverbank located south of the Del Mar Fairgrounds and associated parking lot. Photo facing east.



**Source:** Dudek 2026, Image 11

**Photograph 2.** Southwest Riverbank located adjacent to the Beach Colony and NCTC Railroad, facing the NCTC Railroad and the San Dieguito River/Lagoon. Photo facing north.



**Source:** Dudek 2026, Image 8

**Photograph 3.** Southeast Riverbank located north of Public Works Facility, facing Jimmy Durante Boulevard and the Coast to Crest Trail. Photo facing east-northeast



**Source:** Dudek 2026, Image 2

**Photograph 4**. Disturbances at the Southeast Riverbank located east of Public Works Facility.

Photo facing west-northwest.



**Source:** Dudek 2026, Image 5

## BUILT ENVIRONMENT SURVEY RESULTS

The built environment survey identified six historic-era (45 years of age or older) properties within the APE, consisting of a public utility building, two event halls, and three maintenance and storage buildings. Five of the resources have been previously recorded, including the Exhibit Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse Building (Map ID 2E). These resources were previously found ineligible for the NRHP, CRHR, or local designation through survey evaluation, and were given a status code of 6Z (LSA 2006). Dudek reevaluated these properties under NRHP and CRHR designation criteria as well as integrity requirements. All historic-era properties are recorded and evaluated on DPR 523 Forms located in **Appendix D**.

## 8.0 SIGNIFICANCE EVALUATION

### 8.1 Map ID 1: Public Works Building

## DESCRIPTION

The subject property is a one-story, International style public utility building at 2240 Jimmy Durante Boulevard (Photograph 5). It is set back from the street with an asphalt-paved parking lot along the primary (east and south) elevations, and an asphalt-paved service yard along the rear (west) and north elevations. The building has an L-shape plan and is one-story in height. It is topped by a flat roof with a parapet and features a lower flat roof over the southeast corner of the building that has a cantilevered overhang clad with wood board-and-batten siding. Cladding is a combination of concrete masonry units (CMU) on all elevations, and stucco beneath the overhang and on a portion on the rear (west) elevation. The main entrance on the primary (east) elevation consists of a metal door beneath the projecting overhang. Additional metal doors on the rear (west) elevation provide secondary entrances to the building (Photograph 6). Fenestration includes vinyl-sash sliding and fixed windows on the primary (east and south) elevations, and three corrugated metal roll-up garage doors on the rear (west) elevation. The building is a modest example of the International Style with elements including its asymmetry, flat roof with a cantilevered overhang, lack of decoration or ornamentation, stucco cladding, and large concrete expanses. A flagpole is situated along the primary (east) elevation. Landscaping includes small plantings, shrubs, and a palm tree along the primary (east and south) elevations. The historic property boundary is limited to the property's APNs (299-071-0300 and 299-030-2000). The property is in good condition.

**Photograph 5.** The primary (east and south) elevations of the Public Utility Building, view looking northwest.




**Source:** Dudek, IMG_2180.

**Photograph 6.** The rear (west) elevation of the Public Works Building, view looking southeast.



**Source:** Dudek, IMG_2235.

## STATEMENT OF SIGNIFICANCE

The Public Works Building at 2240 Jimmy Durante Boulevard (Map ID 1) was evaluated in consideration of the NRHP and CRHR criteria and integrity requirements. As a result of the evaluation, the Public Works Building is recommended not eligible for inclusion in the NRHP or CRHR due to a lack of significant associations and architectural merit.

## CRITERION A/1: EVENTS

Under NRHP Criterion A and CRHR Criterion 1, archival research did not find that the Public Works Building possesses a direct and important association with any events or pattern of events significant in local, state, or national history. The subject property was constructed c. 1978, during a period of increased population growth in San Diego County. This population growth was reflective of both state-wide trends in the decades following World War II's conclusion in 1945, as well as a shift in the region's predominantly agricultural economy to one that included more industrial activity, which drew new residents and encouraged residential development. The City of Del Mar was established in 1959, and the Public Works Department was developed shortly after, in the mid-1960s (City of Del Mar 2026a; CD 1964: 15). The Public Works property at 2240 Jimmy Durante Boulevard was constructed to help support essential public infrastructure including the distribution of potable water, wastewater collection, street maintenance, open spaces, and city facilities (City of Del Mar 2026b). Although the subject property has an association with the development of the area, it did not contribute in any significant way

to that pattern of development. The subject property is a typical example of Del Mar's government buildings constructed during the late 1970s to serve the region's growing population. Post-World War II growth was an important trend both regionally and in California; however, this property did not contribute in any significant way to this pattern of development. It is also not known to be directly associated with events that have made a significant contribution to the history of San Diego County, Del Mar, California, or the nation. Research also did not identify a significant historical event that occurred on the property. Therefore, the subject property does not meet NRHP Criterion A or CRHR Criterion 1 and is recommended not eligible.

## CRITERION B/2: SIGNIFICANT PERSONS

Under NRHP and CRHR Criteria B/2, the Public Works Building lacks a significant association with the productive life of any person important in local, state, or national history. Research did not identify information that would indicate the subject property has an association with members of the Del Mar Public Works Department that would rise to the threshold of significance required for eligibility. Additionally, archival research uncovered no person directly associated with the subject property. Due to a lack of identified significant associations with any persons important in our past, the subject property is recommended not eligible under NRHP Criterion B or CRHR Criterion 2.

## CRITERION C/3: DESIGN/CONSTRUCTION

Under NRHP and CRHR Criteria C/3, the Public Works Building does not embody the distinctive characteristics of a type, period, or method of construction that would represent a significant and distinguishable entity. The subject property is a modest and architecturally undistinguished example of a public utility building constructed in c. 1978 that displays elements of the International Style (e.g., its asymmetry, flat roof with a cantilevered overhang, lack of decoration or ornamentation, stucco cladding, and large concrete expanses). Due to its geometric form, easily replicable components, and minimal ornamentation, International Style design elements were commonly applied to modest utilitarian industrial buildings in the 1960s and 1970s. As an undistinguished example of the style, the subject property represents one of many such industrial buildings constructed in Del Mar and San Diego County in the 1970s. Archival research did not identify an architect, designer, or builder. However, as it is a common, purpose-built, commercial property type and style, it is unlikely that it was the work of a master architect or builder. The property appears to have been constructed through already well-documented and common construction techniques and methods and does not appear to possess high artistic values. It does not contribute to the significance of a potential or existing historic district. Overall, the property lacks sufficient design and construction value to meet NRHP Criterion C or CRHR Criterion 3 and is recommended not eligible under this criterion.

## CRITERION D/4: DATA POTENTIAL

Under NRHP and CRHR Criteria D/4, the subject property is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies.

This technology is well understood through contemporary trade journals and scientific monographs. As such, the subject property lacks significance under NRHP Criterion D and CRHR Criterion 4.

### 8.2 Map ID 2A: Exhibit Hall

DESCRIPTION

The Del Mar Fairgrounds Exhibit Hall (Map ID 2A) sits at the southwestern end of a large parcel (APN 7601453804) addressed as 2260 Jimmy Durante Boulevard in Del Mar (Photograph 7). Constructed in 1955, this large one-story building has a rectangular plan, moderately pitched gable roof sheathed with composition shingles. The building walls are clad with stucco and horizontal wood siding. Fenestration includes a row of clerestory windows below the eaves and bands of horizontal rectangular-shaped windows on the addition. The building is in overall good condition.

**Photograph 7.** Exhibit Hall (Map ID 2A), view northeast.




**Source:** Dudek, IMG_2463.

### 8.3 Map ID 2B: Bing Crosby Hall

DESCRIPTION

Bing Crosby Hall (Map ID 2B) sits near the southwestern end of the Del Mar Fairgrounds (APN 7601453804) at 2260 Jimmy Durante Boulevard in Del Mar (Photograph 8). Constructed in 1951, this large one-story building has a rectangular plan, moderately pitched gable roof sheathed with composition shingles, and clerestory windows. The southwest elevation displays a shed roof addition with bay doors. The building is in overall good condition.

**Photograph 8.** Bing Crosby Hall (Map ID 2B), view northwest.



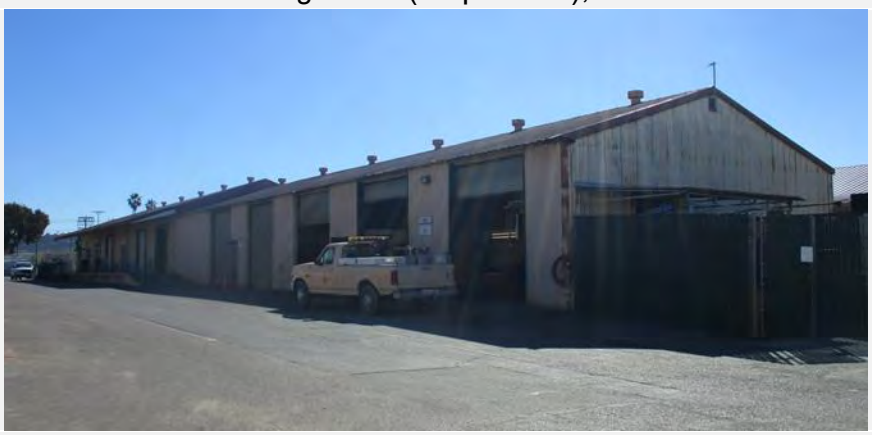

**Source:** Dudek, IMG_2354.

### 8.4 Map ID 2C: Maintenance Building South

DESCRIPTION

The Maintenance Building South (Map ID 2C) sits near the southwestern end of the Del Mar Fairgrounds (APN 7601453804) at 2260 Jimmy Durante Boulevard in Del Mar (Photograph 9). Constructed in c. 1960, this one-story utilitarian building features a rectangular plan, metal clad gable roof, and metal siding. Visible alterations include an addition appended to the western elevation. The building is in overall good condition.

**Photograph 9.** Maintenance Building South (Map ID 2C), view southeast.



**Source:** Dudek, IMG_2399.

### 8.5 Map ID 2D: Maintenance Building

DESCRIPTION

The Maintenance Building (Map ID 2D) sits at the southwestern end of the Del Mar Fairgrounds (APN 7601453804) at 2260 Jimmy Durante Boulevard in Del Mar (Photograph 10). Constructed in c. 1960, this one-story, utilitarian building features a rectangular plan, metal-clad gable roof, and metal siding. The building is in overall fair condition.

**Photograph 10.** Maintenance Building (Map ID 2D), view northeast.



**Source:** Dudek, IMG_2286.

### 8.6 Map ID 2E: Warehouse

DESCRIPTION

The Warehouse (Map ID 2E) sits at the southwestern end of the Del Mar Fairgrounds (APN 7601453804) at 2260 Jimmy Durante Boulevard in Del Mar (Photograph 11). Constructed in c. 1960, this one-story, utilitarian building features a rectangular plan, metal-clad gable roof, and metal siding. The building is in overall fair condition.

**Photograph 11.** Warehouse (Map ID 2E), view northwest.



**Source:** Dudek, IMG_2324.

## STATEMENT OF SIGNIFICANCE

The Del Mar Fairgrounds Exhibit Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building South (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse (Map ID 2E) were previously evaluated in 2006 by Casey Tibet of LSA Associates, Inc., who not only found these building ineligible for individual listing at the national, state, and local levels, but also ineligible as district contributors because the Del Mar Fairgrounds lacked sufficient integrity to be a historic district (Tibbet 2006).

While Dudek's field survey confirmed that these buildings remain extant and in good to fair condition, no new additional information was uncovered that would warrant changing their 6Z ineligible status. The current update evaluation form, therefore, agrees with the ineligible findings in the original 2006 LSA evaluation prepared by Cassey Tibbet, and recommends that the 5 subject buildings evaluated in the current

study are ineligible for listing individually or as district contributors in the NRHP, CRHR, or any other register. Dudek evaluated these five buildings because the Office of Historic Preservation's Built Environment Resources Directory (BERD) indicated that on October 2, 2019, the California SHPO concurred on the 6Y ineligibility determination of the Federal Communications Commission for the Del Mar Fairgrounds Exhibit Hall (Map ID 2A), but it was unclear whether any of the 4 other subject buildings were included in that determination. Additionally, because the 6Y status code indicates that the Exhibit Hall was determined ineligible only for the NRHP by consensus through the Section 106 process, and was not evaluated for potential listing in the CRHR or a local register, the current evaluation closes that regulatory gap by evaluating the 5 subject resources under

all applicable federal, state, and local criteria. With regard to CEQA, the 5 subject buildings were evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code and found not to be historical resources for the purposes of CEQA. The update evaluation also reaffirms that none of the five subject buildings are eligible for listing in the NRHP, either individually or as district contributors, and are thus not considered historic properties under Section 106 of the National Historic Preservation Act of 1966, as amended. As such, Dudek has assigned a 6Z status code to the five subject resources.

Provided below is Dudek's evaluation of the Del Mar Fairgrounds Exhibit Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building South (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse (Map ID 2E) under each of the relevant listing criteria.

CRITERION A/1: EVENTS

Under NRHP Criterion A and CRHR Criterion 1, research did not find that Map IDs 2A, 2B, 2C, 2D, or 2E possess a direct and important association with any events or pattern of events significant in local, state, or national history. Although the Del Mar Fairgrounds is representative of the agricultural and recreational development of Del Mar and San Diego County, none of the five subject resources possess a direct and specific association with any events significant to this development or to history in general, either locally, statewide, or nationally. As such, the 5 subject resources do not appear to be individually eligible under NRHP Criterion A or CRHR Criterion 1.

CRITERION B/2: SIGNIFICANT PERSONS

Under NRHP Criterion B and CRHR Criterion 2, Map IDs 2A, 2B, 2C, 2D, and 2E lack a significant association with the productive life of any person important in local, state, or national history. While the Del Mar Fairgrounds has an association with notable Hollywood entertainers—including Bing Crosby, Pat O'Brien, and Jimmy Durante—none of the five subject buildings possess a direct and demonstrably significant association

with the productive life of any of these individuals. As such, the subject properties are recommended ineligible under NRHP Criterion B and CRHR Criterion 2.

CRITERION C/3: DESIGN/CONSTRUCTION

Under NRHP Criterion C and CRHR Criterion 3, Map IDs 2A, 2B, 2C, 2D, and 2E lack sufficient design distinction and construction value to meet either criterion. Additionally, none of the five subject resources represent the work of a master or possess high artistic values. As such, the subject properties are recommended ineligible under NRHP Criterion C and CRHR Criterion 3.

CRITERION D/4: DATA POTENTIAL

Under NRHP Criterion D and CRHR Criterion 4, Map IDs 2A, 2B, 2C, 2D, and 2E are not significant as sources, or likely sources, of important historical information, nor do they appear likely to yield important information about historic construction methods, materials,

or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the five subject resources lack significance under NRHP Criterion D and CRHR Criterion 4.

## 9.0 CONCLUSIONS AND RECOMMENDATIONS

### 9.1 Historic Architectural Resources

Dudek evaluated six historic-age properties in the APE and found that none are eligible for listing in the NRHP due to a lack of historical significance and architectural merit. Therefore, no historic properties have been identified within the APE. As such, we recommend a finding of **No Historic Properties Affected**.

### 9.2 Archaeological Resources

The SCIC records search results did not identify any previously recorded cultural resources within the Project APE. A total of 31 previously recorded cultural resources were identified within the 1.0-mile search radius of the Project APE and one previously recorded historic resource, P-37-034956 (San Dieguito River Railroad Bridge) is located immediately adjacent to the Project APE. P-37-034956 was recommended not eligible for listing in the NRHP (ASM Affiliates, Inc. 2009).

A review of historical topographic maps and historical aerial photographs revealed that approximately 85% of the Project APE has been disturbed by the San Dieguito River/Lagoon and the previous development of residential properties and urban development since 1953, although the depth of the disturbance is not apparent from the historical aerial photographs.

The pedestrian survey was negative; however, ground visibility of the Project APE was poor to fair (0 – 50%), obscured by dense vegetation and steep bluffs.

The presence of the water source throughout the Project APE would have been an attractive location for prehistoric camps or habitation sites. Reoccurring alluvial action and flooding serve to support the development and presence of cultural deposits in the area. Since there are alluvial soils present throughout a majority of the Project APE, there is a moderate potential for encountering subsurface cultural resources during Project implementation.

Based on available information and in consideration of the topography and presence of cultural resources within the Project vicinity, Dudek recommends that a cultural resources mitigation program be implemented during Project-related ground-disturbing activities within the APE. Cultural resources monitoring efforts should be determined by a qualified archaeologist meeting the Secretary of the Interior's Standards and Guidelines: Professional Qualifications Standards.

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# Appendix A: Personnel Qualifications

# Makayla Murillo

**ARCHAEOLOGIST**



Makayla Murillo (*muh-KAY-luh mur-ILL-oh; she/her*) is an archaeologist with 10 years' experience as an archaeological field technician, laboratory technician, and tribal representative. She has conducted numerous surveys, excavations, data recoveries, artifact analysis, curation, repatriation, and project management, primarily in Southern California. She has extensive experience in north San Diego County, with additional experience in Riverside County, other areas of San Diego County, Orange County, Kern County, San Bernardino County, Santa Barbara County, and Imperial County. Her research interests include the role of experimentation in archaeology, protection and preservation of Native American sites, shell bead production, and lithic production

## Project Experience

### Development

**El Corazon Trails Phase II Monitoring Project, Oceanside, San Diego County, California.** As lead archaeologist, managed and coordinated monitoring schedule to ensure all construction activity was in compliance. Prepared Worker Environmental Awareness Program. (2025-Present).

**Wiivay Park Project, Vista, San Diego County, California.** As lead archaeologist, managed and coordinated with Tribal representatives and restoration department to develop signage for the park. (2025).

**French Valley Childcare Monitoring Project, French Valley, Riverside County, California.** As lead archaeologist, managed and coordinated monitoring schedule to ensure all construction activity was in compliance. Prepared and conducted Worker Environmental Awareness Program. (2025-Present).

## Education

**Pacific Rim Elementary School Classroom Expansion Project, Carlsbad, San Diego County, California.** As an archaeological technician, requested the Sacred Lands File from the Native American Heritage Commission, completed the records search at the South Coastal Information Center, coordinated the cultural resources pedestrian survey, and submitted the Task Order Authorization to the Subconsultant. Co-authored the cultural resources inventory report. (2025)

### *Education*

*San Diego State University*
*MA, Anthropology, 2025*

*University of California, Davis*
*Field School, 2018*

*California State University*
*San Marcos*
*BA, Anthropology, 2017*

*MiraCosta College*
*AA, Anthropology, 2015*

### *Certifications*

*Registered Professional Archaeologist*

*City San Diego Certified*

*HAZWOPER Certified*

*GSA & OSHA Hazardous Communication Certified*

*National Safety Council First Aid Certified*

*National Safety Council CPR Certified*

*Roadway Worker Protection Certified*

*Worker Environmental Awareness Program*

### *Professional Affiliations*

*University of California, San Diego, NAGPRA Campus Committee, Present*

*San Luis Rey Band of Mission Indians, NAGPRA and CalNAGPRA Specialist, Present*

**Calexico Campus Student Housing Project, San Diego State University, Imperial County, California.** As an archaeological technician, requested the Sacred Lands File from the Native American Heritage Commission, completed the records search at the South Coastal Information Center, coordinated the cultural resources pedestrian survey, and submitted the Task Order Authorization to the Subconsultant. Co-authored the cultural resources inventory report. (2024)

## Energy

**Lake Elsinore Front County Fuel Break Phase 2 Project, Riverside County, California.** As an archaeological technician, recorded and documented previously recorded cultural resources, and placed Environmental Sensitivity Assessment fencing. (2025)

**Imperial Solar Energy Center West Project, CSolar IV West LLC, Imperial County, California.** As an archaeological field technician, performed annual site visits for the last 6 years, recorded artifact inventory, and photographed artifacts and environmental conditions as a part of the Long-Term Archaeological Management Plan, prepared the cultural resources inventory report, updated the Department of Parks and Recreation forms. Workers Environmental Awareness Protection Certified. (2017–2025)

## Transportation

**Addendum for the College Boulevard Improvement Project, CR Associates, Oceanside, California.** As an archaeological field technician, conducted the cultural resources pedestrian survey and co-authored the cultural resources inventory report. (2025)

**Olive Park Apartments Project, Capstone Equities, Oceanside, California.** As an archaeological field technician, requested the Sacred Lands File from the Native American Heritage Commission, conducted the cultural resources pedestrian survey, and documented and photographed previously recorded archaeological sites. As a laboratory technician, updated the Department of Parks and Recreation Forms, and co-authored the cultural resources inventory report. Roadway Worker Production Certified. (2024)

## Water/Wastewater

**California Department of Water Resources Cultural and Paleontological Programmatic Approach, Multiple Counties, California.** As an archaeological field technician, conducted records searches and data analysis tables. (2024)

**Mission Viejo Ranch Water Filtration Plant, Mission Viejo, Orange County, California.** As an archaeological technician, conducted cultural resources survey. Co-authored the cultural resources inventory report. (2024)

**Western Municipal Water District New Clay Well Project, City of Murrieta, riverside County, California.** Conducted the archaeological site visit. Requested the Sacred Lands file from the Native American Heritage Comission. Co-authored the cultural resources inventory report (2024)

# Keshia Montifolca, RPA

**ARCHAEOLOGIST**

Keshia Montifolca (*KEE-sha MUHN-tee-FOHL-kuh; she/her*) is a field archaeologist with 15 years' experience specializing in surveying, excavation, monitoring, artifact identification, cataloging, preservation and curation, and Native American consultations. Keshia has 6 years' experience as an environmental planner and regularly coordinates with local, state, and federal agencies and Native American tribal representatives. She is highly knowledgeable about the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and National Historic Preservation Act Section 106 (Section 106). Keshia authors technical reports, Department of Parks and Recreation site records, and CEQA and NEPA documents. She conducts record searches and research using the California Historical Resources Information System at the South Coastal Information Center and meets the Secretary of the Interior's Professional Qualifications Standards.

### *Education*

*San Diego State University*
*MA, Anthropology, 2013*

*University of California, Santa Cruz*
*BA, Sociology, 2008*

### *Certifications*

*Registered Professional Archaeologist (RPA), No. 36587200*

### *Professional Affiliations*

*Society for American Archaeology*

*Society for California Archaeology*

## Project Experience

**North River Road and Sleeping Indian Road Drainage Improvements Project, City of Oceanside, California.** As principal investigator, conducted a records search, coordinated a pedestrian survey, identified all potential impacts to an existing recorded cultural resource, and authored a technical report. (2025)

**North Valley Lift Station Project, N2W Engineering, San Diego, California.** As principal investigator, conducted a records search, coordinated a pedestrian survey, identified all potential impacts to an existing recorded cultural resource, updated a site form, and authored a technical report. (2025)

**Princess Street Coastal Access Trail Project, Environmental Center of San Diego, San Diego, California.** As principal investigator, prepared a testing plan, coordinated the Phase II testing effort, conducted an evaluation of known resources, updated the site form, and authored an evaluation report. (2025)

**Barrett Dam Outlet and Tower Bulkhead and Drawdown Project, City of San Diego, California.** As principal investigator, conducted a records search, coordinated a pedestrian survey, identified potential impacts to cultural resources, and authored a technical report under CEQA and Section 106. (2024-2026)

**Moreno Dam Upstream Face Replacement Project, City of San Diego, California.** As principal investigator, conducted a records search, coordinated a pedestrian survey, identified all potential impacts to previously recorded and newly recorded cultural resources, conducted an evaluation of known resources, and authored a technical report under CEQA and Section 106. (2024-2026)

**Salem Christian Homes Assisted Living Center Project; Howes, Weiler, Landy; San Diego; California.** As principal investigator, conducted a records search, intensive pedestrian survey, and evaluation of a newly identified resource; prepared a site form; and authored a technical report. (2024)

**San Pasqual AT&T Fiber Network Project, AT&T Technology Operations, C&E, San Pasqual Reservation, California.** As project archaeologist, conducted a records search and pedestrian survey, identified all potential impacts to existing and newly recorded cultural resources, conducted an evaluation of known resources under Section 106, prepared site forms, and authored a technical report. (2024)

**Valley Center Indian Creek Project, Citivest, Inc., San Diego County, California.** As principal investigator, conducted a records search and a pedestrian survey, identified all potential impacts to previously recorded cultural resources, conducted an evaluation of known resources, and authored a technical report. (2024)

**Mesa Verde Specific Plan Area 2 Amendment 2 Project, Mesa Verde Owner LLC, Calimesa, California.** As principal investigator, conducted a records search, conducted a pedestrian survey, identified all potential impacts to existing and newly recorded cultural resources, conducted an evaluation of known resources, and authored a technical report. Coordinated the Extended Phase I effort and authored a technical report in support of an Assembly Bill (AB) 52 consultation request (2023–2025)

**E-Group PS Solar Project, K&L Gates LLP, Twentynine Palms, California.** As principal investigator, conducted a records search and Native American Heritage Commission outreach efforts, led a pedestrian survey on a 225-acre property, identified all potential impacts to existing and newly recorded cultural resources, conducted an evaluation of known resources, and authored a technical report. (2023–2024)

**Elsinore Front Country Fuel Break Project, Black Fox Timber Management Group, Inc., Riverside County, California.** As co-principal investigator, coordinated intensive pedestrian surveys and authored an addendum technical report for a project within the scope of the California Vegetation Treatment Program. Responsible for on-site implementation of the archaeological monitoring program, managed field monitors, and authored a technical report. (2023–2024)

**The Exchange Project, JPI Real Estate Acquisition LLC, Riverside, California.** As principal investigator, prepared an archaeological management plan, was responsible for on-site implementation of the archaeological monitoring program, and oversaw field monitors. Prepared an evaluation plan for an unanticipated site identified during construction. Oversaw the trenching of the site, dug shovel test pits, and authored an evaluation report, and monitoring report. (2022–2026)

**Preserve Project; C.C. & S.E. Butler Family Properties III, LLC; Encinitas; California.** As principal investigator, conducted a records search, coordinated an intensive pedestrian survey, identified all potential impacts to previously recorded and newly recorded cultural resources, conducted a Phase II archaeological evaluation for a newly identified resource, and authored an inventory and evaluation report. (2022–2024)

**Camp Winacka-Camp Whispering Oaks: Vegetation Management Project; Black Fox Timber Management Group, Inc.; San Diego County; California.** As co-principal investigator, co-coordinated an intensive pedestrian survey, conducted an evaluation of known resources, and co-authored a technical report for a project within the scope of the California Vegetation Treatment Program. Coordinated testing for a newly identified resource within the project site, conducted an evaluation of known resources, and authored an evaluation report. (2022–2023)

**Zona Gale Estates Project, City of Encinitas, California.** As principal investigator, conducted a records search, coordinated a pedestrian survey, identified all potential impacts to existing and newly recorded cultural resources, served as field director for testing and evaluation of known resources, and authored an inventory and evaluation report. (2022–2023)

# Micah Hale, PhD, RPA

**SENIOR ARCHAEOLOGIST**



Micah Hale is Dudek's cultural resources practice manager and lead principal investigator, with technical expertise as a lithic and groundstone analyst, invertebrate analyst, and in ground penetrating radar. Over the course of his 23-year career, Dr. Hale has served as a principal investigator in the public and private sector for all levels of archaeological investigation, as a public outreach coordinator and as an assistant professor at the University of California (UC), Davis. As Dudek's cultural resources practice manager, he currently functions as a principal investigator in project oversight including proposals, research designs, fieldwork, artifact analysis, and report authorship.

Dr. Hale's experience is both academic and professional spanning California, Arizona, Nevada, and Oregon, including work for Naval Facilities Engineering Command (NAVFAC) Southwest, California Department of Transportation (Caltrans), Western Area Power Administration, Bureau of Land Management (BLM), U.S. Army Corps of Engineers (ACOE), U.S. Fish and Wildlife Service (USFWS), California State Parks, various city and county agencies, and directly for Native American groups.

Dr. Hale has supervised numerous large-scale surveys, test excavations, data recovery programs, and geoarchaeological investigations, served as a third-party review consultant, and an expert witness in legal proceedings. He has authored research designs, management and treatment plans, proposals, preliminary and final reports, and technical analyses. Dr. Hale has integrated his personal research interests into projects and participated in professional symposia at local and national venues, including the Society for American Archaeology and the Society for California Archaeology. Additionally, he has conducted academic research in the Polar Arctic, Greenland. Dr. Hale's current focus is on hunter-gatherer archaeology of California and the Great Basin, applying theoretical premises of cultural evolution and human behavioral ecology.

### *Education*

*University of California, Davis*
*PhD, Anthropology, 2009*
*BS, Anthropology, 1996*
*California State University, Sacramento*
*MA, Anthropology, 2001*

### *Certifications*

*Register of Professional Archaeologists (RPA)*

### *Professional Affiliations*

*Antelope Valley Archaeological Society*
*San Diego Archaeological Society*
*Society for American Archaeology*
*Society for California Archaeology*

Dr. Hale currently assists in the preparation of technical descriptions and analyses for environmental impact statements and reports at the state and federal levels for Dudek projects. Examples of completed environmental sections include those prepared for the Yokohl Ranch, Rio Mesa Solar, Soitec Rugged and Tierra Del Sol Solar, San Diego Gas and Electric's (SDG&E) Wood to Steel project, and various others.

## Project Experience

### Development

**Phase II Archaeological Data Recovery for the Newland Homes Sierra Project, San Diego County, California.** As project manager and principal investigator, supervising data recovery investigations at two significant prehistoric archaeological sites and historic archival research of a homestead in support of the Newland Sierra Environmental Impact Report (EIR). (2013–Present)

## Education

**Data Recovery for the Palomar North and Meadowood Projects, Palomar College, San Diego County, California.** As principal investigator, supervised Section 106 and CEQA-compliant data recovery of the ethnohistoric village of Tom-Kav. Expert witness for litigation of archaeological work for the client. (2012)

## Energy

**Phase II Evaluation of 19 Archaeological Sites for Soitec's Tierra Del Sol Solar Project, San Diego County, California.** As principal investigator, oversaw and implemented significance evaluations, including fieldwork and documentation, under CEQA and San Diego County guidelines within the development footprint. (2012–2013)

## Federal

**Ground-Penetrating Radar Survey and Class III Inventory for the Friendship Circle Project, Department of Homeland Security, Gulf South Research Corporation, San Diego County, California.** As project manager and principal investigator, supervised and implemented a ground-penetrating radar survey and surface survey for the Friendship Circle project at Border Fields State Park, San Diego.

## Resource Management

**South Sacramento Habitat Conservation Plan (HCP) EIR, County of Sacramento, California.** Led the cultural resources effort on the South Sacramento HCP Project, including development of a long-term plan for analyzing cultural resources constraints and assisting multiple agencies in their tribal outreach obligations.

## Transportation

**Ortega Highway Monitoring, City of San Juan Capistrano, Orange County, California.** As project manager, supervised Dudek's principal investigator to coordinate archaeological, tribal, and paleontological mitigation monitoring associated with the construction of water conveyance facilities and road repairs. (2013)

## Tribal

**Section 106 Mitigation Development and Tribal Consultation Assistance, BLM, San Diego County, California**. As project manager, assisted the BLM in development of Historic Properties Treatment Plan, Tribal Participation Plan, and other mitigation measures for the Tule Wind project, McCain Valley California. (2011–2012)

**Mitigative Screening, Agua Caliente Band of Cahuilla Indians, Palm Springs, Riverside County, California.** As field director, supervised archaeological mitigation of an impacted burial site on the Agua Caliente Reservation. Prepared mapping of the project, coordinated field efforts with Tribal representatives, oversaw monitoring of the project, and prepared portions of the technical report. (2003)

## Water/Wastewater

**San Clemente Water Recycling Monitoring, City of San Clemente, Orange County, California.** As project manager, supervised Dudek's principal investigator to coordinate archaeological, tribal, and paleontological mitigation monitoring associated with the construction of a new water conveyance pipeline. Duties include preparation of a discovery and treatment plan. (2013)

# Katie Ahmanson, MHC

**ARCHITECTURAL HISTORIAN**



Katie Ahmanson (*KAY-tee AH-mun-son; she/her*) is an architectural historian with 5 years' experience in the field of architectural history and heritage conservation. She has experience with Historic-Cultural Monument nominations; citywide historic contexts; historical significance evaluations in consideration of the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and local designation criteria; California Department of Parks and Recreation (DPR) 523 forms; and Nevada Architectural Resource Assessment forms. Ms. Ahmanson has worked with environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA).

***Education***

*University of Southern California School of Architecture*
*MA, Heritage Conservation, 2022*

*Claremont McKenna College*
*BA, Art History, 2019*

## Project Experience

**Mockingbird Canyon Wash Stabilization Project, Riverside County Flood Control & Water Conservation District, Riverside County, California.** Dudek was retained by the Riverside County Flood Control & Water Conservation District to record and evaluate 15 properties located in the unincorporated community of Woodcrest, Riverside County, California. The district proposed to construct and maintain improvements along approximately 1.8 miles of Mockingbird Canyon Wash. The project required a Section 408 permit from the U.S. Army Corps of Engineers and is subject to Section 106 of the NHPA. As an architectural historian, coauthored the report, surveyed the property, wrote significance evaluations and building descriptions, and completed archival research. (2025)

**Kenneth Hahn State Recreation Area Bowl Improvements Project Built Environment Inventory and Evaluation Report, Los Angeles County Department of Parks and Recreation, Los Angeles, California.** Under the existing Master Services Agreement with the Los Angeles Department of Parks and Recreation, Dudek prepared a historical resources assessment report to support the proposed project at the Kenneth Hahn State Recreation Area at 4100 S La Cienega Boulevard in Los Angeles, California. The report evaluates three historic-age properties located within the park—the Baldwin Hils Reservoir and Dam Site, the Federal Aviation Administration Air Traffic Control Station, and the Baldwin Hills Communication Tower Site—in anticipation of the proposed redevelopment project at Baldwin Hills Reservoir. The report is being prepared in coordination with California State Parks and in accordance with CEQA and California Public Resources Code, Sections 5024 and 5024.5. As an architectural historian, coauthored the report, surveyed the properties, wrote significance evaluations and building descriptions, and completed archival research. (2025)

**Simms Park Stormwater Capture and Teen & Senior Center Project, City of Bellflower, California.** Dudek was retained by the City of Bellflower to prepare a BEIER for the proposed Simms Park Stormwater Capture and Teen & Senior Center Project. The project consists of two major components: (1) stormwater capture infrastructure development and (2) a new Teen and Senior Center. The report documents Dudek's efforts to identify and evaluate built environment resources 45 years of age or older (historic era) that may be subject to direct or indirect impacts

under CEQA as a result of the construction and operation of the proposed project. As an architectural historian, coauthored the report, wrote building descriptions and significance evaluations, surveyed the property, and completed archival research. (2023)

**Shared-Use Pathway East Wetland Park to Pacific Avenue, Arizona Department of Transportation, Yuma, Arizona.** The Arizona Department of Transportation retained Dudek to identify and evaluate built environment cultural resources within or adjacent to the proposed Shared-Use Pathway East Wetland Park to Pacific Avenue Project. The evaluation involved research and development of a construction timeline, supplemental research on relevant historic context, survey of the project site, a description of the resource, and completion of a historical resource evaluation under NRHP and criteria and integrity requirements. As an architectural historian, surveyed the project site. (2024)

**Eaton Wash Storm Water Capture Project Cultural Resources Assessment Report, City of Pasadena, California.** The City of Pasadena is proposing improvements on city-owned property and public right-of-way adjacent to the Eaton Wash to enhance water quality and effectively manage stormwater runoff. The project entails constructing public infrastructure to divert dry weather and stormwater flows from the Eaton Wash channel and send the water for treatment through a series of vegetated treatment ponds and a subsurface storage reservoir. Four historic-age built environment resources were recorded and evaluated for the NRHP. As an architectural historian, coauthored the report, surveyed the subject properties, wrote significance evaluations and building descriptions, and completed archival research. (2025)

**Cantara Trunk Line Replacement Project Cultural Resources Inventory and Evaluation Report, Los Angeles Department of Water and Power, Los Angeles, California.** The Los Angeles Department of Water and Power (LADWP) retained Dudek to complete a cultural resources investigation for the proposed Cantara Trunk Line Replacement Project in the City of Los Angeles, California. The Cantera Trunk Line dates to approximately 1917. The historic-era water management infrastructure required evaluation under CEQA as the project proposes modifications to the structure as a result of proposed improvements to the LADWP water system. Technical work included research and development of a construction timeline, creation of a historic context, survey of the project site, description of the resource, and completion of a historical resource evaluation under NRHP, CRHR, and Los Angeles Historic Cultural Monument criteria and integrity requirements. As an architectural historian, coauthored the report, surveyed the project site, wrote significance evaluations and building descriptions, and completed archival research. (2025)

**Barrett Dam Outlet and Tower Bulkhead and Drawdown Project Cultural/Historical Resources Technical Report, City of San Diego, California.** The City of San Diego retained Dudek to complete a cultural/historical resource technical report for the Barrett Dam Outlet Tower Bulkhead and Drawdown Improvements Project in the City of San Diego, California. The evaluation involved research and development of a construction timeline, supplemental research on relevant historic context, survey of the property, a description of the resource, and completion of a historical resource evaluation under NRHP, CRHR, and City of San Diego criteria and integrity requirements. As an architectural historian, coauthored the report and surveyed the project site. (2025)

**Historic Property Survey Report, California Department of Water Resources, Los Angeles and San Bernardino Counties, California.** The California Department of Water Resources (DWR) retained Dudek to complete a historic property survey report to inventory and evaluate DWR owned historic resources in Los Angeles and San Bernardino Counties, California. DWR is proposing construction and modifications at multiple DWR sites within the East and West Branches of the California Aqueduct. As an architectural historian, wrote building descriptions and completed DPR 523 forms for the subject properties. (2025)

# Andrea Dumovich Heywood, MHC

**ARCHITECTURAL HISTORIAN**



Andrea Dumovich Heywood (*AND-ree-ah DOOM-oh-vich HEY-wood; she/her*) is a historic preservation professional with 11 years' professional experience specializing in historic preservation, environmental compliance, municipal government/planning, and affordable housing.

Andrea's experience has included the preparation of historic context statements, historic resource surveys, environmental compliance studies in support of the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (Section 106), preservation ordinances and elements, and Secretary of the Interior's Standards project review. Andrea specializes in evaluating properties for listing in local registers at the city/municipal level; the California Register of Historical Resources; and the National Register of Historic Places (NRHP). Additionally, Andrea has worked as the lead historic preservation planner for the City of Santa Ana and the City of Claremont, where she managed both city's Mills Act programs and historic compliance review. She is experienced in interpreting local zoning codes and ordinances, as well as conducting architectural design review.

### *Education*

*University of Southern California, School of Architecture*
*MHC, Heritage Conservation, 2018*

*University of California, Berkeley*
*MA, English Major and Sustainable Design Minor, 2011*

### *Certifications*

*Exceeds Requirements of the Secretary of the Interior's Professional Qualification Standards in Architectural History and History*

## Dudek Project Experience

**2021 Chanticleer Avenue Project, New Horizons Affordable Housing and Development, Inc., Santa Cruz County, California.** The Project is to construct an affordable multifamily housing development project located in unincorporated Santa Cruz County. The project is to build a three-story, 60-unit apartment building in a Craftsman style, which is compatible with the surrounding neighborhood. The project received federal funding from the U.S. Department of Housing and Urban Development (HUD); therefore, it is subject to compliance with Section 106 of the NHPA, and NEPA. Buildings in the area of potential effects (APE) required inventory and evaluation to determine if they were historic properties as defined under Section 106 of the NHPA. Served as architectural historian and the primary author of the Built Environment Inventory and Evaluation Report and DPR. (2026–Ongoing)

**Aspan Court Apartments Project, National Community Renaissance of California, Lake Forest, California.** The Project is to demolish the existing commercial building and parking lot, and construct a four-story affordable rental housing development. County of Orange is the Responsible Entity for HUD, the lead federal agency. The project was subject to Section 106 of the NHPA and NEPA and buildings in the APE required inventory and evaluation to determine if they were historic properties. Served as architectural historian providing architectural survey, property research, architectural descriptions, and completion of DPRs. (2026)

**Costa Mesa Housing Element Implementation Program, City of Costa Mesa, Costa Mesa, California.** The Project is to implement the city's state-mandated housing element by rezoning commercial and industrial areas for housing. To

comply with CEQA a Program Environmental Impact Report (EIR) was prepared. Served as architectural historian which included co-authoring the EIR's Cultural chapter. (2025–Ongoing)

**Confidential Energy Storage Project, County of Ventura, California.** Served as architectural historian and coauthor for a historic evaluation of an energy storage project in a rural project area comprised of 60 acres. Tasks included historic research, technical report writing, evaluation of an age-eligible historic resource, and project impact analysis. (2025–Ongoing)

**North Chico Solar Project, Confidential Client, Butte County, California.** The applicant proposed to construct, operate, and eventually repower or decommission the BESS. AB 205 broadened the CEC's authority to oversee the permitting of clean and renewable energy facilities, including energy storage systems. Known as the Opt-In Certification Program, this permitting process offers applicants an optional pathway to submit a project application and facilities faster development of renewable energy technologies. Under AB 205, the CEC is the lead CEQA agency. The 20 CCR Division 2 Chapter 5 establishes the regulatory framework for power plant site certification as part of AB 205. Served as architectural historian providing property research, architectural descriptions, and completion of DPRs. (2025–Ongoing)

**Palm Avenue Complete Multimodal Corridor Project, CR Associates, Imperial Beach, California.** The Project is approximately 5,711 linear feet includes establishing Class IV protected bike lanes, widening existing sidewalks, installing shade canopy trees, installing ornamental lighting, improving median landscape, replacing median vehicle lighting, constructing curb extensions with directional ramps, and rebuilding alley entrances, driveways, and curb ramps to be Americans with Disabilities Act compliant. Served as lead author for the historic context statements and linear resource DPRs as part of the Cultural Resources Inventory and Evaluation Report. (2025–Ongoing)

**8222 W. Sunset Boulevard, City of West Hollywood, California.** The City of West Hollywood retained Dudek to prepare a memorandum for the record to analyze any indirect impacts to historic resources adjacent to the 8222 Sunset site. The proposed project involves construction of a billboard on a site occupied by a small newsstand structure. As an architectural historian. Served as lead architectural historian. Tasks included historic research, writing, and evaluation of an age-eligible historic resource. (2025)

**Edward 'Ted' Taylor Science and Engineering Academic Building Project, California State University, Monterey Bay (CSUMB) and National Oceanic and Atmospheric Administration, Monterey County, California. T**he project was to develop the Edward 'Ted' Taylor Science and Engineering Building and construct a new science facility. The National Oceanic and Atmospheric Administration's Office of National Marine Sanctuaries is planning to provide partial funding to CSUMB for a portion of the construction and maintenance of the new building. The project was subject to Section 106 of the NHPA, CEQA, and California Public Resources Code (PRC) 50214. As architectural historian, addressed SHPO comments in the second draft of technical report and DPRs. (2025)

**Kaiser Permanente Los Angeles Medical Center Project, Kaiser Permanente, City of Los Angeles, California.** The project included expansion of the existing medical campus through the replacement of facilities and the addition of new buildings on adjacent parcels in order to modernize its infrastructure. Served as a primary report author for the Historical Resources Technical Report. As architectural historian, tasks included historic research, writing, and evaluation of age-eligible historic resources. (2025)

# Monte Kim, PhD

**SENIOR ARCHITECTURAL HISTORIAN**

Monte Kim (*he/him*) is a senior architectural historian and historic built environment resource specialist with 23 years of professional experience in all phases of regulatory compliance under Section 106 and Section 110 of the National Historic Preservation Act, Section 4(f) of the Department of Transportation Act, National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and PRC §§ . He has experience in the inventory and evaluation of resources within the historic built environment, as well as the assessment of effects on historic properties and historical resources and has authored or co-authored nominations for the National Register of Historic Places (NRHP) and has overseen the documentation of historic properties in accordance with the standards required for the Historic American Building Survey (HABS), the Historic American Engineering Record (HAER), and the Historic American Landscape Survey (HALS). He has also developed and implemented resource-specific mitigation measures, treatment plans, protection plans, and interpretive plans for large, transportation-related projects, including the California High-Speed Rail Project. Additionally, he has experience consulting with State Historic Preservation Officers and developing programmatic agreements and memorandum of agreement documents for government agencies. Mr. Kim meets the Secretary of the Interior's (SOI) Professional Qualification Standards for history and architectural history.



### *Education*

*University of California, Santa Barbara PhD, History, 2005*

*California State University, Sacramento MA, Public History, 1999*

*University of California, Santa Cruz BA, History, 1996*

### *Professional Affiliations*

*California Preservation Foundation*

*Vernacular Architecture Forum*

*Transportation Research Board*

### *Employment History*

*Dudek (2023-Present)*

*WSP/CA High-Speed Rail Authority (2015-2023)*

*ICF International 2015-2022)*

## Relevant Project Experience

**On-Call Services for Department of Water Resources (DWR), Operations and Maintenance Division, State of California.** Dudek was retained by the State of California's Department of Water Resources (DWR) to assist in a wide range of on-going environmental compliance efforts. Under this on-call contract, Mr. Kim provides senior level guidance and reviews of the built environment evaluations and technical reports prepared under the current task orders (2023–Ongoing). Recently, he co-authored an inventory, evaluation, and impacts assessment for DWR's Physical Security Modernization Project. The technical report included a CHRIS records search, archival research, delineation of a CEQA area of potential impacts (API), intensive-level surveys conducted by SOI-qualified architectural historians, a comprehensive historic context statement, a discussion of property typologies and character-defining features, NRHP and CRHR significance evaluations, and a CEQA impacts assessment, which concluded that none of the project components and proposed upgrades would cause a substantial adverse change in the significance of any of the historical resources in the API because all work would conform with the SOI Standard for Rehabilitation. Overall, the report found that the Project would have a less than significant impact on historical resources and no mitigation would be required. Mr. Kim prepared the CEQA impacts analysis and contributed to the built environment inventory and evaluation sections of the report (2024).

**California Department of Fish and Wildlife Mission Creek Habitat Restoration Project, Santa Barbara County, California.** The California Department of Fish and Wildlife (CDFW) retained Dudek to provide a peer review of a mitigated negative declaration (MND)and the supporting cultural resources studies for the Mission Creek Habitat Restoration Project. The reports were prepared for Southern California Edison for a project that involved restoration treatments on a 2.88-acre site and the evaluation of historic built resources within the area of potential impacts in conformance with the regulatory requirements of the California Environmental Quality Act. Mr. Kim reviewed the MND and supporting technical studies and found them to be adequate for compliance under CEQA (2023).

**Area of Potential Effects Justification & Preliminary Effects Assessment Memorandum for the San Luis Rey Habitat Management Area Wetland Restoration Project, San Diego County, California.** Dudek assisted the San Diego County Water Authority (SDCWA) as part of an on-call contract to address comments from the U.S. Army Corps of Engineers (Corps) regarding potential impacts from the San Luis Rey Habitat Management Area Wetlands Restoration Project on a segment of the Second San Diego Aqueduct within the project's area of potential effects (APE). The memorandum recommended that SCDWA consider the aqueduct segment within the APE eligible for the National Register of Historic Places (NRHP) for the purposes of the undertaking only and that a finding of no historic properties affected under 36 CFR § 800.4(d)(1) would be appropriate because the resource would be avoided and protected through measures implemented by the project. Mr. Kim authored the justification for the APE and the Section 106 preliminary effects analysis using the criteria of adverse effect (36 CFR § 800.5) (2023).

**Cultural Resources Assessment Report for the Mockingbird Canyon Wash Stabilization Project, Riverside County, California.** The Riverside County Flood Control and Water Conservation District (District) contracted Dudek to prepare a cultural resources assessment for this project, which proposed a series of maintenance improvements along approximately 1.8 miles of the Mockingbird Canyon Wash (Wash) in the unincorporated community of Woodcrest, Riverside County. The project required a Section 404 permit from the U.S. Army Corps of Engineers and was subject to Section 106 of the National Historic Preservation Act. Dudek qualified architectural historians identified 15 historic age built environment resources within the area of potential effects. These resources were evaluated under NRHP and CRHR criteria and found to be ineligible for either register. Mr. Kim served as the built environment lead for this project and provided a senior level review of the technical report (2025).

**Hermosillo Park Stormwater Capture and Park Rehabilitation Project, Norwalk, CA.** This project proposed the construction and operation of a stormwater capture, treatment, and filtration facility within the northern portion of Hermosillo Park, as well as the implementation of a comprehensive park rehabilitation project to replace existing park features with improved amenities. The City of Norwalk was the lead agency under CEQA. In 2024, the City prepared a CEQA initial study to analyze and consider the environmental impacts of implementing the project and determined that a mitigated negative declaration was the appropriate environmental document. Mr. Kim contributed to the Initial Study Cultural Resources section, which concluded that the project would not cause a substantial adverse change in the significance of any historical resources within or adjacent to Hermosillo Park pursuant to Section 15064.5 of the CEQA Guidelines. (2024).

**Cultural Resources Technical Memorandum for the Scotts Valley Water District Intertie Project, Santa Cruz County, California.** Dudek was retained by the Scotts Valley Water District to evaluate the impacts from the extension of a 9,600 linear-foot water pipeline to a new pump station in unincorporated Santa Cruz County. Dudek completed a records search, intensive pedestrian survey, and evaluation of built resources within the pipeline's study area. The memorandum found that none of the built resources in the study area were eligible for the NRHP, CRHR, or local designation. These resources were also evaluated in accordance with 14 CCR § 15064.5(a)(2)-(3) using the criteria outlined in PRC § 5024.1 and determined not to be historical resources for the purposes of CEQA. Mr. Kim provided a senior level review of the evaluations and the technical memorandum for this project (2023).

## Appendix B: CONFIDENTIAL SCIC Records Search Results

## Appendix C: Sacred Lands File Search and Tribal Coordination Correspondence

# Sacred Lands File & Native American Contacts List Request

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

*Information Below is Required for a Sacred Lands File Search*

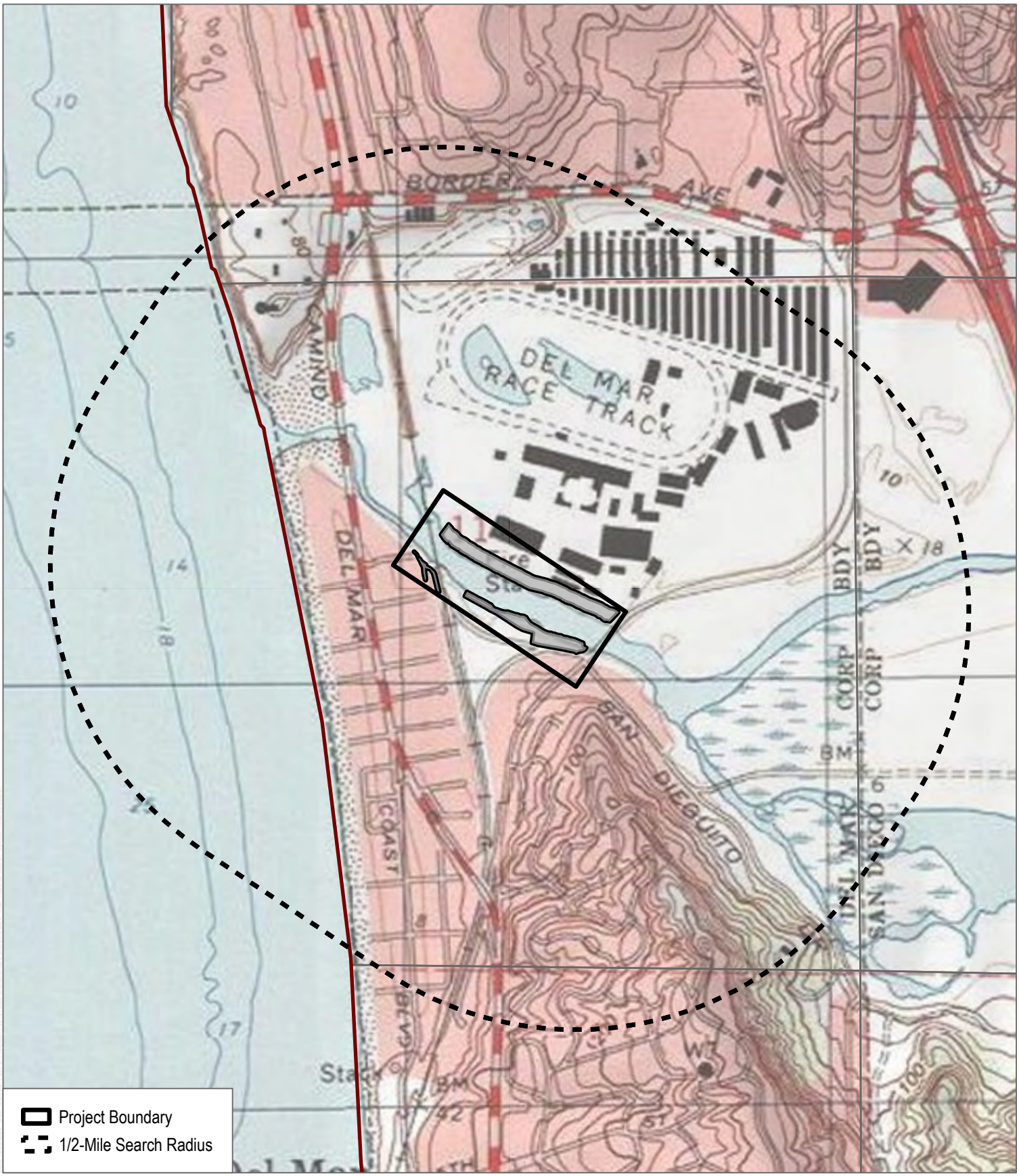
Project: San Dieguito Lagoon Shoreline Protection Project PN 17001
County: San Diego

USGS Quadrangle
Name: Del Mar OE W
Township: 14S Range: 14W Section(s): 1, 2, 11, 12, 13, 14

Company/Firm/Agency:
Dudek
Contact Person: Keshia Montifolca
Street Address: 687 S Coast Highway 101, Suite 110
City: Encinitas, CA Zip: 92024
Phone: (619) 949-3082 Extension:
Fax:
Email: kmontifolca@dudek.com

Project Description:
The City of Del Mar is proposing shoreline protection, including a living levee along portions of the shoreline of the San Dieguito Lagoon/River in Del Mar, San Diego County, California. The Project proposes to use living levee design concepts to improve resilience to sea level rise flood risk protection, result in no rise to the floodplain, improve local water quality, enhance biodiversity, and increase and enhance coastal access.

☑ Project Location Map is attached




SOURCE: USGS 7.5-Minute Series 1:12,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

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0 150 300 Meters

# Records Search

SDL Shoreline Protection

# NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
*Chumash*

VICE-CHAIRPERSON
Buffy McQuillen
*Yokayo Pomo, Yuki, Nomlaki*

SECRETARY
Isaac Bojorquez
*Ohlone-Costanoan*

PARLIAMENTARIAN
Wayne Nelson
*Luiseño*

COMMISSIONER
Sara Dutschke
*Miwok*

COMMISSIONER
Stanley Rodriguez
*Kumeyaay*

COMMISSIONER
Bennae Calac
*Pauma-Yuima Band of Luiseño Indians*

COMMISSIONER
Vacant

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Andrew Alejandre
*Paskenta Band of Nomlaki Indians*

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

January 14, 2026

Keshia Montifolca
Dudek

Via Email to: kmontifolca@dudek.com

Re: San Dieguito Lagoon Shoreline Protection Project, San Diego County

To Whom It May Concern:

As requested, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were negative. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes that are traditionally and culturally affiliated with the project's geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the project area that is not listed with the NAHC.

If within two weeks of notification, a response has not been received, the Commission requests that you follow up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) information center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
*Cultural Resources Analyst*

Attachment

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Art Bunce
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Bunce,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation notification or initiation of consultation. AB 52 and Section 106 consultations are processes between the lead agency and Native American Tribes. If you have any information or concerns pertaining to such information, please contact me by phone or email.

Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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## Records Search

SDL Shoreline Protection

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Marcus Cuero,
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Cuero,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation notification or initiation of consultation. AB 52 and Section 106 consultations are processes between the lead agency and Native American Tribes. If you have any information or concerns pertaining to such information, please contact me by phone or email.

Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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SDL Shoreline Protection

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Lisa Cumper, THPO
Jamul Indian Village
P.O. Box 612
Jamul, CA 91935

**Subject:** Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Cumper,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

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Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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## Records Search

SDL Shoreline Protection

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. John Flores, Environmental Coordinator
San Pasqual Band of Diegueno Mission Indians
P.O. Box 365
Valley Center, CA 92082

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Flores,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

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Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

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Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Ben Dyche, Vice Chairperson
Campo Band of Diegueno Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Dyche,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

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Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




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Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Laurie Gonzales, Tribal Council Member/ Cultural committee member
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA, 92082

**Subject:** Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Gonzales,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

0 1,050 2,100 Feet 0 300 600 Meters

## Records Search

SDL Shoreline Protection

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Daniel Tsosie, THPO
Campo Kumeyaay Nation
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Tsosie,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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January 15, 2026 17001.01 2A

Mr. Allen E. Lawson, Chairperson
San Pasqual Band of Diegueno Mission Indians
P.O. Box 365
Valley Center, CA 92082

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Lawson,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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January 15, 2026 17001.01 2A

Mr. Jospeh Linton, Tribal Council Member/ Cultural committee member
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA, 92082

**Subject:** Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Linton,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Michael Linton, Chairperson
Mesa Grande Band of Dieguneo Mission Indians
P.O. Box 270
Santa Ysabel, CA 92070

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Linton,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Clint Linton, Director of Cultural Resources
Ipay Nation of Santa Ysabel
P.O. Box 507
Santa Ysabel, CA 92070

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Linton,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Cheryl Madrigal, Tribal Historic Preservation Officer
Rincon Band of Mission Indians
One Government Center Lane
Valley Center, CA 92082

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Madrigal,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Lucia Majel, Pauma Cultural Resources Project Manager
Pauma Band of Mission Indians
P.O. Box 369
Pauma Valley, CA 92061

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Majel,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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Phone: (760) 846-5874
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Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

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## Records Search

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Cody Martinez, Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Martinez,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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MAIN OFFICE
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ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Eric La Chappa, Chairman
La Posta Band of Diegueno Mission Indians
8 Crestwood Rd.
Boulevard, CA 91905

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. La Chappa,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Rebecca Osuna, Chairperson
Inaja-Cosmit Band of Indians
2005 S. Escondido Blvd.
Escondido, CA 92025

**Subject:** Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Osuna,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Bernice Paipa, Cultural Resource Specialist
Sycuan Band of the Kumeyaay Nation
Sycuan Cultural Center: 910 Willow Glen Drive
El Cajon, CA, 92019

**Subject:** Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Paipa,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Ernest Pingleton, Tribal Historic Officer
Viejas Band of Kumeyaay Indians
1 Viejas Grade Rd.
Alpine, CA 91901

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Pingleton,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

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SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

0 1,050 2,100 Feet 0 300 600 Meters

## Records Search

SDL Shoreline Protection

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Erica Pinto, Chairperson
Jamul Indian Village
P.O. Box 612
Jamul, CA 91935

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Pinto,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation notification or initiation of consultation. AB 52 and Section 106 consultations are processes between the lead agency and Native American Tribes. If you have any information or concerns pertaining to such information, please contact me by phone or email.

Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

0 1,050 2,100 Feet 0 300 600 Meters

## Records Search

SDL Shoreline Protection

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Eduardo Mercado, Principle
Ewiiaapaayp Band of Kumeyaay Indians
1 Crestwood Road
Boulevard, CA, 91905

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Mercado,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation notification or initiation of consultation. AB 52 and Section 106 consultations are processes between the lead agency and Native American Tribes. If you have any information or concerns pertaining to such information, please contact me by phone or email.

Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

0 1,050 2,100 Feet 0 300 600 Meters

## Records Search

SDL Shoreline Protection

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Angela Elliott Santos, Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Santos,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

Please note that this letter does not constitute Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation notification or initiation of consultation. AB 52 and Section 106 consultations are processes between the lead agency and Native American Tribes. If you have any information or concerns pertaining to such information, please contact me by phone or email.

Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

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## Records Search

SDL Shoreline Protection

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Mr. Ray Teran, Resource Management Director
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA, 91901

**Subject:** Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Mr. Teran,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

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Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

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## Records Search

SDL Shoreline Protection

DUDEK
MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 800.450.1818 F 760.632.0164

January 15, 2026 17001.01 2A

Ms. Denise Walsh, Attorney General
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA, 92082

Subject: Information Request for the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California

Dear Ms. Walsh,

The City of Del Mar is proposing development for the San Dieguito Lagoon Shoreline Protection Project (Project), including living levees along portions of the shoreline of the San Dieguito River Channel. The Project comprises approximately 5.74-acre area of direct impact (ADI), located immediately south of the Del Mar Fairgrounds, along the north and south banks of the San Dieguito Lagoon/River, in the City of Del Mar, California. The Project falls within Section 11 of Township 14 South, Range 4 West on the Del Mar OE W U.S. Geological Survey 7.5-minute quadrangle.

As part of the cultural resources study prepared for the proposed Project, Dudek contacted the Native American Heritage Commission (NAHC) for a Sacred Lands file (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project area. The NAHC emailed a response on January 14, 2026, which stated that the SLF search did not identify the presence of Native American cultural resources in the immediate Project area. I am writing as part of the cultural inventory process in order find out if you, or your tribal community, have any knowledge of cultural resources or places that may be impacted by the proposed Project.

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Respectfully,

Makayla Murillo, M.A., RPA
Archaeologist
DUDEK
Phone: (760) 846-5874
Email: mmurillo@dudek.com

***Attachments:*** *Figure 1. Records Search Project Map.*




SOURCE: USGS 7.5-Minute Series 1:24,000

Del Mar OE W Quadrangle - Township 14S Range 14W Section 01,02, 11-14

DUDEK

0 1,050 2,100 Feet 0 300 600 Meters

## Records Search

SDL Shoreline Protection

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3266 07

MS DENISE WALSH ATTORNEY GENERAL
RINCON BAND OF LUISENO INDIANS
1 GOVERNMENT CENTER LN
VALLEY CENTER CA 92082-5344

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3274 44

MR RAY TERAN RESOURCE MANAGEMENT DIRECTOR
VIEJAS BAND OF KUMEYAAY INDIANS
1 VIEJAS GRADE RD
ALPINE CA 91901-1605

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3274 68

MS ANGELA ELLIOTT SANTOS CHAIRPERSON
MANZANITA BAND OF KUMEYAAY NATION
PO BOX 1302
BOULEVARD CA 91905-0402

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3274 99

MR EDUARDO MERCADO PRINCIPLE
EWIIAAPAAYP BAND OF KUMEYAAY INDIANS
1 CRESTWOOD RD
BOULEVARD CA 91905-9725

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3275 05

MS ERICA PINTO CHAIRPERSON
PO BOX 612
JAMUL CA 91935-0612

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



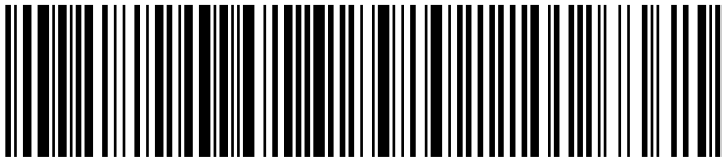
9214 8901 9403 8352 3275 36

MR ERNEST PINGLETON TRIBAL HISTORIC OFFICER
VIEJAS BAND OF KUMEYAAY INDIANS
1 VIEJAS GRADE RD
ALPINE CA 91901-1605

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8300 0052 3276 66

MS. BERNICE PAIPA, CULTURAL RESOURCE SPECIALIST
SYCUAN BAND OF THE KUMEYAAY NATION
910 WILLOW GLEN DRIVE
EL CAJON, CA, 92019

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3276 80

MS REBECCA OSUNA CHAIRPERSON
INAJA-COSMIT BAND OF INDIANS
2005 S ESCONDIDO BLVD
ESCONDIDO CA 92025-8207

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3277 03

MR ERIC LA CHAPPA CHAIRMAN
LA POSTA BAND OF DIEGUENO MISSION INDIANS
8 CRESTWOOD RD
BOULEVARD CA 91905-9725

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3277 34

MR CODY MARTINEZ CHAIRPERSON
SYCUAN BAND OF THE KUMEYAAY NATION
1 KWAAYPAAY CT
EL CAJON CA 92019-1833

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3277 41

MS LUCIA MAJEL PAUMA CULTURAL RESOURCES PROJECT MANAGER
PAUMA BAND OF MISSION INDIANS
PO BOX 369
PAUMA VALLEY CA 92061-0369

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3277 65

MS CHERYL MADRIGAL TRIBAL HISTORIC PRESERVATION OFFICER
RINCON BAND OF MISSION INDIANS
1 GOVERNMENT CENTER LN
VALLEY CENTER CA 92082-5344

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3278 26

MR CLINT LINTON DIRECTOR OF CULTURAL RESOURCES
IPAY NATION OF SANTA YSABEL
PO BOX 507
SANTA YSABEL CA 92070-0507

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3278 57

MR MICHAEL LINTON CHAIRPERSON
MESA GRANDE BAND OF DIEGUNEO MISSION INDIANS
PO BOX 270
SANTA YSABEL CA 92070-0270

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3278 95

MR JOSPEH LINTON
TRIBAL COUNCIL MEMBER/ CULTURAL COMMITTEE MEMBER
RINCON BAND OF LUISENO INDIANS
1 GOVERNMENT CENTER LN
VALLEY CENTER CA 92082-5344

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3279 01

MR ALLEN E LAWSON CHAIRPERSON
SAN PASQUAL BAND OF DIEGUENO MISSION INDIANS
PO BOX 365
VALLEY CENTER CA 92082-0365

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3279 18

MR DANIEL TSOSIE THPO
CAMPO KUMEYAAY NATION
36190 CHURCH RD
STE 1
CAMPO CA 91906-2732

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3279 56

MS LAURIE GONZALES
TRIBAL COUNCIL MEMBER/ CULTURAL COMMITTEE MEMBER
RINCON BAND OF LUISENO INDIANS
1 GOVERNMENT CENTER LN
VALLEY CENTER CA 92082-5344

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3279 94

MR BEN DYCHE VICE CHAIRPERSON
CAMPO BAND OF DIEGUENO MISSION INDIANS
36190 CHURCH RD
STE 1
CAMPO CA 91906-2732

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3280 07

MR JOHN FLORES ENVIRONMENTAL COORDINATOR
SAN PASQUAL BAND OF DIEGUENO MISSION INDIANS
PO BOX 365
VALLEY CENTER CA 92082-0365

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3280 21

MS LISA CUMPER THPO
PO BOX 612
JAMUL CA 91935-0612

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3280 38

MR MARCUS CUERO
CAMPO BAND OF MISSION INDIANS
36190 CHURCH RD
STE 1
CAMPO CA 91906-2732

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

Dudek
687 S Coast Highway 101
Ste 110
Encinitas  CA 92024

USPS CERTIFIED MAIL



9214 8901 9403 8352 3280 76

MR ART BUNCE
BARONA GROUP OF THE CAPITAN GRANDE
1095 BARONA RD
LAKESIDE CA 92040-1541

Return Reference Number:17001.01 2A
Username: Marcel Fuentes

SDL-Levee Shoreline Inventory
NAHC Outreach

| Tribe Name | Contact Person | Contact Address | Phone # | Email Address | Initial Letters | Follow Up | Comment Received |
|---|---|---|---|---|---|---|---|
| Barona Group of the Capitan Grande | Art Bunce, Attorney | 1095 Barona Road<br>Lakeside, CA, 92040 | (760) 489-0329 | buncelaw@aol.com | 1/15/2026 | 1/30/2026 | No comments to the project. |
| Campo Band of Diegueno Mission Indians | Ben Dyche, Vice Chairperson | 36190 Church Road, Suite 1<br>Campo, CA, 91906 | (619) 478-9046 | bdyche@campo-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left message with receptionist. |
| Campo Band of Diegueno Mission Indians | Marcus Cuero, Chairperson | 36190 Church Road, Suite 1<br>Campo, CA, 91906 | (619) 478-9046 | marcuscuero@campo-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left message with receptionist. |
| Campo Band of Diegueno Mission Indians | Daniel Tsosie, THPO | 36190 Church Road, Suite 1<br>Campo, CA, 91906 | (619) 760-6480 | dtsosie@campo-nsn.gov | 1/15/2026 | 1/30/2026 | Need to follow up with an email since voicemail message inbox is full. Sent email on 1/30/2026. Response is pending. |
| Ewiiaapaayp Band of Kumeyaay Indians | Eduardo Mercado, Principle, Grey Wolf Monitoring | 1 Crestwood Road<br>Boulevard, CA, 91905 | (619) 301-4794 | emercado75@hotmail.com | 1/15/2026 | 1/30/2026 | Need to follow up with an email since voicemail message inbox is full. Sent email on 1/30/2026. Response is pending. |
| Iipay Nation of Santa Ysabel | Clint Linton, Director of Cultural Resources | P.O. Box 507<br>Santa Ysabel, CA, 92070 | (760) 803-5694 | clint@redtailenvironmental.com | 1/15/2026 | 1/30/2026 | We conducted the cultural resources inventory for the Project area on 1/16/2026. Clint requests tribal monitorig for the project due to resources within the vicinity. |
| Inaja-Cosmit Band of Indians | Rebecca Osuna, Chairperson | 2005 S. Escondido Blvd.<br>Escondido, CA, 92025 | (760) 737-7628 | | 1/15/2026 | 1/30/2026 | Inbox full and no email provided. |
| Jamul Indian Village | Lisa Cumper, Tribal Historic Preservation Officer | P.O. Box 612<br>Jamul, CA, 91935 | (619) 669-4855 | lcumper@jiv-nsn.gov | 1/15/2026 | 1/30/2026 | Need to follow up with an email since voicemail message inbox is full. Sent email on 1/30/2026. Response is pending. |
| Jamul Indian Village | Erica Pinto, Chairperson | P.O. Box 612<br>Jamul, CA, 91935 | (619) 669-4785 | epinto@jiv-nsn.gov | 1/15/2026 | 1/30/2026 | Need to follow up with an email since voicemail message inbox is full. Sent email on 1/30/2026. Response is pending. |
| La Posta Band of Diegueno Mission Indians | Eric La Chappa, Chairman | 8 Crestwood Road<br>Boulevard, CA, 91905 | (619) 478-2113 | ELaChappa@lptribe.net | 1/15/2026 | 1/30/2026 | Need to follow up with an email since voicemail message inbox is full. Sent email on 1/30/2026. Response is pending. |
| Manzanita Band of Kumeyaay Nation | Angela Elliott Santos, Chairperson | P.O. Box 1302<br>Boulevard, CA, 91905 | (619) 766-4930 | | 1/15/2026 | 1/30/2026 | No answer. Left a voicemail. No email |
| Mesa Grande Band of Diegueno Mission Indians | Michael Linton, Chairperson | P.O Box 270<br>Santa Ysabel, CA, 92070 | (760) 782-3818 | | 1/15/2026 | 1/30/2026 | Phone number does not work. |
| Pauma Band of Luiseno Indians | Lucia Majel, Pauma Cultural Resource Project Manager | P.O. Box 369<br>Pauma Valley, CA, 92061 | (760) 742-1289 | crm@Pauma-nsn.gov | 1/15/2026 | 1/30/2026 | They left us an email on 1/30/2026: request that our office be immediately notified of any inadvertent discoveries or potential impacts to cultural resources, sacred sites, or ancestral remains that may occur during project activities. We also recommend that tribal monitors be present during all ground disturbing activities to limit any impact to cultural resources. |
| Rincon Band of Luiseno Indians | Cheryl Madrigal, Cultural Resources Manager/Tribal Historic Preservation Officer | One Government Center Lane<br>Valley Center, CA, 92082 | (760) 648-3000 | cmadrigal@rincon-nsn.gov | 1/15/2026 | 1/30/2026 | Cherly would like the letter emailed to her. Dudek emailed the letter on 1/30/2026. Response is pending. |
| Rincon Band of Luiseno Indians | Denise Turner Walsh, Attorney General | One Government Center Lane<br>Valley Center, CA, 92082 | (760) 689-5727 | dwalsh@rincon-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left a voicemail. Cherly would like the letter emailed to her. Dudek emailed the letter on 1/30/2026. Response is pending. |
| Rincon Band of Luiseno Indians | Joseph Linton, Tribal Council/Culture Committee Member | One Government Center Lane<br>Valley Center, CA, 92082 | (760) 803-3548 | jlinton@rincon-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left a voicemail. Cherly would like the letter emailed to her. Dudek emailed the letter on 1/30/2026. Response is pending. |
| Rincon Band of Luiseno Indians | Laurie Gonzalez, Tribal Council/Culture Committee Member | One Government Center Lane<br>Valley Center, CA, 92082 | (760) 484-4835 | lgonzalez@rincon-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left a voicemail. Cherly would like the letter emailed to her. Dudek emailed the letter on 1/30/2026. Response is pending. |
| San Pasqual Band of Diegueno Mission Indians | Allen Lawson, Chairperson | P.O. Box 365<br>Valley Center, CA, 92082 | (760) 749-3200 | | 1/15/2026 | 1/30/2026 | Told to call THPO Desiree Whitman 760-644-7060. No answer, left voicemail. Dudek emailed the letter on 1/30/2026. Response is pending. |
| San Pasqual Band of Diegueno Mission Indians | John Flores, Environmental Coordinator | P. O. Box 365<br>Valley Center, CA, 92082 | (760) 749-3200 | johnf@sanpasqualtribe.org | 1/15/2026 | 1/30/2026 | Told to call THPO Desiree Whitman 760-644-7060. No answer, left voicemail. Dudek emailed the letter on 1/30/2026. Response is pending. |
| Sycuan Band of the Kumeyaay Nation | Cody Martinez, Chairman | Sycuan Tribal Office: 1 Kwaaypaay Court<br>El Cajon, CA, 92019 | (619) 445-2613 | cmartinez@sycuan-nsn.gov | 1/15/2026 | 1/30/2026 | Just received the letter and will send to their cultural center. They will reach out if they have any comments or concerns. |
| Sycuan Band of the Kumeyaay Nation | Bernice Paipa, Cultural Resource Specialist | Sycuan Cultural Center: 910 Willow Glen Drive<br>El Cajon, CA, 92019 | (619) 445-6917 | bpaipa2@sycuan-nsn.gov | 1/15/2026 | 1/30/2026 | Same as above. |
| Viejas Band of Kumeyaay Indians | Ernest Pingleton, THPO | 1 Viejas Grade Road<br>Alpine, CA, 91901 | (619) 445-3810 | epingleton@viejas-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left message. Dudek emailed the letter on 1/30/2026. Response is pending. |
| Viejas Band of Kumeyaay Indians | Ray Teran, Resource Management Director | 1 Viejas Grade Road<br>Alpine, CA, 91901 | (619) 659-2312 | rteran@viejas-nsn.gov | 1/15/2026 | 1/30/2026 | No answer. Left message. Dudek emailed the letter on 1/30/2026. Response is pending. |

# Pauma Band of Luiseno Mission Indians - City of Del Mar San Dieguito Lagoon Shoreline Protection Projec

Reply | Reply All | Forward | ...

CR

Cultural Resource Management <crm@Pauma-n

To alee@delmar.ca.us; Makayla Murillo

Cc Evelyn Majel

Fri 1/30/2026 11:56 AM

EXTERNAL - An email in this conversation originated from outside of Dudek. Do not click links or open attachments unless you recognize the sender and know the content is safe.
You replied to this message on 1/30/2026 12:16 PM.
If there are problems with how this message is displayed, click here to view it in a web browser.

Thank you for your notification regarding the above-mentioned project. On behalf of the Pauma Band of Luiseno Mission Indian's Cultural Resource Department, we are emailing to respectfully request that our office be immediately notified of any inadvertent discoveries or potential impacts to cultural resources, sacred sites, or ancestral remains that may occur during project activities. We also recommend that tribal monitors be present during all ground disturbing activities to limit any impact to cultural resources.

Since the project area is within Pauma's ancestral area, it is important that the tribe be informed promptly of any such findings to ensure that appropriate measures are taken in accordance with tribal protocols, cultural sensitivity, and applicable laws and regulations.

Please direct all notification via email to CRM@pauma-nsn.gov and emajel@pauma-nsn.gov or by phone at (760)742-1289 ext. 317.

Alisha Pico
Pauma Band of Luiseno Indians
Cultural Department
Work: (760)742-1289 ext. 317
Cell: (619)212-2118
CRM@pauma-nsn.gov
PO Box 369, Pauma Valley, CA 92061

# Rincon Band of Luiseño Indians
## CULTURAL RESOURCES DEPARTMENT

One Government Center Lane | Valley Center | CA 92082
(760) 749-1092 | Fax: (760) 749-8901 | rincon-nsn.gov

January 30, 2026

**Sent via email: mmurillo@dudek.com**
Ms. Makayla Murillo
DUDEK

**Re: Your Information Request for Native American cultural resources on or near the San Dieguito Lagoon Shoreline Protection Project, City of Del Mar, San Diego County, California**

Dear Ms. Murillo,

This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Tribe"), a federally recognized Indian tribe and sovereign government in response to your request for information pertaining to cultural and tribal cultural resources on the above referenced project. The identified location is south of what we identify as the Tribe's Traditional Use Area.

After reviewing the documents provided and our internal information, the Rincon Band has no information on specific Tribal Cultural Resources (TCRs) or Traditional Cultural Properties (TCPs) within or surrounding the project area to share. However, this does not mean that none exist. The San Dieguito Lagoon like other waterways is considered a culturally sensitive area due to its historical and cultural significance to indigenous people. The lagoon and associated waterways historically provided essential water and biological resources and supported long-term habitation and use. Given this context, there is potential for subsurface archaeological resources, including cultural materials, to be present within the project area, even in locations that have experienced prior disturbance. Ground-disturbing activities associated with the proposed project could result in impacts to previously undiscovered cultural resources. Therefore, tribal and archaeological monitoring during ground-disturbing activities is recommended, unless consultation between the affiliated Tribes and the lead agency determines that there is no reasonable potential to encounter cultural resources based on the results of additional technical studies, such as a geotechnical report. We also recommend working closely with the Kumeyaay Nation as they may have additional information to provide.

If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 749 1092 ext. 323 or via electronic mail at cmadrigal@rincon-nsn.gov. Thank you for the opportunity to protect our cultural assets.

Sincerely,



Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

Steve Stallings, Chairman | Joseph Linton, Vice Chairman | Laurie E. Gonzalez, Council Member | John Constantino, Council Member | Alfonso Kolb Sr., Council Member

# Appendix D: DPR 523 Forms

**State of California - The Resources Agency**
**DEPARTMENT OF PARKS AND RECREATION**

# PRIMARY RECORD

**Primary #**
**HRI #**
**Trinomial**
**NRHP Status Code** 6Z

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** (Assigned by recorder) Public Works Building

**P1. Other Identifier:** Map ID 1
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Diego
**and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** *Del Mar, Calif.* **Date** 2000 **T** 14S; **R** 4W; ¼ **of** ¼ **of Sec** 11; San Bernardino **B.M.**
c. Address 2240 Jimmy Durante Boulevard City Del Mar Zip 92014
d. UTM: (Give more than one for large and/or linear resources) Zone 11, 475268 mE/ 3648116 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APNs 299-071-0300 and 299-030-2000

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property is a one-story, International style public utility building at 2240 Jimmy Durante Boulevard (Photograph 1). It is set back from the street with an asphalt-paved parking lot along the primary (east and south) elevations, and an asphalt-paved service yard along the rear (west) and north elevations. The building has an L-shape plan and is one-story in height. It is topped by a flat roof with a parapet and features a lower flat roof over the southeast corner of the building that has a cantilevered overhang clad with wood board-and-batten siding. See Continuation Sheet.

***P3b. Resource Attributes:** (List attributes and codes) HP9. Public Utility Building
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)




P5b. Description of Photo: (View, date, accession #) Photo 1, primary (east and south) elevations, looking northwest, 1/16/2026, Dudek, IMG_2180.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1978 (NETR 2026)

***P7. Owner and Address:**
City of Del Mar
1050 Camino Del Mar
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, address)
Katie Ahmanson, MHC
Dudek
225 S. Lake Ave, Ste. M210
Pasadena, CA 91101

***P9. Date Recorded:**
January 16, 2026

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Dudek. 2026. *Cultural Resources Assessment Report for the San Dieguito Lagoon Shoreline Protection Planning Project*. Prepared for the City of Del Mar.
***Attachments:** ☐ NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐Sketch Map ☐Other (List):

# BUILDING, STRUCTURE, AND OBJECT RECORD



***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) Public Works Building

B1. Historic Name: Del Mar Public Works Building
B2. Common Name: Del Mar Public Works Building
B3. Original Use: Public Utility Building
B4. Present Use: Public Utility Building
***B5. Architectural Style:** International Style
***B6. Construction History:** (Construction date, alterations, and date of alterations) Built c. 1978 (NETR 2026). No alterations were identified during the property survey on January 16, 2026.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:** Surrounding asphalt paved parking lot and a flag pole.

B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** N/A **Area:** N/A
**Period of Significance** N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Public Works Building at 2240 Jimmy Durante Boulevard does not meet the criteria for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR). The property was evaluated in accordance with Section 106 of the National Historic Preservation Act (Section 106) and Section 15064.5 (a)(2)-(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code. The property is not considered a historic property for the purposes of Section 106 or a historical resource under CEQA. As such, this evaluation assigns a 6Z California Historical Resources Status Code to the Public Works Building at 2240 Jimmy Durante Boulevard. See Continuation Sheet.

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** See Continuation Sheet.

B13. Remarks:

***B14. Evaluator:** Katie Ahmanson, MHC, Dudek, and Andrea Dumovich Heywood, MHC, Dudek

***Date of Evaluation:** January 2026

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



**State of California - The Resources Agency**
**DEPARTMENT OF PARKS AND RECREATION**

# LOCATION MAP

**Primary #**
**HRI#**
**Trinomial**



***Resource Name or #** (Assigned by recorder) Public Works Building

***Map Name:** Del Mar, Calif. ***Scale:** 1:24,000 ***Date of map:** 2000






*** Required information**

***P3a. Description (continued from page 1)**

Cladding is a combination of concrete masonry units (CMU) on all elevations, and stucco beneath the overhang and on a portion on the rear (west) elevation. The main entrance on the primary (east) elevation consists of a metal door beneath the projecting overhang. Additional metal doors on the rear (west) elevation provide secondary entrances to the building (Photograph 2). Fenestration includes vinyl-sash sliding and fixed windows on the primary (east and south) elevations, and three corrugated metal roll-up garage doors on the rear (west) elevation. The building is a modest example of the International Style with elements including its asymmetry, flat roof with a cantilevered overhang, lack of decoration or ornamentation, stucco cladding, and large concrete expanses. A flagpole is situated along the primary (east) elevation. Landscaping includes small plantings, shrubs, and a palm tree along the primary (east and south) elevations. The historic property boundary is limited to the property's APNs (299-071-0300 and 299-030-2000). The property is in good condition.

***B10. Significance (continued from page 2):**

Historical Overview of San Diego County

The written history of the State of California is generally divided into three periods: the Spanish Period (1769–1821), Mexican Period (1821–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American Period when California became a territory of the United States.

*Spanish Period (1769–1821)*

Spanish explorers made sailing expeditions along the coast of Southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabríllo stopped in 1542 at present-day San Diego Bay. With his crew, Cabríllo explored the shorelines of present-day Catalina Island and San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1884: 1-3).

San Diego was first recorded in 1602 by Spanish explorer, Sebastián Vizcaíno, who explored the coast of California with a galleon of three ships, the San Diego, his flagship, the Santo Tomas and Tres Reyes. Vizcaíno and his crew landed on the coast on November 10, 1602, which was also the Catholic feast day of San Diego Alcalá. Thus, they renamed the area, San Diego, in honor of the day and the ship that got them there. However, they only stayed for ten days before departing and it would be over hundred years before their return (Mills 1985: 1-20).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July 1769, while Portolá was exploring Southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Bancroft 1884: 4-31).

The Spanish colonization of Alta California began in 1769 with the founding of Mission San Diego de Alcalá by Father Junípero Serra. Concerns over Russian and English interests in California motivated the Spanish government to send an expedition of soldiers, settlers, and missionaries to occupy and secure the northwestern borderlands of New Spain through the establishment of a Presidio, Mission, and Pueblo (Smythe 1908: 58). The site for the Mission was chosen because of its proximity to Kumeyaay villages which were known to be a reliable source of fertile land and water.

Members of the local tribes were gathered and required to build Mission San Diego and a presidio structure on the hill near the river. Additionally, they cultivated wheat, barley, corn, and beans in the fields, and maintained orchards and vegetable gardens at the Mission with over 50,000 acres of land cultivated by 1797 (NPS 2023). Spanish soldiers primarily garrisoned the forts as well as guarded the mission and its resources. They lived on small house lots in house made from wood, rushes, tule, and adobe with garden plots, and by 1821, their residences spread to the base of the Presidio Hill and across Mission Valley (Smythe 1908: 47-59).

*Mexican Period (1821–1848)*

In the early 1820s, Spanish control over its expansive subjugated territories began unraveling, which greatly affected the political and national identity of the Southern California territory. Mexico established independence from Spain in 1821, secured California as a Mexican territory in 1822, and became a federal republic in 1824. After Mexican independence and the 1833 confiscation of former mission lands, Juan B. Alvarado became governor of the territory. Secularization of the mission system began in 1834, and in 1836, Alvarado commenced with subdividing the former mission lands into large land grants called ranchos (Brown and Boyd 1922: 15).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico (Brown and Boyd 1922: 26-28). By 1834 the presidio, once the center of life in Spanish San Diego, had been abandoned and lay in ruins (NPS 2023). San Diego's official Pueblo (town) status was removed by 1838, and it was made a subprefecture of the Los Angeles Pueblo (SD 2007: 17). In 1841, the area comprising present-day Del Mar was granted to Don Jaun Maria Osuna as part of the San Dieguito Ranch (DMUSD 2026).

*American Period (1848–Present)*

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident Californios and Americans in the San Bernardino area. The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories. Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but were also desired as a source of meat and other goods. During the 1850s there was a significant cattle boom in the Los Angeles basin and Southern California at large, and rancho vaqueros drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Old Spanish Trail, then were transported by trains when available. The cattle boom ended for Southern California as neighbor states and territories drove herds to Northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Brown and Boyd 1922: 30-36).

After the Panama Canal was opened in 1914, San Diego County's economic focus on agriculture and fishing expanded to include manufacturing and shipping. Additionally, military presence in the area increased with the establishment of Naval Base Point Loma in 1898, Marine Corps Recruit Depot in 1911, Marine Corps Air Station Miramar and the Naval Air Station North Island in 1917, Naval Base San Diego in 1919, Naval Amphibious Base Coronado in 1943, and Marine Corps Base Pendleton in 1942 (Britannica 2023). World War II accelerated the economic and population growth that lasted until the end of the Cold War in 1990 (Mills 1985: 1-20). Post World War II-era growth included the establishment of cities within San Diego County, such as the City of Del Mar (incorporated in 1959), and the City of Solana Beach (incorporated in 1986) (City of Del Mar 2026a; Solana Beach Civic and Historical Society 2022).

During the twenty-first century, San Diego County established itself as one of the largest counties in California with its main industries focused on defense and tourism. Examples of every major period and style remain in San Diego County. Among the recognized styles are Spanish Colonial, Pre-Railroad New England, National Vernacular, Victorian Italianate,

Stick, Queen Anne, Colonial Revival, Neoclassical, Shingle, Folk Victorian, Mission, Craftsman, Prairie, French Eclectic, Italian Renaissance, Spanish Eclectic, Egyptian Revival, Tudor Revival, Modernistic, and International (SD 2007: 53).

Development of the Del Mar Public Works Department

Archival research indicates that the Del Mar Public Works Department was established by the mid-1960s (CD 1964: 15). The Department maintains essential public infrastructure such as the distribution of potable water, wastewater collection, street maintenance, open spaces, and city facilities. Such programs are facilitated in conjunction with the city engineering services firm, city traffic consultant, and citizen-led committees (City of Del Mar 2026b). Historic newspapers reported on several Public Works Department projects over the years including, the development of two stormwater sewers in 1964, road improvements to the alley east of Camino del Mar in 1988, and sewage spill repairs in 1974 and 1988 (CD 1964: 15; DMC 1988a: 3; DMC 1988b: 12). According to historic aerial photographs, the Public Works Building at 2240 Jimmy Durante Boulevard was built in c. 1978 along the south shore of the San Dieguito Lagoon and has not undergone any significant alterations since its construction (NETR 2026). The Del Mar Public Works Department has continued to own and operate the property to the present.

Typology: Public Utility Buildings

Public Utility Buildings, such as the Public Works Building, are comprised of an administration building and service yard. Administrative buildings are typically conventional in form with architectural styles reflective of the periods in which they were built. Service yards sited to the rear of administrative buildings feature heavy machinery, workshops, and sheds. Such properties may be significant for their associations with changes in maintenance machinery and technical procedures, for their architectural style, or are designed by a notable architect, or for their association with significant trends in community planning related to publicly-owned utilities (Survey LA 2017: 52-61).

Character Defining Features for Public Utility Buildings include the following:

- Administration buildings have significant lobby spaces and prominent signage; may have significant landscape features
- May also be significant within themes of the Architecture and Engineering context, particularly administration buildings
- Of an engineering and/or architectural form/style
- May be designed by noted architects
- Reflects significant trends in community planning relating to the expansion of publicly-owned utilities
- Associated with the physical growth of a city

Architectural Style: International Style (c. 1925-Present)

The International Style came to the United States in the 1930s after gaining popularity in Germany, Holland, and France through architects such as Walter Gropius and Ludwig Mies van der Rohe. The style spread in part because of Henry-Russell Hitchcock and Philip Johnson's 1932 book titled *The International Style: Architecture Since 1922* for the New York Museum of Modern Art's exhibition. In their book, Hitchcock and Johnson introduced the term International and identified the three principles as architecture as volume, regularity, and avoiding the application of ornament. These three principals have been the baseline for American International Style (SFPD 2011: 168; McAlester 2019: 616-621).

The main difference between International Style buildings and their predecessors was their lack of exterior support of solid masonry. They often depended on a metal interior skeleton and utilized the curtain wall to clad walls in glass. This dependency on the metal frame resulted in windows being hung in repeating patterns which brought another level of order to these already stripped-down buildings. Mies's designs specifically focused on perfection through mathematics, generating rectangular curtail wall designs displaying strong roots in the philosophy of the Bauhaus. This movement incorporated simple and precise designs and incorporated mass-produced materials such as concrete, steel, and glass paired with functionality in design (SFPD 2011: 168; McAlester 2019: 616-621).

The International Style remained popular after World War II through the 1970s, as the clean and geometric characteristics of the style provided efficient construction for large buildings. Architects began to divert from the

formulaic constraints inherent in the International Style by including asymmetrical features such as cantilevered projections, although the style's easily replicable forms, materials, and minimal ornamentation continued to make it a popular choice for utilitarian and corporate buildings. In the 1960s, the style became the dominant style for skyscrapers, emphasizing volume over mass with the use of lightweight, mass-produced materials. By the 1970s, it was the most common style for corporate offices, with aspects of the style still being applied today (Hitchcock and Johnson 1995: 33-37; Britannica 2020; McAlester 2019: 620).

Characteristics of the International style:

- Vertical box
- Often set on "pilotis" or stilts, giving the appearance of floating
- Asymmetry
- Windows and wall surfaces are on the same plane, providing the look of a taut skin
- Tinted and/or mirrored glass
- Repeating pattern of fenestration
- Flat roof structure often with cantilevered projections
- Little decoration or ornamentation
- Open interior spaces
- Smooth wall surfaces, usually clad with stucco
- Large concrete expanses
- Use of modern materials such as metal windows, concrete, and steel

Statement of Significance

The Public Works Building at 2240 Jimmy Durante Boulevard was evaluated in consideration of the NRHP and CRHR criteria and integrity requirements. As a result of the evaluation, the Public Works Building is recommended not to be eligible for inclusion in the NRHP or CRHR due to a lack of significant associations and architectural merit.

NRHP/CRHR Evaluation

*Criterion A/1: Events*

Under NRHP Criterion A and CRHR Criterion 1, archival research did not find that the Public Works Building possesses a direct and important association with any events or pattern of events significant in local, state, or national history. The subject property was constructed c. 1978, during a period of increased population growth in San Diego County. This population growth was reflective of both state-wide trends in the decades following World War II's conclusion in 1945, as well as a shift in the region's predominantly agricultural economy to one that included more industrial activity, which drew new residents and encouraged residential development. The City of Del Mar was established in 1959, and the Public Works Department was developed shortly after, in the mid-1960s (City of Del Mar 2026a; CD 1964: 15). The Public Works property at 2240 Jimmy Durante Boulevard was constructed to help support essential public infrastructure including the distribution of potable water, wastewater collection, street maintenance, open spaces, and city facilities (City of Del Mar 2026b). Although the subject property has an association with the development of the area, it did not contribute in any significant way to that pattern of development. The subject property is a typical example of Del Mar's government buildings constructed during the late 1970s to serve the region's growing population. Post-World War II growth was an important trend both regionally and in California; however, this property did not contribute in any significant way to this pattern of development. It is also not known to be directly associated with events that have made a significant contribution to the history of San Diego County, Del Mar, California, or the nation. Research also did not identify a significant historical event that occurred on the property. Therefore, the subject property does not meet NRHP Criterion A or CRHR Criterion 1 and is recommended not eligible.

*Criterion C/2: Significant Persons*

Under NRHP and CRHR Criteria B/2, the Public Works Building lacks a significant association with the productive life of any person important in local, state, or national history. Research did not identify information that would indicate the

subject property has an association with members of the Del Mar Public Works Department that would rise to the threshold of significance required for eligibility. Additionally, archival research uncovered no person directly associated with the subject property. Due to a lack of identified significant associations with any persons important in our past, the subject property is recommended not eligible under NRHP Criterion B or CRHR Criterion 2.

*Criterion C/3: Design/Construction*

Under NRHP and CRHR Criteria C/3, the Public Works Building does not embody the distinctive characteristics of a type, period, or method of construction that would represent a significant and distinguishable entity. The subject property is a modest and architecturally undistinguished example of a public utility building constructed in c. 1978 that displays elements of the International Style (e.g., its asymmetry, flat roof with a cantilevered overhang, lack of decoration or ornamentation, stucco cladding, and large concrete expanses). Due to its geometric form, easily replicable components, and minimal ornamentation, International Style design elements were commonly applied to modest utilitarian industrial buildings in the 1960s and 1970s. As an undistinguished example of the style, the subject property represents one of many such industrial buildings constructed in Del Mar and San Diego County in the 1970s. Archival research did not identify an architect, designer, or builder. However, as it is a common, purpose-built, commercial property type and style, it is unlikely that it was the work of a master architect or builder. The property appears to have been constructed through already well-documented and common construction techniques and methods, and does not appear to possess high artistic values by articulating a particular concept of design to the extent that it expresses an aesthetic ideal. It does not contribute to the significance of a potential or existing historic district. Overall, the property lacks sufficient design and construction value to meet NRHP Criterion C or CRHR Criterion 3 and is recommended not eligible under this criterion.

*Criterion D/4: Data Potential*

Under NRHP and CRHR Criteria D/4, the subject property is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the subject property lacks significance under NRHP Criterion D and CRHR Criterion 4.

Integrity Considerations

Integrity is the ability of a property to convey its significance. Because the concept of integrity is based on significance, the assessment of a property's integrity can only proceed after its significance has been fully established. Because the subject property lacks sufficient significance to meet any of the criteria for listing in the NRHP or CRHR, analysis was considered immaterial for the subject properties.

***B12. References (continued from page 2):**

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Brown, J., and J. Boyd. 1922. *History of San Bernardino and Riverside Counties, Volume 1*. Chicago, Illinois: The Western Historical Association. Accessed January 16, 2020. Accessed February 2025. https://archive.org/details/historyofsanbern01brow/page/n5/mode/2up.

CD (Coast Dispatch). 1964. "Storm Sewers in Del Mar Under Study." Newspapers.com: *Coast Dispatch* (Encinitas, CA). April 2, 1964. Page 15.

City of Del Mar. 2026a. "About Del Mar." City of Del Mar Public Works Department (Del Mar, CA). Accessed January 26, 2026. https://www.delmar.ca.us/764/About-Del-Mar.

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***Pfa. Photographs (continued from page 1):**

**Photograph 2.** The rear (west) elevation of the Public Works Building, view looking southeast.



**Source:** Dudek, IMG_2235.

*NRHP Status Code: 6Z

**P1. Other Identifier:** Map IDs , 2, 2A, 2B, 2C, 2D, and 2E

***P3a. Description:**

This Update DPR 523 form supplements the original recordation and evaluation of the Del Mar Fairgrounds (Map ID 2) prepared by Casey Tibbet of LSA Associates, Inc. in 2006 (Tibbet 2006). The focus of the current update recordation, however, is limited to 5 historic-age buildings along the southern end of the fairgrounds property at 2260 Jimmy Durante Boulevard. These buildings include the following:

- Exhibit Hall (Map ID 2A). Constructed in 1955, this large one-story building has a rectangular plan, moderately-pitched gable roof sheathed with composition shingles. The building is clad with stucco and horizontal wood siding. Fenestration includes a row of clerestory windows below the eaves and bands of horizontal rectangular-shaped windows on the addition. The building is in overall good condition.
- Bing Crosby Hall (Map ID 2B). Constructed in 1951, this one-story building features a rectangular plan, medium pitch gable roof sheathed with composition shingles, and clerestory windows. The southwest elevation displays a shed-roof addition with bay doors. The building is in overall good condition.
- Maintenance Building South (Map ID 2C). Constructed in c. 1960, this one-story utilitarian building features a rectangular plan, metal-clad gable roof, metal siding and an addition appended to the western elevation. The building is in overall fair condition.
- Maintenance Building (Map ID 2D). Constructed in c. 1960, this one-story utilitarian building features a rectangular plan, metal-clad gable roof, and metal siding. The building is in overall fair condition.
- Warehouse (Map ID 2E). Constructed in c. 1960, this one-story utilitarian building features a rectangular plan, metal-clad gable roof, and metal siding. The building is in overall fair condition.

During the inventory update, Dudek architectural historian Katie Ahmanson identified two additional buildings that were not specifically called out in the 2006 DPR form. One of these buildings was a small metal-clad office built in 2003 directly adjacent to the northeast corner of Map ID 2E, and the other was a laundry facility with restrooms (Map ID 2F) that was built in 2001 near the southwestern corner of Map ID 2A. Neither building met the age threshold for formal recordation and lacked the potential for listing in any register as resources less than 50 years of age.

**P5a. Photograph 1.**




**P5b. Description of Photo**: Photo 1. Aerial view of inventoried resources. 1/16/2026.

***P6. Date Constructed/Age and Sources:**
☒ Historic; 1951, 1955, c. 1960, 2001, and 2003. Source: Tibbet 2006 and historic aerials (NETR 2026)

***P8. Recorded by:**
Katie Ahmanson, MA
Dudek
225 S. Lake Avenue
Pasadena, CA 91101

***P9. Date Recorded:**
1/16.2026

***P10. Survey Type:**
Intensive

***P11. Report Citation**: Dudek. 2026. Cultural Resources Assessment Report for the San Dieguito Lagoon Shoreline Protection Planning Project. Prepared for the City of Del Mar.
***Attachments:** ☒Sketch Map ☒Other: Previously prepared DPR 523 forms.
***B5. Architectural Style:** Utilitarian
***B6. Construction History:** Exhibit Hall, Bing Crosby Hall The Maintenance Building South, Maintenance Building, and Warehouse were constructed in ca. 1960. The Laundry & Restroom building was constructed in 2001 and the Office was constructed in 2003. The date of additions and other alterations is unknown.

***B10. Significance:** **Theme**: N/A **Area:** N/A
**Period of Significance**: N/A **Property Type**: N/A **Applicable Criteria**: N/A

The Del Mar Fairgrounds was previously inventoried and evaluated as a potential historic district in 2006 by Casey Tibbet of LSA Associates, Inc. (LSA) to support the findings in LSA's technical study, *Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California* (LSA 2006). The 2006 intensive level survey and significance evaluations were prepared in compliance with the California Environmental Quality Act (CEQA) and recommended ineligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), as well as applicable local ordinances, and it was assigned a 6Z California Historical Resources Status Code. As such, the Del Mar Fairgrounds is not considered a historical resource for the purposes of CEQA, nor was it found to be a historic property under Section 106 of the National Historic Preservation Act (NHPA) (Tibbet 2006: 52).

Tibbet also inventoried and evaluated several resources within the fairgrounds for potential individual significance. These resources included the Exhibit Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Main Racetrack, D. Robert Jones Center, Alvarado House, Fire Station Office, Del Mar Thoroughbred Club Grandstand and Racetrack complex, Infield Pavilion, Janitorial building, Surfside Race Place and Horse Arena Complex, Maintenance Building South (Map ID 2C), Maintenance Building North, Metal and Manufactured Storage buildings (Map IDs 2D and 2E), O'Brien Hall, and the


SOLANA BEACH COUNTY PARK
Solana Beach
Del Mar
Del Mar Heights
DEL MAR RACE TRACK
SAN
0 1,250 2,500 Feet
0 260 520 Meters
Project Location
Del Mar Fairgrounds


Marsolan Ave
W Solana Cir
E Solana Cir
Peppertree Ln
Turfwood Ln
Cofair Ave
Hialeah Cir
S Cedros Ave
Cofair Ct
Sea Turf Cir
Shoemaker Ln
Solana Cir
Longden Ln
Arcaro Ln
Turf View Dr
Del Mar Downs Rd
Pimlico Dr
Waterford Dr
Highland Dr
Valley Ave
Via de la Valle
Turf Rd
7601453804
2990301300
2990300500
2
2F
2A
2B
2C
2D
2E
Sandy Pointe
2990300200
Jimmy Durante Blvd
28th St
2990302000
2990302100
27th St
2990640100
2990710300
26th St
25th St
Ocean Fr
0 350 700 Feet
0 70 140 Meters
Del Mar Fairgrounds
Area of Potential Effects
Map ID 2: Del Mar Farigrounds - 2260 Jimmy Durante Blvd, Del Mar / Assessor Parcel Number [APN]: 760-145-3804
MapID #, Name
2,Del Mar Fairgrounds
2A,Exhibit Hall
2B,Bing Crosby Hall
2C,Maintenance Building South
2D,Maintenance Building
2E,Warehouse
2F,Laundry & Restrooms (not of age)

Stephens Training track. Tibbett found all these resources to be ineligible for individual listing at the local, state, and national level and assigned a 6Z status code. Consequently, Tibbett found none of these resources to be historical resources for the purposes of CEQA or historic properties under Section 106 of the NHPA (Tibbet 2006: 52).

Finally, Tibbet inventoried the Clock Tower Building and the Stables/living quarters complex within the fairgrounds property and found that these resources also do not meet any of the criteria for individual significance at the local state, or national level. Tibbets did, however, suggest that with the passage of time, these resources may merit consideration in the local planning process should the City develop a historic preservation ordinance. Consequently, Tibbet assigned a 6L status code to these resources (Tibbet 2006: 54).

Subsequent to Tibbets' 2006 DPR evaluation of the Del Mar Fairgrounds and its 17 historic period resources, three additional evaluations involving this property have been prepared. The first was a 2015 DPR update evaluation prepared by Kara Brunzell for the Del Mar Infield Pavilion, which was assigned the Primary Number P-37-035935. The Update DPR form was prepared in support of the *Cultural Resources Assessment for the Del Mar Grandstands Project, Del Mar, San Diego County, California*. Bunzell reaffirmed that the Del Mar Infield Pavilion is ineligible for individual listing at the local, state, and national level because it was constructed outside of the Del Mar Fairgrounds' potential period of significance, 1936-1956 (Brunzell 2015:1).

The second DPR update evaluation focused on the Human Resources Building (P-37-035936), which is part of the Del Mar Thoroughbred Club Grandstand and Racetrack Complex at the Del Mar Fairgrounds. The evaluation was prepared in 2016 by M. Mello of AECOM, and it reaffirmed the 2006 finding that this building does not appear to be eligible for listing in the NRHP or CRHR, either as an individual resource or as a contributor to a larger historic property (Mello 2016:1).

The third update evaluation centered on the Del Mar Race Track and Fairgrounds Exhibit Hall. Although this evaluation was not on file at the South Central Information Center, the Office of Historic Preservation's Built environment Resources Directory (BERD) indicates that it underwent formal review by the State Historic Preservation Officer. The lead agency for this project was the Federal Communications Commission, and it was assigned a 6Y status code on October 2, 2019, indicating that it was determined ineligible for the NRHP by consensus through the Section 106 process but not evaluated for the CRHR or for local listing. Dudek was unable to obtain a copy of the SHPO concurrence letter.

The current evaluation focuses on five historic age buildings along the southern end of the Del Mar Fairgrounds: the Exhibit Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building South (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse (Map ID 2E). While Dudek's field survey confirmed that these buildings remain extant and in good to fair condition, no new additional information was uncovered that would warrant a change in their 6Z ineligible status. The current update evaluation form, therefore, agrees with the ineligible findings in the original 2006 LSA evaluation prepared by Cassey Tibbet, and recommends that the five subject buildings evaluated in this study are ineligible for listing, individually or as district contributors, in the NRHP, CRHR, or any other register. Dudek evaluated these five buildings because the BERD indicated that on October 2, 2019, the California SHPO concurred on the 6Y ineligibility determination of the Federal Communications Commission for the Del Mar Fairgrounds Exhibit Hall (Map ID 2A), but it was unclear whether any of the 4 other subject buildings were included in that determination. Additionally, because the 6Y status code indicates that the Exhibit Hall was determined ineligible only for the NRHP by consensus through the Section 106 process, and was not evaluated for potential listing in the CRHR or a local register, the current evaluation closes that regulatory gap by providing an evaluation of the subject resources under all applicable federal, state, and local criteria. With regard to CEQA, the five subject buildings were evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code and found not to be historical resources for the purposes of CEQA. The update evaluation also reaffirms that none of the five subject buildings are eligible for listing in the NRHP, either individually or as district contributors, and are thus not considered historic properties under Section 106 of the NHPA. As such, Dudek has assigned a 6Z status code to the 5 subject resources.

Provided below is Dudek's evaluation of the Del Mar Fairgrounds Exhibit Hall (Map ID 2A), Bing Crosby Hall (Map ID 2B), Maintenance Building South (Map ID 2C), Maintenance Building (Map ID 2D), and Warehouse (Map ID 2E) under each of the NRHP and CRHR listing criteria. The City of Del Mar does not currently maintain a register of locally designated historic resources.

Under NRHP Criterion A and CRHR Criterion 1, research did not find that Map IDs 2A, 2B, 2C, 2D, or 2E possess a direct and important association with any events or pattern of events significant in local, state, or national history. Although the Del Mar Fairgrounds is representative of the agricultural and recreational development of Del Mar and San Diego County, none of the subject resources possess a direct and significant association with any events important to this development or to history in general, either locally, statewide, or nationally. As such, the five subject resources do not appear to be individually eligible under NRHP Criterion A or CRHR Criterion 1.

Under NRHP Criterion B and CRHR Criterion 2, Map IDs 2A, 2B, 2C, 2D, and 2E lack a significant association with the productive life of any person important in local, state, or national history. While the Del Mar Fairgrounds has an association with notable Hollywood entertainers—including Bing Crosby, Pat O'Brien, and Jimmy Durante—none of the five subject buildings possess a direct and demonstrably significant association with the productive life of any of these individuals. As such, the subject properties are recommended ineligible for listing under NRHP Criterion B and CRHR Criterion 2.

Under NRHP Criterion C and CRHR Criterion 3, Map IDs 2A, 2B, 2C, 2D, and 2E lack sufficient design distinction and construction value to meet either criterion. Additionally, none of the subject resources represents the work of a master or possesses high artistic values. As such, the subject properties are recommended ineligible for listing under NRHP Criterion C and CRHR Criterion 3.

Under NRHP Criterion D and CRHR Criterion 4, Map IDs 2A, 2B, 2C, 2D, and 2E are not significant as sources, or likely sources, of important historical information, nor do they appear likely to yield important information about historic construction methods, materials, or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the subject resources lack significance under NRHP Criterion D and CRHR Criterion 4.

The five subject buildings were evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code and found not to be historical resources for the purposes of CEQA. The update evaluation also reaffirms that none of the subject buildings are eligible for listing in the NRHP, either individually or as district contributors, and are thus not considered historic properties under Section 106 of the NHPA. As such, Dudek has assigned a 6Z status code to the five subject resources.

***B14. Evaluators:** Monte Kim, PhD
Dudek, 1810 13th Street, Sacramento CA 95811

***Date of Evaluation**: 1/27/2026

Photograph(s):

**Photograph 2.** Exhibit Hall (Map ID 2A), view northeast. Photograph taken on January 16, 2026.




**Photograph 3.** Bing Crosby Hall (Map ID 2B), view northwest. Photograph taken on January 16, 2026.



**Photograph 4.** Maintenance Building South (Map ID 2C), view southeast. Photograph taken on January 16, 2026.



**Photograph 5.** Maintenance Building (Map ID 2D), view northeast. Photograph taken on January 16, 2026.



Photograph 6. Warehouse (Map ID 2E), view northwest. Photograph taken on January 16, 2026.



*B12. References

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Tibbet, Casey. 2006. "Evaluation of the Del Mar Fairgrounds" prepared on a California Department of Parks and Recreation 523 form set. On file at the City of Corona Planning Division.

Office of Historic Preservation Built Environment Resources Directory showing that the Del Mar Race Track and Fairgrounds Exhibit Hall were determined ineligible for the NRHP with SHPO concurrence on October 2, 2019

| Primary Number | OTIS ID | Property Number | Name | St Number | St Name | City | County | Zip | Evaluation Info | Construction Year(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 480593 | 081938 | RESIDENCE | 220 | 27TH ST | DEL MAR | SAN DIEGO | | 6Y, 05/25/1993, HUD930409E | 1937 |
| | 565306 | 132970 | CANFIELD-WRIGHT HOUSE\|PINK LADY\|WRIGHTLA | 420 | AVENIDA F | DEL MAR | San Diego | 92014 | 1S, 05/14/2004, NPS-02001747-9999 \| 3 | 1910 |
| | 551709 | 146556 | CANFIELD-WRIGHT HOUSE STORAGE BUILDING | 420 | AVENIDA F | DEL MAR | SAN DIEG( | 92014 | 1D, 05/14/2004, NPS-02001747-0001 | |
| | 551711 | 146558 | CANFIELD-WRIGHT HOUSE GARAGE | 420 | AVENIDA F | DEL MAR | SAN DIEG( | 92014 | 6X, 05/14/2004, NPS-02001747-0003 | |
| 37-017450 | 443594 | 041215 | POWERHOUSE BUILDING AND SMOKESTACK, POW | 1638 | COAST BL\ | DEL MAR | SAN DIEG( | 92014 | 3S, , 2014-0001-0000 \| 3S, 12/21/1988, | 1926 |
| | 690721 | | Del Mar Race Track and Fairgrounds Exhibit Hall | 2260 | Jimmy Dur | Del Mar | San Diego | 92014 | 6Y, 10/02/2019, FCC_2019_0827_001 | 1960 |
| | 664985 | | SDG&E Tie Line #625 transmission line | | Japutal Va | Descanso | San Diego | 91916 | 6Y, 11/17/2015, USFS_2014_0722_001 | 1947 |
| | 507133 | 115011 | BRIDGE #57C-2 | | LAS TERRII | DESCANSC | SAN DIEGO | | 2S2, 10/19/1986, DOE-37-86-0001-0000 | 1917 |
| | 664987 | | SDG&E Tie Line #629 transmission line | | SR 49 | Descanso | San Diego | 91916 | 6Y, 11/17/2015, USFS_2014_0722_001 | 1950 |
| | 664979 | | SDG&E Circuit #78 utility line | | SR 79 | Descanso | San Diego | 91916 | 6Y, 11/17/2015, USFS_2014_0722_001 | 1964 |
| | 688100 | | Viejas Boulevard Bridge #57C-340 | | Viejas Blv | Descanso | San Diego | 91916 | 6Y, 01/12/2004, FHWA030730A | 1950 |
| 37-037063 | 683999 | | Viejas Boulevard | | Viejas Blv | Descanso | San Diego | 91916 | 6Y, 10/24/2018, USDA_2018_0926_001 | |
| | 489801 | 092885 | | 25064 | VIEJAS BL\ | DESCANSC | SAN DIEGO | | 6Y, 11/23/1994, HUD941019A | 1936 |
| | 531382 | 166582 | DESCANSO RANGER STATION ENGINE GARAGE #23 | 24321 | VIEJAS GR | DESCANSC | San Diego | 91916 | 2S2, 10/03/2000, USFS990719A | 1935 |
| | 531383 | 166583 | DESCANSO RANGER STATION GAS & OIL HOUSE #2 | 24321 | VIEJAS GR | DESCANSC | San Diego | 91916 | 2S2, 10/03/2000, USFS990719A | 1938 |
| | 443596 | 041217 | BRIDGE #57-114 | | SR 94 | DULZURA | SAN DIEGO | | 7R, , 2017-0002-0000 | 1928 |
| 37-017451 | 443595 | 041216 | BRIDGE #57-113 | | SR 94 | DULZURA | SAN DIEGO | | 7R, , 2017-0001-0000 | 1930 |
| 37-017452 | 443597 | 041218 | BRIDGE #57-186 | | SR 94 | DULZURA | SAN DIEGO | | 7N, , 2017-0003-0000 | 1907 |
| | 499877 | 106011 | DULZURA FOREST FIRE STATION OFFICE | 17304 | SR 94 | DULZURA | SAN DIEG( | 92017 | 4CM, 12/31/1996, ST.AG.-3540-0232 | 1974 |
| | 499878 | 106012 | DULZURA FOREST FIRE STATION GARAGE | 17304 | SR 94 | DULZURA | SAN DIEG( | 92017 | 4CM, 12/31/1996, ST.AG.-3540-0233 | 1974 |
| | 500736 | 107210 | DULZURA FOREST FIRE STATION GAS & OIL HOUSE | 17304 | SR 94 | DULZURA | SAN DIEG( | 92017 | 4CM, 04/03/1997, ST.AG.-3540-0234 | 1974 |
| | 500774 | 107213 | DULZURA FOREST FIRE STATION WELL PUMP HOUS | 17304 | SR 94 | DULZURA | SAN DIEG( | 92017 | 4CM, 04/03/1997, ST.AG.-3540-0235 | 1974 |
| | 560825 | 120020 | | 21586 | SR 94 | DULZURA | SAN DIEGO | | 6U, 04/15/1996, DOE-37-96-0130-00 \| 6 | 1946 |
| | 521345 | 176655 | STAR RANCH: 2 STORY HOUSE WITH PATIO WITH BRICK OV | | | EL CAJON | SAN DIEGO | | 6Y, 09/30/2009, BIA090817A | |
| | 521346 | 176656 | SMITH RANCH COMPLEX | | | EL CAJON | SAN DIEGO | | 6Y, 09/30/2009, BIA090817A | |
| | 539342 | 158395 | CREST EAST AND WEST WATER TANKS | 515 | ALTA LN | EL CAJON | San Diego | 92021 | 6Y, 01/18/2006, FCC060106G | 1950 |
| | 560171 | 137728 | | 1190 | ANDOVER | EL CAJON | SAN DIEGO | | 6Y, 03/12/2003, DOE-37-03-0005-0000 | 1952 |
| 37-017455 | 443600 | 041221 | REX HALL HOUSE | 548 | ANN ST | EL CAJON | SAN DIEG( | 92021 | 5S2, , 2020-0003-0000 | 1927 |
| 37-017457 | 443602 | 041223 | MEXICAN BAPTIST CHURCH, FIRST SPANISH BAPTI | 348 | AVOCADO | EL CAJON | SAN DIEG( | 92021 | 5S2, , 2020-0005-0000 | 1932 |
| 37-017458 | 443603 | 041224 | REV JOHN RODRIGUEZ HOUSE | 360 | AVOCADO | EL CAJON | SAN DIEG( | 92021 | 5S2, , 2020-0006-0000 | 1930 |
| 37-017459 | 443604 | 041225 | NELLIE FANSHER HOUSE | 907 | AVOCADO | EL CAJON | SAN DIEG( | 92021 | 5S2, , 2020-0007-0000 | 1934 |

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:**

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2 and; NW¼ **of** NE ¼ **of Sec** 11**c. Address:** 2260 Jimmy Durante Boulevard (main address for the fairgrounds) **City:** Del Mar **Zip:** 92014
**d. UTM: Zone:** 11; 475529 mE/ 3648530 mN (NAD 27) (center of the fairgrounds)
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN for the Fairgrounds: 760-145-05-01,

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Del Mar Fairground are bound by Via De La Valle to the north, Jimmy Durante Boulevard to the east, the BNSF railway tracks to the west, and the San Dieguito River channel to the south.

See District Record.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds Buildings)

***P4. Resources Present:** ☐Building ☐Structure ☐Object ☐Site ☒District ☐Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #)
Aerial view of fairgrounds.

***P6. Date Constructed/Age and Sources:** ☒Historic
☐Prehistoric ☐Both
Ca. 1930s–2006; Historic aerial photographs, Del Mar Fairgrounds Records

***P7. Owner and Address:**
22nd District Agricultural Association/Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe) Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California. September 2006.

***Attachments:** ☐NONE ☒Location Map ☒Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

**D1. Historic Name:** The San Diego County Fair (1938–1953, 2002–2006); The Southern California Exposition and San Diego County Fair (1954–1969); Southern California Exposition (1970 to 1983); Del Mar Fair (1984–2001).

**D2. Common Name:** Del Mar Fairgrounds

***D3. Detailed Description** (Discuss overall coherence of the district, its setting, visual characteristics, and minor features. List all elements of district.)

The Del Mar Fairgrounds is located at 2260 Jimmy Durante Boulevard in the City of Del Mar and encompasses approximately 313 acres. Contributing buildings to the property include Bing Crosby Hall (1951), Clock Tower Building (1953), Exhibit Hall (1955), Race Track (1938), and the Stables and Living Quarters Complex (1935–2006). The following noncontributing features of the Fairgrounds were either constructed or moved onto the property outside of the period of significance or no longer retain integrity due to loss of character-defining features: D. Robert Jones Center (1963), Alvarado House (1885), Fire Station Office (ca.1960s), Grandstand Complex (2001), Infield Buildings (1991), janitorial building (ca.1960s), Surfside Race Place and Horse Arena Complex (1989–2006), metal and manufactured buildings (various), Pat O'Brien Hall (1980), maintenance buildings (north and south) (ca.1950s), and the Training Track (ca.1980s).

***D4. Boundary Description** (Describe limits of district and attach map showing boundary and district elements.):
The boundary is comprised of __ acres of land located in the City of Del Mar, County of San Diego. APN for the Fairgrounds is 760-145-05-01.

***D5. Boundary Justification:** The boundary is composed of the original 181acres of land that comprised the Del Mar golf course that the 22nd Agricultural Association District purchased in 1935 and an additional 57.2 acres of adjacent land purchased by the District during the period of significance.

***D6. Significance: Theme:** Architecture, Entertainment/Recreation **Area:** San Diego County
**Period of Significance:** 1935–1956 **Applicable Criteria:** N/A
(Discuss district's importance in terms of its historical context as defined by theme, period of significance, and geographic scope. Also address the integrity of the district as a whole.): The Del Mar Fairgrounds first opened in 1936 and currently consists of approximately 313 acres developed with more than 17 buildings and features. The Fairgrounds complex was evaluated as a potential historic District because it consists of a geographically defined collection of buildings and features with a shared history. Although the Fairgrounds have operated continuously since 1936, the potential District's period of significance was determined to be 1936 to 1956 based on the year the Fairgrounds opened and the National Register of Historic Places (National Register) guideline of 50 years of age. Based on extensive research and a field survey, the potential Del Mar Fairgrounds historic District does not appear to be eligible for listing in the National Register or California Register of Historical Resources (California Register) or for designation under any local ordinance.

Under criterion A/1, although the Del Mar Fairgrounds has played a key role in the agricultural and recreational history of Del Mar and San Diego County since it was developed in the 1930s, most of the buildings and structures on the property were constructed after the period of significance, 1936–1956. Many of the essential features that tied the property to the area's agricultural and recreational history, such as the barns and the grandstand, have been destroyed or substantially altered. While the Fairgrounds exhibits integrity of location, the overall setting is not intact. Due to impacts to the setting and loss of a significant portion of the historic-period resources, the property no longer possesses the physical characteristics or the quality of historic integrity to convey the important aspects of history with which it is associated to make it eligible for listing on the National or California Registers (see continuation sheet).

Under criterion B/2, the Del Mar Fairgrounds has long been associated with a number of well-known people, Hollywood entertainers in particular, some of whom have had their names memorialized at the Fairgrounds for their contributions to local development (Bing Crosby, Pat O'Brien, Jimmy Durante). However, the contributions of these individuals are not demonstrably important within a local, State, or national historic context; their association with the Del Mar Fairgrounds is relatively minor in comparison with their contributions to national entertainment history.

***D7. References** (Give full citations including the names and addresses of any informants, where possible.):

(See continuation sheet)

***D8. Evaluator:** Casey Tibbet, MA
**Date:** 8/28/06
**Affiliation and Address:** LSA Associates, Inc., 20 Executive Park, Suite 200, Irvine, California 92614

State of California — The Resources Agency
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Primary #
HRI #
Trinomial
NRHP Status Code 6Z

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***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Bing Crosby Hall

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***a. County:** San Diego

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern portion of the Fairgrounds.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This board-formed concrete building was designed by Harry Hayden Whiteley and constructed in 1951. Whiteley designed a number of residential buildings throughout Los Angeles and San Diego Counties between the 1920s and the 1950s. Shortly after building Bing Crosby Hall, Whiteley moved to Las Vegas, where he continued to work, designing public buildings for local municipalities such as schools, hospitals, and jails The building is rectangular in plan and surmounted by a medium-pitched gable roof sheathed with composition shingles and features a clerestory that runs almost the entire length of the roof. The southeast-facing facade includes a shed roof supported by wood posts above a recessed entry and a horizontal band of multipaned awning windows. A series of horizontal-rectangular openings covered with boards is located between the eave and a shed-roof addition in the southwest elevation. This elevation also includes bay doors.

This building was designed by a noted architect, retains a good level of integrity, and dates to the period of significance of the potential historic district. While it is a contributing feature to the potential historic district, the district has been determined ineligible for designation at the local, State, or national level. In addition, the building does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the north; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1951; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

**P1. Other Identifier:** Clock Tower Building
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**
**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014
**d. UTM: Zone:** 11; mE/ mN
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located north of Bing Crosby Hall and south of the grandstands.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This one-story Googie-style building was constructed in 1953. The building features an upswept roof consisting of three inverted diamond-shaped segments punctuated by an approximately 40-foot-tall triangular clock tower. Each side of the clock tower is approximately 12 feet wide and has a working clock and a tile mural of the Fairgrounds mascot, Don Diego. The extremely wide roof eaves are supported by round metal poles, and the building is clad with a combination of board-and-batten siding and masonry. There is a rustic wood and glass door typical of 1950s residential buildings in the southeast elevation, while the other elevations feature unique trapezoidal ribbon windows or vents.

This is the only Fairgrounds building dating to the period of significance of the potential historic district that represents an established architectural style and retains a good level of architectural integrity. As such, it is a contributing feature to the potential district, which has been determined ineligible for designation at the local, State, or national level. Although the building does not meet the criteria for individual significance at the local, State, or national level, Googie-style buildings are becoming increasingly rare, and this building should be given some consideration in the local planning process.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the north; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1953; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

«P:\DLM0601\Cultural\Historics\DPRs\Clock tower 09/15/06.doc»

State of California — The Resources Agency
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# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



*Resource Name or #: Del Mar Fairgrounds

**P1. Other Identifier:** Exhibit Hall

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2; S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern part of the Fairgrounds, southwest of the Clock Tower Building.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This large, rectangular, one-story building was reportedly constructed in 1955. It has a moderately pitched gable roof with a clerestory and is sheathed with composition shingles. It is predominantly clad in stucco and horizontal wood siding. Along the northeast-facing facade, a portion of the roof projects, creating a large, covered entry area with recessed aluminum-framed glass doors. The facade also includes narrow, horizontal vents above a shed roof addition. The addition has enclosed portions with bands of horizontal-rectangular windows, as well as open walkway/patio areas. The northwest end of the building has metal, auditorium-style doors. This building retains a fair level of integrity and dates to the period of significance of the potential historic district. While it is a contributing feature to the potential historic district, the district has been determined ineligible for designation at the local, State, or national level. In addition, the building does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the southwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1955; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Main racetrack

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2; S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

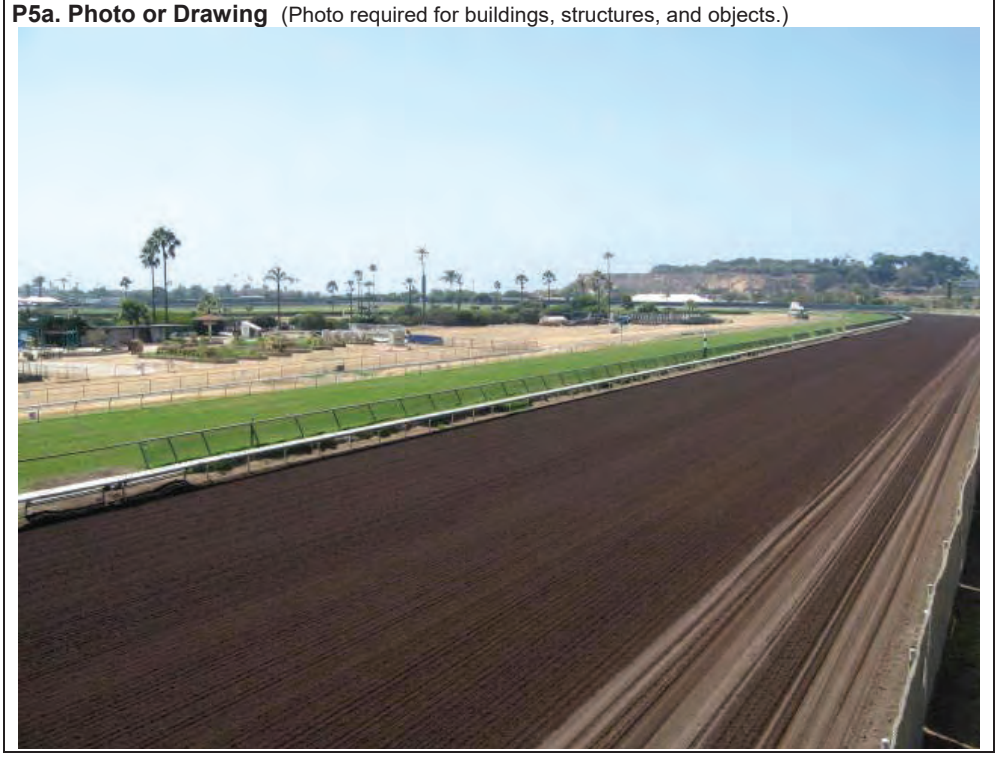
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. The main racetrack is located in the center of the Fairgrounds.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The main racetrack is oval-shaped and oriented lengthwise in a northwest-southeast direction. It was constructed in 1938 and has remained in the same location and configuration since that time. Although the racetrack retains a good level of integrity, its context has been compromised by the construction of the infield Pavillion (ca. 1991), the new grandstand complex (1992), and the barns (1992–2005) at the southeast end of the track. However, the racetrack is considered a contributing feature to the potential historic district since it is one of the main focal points of the Fairgrounds and dates to the potential district's period of significance. However, the district has been determined ineligible for designation at the local, State, or national level, and the racetrack itself does not meet the criteria for individual significance.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds main racetrack)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) Back straight; view to the northwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1938; aerial photograph

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6L

Other Listings
Review Code | Reviewer | Date



*Resource Name or #: Del Mar Fairgrounds

**P1. Other Identifier:** Stables/living quarters complex

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2; S.B. **B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. These buildings are located in the northern part of the Fairgrounds.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

There are more than 50 stables/living quarters buildings in this complex as well as a stable office building, an equine hospital, a race office, a dining hall, pipe corrals, and round pens. All of these buildings and structures are very utilitarian in appearance, with no particular architectural style.

According to aerial photographs, approximately 13 of the stables/living quarters buildings (today's F–R buildings) were present as early as 1936. An employee indicated that these original buildings were constructed of adobe block, but a field inspection revealed that they are currently covered with stucco. These generally rectangular buildings are aligned in a north-south direction and consist of one-story gable-roofed stable buildings with two-story living quarters at either end. The living units are accessed by wooden stairs and have full-width balconies and aluminum-framed sliding windows. Tack rooms are located below the living quarters.

***(See Continuation Sheet page 8)***

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds buildings)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) Stables/living quarters building; ca 1939; view to the northwest; August 24, 2006

***(See Continuation Sheet for additional photos, pages 8/9.)***

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
ca. 1936–present

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The other stables/living quarters buildings were constructed between 1940 and 1990 according to aerial photographs. These generally rectangular buildings are aligned in a north-south direction and typically consist of one-story stables with gable roofs with a clerestory and two-story living quarters with "flying" shed roofs (the roofs slant up away from the balconies rather than down toward them). There are also freestanding living quarters of the same design, which are oriented in an east-west direction and do not have any associated stables.

The one-story stable café, located in the northeastern quadrant of the stables/living quarters complex, was constructed between 1936 and 1953, according to aerial photographs. The rectangular building has a low-pitched gable roof with narrow eaves, and the exterior walls are clad in board-and-batten siding and brick (south and west elevations). An enclosed shed-roof patio area is located along the west elevation, and outdoor concrete seating is provided on the east side of the building.

The one-story race office building, located just south of the stable café, was also constructed between 1936 and 1953. It has a moderately pitched side-gable roof and is clad with plywood panels accented by narrow, vertical wood strips. The south-facing facade includes aluminum-framed sliding windows and a shed-roof patio cover supported by wood posts.

Other buildings include: the stable office and equine hospital, which are both constructed of concrete block with gable roofs and aluminum-framed sliding windows; freestanding, one-story, concrete block restroom buildings with gable roofs and clerestories; freestanding concrete block stables; and freestanding pipe stables with gable roofs.

All of the buildings are extremely nondescript and have been altered over time and, therefore, do not meet the criteria for individual significance at the local, State, or national level. However, many of the buildings date to the period of significance of the potential historic district and the others were constructed in a manner consistent in size, design, and orientation. For these reasons, the complex as a whole is a contributing feature to the potential district, which has been determined ineligible for designation at the local, State, or national level. However, it should be given consideration in local planning.

**P5b. Description of Photo:** (View, date, accession #)



Representative stable/living quarters building (August 24, 2006)



Representative freestanding living quarters (August 24, 2006)

**P5b. Description of Photo:** (View, date, accession #)



Stable café; view to the northwest. (August 24, 2006)



Race office; view to the northwest. (August 24, 2006)

State of California — The Resources Agency
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# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

 ***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** D. Robert Jones Center
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**
**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014
**d. UTM: Zone:** 11; mE/ mN
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern portion of the Fairgrounds, southwest of the Don Diego statue and east of the Pat O'Brien building.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This one-story office building was constructed in 1963 and dedicated to "the youth of San Diego in memory" of former manager D. Robert Jones (quoted from wall plaque). The building is rectangular in plan with a central courtyard and has both flat and gabled roofs. The exterior walls are clad with stucco and in some areas incorporate narrow, vertical wood strips spaced approximately three feet apart. The courtyard is accessed from the northwest elevation via a wide breezeway. Within the breezeway are a unique set of decorative metal accordion doors that can be extended to enclose the courtyard. Several offices and a large board room open onto the courtyard. Fenestration includes at least one set of sliding glass doors. Because it was constructed outside the period of significance, this building is not a contributor to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the building does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the southwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
1963; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



*Resource Name or #: Del Mar Fairgrounds

**P1. Other Identifier:** Alvarado House

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***a. County:** San Diego

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern part of the Fairgrounds, west of the Fire Station.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This modest, one-story Folk Victorian residence dates to 1885 and was moved to the Fairgrounds in 1989. The building sits on a raised foundation that is covered with plywood panel-siding and has a moderately-pitched pyramidal roof sheathed with composition shingles. The facade includes tall, vertical-rectangular, four-paned windows flanking a wood and glass door with a transom. The full-width porch has a low, decorative wood balustrade and is sheltered by a shed roof supported by six wood posts with decorative brackets. The porch supports and balustrade do not appear to be original, nor does the facade siding, which consists of plywood panels made to look like vertical boards. Because it was constructed outside the period of significance, this building is not a contributor to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, because it has been relocated and extensively altered, the building does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)




**P5b. Description of Photo:** (View, date, accession #) View to the southwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1885; moved to this location in 1989; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Fire Station Office

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

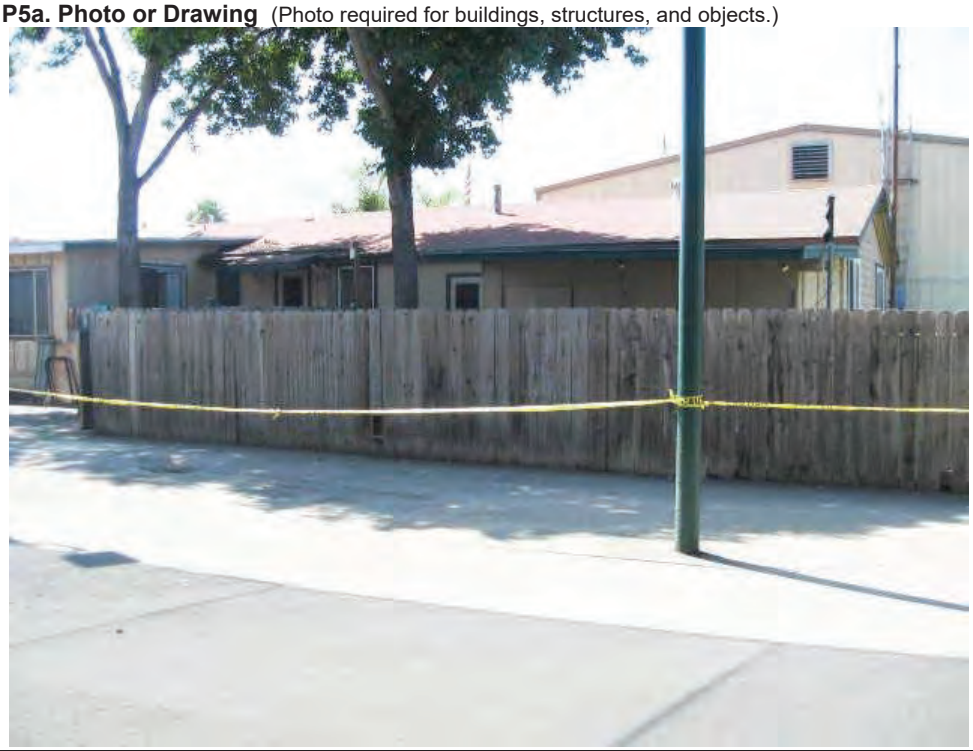
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern part of the Fairgrounds, south of the O'Brien building and adjacent to the Fire Station storage building.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This one-story, wood-frame residential building was evidently moved to the Fairgrounds in the1960s and is currently used by the Fairground's fire department. The building is surmounted by a low-pitched gable roof sheathed with composition shingles and has narrow eaves. The exterior walls are clad with wide clapboard siding, and the original fenestration has been replaced by aluminum-framed sliders. Two shed-roof additions, which are clad with plywood and board-and-batten siding, have been constructed on the northeast-facing facade. The facade is somewhat obscured from view by a 6-foot-high wood fence. Although the building dates to the period of significance of the potential historic district, it is not a contributing feature because it was moved to this location, and its integrity has been significantly compromised by alterations. For the same reasons, the building is not individually significant.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the southwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
Moved to this location in the 1950s; Larry Baumann, Personal Communication

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Del Mar Thoroughbred Club Grandstand and Racetrack complex

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2; S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. These buildings are located adjacent to and south of the main racetrack.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The buildings in this complex were constructed in 1992 in a contemporary interpretation of the Mission Revival style. Because they were constructed outside the period of significance, these buildings are not contributors to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the buildings do not meet the criteria for individual significance.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds buildings)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) Date unknown; aerial view found online at: http://www.csusm.edu/enroll/commencement_images/del_mar_aerial1.gif

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
1992; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Infield Pavilion

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B. **B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

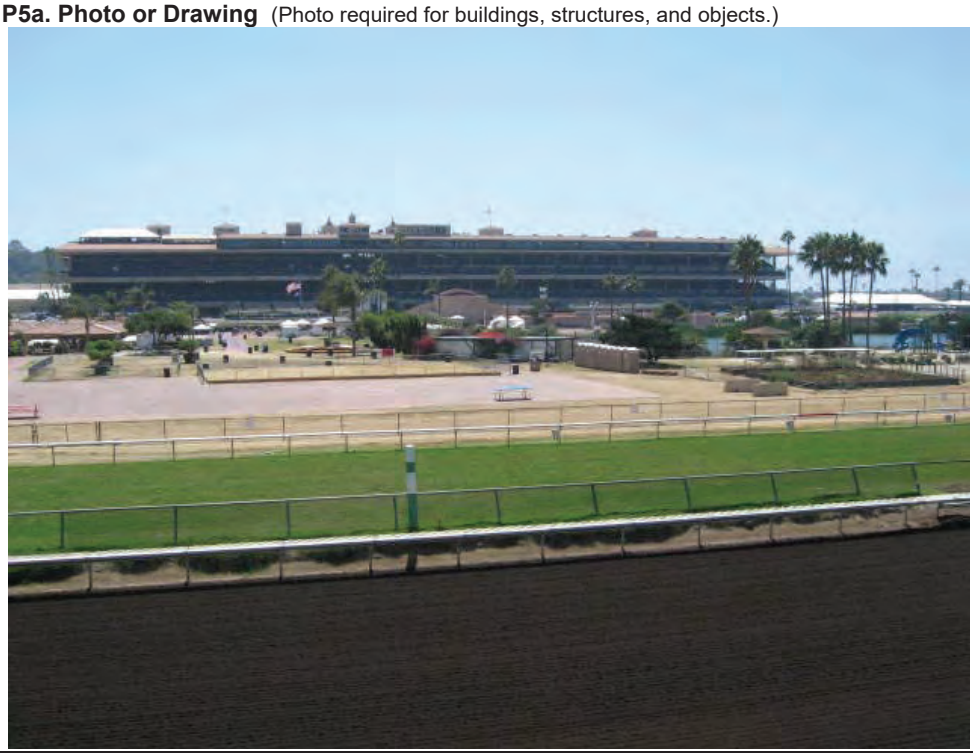
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. The infield buildings are located in the center of the main racetrack.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
There are several buildings in the infield pavilion, including Captain Morgan's Shack and the video and tote boards. Based on aerial photos, it appears that all of these buildings are of modern origin. Because they were constructed outside the period of significance, these buildings are not contributors to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the buildings do not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds buildings)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the southwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
1991; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date


*Resource Name or #: Del Mar Fairgrounds

**P1. Other Identifier:** Janitorial building
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**
**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014
**d. UTM: Zone:** 11; mE/ mN
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern part of the Fairgrounds, southwest of the Don Diego statue and east of the O'Brien building.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This small, one-story building, which was constructed ca. 1960s, has been altered by an addition and remodeling. The generally rectangular building appears to be a janitorial office. It is surmounted by a low-pitched gable roof sheathed with ceramic tiles, and the exterior walls are clad with stucco. A small, shed-roof, masonry structure has been added to the northwest elevation. Two sides of this addition feature decorative concrete blocks, while the other two sides have large horizontal openings. A masonry wall extends from the addition along the southwest building elevation. There are two square hopper windows visible in the southwest elevation, but the remainder of the building is hidden from view by a fence. The northwest elevation is similarly obscured from view by a screen wall and a wrought iron fence, but appears to include at least two doors and a triangular vent with horizontal slats.

Because it was constructed outside the period of significance, this building is not a contributor to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the building does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the southwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
Ca. 1960s, Historic Aerial Photographs

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Surfside Race Place and Horse Arena Complex

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. These buildings are located at the southeast end of the main racetrack, west of the parking lot and Jimmy Durante Boulevard.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
These buildings were constructed during the past 17 years in a contemporary interpretation of the Mission Revival style. They include the Surfside Race Place and Horse Arena, the Receiving Barn, Barn W, the Expo Center, Wyland Hal,l and several other barns. Because these buildings were constructed outside the period of significance, they are not contributors to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the buildings do not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds buildings)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) Representative photo; view to the north; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
1989–2006

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code | Reviewer | Date


***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Metal and manufactured buildings
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego
**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2 and; NW¼ **of** NE ¼ **of Sec** 11**;** S.B.**B.M.**
**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014
**d. UTM: Zone:** 11; mE/ mN
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. These buildings are scattered throughout the Fairgrounds.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Throughout the Fairgrounds there are a number of large metal storage buildings. Most of them have gable roofs, large bay doors, or are open on one side for vehicle storage. There are also a number of smaller, one-story manufactured buildings that typically house offices. Many of these buildings are on temporary foundations. Because of their generic design and temporally ambiguous nature, none of these buildings are contributors to the potential historic district, nor are they individually significant.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds buildings)
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) Representative photo (metal building); August 24, 2006, View north.

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
Various; Historic Aerial Photographs 1939–2002

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** O'Brien Hall

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern portion of the Fairgrounds, southwest of the Don Diego statue and north of the Fire Station.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) Based on aerial photographs, this large rectangular building was constructed in 1980. It has a low-pitched, front-gable roof and is clad in stucco. The west-facing facade features a row of glass doors below a central glass panel with a front gable that has a steeper pitch than the remainder of the roof. Rectangular shed-roof projections, each punctuated by four small horizontal-rectangular, aluminum-framed sliding windows, flank the doors. Because it was constructed outside the period of significance, this building is not a contributor to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the building does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the east; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
1980; Del Mar Fairgrounds Records

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Maintenance building (south)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the southern part of the Fairgrounds.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This one-story masonry building appears to have been constructed in the 1950s. The building has a moderately-pitched gable roof with no eaves, except for the shed roof overhang along a portion of the southeast elevation. That elevation has several doors, including sliding doors, and features a raised walkway that extends along the southern part of the elevation. Beyond the raised walkway there are five bay doors. The south elevation has two multipane windows and an aluminum-framed slider. Although this building appears to date to the period of significance of the potential historic district, it is not a contributing feature because its integrity has been significantly compromised by alterations. For the same reasons, the building is not individually significant.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds maintenance building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the north; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
Ca. 1950s; Historic Aerial Photographs

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



***Resource Name or #:** Del Mar Fairgrounds

**P1. Other Identifier:** Maintenance building (north)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) **T** 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B.**B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. This building is located in the northwestern part of the Fairgrounds, southeast of the training track and west of the stables and living quarters.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
According to aerial photographs, this building was constructed sometime between 1939 and 1953. The building is of wood-frame construction clad with stucco and vertical boards. It is surmounted by parallel gables separated by a flat roof covered with corrugated metal panels. The south elevation includes aluminum-framed sliding windows and bay doors. The north elevation has a long, flat-roofed, plywood-sided addition that is open on the east side and used for storage. Although this building dates to the period of significance of the potential historic district, it is not a contributing feature because of its lack of integrity. For the same reasons, the building is not individually significant.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds building)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the northwest; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
Between 1939–1953; Historic Aerial Photographs

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
# PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date



*Resource Name or #: Del Mar Fairgrounds

**P1. Other Identifier:** Stephens Training track

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Diego

**and** (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *Del Mar* **Date:** 1967 (PR 1975) 14 S; **R** 4 W; SW¼ **of** SE ¼ **of Sec** 2**;** S.B. **B.M.**

**c. Address:** 2260 Jimmy Durante Boulevard **City:** Del Mar **Zip:** 92014

**d. UTM: Zone:** 11; mE/ mN

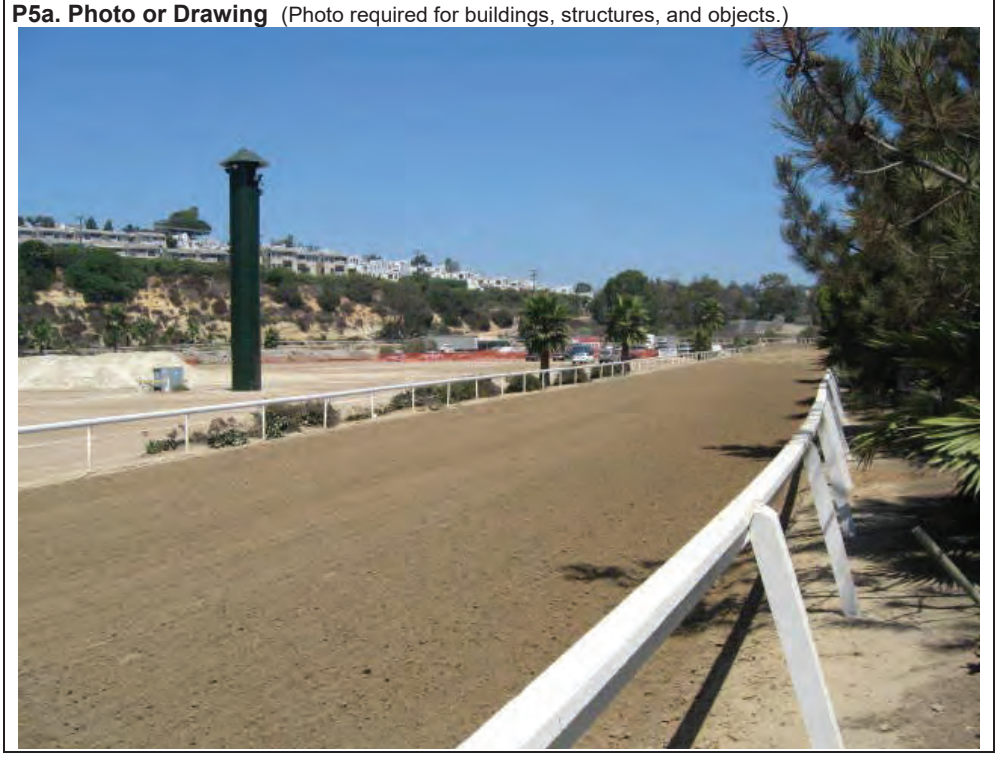
**e. Other Locational Data:** (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN: 760-145-05-01. The training track is located at the northwest corner of the Fairgrounds.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The training track is oval-shaped and oriented lengthwise in a southwest-northeast direction. Based on aerial photographs, it was constructed during the 1980s. Because it was constructed outside the period of significance, this track is not a contributor to the potential historic district, which has been determined ineligible for designation at the local, State, or national level. In addition, the training track does not meet the criteria for individual significance at the local, State, or national level.

***P3b. Resource Attributes:** (List attributes and codes) HP39-Other (Fairgrounds training track)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

**P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)



**P5b. Description of Photo:** (View, date, accession #) View to the northeast; August 24, 2006

***P6. Date Constructed/Age and Sources:** ☐Historic ☐Prehistoric ☐Both
1980s; Historic Aerial Photographs

***P7. Owner and Address:**
Del Mar Thoroughbred Club
Post Office Box 700
Del Mar, CA 92014

***P8. Recorded by:** (Name, affiliation, and address)
Casey Tibbet, MA
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507

***P9. Date Recorded:**
August 24, 2006

***P10. Survey Type:** (Describe)
Intensive-level CEQA compliance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Historical Resources Assessment Report for the Del Mar Fairgrounds, County of San Diego, California, September 2006.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

***D6. Significance:** The Del Mar Fairgrounds does not appear to be eligible as a historic District under criterion C/3 due to extensive alterations and additions to the property dating from outside of the period of significance that have impacted its overall integrity. Out of the 17 buildings and features within the Fairgrounds boundary, only 5 retain sufficient integrity to be considered contributing features of the Fairgrounds: Bing Crosby Hall, Exhibit Hall, Clock Tower, Stables and Living Quarters Complex, and the Race Track. A large proportion of the Fairgrounds buildings have been altered over time or were built or moved onto the property within the last 50 years; therefore, the Fairgrounds property does not represent a significant and distinguishable entity.

Under criterion D/4, the Fairgrounds complex is not likely to yield information about the history or prehistory of the area (which relates primarily to archaeological sites).

In addition to being evaluated as a potential historic District, the buildings and features within the Fairgrounds complex were evaluated for individual significance. Of the 17 buildings and features evaluated, five were determined to be contributors to the potential historic District, which was determined ineligible for listing in the National Register or California Register. None of the these 5 buildings and features or the remaining 12 meet the criteria for individual listing in the National Register or California Register (see DPR forms for detailed evaluations) and do not constitute historical resources under CEQA or historic properties under Section 106. Individually, most of the buildings and features are of simple construction and do not represent the work of a master, nor do they possess high artistic value. Most of the buildings have been substantially altered or were constructed or moved onto the property outside of the period of significance. Although the race track and stables are associated with the WPA, they have been substantially altered since their construction and no longer retain integrity. Further, they are utilitarian in design and are merely remnants of a larger WPA project. Therefore, no mitigation is required should the buildings be demolished as part of the proposed project.

Although they are not eligible for designation, the Clock Tower Building, which represents a fairly intact example of the Googie style, and the Stables/Living Quarters Complex, which represents one of the earliest features of the Fairgrounds, both merit consideration in the local planning process. However, the City does not have a historic preservation ordinance.

**San Diego County Fairgrounds**

In 1880, the County organized its first fair, the San Diego County Horticultural and Agricultural Display, to showcase the County's local agricultural activities. The event was staged under a canvas tent in what is now Kimball Park in National City. Examples of locally grown produce were displayed, as well as oil paintings, quilts, leatherwork, shells, and "an elegant display of photographic art". Only limited numbers of livestock were present, as transportation to the fair from local farms proved difficult. In the evening, fairgoers enjoyed dinner and dancing, with music supplied from the Harmony Brass Band. *The San Diego Union* reported, "Attendance on the second day was so great that long before noon, not a vehicle of any description, not a saddle horse could be had in town for love nor money".

In 1904, the State legislature formally organized District Agricultural Associations as official State agencies for the purpose of promoting local agricultural production. In San Diego, the 22nd District Agricultural Association was established.

During the early 20th century, the fair was sporadically held at various places throughout the County, provided the District was able to find a suitable location to host the fair and the necessary funds to operate it. The fair moved around the County to Escondido, Coronado, Oceanside, and finally to Balboa Park in San Diego, where it remained throughout the 1920s. During the Depression years of the early 1930s, the fair was not held, as funding was not available to produce the event.

By the 1930s, California had become one of the nation's leading agricultural producers, growing some of the leading varieties of citrus, nuts, avocados, and beans. Because California's agricultural production played a major role in the development of the State, the fairs that exhibited these products became very important.

**Del Mar Fairgrounds**

In 1933, Assembly Bill 1115, the Horse Racing Act, was passed legalizing pari-mutuel wagering on horse races at private tracks and district, county, and State fairs. A portion of the revenues received by the State were to be used for the support of agricultural fairs as well as to establish institutions for training youth in agricultural and animal husbandry fields (Cater 3, Ewing 1988:193). Prior to 1933, the state had eight fairs that were partially financed by the State's General Fund. In 1946, there were 76 fairs in California (See continuation sheet.)

***D6. Significance:** In September 1933, eight people were appointed to the 22nd District Agricultural Association Board of Directors. The Board received financial support from the State Division of Fairs and Expositions and immediately began its search for a permanent location for the fair. While many places throughout the County were considered, the board ultimately settled on the Del Mar golf course. The Board's choice of Del Mar was largely influenced by real estate developer E.C. Batchelder, who promised his assistance in obtaining a grant from the Works Progress Administration (WPA) for construction of the Fairgrounds. The Del Mar site consisted of 184 acres, bounded by State Highway 101 to the east, the Santa Fe Railroad to the west, and the San Dieguito River channel to the south. The location was easily accessible from both San Diego and Los Angeles, making it a logical place for a permanent home for the fair. In 1935, the board approved Del Mar as the site and proceeded to purchase the golf course from the South Coast Land Company for $25,000. An additional 57.2 acres were later purchased for $10,868, making the Fairgrounds a total 241.2 acres in size.

The board immediately filed an application with the WPA for a grant of $500,666 to construct the Fairgrounds. Following State and federal approval, construction of the first buildings began. An estimated 500,000 hours and a labor force of 380 workers were required to complete the project in a nine-month period.

Architects Joe and Sam Hamill and Herbert Louis Jackson were chosen to design the Fairgrounds. The buildings were designed in the Spanish Colonial Revival Style and were constructed of adobe bricks, which were made on site. Each of the buildings was designed to represent one of the California missions. The first buildings erected were the main exhibit building and auditorium, a combination grandstand and utility building, 10 livestock buildings, an equipment shed, a main entrance building, a bell tower, and stables to house 600 horses. In addition, a 1-mile-long oval-shaped racetrack, used for harness racing, was created. The entire property was enclosed within an 8-foot-high adobe wall, a portion of which still stands. A historic aerial photograph taken shortly after the first buildings were constructed (1939) depicts the original WPA-constructed buildings and features: the racetrack, the grandstand, stables, barns, and maintenance buildings, all located on the original 180-acre property.

The fair's opening day was Thursday, October 8, 1936. The inaugural ceremony featured the Governor; WPA administrators; State, County, and City officials; and ranking Army, Navy, and Marine officers. A plaque was laid on the bell tower that indicated that it was constructed by the WPA. (The tower burned down in October of 1969 and was rebuilt.) In addition to politicians and government officials, many recognized entertainers were present for the opening festivities, including Bing Crosby, Elizabeth Russell, Barbara Stanwyck, Robert Taylor, and Bette Davis.

Shortly after the first buildings were constructed, stockbroker William Quigley of La Jolla approached the District with a proposal to host thoroughbred races at the Fairgrounds. The District approved the idea, and Quigley in turn secured the support and leadership of Bing Crosby to build the Del Mar Turf Club (Turf Club). The singer and actor was a resident in nearby Rancho Santa Fe and was a noted horse enthusiast. In May 1936, Crosby filed articles of incorporation and formed a board that included Pat O'Brien, Bill Quigley, C.S. Howard, Kent Allen, and Everett Crosby. A 10-year lease agreement between the Turf Club and the District was signed. The agreement called for the District to build a clubhouse, paddock, jockey's quarters, and additional horse stables to accommodate horse racing. In order to raise the necessary funds to contribute to the project, the Turf Club spent its first year selling stock in the venture.

The friendly agreement between the Turf Club and the District was temporarily disrupted in early 1937, when the WPA halted construction at the Fairgrounds with $200,000 in unfinished work remaining on the project. According to the WPA, it withdrew from the project because it had not intended to fund construction of a horse racing enterprise. Together, Crosby and O'Brien were able to raise the funds to complete the necessary construction for the race track; however, the design of the buildings was scaled back. The Del Mar Turf Club opened to the public on July 3, 1937, with Crosby himself greeting the first guests through the turnstiles. Crosby's passion for the race track he began was even commemorated in the lyrics of a song, as he sang:

> Where the surf meets the turf,
> Down at Del Mar,
> Take a plane, take a train, take a car…
> There's a smile on every face,
> And a winner in each race,
> Where the turf meets the surf at Del Mar

The tune ultimately became the official anthem of the racetrack, and is still played today at the beginning and end of each racing day.

The opening of the Turf Club marked the beginning of a change in the small seaside community of Del Mar. Throughout the 1930s and early 1940s countless celebrities flocked to the quiet seaside community to enjoy the races and the town's relaxed atmosphere. Other regulars to Del Mar included Jimmy Durante, Douglas Fairbanks, Mickey Rooney, W.C. Fields, Dorothy Lamour, and Ann Miller. Durante was also an ardent fan of horse racing and a mainstay in Del Mar until his death in 1980. So loved was the entertainer that in 1963 he was declared the honorary mayor, and the street on which the Fairgrounds is located was renamed Jimmy Durante Boulevard.

(See continuation sheet).

***D6. Significance:** During World War II, the activities at the fair were temporarily suspended. Instead of hosting races and fairs, the grounds became a training facility and temporary quarters for military personnel. The horse stalls became temporary housing for paratroopers who trained on nearby beaches. In addition, some 500,000 square feet of space was transformed into assembly lines to manufacture wing ribs for the production of Douglas B-17 bomber planes.

The fair was reopened to the public in 1946, and the expansion of the Fairgrounds commenced following the end of the war.

In 1951, Bing Crosby Hall was built, commemorating the actor's long relationship with the Turf Club and Fairgrounds. Architect Harry Hayden Whiteley was commissioned to design the large exhibit building. Whiteley designed a number of residential buildings throughout Los Angeles and San Diego Counties between the 1920s and the 1950s. Shortly after building Bing Crosby Hall, Whiteley moved to Las Vegas, where he continued to work, designing public buildings for local municipalities such as schools, hospitals, and jails.

Also during the 1950s, several new additions were made to the Fairgrounds, including the Stable Dining Hall and Office (1950s), additional stables (1950s), the Clock Tower Building (1953), the Exhibit Hall (1955), and several maintenance buildings (ca. 1950s). In contrast to the first buildings erected at the Fairgrounds, most of these buildings were constructed in very simple and utilitarian design. A notable exception was the Clock Tower Building, which was designed in the Googie style that became popular during the 1950s and 1960s.

During this time, the District embarked on a promotional campaign to attract people to the fair and the racetrack. Its campaign was inspired by Don Diego Alvarado, a ranchero from California's Mexican period, who was locally recognized for his renowned hospitality. In 1834, Alvarado was granted the 8,400-acre Los Penasquitos Rancho by the Mexican Governor of California, which included the town of Del Mar. The District utilized the stories of Alvarado to create its own character, who promoted the Fairgrounds each year and greeted the guests with "Bienvenidos, Amigos."

Del Mar's Don Diego would remain the most-recognized symbol of the County Fair for four decades. In 1954, a tile likeness of Don Diego was constructed on the facade of the Clock Tower along the main fair avenue. In 1985, a 16-foot statue of Don Diego was placed at the front entrance to the fair.

Throughout the 1950s and 1960s, Del Mar continued to be a playground for celebrities who purchased oceanfront homes and attended the races daily to watch their horses compete. Countless stories exist detailing the exploits of Hollywood such stars as Gregory Peck, Lucille Ball, and Desi Arnaz.

By the 1960s, the Fairgrounds returned to its pre-war success, scoring record attendance. In 1963, the D. Robert Jones Administration Building was constructed. By 1964, the Fairgrounds property was expanded to include an additional 57.2 acres located east of the original property. Jimmy Durante Boulevard was constructed, which wrapped around the property's new eastern boundary. No new buildings were constructed on the property addition; it was used for parking. Also by 1964, the Exhibit Hall was added, as well as the maintenance buildings and additional stables.

In 1970, the Del Mar Thoroughbred Club (DMTC) took over racing operations for the Turf Club. Since the 1970s, the Fairgrounds has undergone many alterations. The first major renovation occurred between 1972 and 1978 at a cost of $2.5 million. During this effort, alterations and upgrades were made, including the addition of several ancillary buildings, improvements to the grandstand, and the addition of the DMTC offices. However, it was reported that the improvements did not alter the Spanish Colonial characteristics of the original buildings.

Additional renovations and improvements followed during the 1980s. Longtime Turf Club member and Del Mar resident Pat O'Brien was recognized for his commitment to the community and, in 1980, the new exhibition hall was named after him. Also during the 1980s, a smaller training track known as the Stephens Track was constructed to the northwest of the racetrack. In 1989, the historic Alvarado House was moved to the Fairgrounds. The modest one-story Folk Victorian residence was built in 1885 by Jacob Taylor and sold the same year to Don Diego. During the 1980s, the property where the house was originally located was sold to developers, and the house was donated to the historical society and moved to the Fairgrounds.

During the 1990s the Fairgrounds underwent the most extensive improvements to date. In 1991, the Fairgrounds were expanded to include the new Surfside Race Place, an off-track wagering facility that offers satellite horse racing. The Infield Pavilion, located in the racetrack infield, was added in 1991. Between 1992 and 1993, an $80 million renovation was completed that replaced the original Spanish Colonial grandstand with the new modern grandstand, constructed in a contemporary interpretation of the Mission Revival Style.

The two most recent buildings, Wyland Hall and Expo Center, were completed in June 2006. These two buildings are located east of the grandstand, next to the race track. The east wall of Wyland Hall has a mural depicting gray whales at sunset that was painted by the famed marine-life artist Wyland at the 2006 San Diego County Fair. This mural is visible from nearby Interstate 5

(See continuation sheet).

***D6. Significance:** Since the 1970s, numerous improvements have occurred that have gradually altered the character of the Fairgrounds from its original 1930s design. Aerial photographs of the property taken during the last four decades clearly show the evolution of the Fairgrounds. Additional land was acquired to facilitate additional expansions, bringing the total of the property to 313 acres. Most of the original adobe-style buildings from the 1930s were torn down and replaced, including the grandstand, maintenance sheds, exhibit buildings, and offices. There are five remaining buildings and features that were constructed during the period of significance at the Fairgrounds. However, the large modern buildings constructed post-1970s dominate the Fairgrounds setting.

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1926 *La Jolla, California,* Topographic Quadrangle. 7.5-minute series.
1967 *Del Mar, California,* Topographic Quadrangle. 7.5-minute series.
1975 *Del Mar, California,* Topographic Quadrangle. Photorevised 1967. 7.5-minute series.

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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI #
Trinomial



*Resource Name or # (Assigned by recorder) Del Mar Fairgrouds

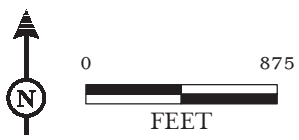
*Drawn By: Pete Pang

*Scale: 1:24,000

*Date of Map: 2006

| Contributing Resources | |
|---|---|
| **Label** | **Feature** |
| A | Bing Crosby Hall |
| B | Clock Tower |
| C | Exhibit Hall |
| D | Racetrack |
| E | Stables and Living Quarters Complex |
| **Non-Contributing Resources** | |
| **Label** | **Feature** |
| F | D. Robert Jones Center |
| G | Alvarado House, 1885 |
| H | Fire Station Office |
| I | Grandstand Complex |
| J | Infield Buildings |
| K | Janitorial Building |
| L | Surfside Race Place, Horse Arena and Barns |
| M | Metal & Manufactured Buildings |
| M | Metal & Manufactured Buildings |
| N | Pat O'Brien Hall |
| O | Maintenance Bulding (South) |
| P | Maintenance Bulding (North) |
| Q | Training Track |
| R | Don Diego Statue |
| S | Adobe Wall, 1938 |




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* Required Information

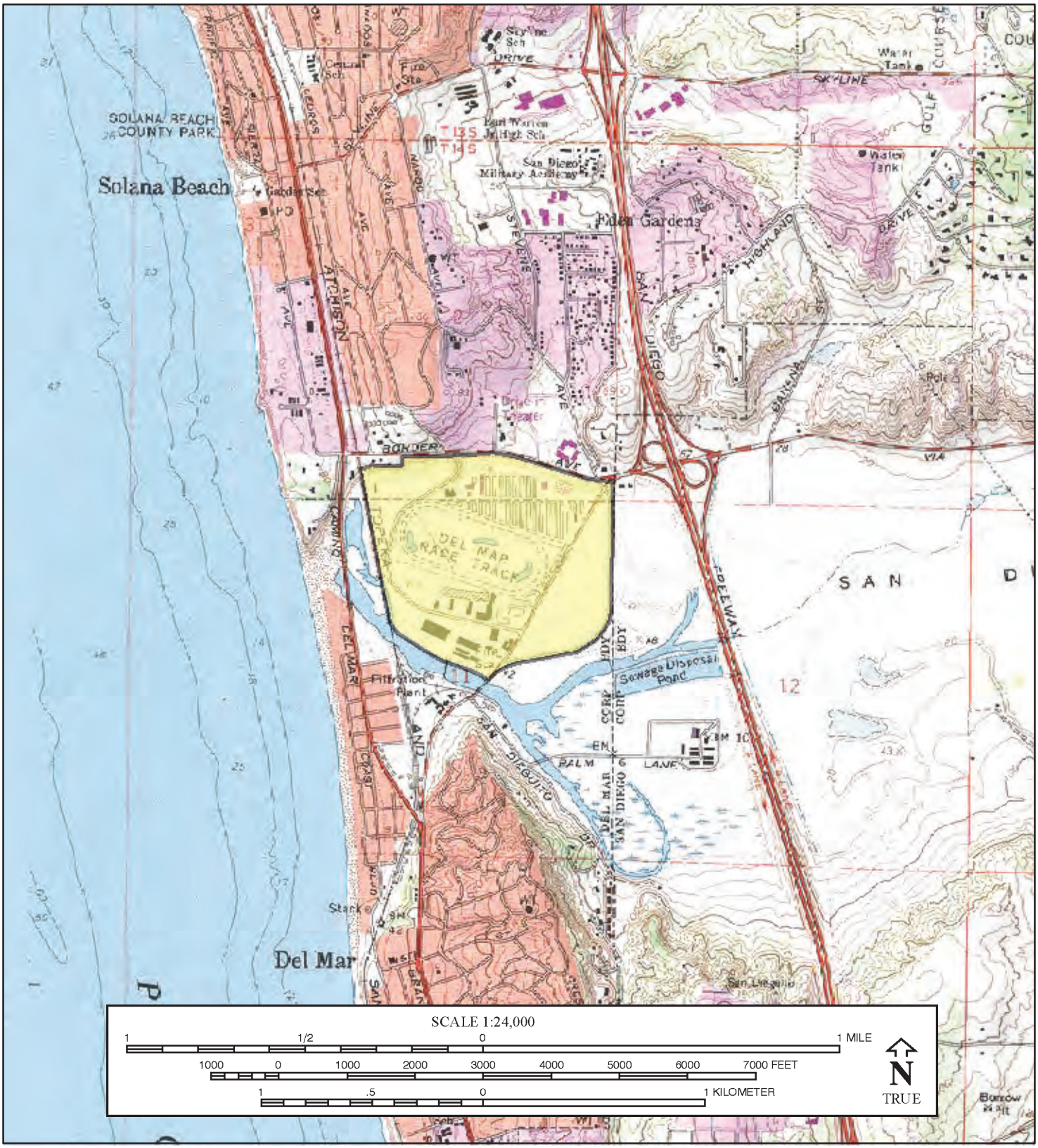
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial



*Resource Name or # (Assigned by recorder) Del Mar Fairgrouds

*Map Name: USGS 7.5' Quad, *DEL MAR*, California *Scale: 1:24,000 *Date of Map: 2006




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* Required Information

DPR 523J (1/95)

**P1. Other Identifier:** Del Mar Infield Pavilion

*P2 e. Other Locational Data: APN:
2260 Jimmy Durante Boulevard
Del Mar, California 92014

***P3a. Description:**
The Del Mar Infield Pavilion is a single story building with an irregular plan located in the center of the racetrack. It is across the track to the north from the Grandstand complex. Its main section, which is constructed of brick, is a long modified rectangle that bends to conform to the shape of the track. A secondary wing projecting from its north elevation is clad in vertical groove plywood, and has several covered window openings. A roll-up door designed to give access to equipment is located near the eastern end of its north elevation. It is flanked by three entryways fitted with flat metal doors. There is also an entry door at the building's northwest end, as well as several doors in the western half of the north elevation. The south elevation, which faces the grandstand, was originally used as a scoreboard and has numerous openings that have been boarded up. It is obscured from view by a long scoreboard installed in front of it. The eastern end of the building, which is visible from the Grandstand, has three large screens installed on its façade. A shaped parapet and applied quatrefoil detail near the eastern end of the elevation hide the equipment on the roof from view from the Grandstand. Both wings are topped with a flat roof, and there is a volume east of center atop its roof designed to house equipment. Although it references the Mission architectural style with these details, the Infield Pavilion is clearly a contemporary building.

***P3b. Resource Attributes:** HP42

***P8. Recorded by:** Kara Brunzell, 1613 B Street, Napa, California 94559

***P11. Report Citation:** Cultural Resources Assessment for the Del Mar Grandstands Project, Del Mar, San Diego County, California

***B10. Significance:**
The building was constructed outside the period of significance and the historic period, and is therefore not eligible as a historic resource at the local, state, or national level.

Historic Context
The Del Mar Fairgrounds, where the Del Mar Racetrack and its associated resources is located, was evaluated as a potential historic district as part of the Del Mar Fairgrounds Master Plan Project in 2006. The period of significance was defined as 1936 – 1956, starting with the year the Del Mar Fairgrounds opened. Although according to the Office of Historic Preservation a period of significance "refers to a chronological period as it relates to historic significance," the end of the date was chosen simply because it was 50 years prior to the year the property was evaluated. 1970, which was the year the Del Mar Thoroughbred Club took over management from the Del Mar Turf Club, is a less arbitrary end date for the period of significance, and allows for the evaluation of resources that have aged into potential significance in the decade since the previous evaluation was undertaken.[1]

Evaluation
The 2006 Historic Resource Assessment of the Del Mar fairground found 17 historic-period buildings, which were evaluated individually and as a potential historic district (continued page 2).

***B14. Evaluator:** Kara Brunzell ***Date of Evaluation:** May 5, 2015

[1] Office of Historic Preservation, "Instructions for Recording Historical Resources," March, 1995, p. 12; State of California, "Historic Resource Assessment: Del Mar Fairgrounds Master Plan Project," Prepared by Casey Tibbets of LSA, November, 2006, p. 22.

Evaluation (cont.)

The period of significance was defined as 1936 – 1956, starting with the year the Del Mar Fairgrounds opened. Although according to the Office of Historic Preservation a period of significance "refers to a chronological period as it relates to historic significance," the end of the date was chosen simply because it was 50 years prior to the year the property was evaluated. 1970, which was the year the Del Mar Thoroughbred Club took over management from the Del Mar Turf Club, is a less arbitrary end date for the period of significance, and allows for the evaluation of resources that have aged into potential significance in the decade since the previous evaluation was undertaken.[2]

The 2006 Historic Resource Assessment of the Del Mar fairground found 17 historic-period buildings, which were evaluated individually and as a potential historic district. Although the fairgrounds was found eligible under Criterion 1/A for its association with the agricultural and recreation history of San Diego County, and under Criterion 3/C for its architecture, the buildings evaluated were found to lack integrity to the period of significance (1936 – 1956) established as part of that study. Re-evaluating the potential district with the expanded period of significance (1936 – 1970) does not alter the results in terms of historic eligibility. Most of the buildings and structures that date from the period of significance have been demolished or significantly altered since 1970, and therefore do not retain sufficient integrity to qualify as historic resources. Although five buildings were determined at that time to retain integrity, they were subsequently determined to lack sufficient architectural significance for individual eligibility. However, because of the length of time that has elapsed since the previous study, these resources, (the Bing Crosby Hall, the Exhibit Hall, the Clock Tower, the Stables and Living Quarters Complex, and the Race Track), should be re-evaluated if a future project proposes a significant effect to the buildings.

The DPR 523 form created for the Del Mar Infield Pavilion states that the building was constructed during 1991. It goes on to state that the building was constructed outside the period of significance and the historic period, and is therefore not eligible as a historic resource at the local, state, or national level. Historic aerial photographs, however, have revealed that although several infield buildings were constructed in 1991, the Infield Pavilion was present by 1953. The addition at the northwest end of the building was constructed between 1953 and 1964, and the projecting north wing was constructed in the 1980s. The large screen appears to have been installed in 1999, and the building was probably remodeled at this time.[3]

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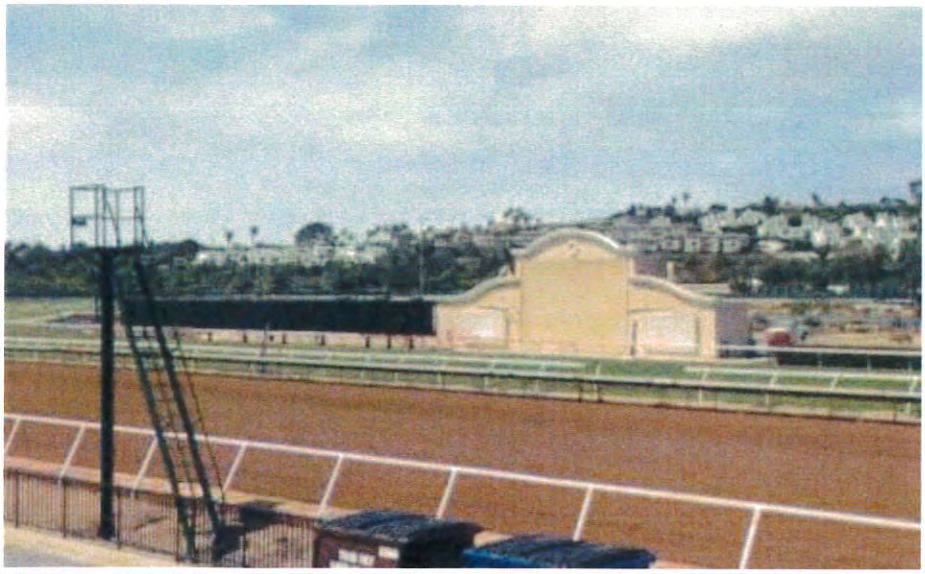
[2] Office of Historic Preservation, "Instructions for Recording Historical Resources," March, 1995, p. 12; State of California, "Historic Resource Assessment: Del Mar Fairgrounds Master Plan Project," Prepared by Casey Tibbets of LSA, November, 2006, p. 22.

[3] Historic Aerials by NETR online, http://www.historicaerials.com/, Copyright 2009-2015 Nationwide Environmental Title Research, LLC, accessed May 29, 2015; Kara Brunzell, personal communication with Rodney Philhower, PlanCom, Inc., June 4, 2015. (BCR Consulting personnel attempted to contact site staff at Del Mar Racetrack, who declined to provide building records or to respond directly to questions regarding the building's construction and maintenance history. Rodney Philhower is a consultant who has worked for Del Mar Racetrack and he passed on information regarding the most recent changes to the building. His facts appear to have been provided verbally by Del Mar Racetrack staff.)

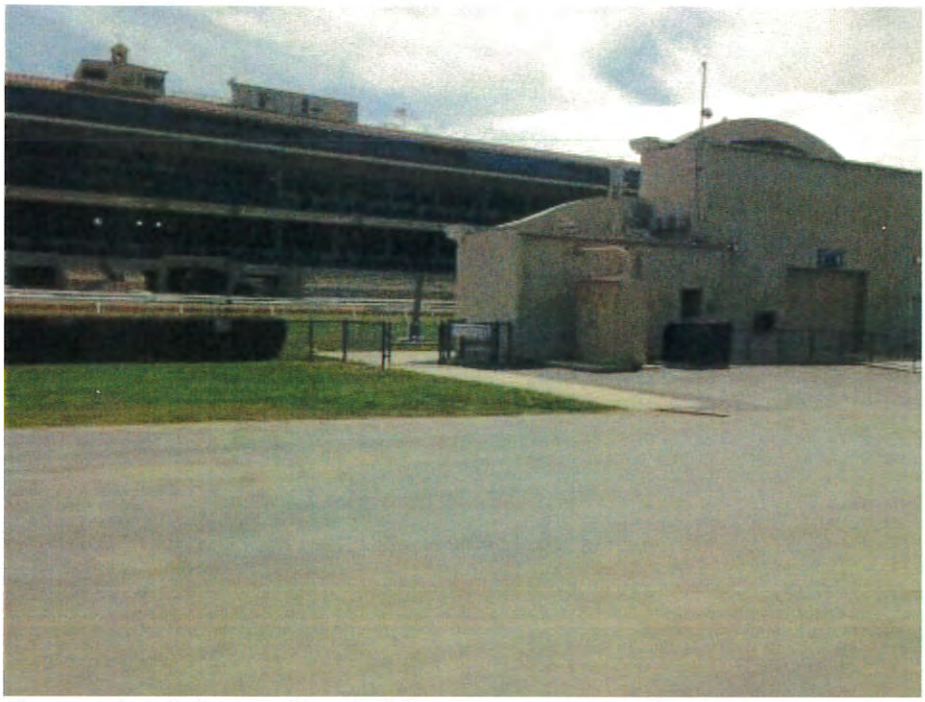
**Photographs:**



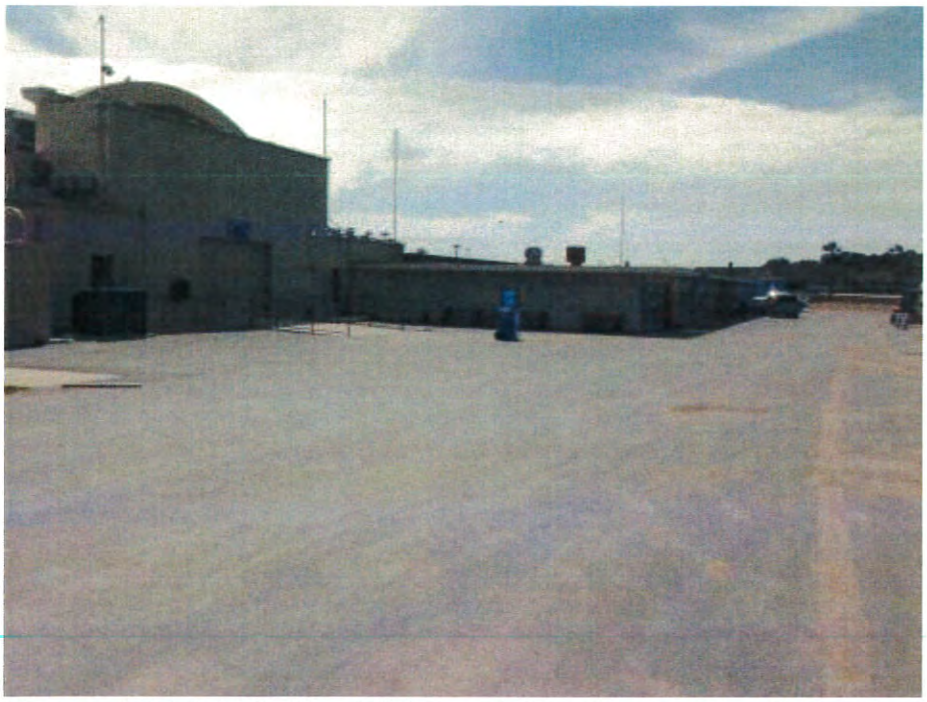
Photograph 1: Infield Pavilion building from Grandstand, south elevation with scoreboard blocking view of the western end of the building, camera facing northeast, May 5, 2015.



Photograph 2: Infield Pavilion Building, south and east elevations, camera facing northwest, May 5, 2015.



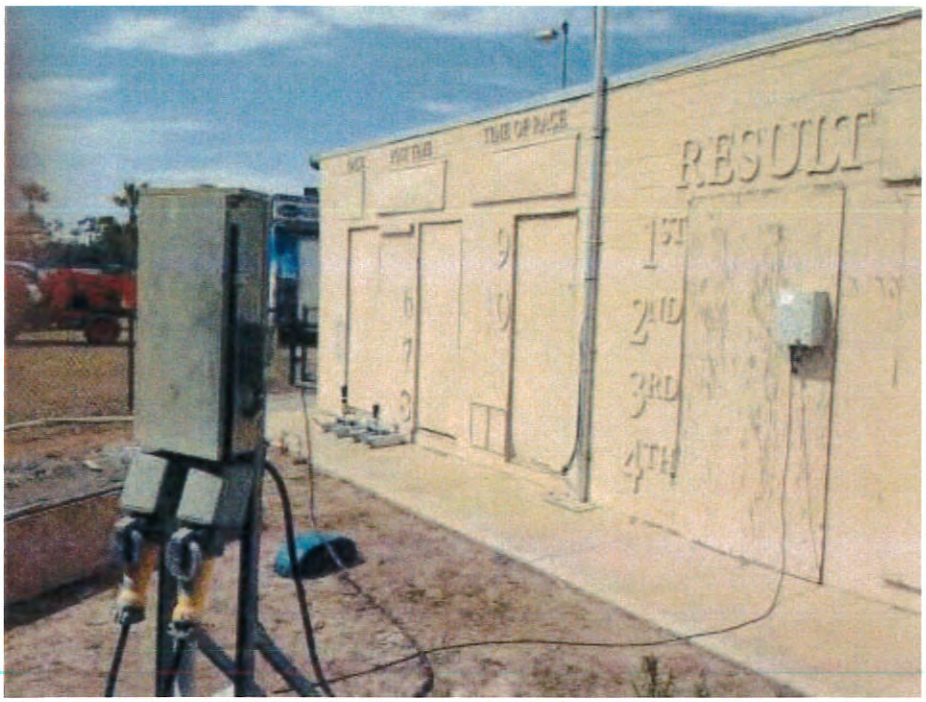
Photograph 3: Infield Pavilion Building, eastern portion of building showing east and north elevations with Grandstand Complex in background, camera facing southwest, May 5, 2015.



Photograph 4: Infield Pavilion Building north elevation, east and north elevations of north wing, camera facing northwest, May 5, 2015.



Photograph 5: Infield Pavilion, north and west elevation, camera facing southeast, May 5, 2015.




Photograph 6: Detail, Infield Pavilion, west end of south elevation, camera facing northwest, May 5, 2015.



Photograph 7: Detail, large covered screens on south elevation of infield pavilion, camera facing west, May 5, 2015.

**Previous Historic Resources Inventory**

State of California, "Historic Resource Assessment: Del Mar Fairgrounds Master Plan Project," Prepared by Casey Tibbets of LSA, November, 2006.

**State of California — The Resources Agency**
**DEPARTMENT OF PARKS AND RECREATION**

# UPDATE SHEET

**Primary #** P-37-035936
**HRI #**
**Trinomial**
**NRHP Status Code**

 ***Resource Name or #:** (Assigned by recorder) Del Mar Thoroughbred Club Grandstand and Racetrack Complex

☐ Continuation ☒ Update

**P1. Other Identifier:** Human Resources Building at Del Mar Thoroughbred Club Grandstand and Racetrack Complex
***P2 e. Other Locational Data:**
***P3a. Description:**

This form serves as an update to the previously recorded Del Mar Thoroughbred Club Grandstand and Racetrack Complex (P-37-035936), recorded in the Historic Resource Assessment of the Del Mar Fairground in 2006. The Del Mar Thoroughbred Club Grandstand and Racetrack Complex was also updated by Kara Brunzell in 2015. This form analyzes the Human Resources building on the Del Mar Fairgrounds property.

This property was built in1965 and is a vernacular Modern style ancillary building (**Photograph 1**) (Construction date based on review of Historic Aerials). It has an east-facing orientation. It is one story in height with a rectangular plan. The building has a flat roof, a stucco exterior, and multiple commercial steel doors. The original windows appear to infilled and converted to sliding 1/1 vertical and horizontal units. The build is surrounded by paved access paths and a surface parking lot.

***P3b. Resource Attributes:** HP4. Ancillary building



**P5a. Photograph:**
**Photograph 1.** Overview Human Resources Building, facing northwest; Photo #8456; 10/19/2016*

**P8. Recorded by:** AECOM
401 West A Street, Suite 1200
San Diego, CA 92101

***P9. Date Recorded:** October 2016

***P10. Survey Type:** Intensive Pedestrian

***P11. Report Citation**: AECOM, 2016 Cultural Resources Survey Report for Coastal Reliability Project - TL674A Del Mar Reconfigure and TL666D Removal Project, San Diego County, California.

***B10. Significance:**

The period of significance for P-37-035936 was defined as 1936-1956. The Human Resources building was constructed outside of the period of significance in 1965. The building appears to have been extensively altered since 1970 (based on field observation). Overall, although the building retains some of its integrity, the property does not appear meet any of the NRHP and CRHR criteria for listing eligibility. Therefore, based on site investigations and historic research conducted to date, human resources building located at the Del Mar Fairgrounds does not appear to be eligible for listing on the NRHP or CRHR either as an individual resource or as a contributor to a larger historic property (Thoroughbred Club Grandstand and Racetrack Complex).

***B14. Evaluator:** M. Mello, AECOM ***Date of Evaluation:** October 2016

***B12. References:**

HistoricAerials. 1964, 1966, 1980, 2012. Aerial Photograph. http://www.historicaerials.com. Accessed October 12, 2016.

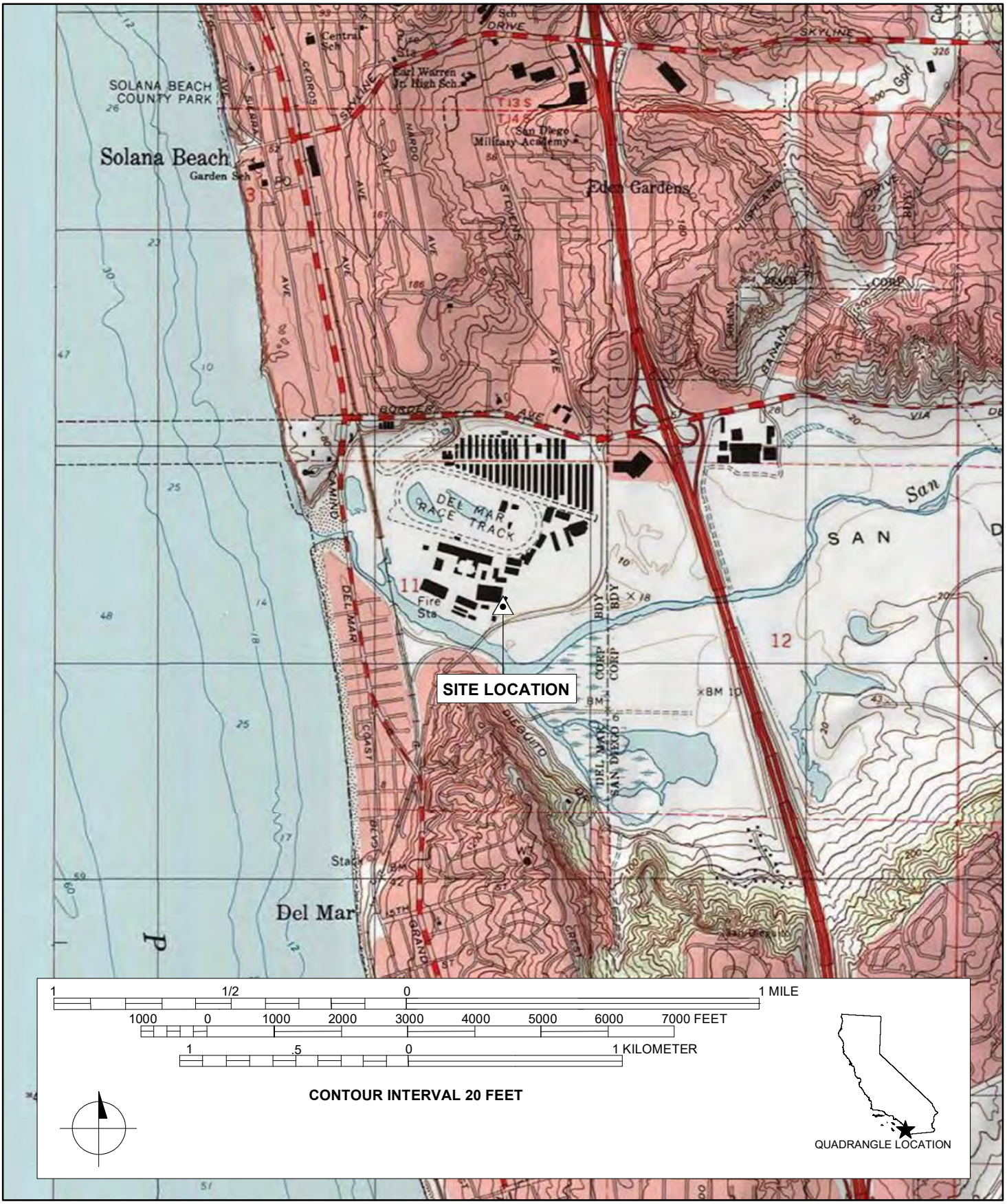
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

# LOCATION MAP

Primary #
HRI #
Trinomial

**Page** X **of** X *** Resource Name or #** (Assigned by recorder) P-37-035936 Update

*** Map Name:** Del Mar, Calif. 7.5' Quadrangle *** Scale:** 1:24,000 *** Date of Map:** 1975



**P1. Other Identifier:** Del Mar Thoroughbred Club Grandstand and Racetrack complex

*P2 e. Other Locational Data: APN:
2260 Jimmy Durante Boulevard
Del Mar, California 92014

***P3a. Description:**

The Del Mar Thoroughbred Club Grandstand is a large four-story complex of buildings designed to house grandstand seating for the racetrack. Located just south of the racetrack, the contemporary building is a recent historicist interpretation of the original 1937 Del Mar Turf Club Grandstand's Spanish Eclectic architecture. The main volume of the building is essentially rectangular in plan. The flat roof of its four-story central section is surrounded by a hipped parapet with clay tile. The main (south) façade of the central section of the building is surrounded by elements designed to mimic a Spanish village including asymmetrical façade, varying roof forms, arched window and door openings, and numerous projecting one- and two-story volumes. The Grandstand also features domed towers flanking its main entrance and arcades at the ground floor. It is clad in stucco, and features impost molding and other Spanish Eclectic detail. The north elevation of the building has three levels of grandstand seating open to the racetrack, and lacks decorative architectural elements except the hipped parapet with clay tile around the roof. Although the building references the architectural style of the original, the current Del Mar Thoroughbred Club Grandstand is clearly a contemporary building.

***P3b. Resource Attributes:** HP42

***P8. Recorded by:** Kara Brunzell, 1613 B Street, Napa, California 94559

***P11. Report Citation:** Cultural Resources Assessment for the Del Mar Grandstands Project, Del Mar, San Diego County, California

***B10. Significance:**

The building was constructed outside the period of significance and the historic period, and is therefore not eligible as a historic resource at the local, state, or national level.

Historic Context

The Del Mar Fairgrounds, where the Del Mar Racetrack and its associated resources is located, was evaluated as a potential historic district as part of the Del Mar Fairgrounds Master Plan Project in 2006. The period of significance was defined as 1936 – 1956, starting with the year the Del Mar Fairgrounds opened. Although according to the Office of Historic Preservation a period of significance "refers to a chronological period as it relates to historic significance," the end of the date was chosen simply because it was 50 years prior to the year the property was evaluated. 1970, which was the year the Del Mar Thoroughbred Club took over management from the Del Mar Turf Club, is a less arbitrary end date for the period of significance, and allows for the evaluation of resources that have aged into potential significance in the decade since the previous evaluation was undertaken.[1]

Evaluation

The 2006 Historic Resource Assessment of the Del Mar fairground found 17 historic-period buildings, which were evaluated individually and as a potential historic district (continued page 2).

***B14. Evaluator:** Kara Brunzell ***Date of Evaluation:** May 5, 2015

[1] Office of Historic Preservation, "Instructions for Recording Historical Resources," March, 1995, p. 12; State of California, "Historic Resource Assessment: Del Mar Fairgrounds Master Plan Project," Prepared by Casey Tibbets of LSA, November, 2006, p. 22.

Evaluation (cont.)

The period of significance was defined as 1936 – 1956, starting with the year the Del Mar Fairgrounds opened. Although according to the Office of Historic Preservation a period of significance "refers to a chronological period as it relates to historic significance," the end of the date was chosen simply because it was 50 years prior to the year the property was evaluated. 1970, which was the year the Del Mar Thoroughbred Club took over management from the Del Mar Turf Club, is a less arbitrary end date for the period of significance, and allows for the evaluation of resources that have aged into potential significance in the decade since the previous evaluation was undertaken.[2]

The 2006 Historic Resource Assessment of the Del Mar fairground found 17 historic-period buildings, which were evaluated individually and as a potential historic district. Although the fairgrounds was found eligible under Criterion 1/A for its association with the agricultural and recreation history of San Diego County, and under Criterion 3/C for its architecture, the buildings evaluated were found to lack integrity to the period of significance (1936 – 1956) established as part of that study. Re-evaluating the potential district with the expanded period of significance (1936 – 1970) does not alter the results in terms of historic eligibility. Most of the buildings and structures that date from the period of significance have been demolished or significantly altered since 1970, and therefore do not retain sufficient integrity to qualify as historic resources. Although five buildings were determined at that time to retain integrity, they were subsequently determined to lack sufficient architectural significance for individual eligibility. However, because of the length of time that has elapsed since the previous study, these resources, (the Bing Crosby Hall, the Exhibit Hall, the Clock Tower, the Stables and Living Quarters Complex, and the Race Track), should be re-evaluated if a future project proposes a significant effect to the buildings.

The Del Mar Thoroughbred Club Grandstand complex was constructed during 1992 – 1993. It was constructed outside the period of significance and the historic period, and is therefore not eligible as a historic resource at the local, state, or national level. It was recorded in 2006 as part of the previous evaluation effort, and at that time the evaluator reached the same conclusion.

[2] Office of Historic Preservation, "Instructions for Recording Historical Resources," March, 1995, p. 12; State of California, "Historic Resource Assessment: Del Mar Fairgrounds Master Plan Project," Prepared by Casey Tibbets of LSA, November, 2006, p. 22.

**Photographs:**



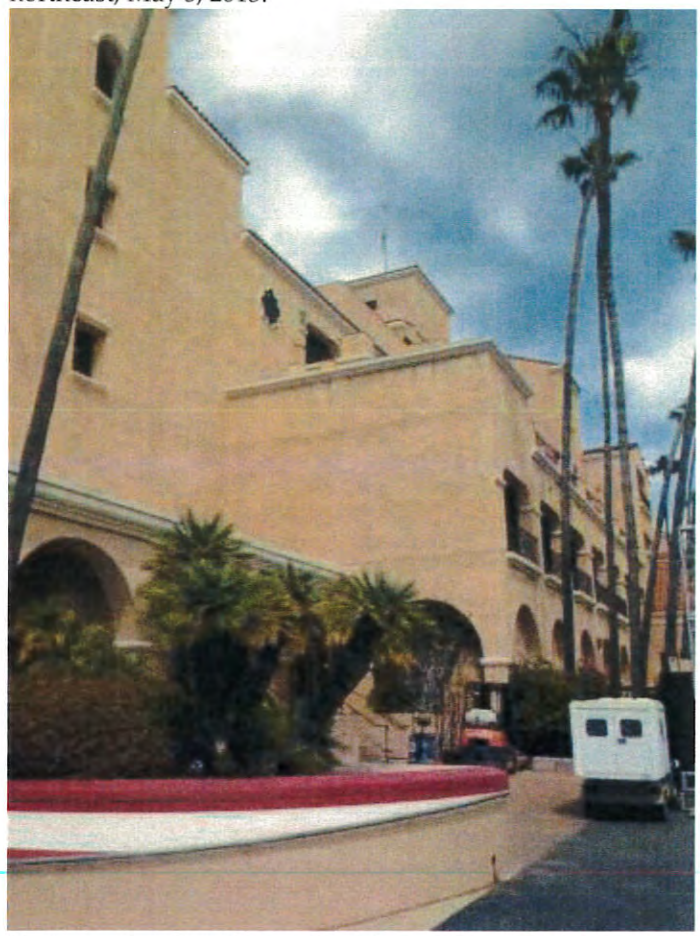
Photograph 1: Grandstand complex, central portion of south elevation showing towers, projecting volumes, and arcades, camera facing northeast, May 5, 2015.



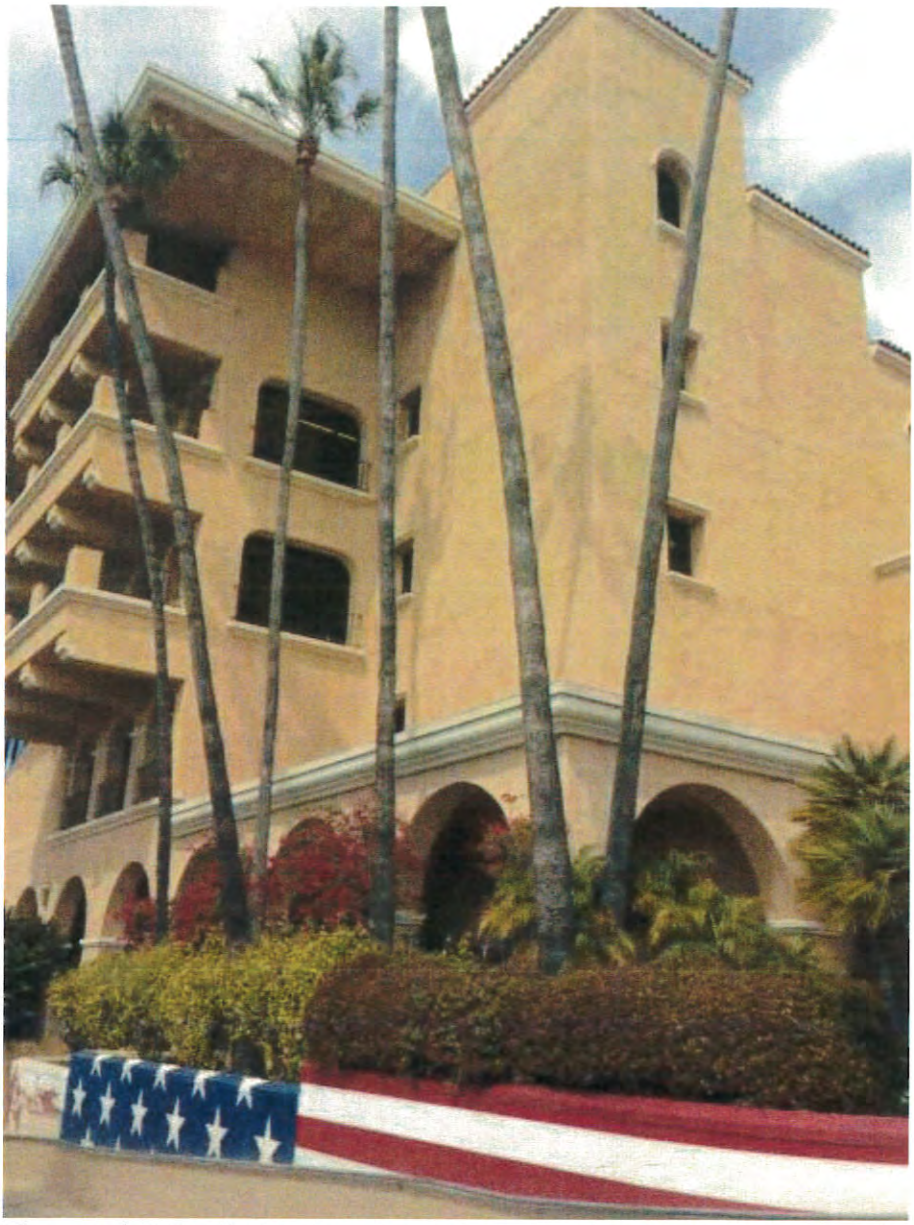
Photograph 2: Grandstand complex, south elevation with Operations Building in foreground, camera facing northwest, May 5, 2015.



Photograph 3: Grandstand complex, south and west elevations with Operations building left of frame, camera facing northeast, May 5, 2015.



Photograph 4: Detail Grandstand complex, south elevation, camera facing east, May 5, 2015.



Photograph 5: Detail, Grandstand complex, west and south elevation, camera facing northeast, camera facing northeast, May 5, 2015.



Photograph 6: Grandstand complex, west end of north elevation, camera facing south, May 5, 2015.



Photograph 7: Grandstand complex, east end of north elevation, camera facing southeast, May 5, 2015.



Photograph 8: Detail Grandstand complex, camera facing west, May 5, 2015.

**Previous Historic Resources Inventory**

State of California, "Historic Resource Assessment: Del Mar Fairgrounds Master Plan Project," Prepared by Casey Tibbets of LSA, November, 2006.

## Appendix E: Caltrans Structure Maintenance and Investigations, Historical Significance - Local Agency Bridges

# Structure Maintenance & Investigations




## Historical Significance - Local Agency Bridges

## District 11

### San Diego County

| Bridge Number | Bridge Name | Location | Historical Significance | Year Built | Year Wid/Ext |
|---|---|---|---|---|---|
| 57C0002 | SWEETWATER RIVER | 0.1 MI W/O RTE 79 | 2. Bridge is eligible for NRHP | 1917 | |
| 57C0009 | SIXTH AVENUE UC | 0.2 M W/0 ROUTE 163 | 2. Bridge is eligible for NRHP | 1940 | |
| 57C0010 | SAN LUIS REY RIVER | 0.9 MI N ROUTE 76 | 5. Bridge not eligible for NRHP | 1965 | |
| 57C0011 | SWEETWATER RIVER | 0.15 MI N/O BONITA RD | 5. Bridge not eligible for NRHP | 1940 | |
| 57C0015 | NAVY ESTUARY | 0.4 MI E OF RTE 209 | 5. Bridge not eligible for NRHP | 1981 | |
| 57C0020 | CHOLLAS CREEK (MAIN ST) | 200' W WABASH ST | 5. Bridge not eligible for NRHP | 1937 | |
| 57C0023 | SAN DIEGO RIVER FLOOD CONTROL CHANNEL | 0.1 MI NW RTE I 8 | 5. Bridge not eligible for NRHP | 1950 | |
| 57C0028 | SAN DIEGO RIVER (MORENA BLVD) | JUST NORTH OF I-8 | 5. Bridge not eligible for NRHP | 1952 | 1969 |
| 57C0029 | TECOLOTE CREEK | 0.5 M. N/O MORENA BLVD. | 5. Bridge not eligible for NRHP | 1957 | |
| 57C0042 | SAN DIEGUITO RIVER | 0.3 MI S VIA DE LA VALLE | 5. Bridge not eligible for NRHP | 1940 | |
| 57C0043 | SAN DIEGUITO RIVER | 0.7 MI S VIA DE LA VALLE | 5. Bridge not eligible for NRHP | 1982 | |
| 57C0056 | GOPHER CANYON CREEK | 0.1 MI S GOPHER CANYON RD | 5. Bridge not eligible for NRHP | 1940 | 1974 |
| 57C0057 | MOOSA CANYON CREEK | 0.3 MI SE WEST LILAC RD | 5. Bridge not eligible for NRHP | 1974 | |
| 57C0068 | SANTA MARIA CREEK | 6.7 MI E OF I-15 | 5. Bridge not eligible for NRHP | 1980 | |
| 57C0070 | BOLAS CREEK | .2 MI E/O RTE 15 | 5. Bridge not eligible for NRHP | 1930 | |
| 57C0073 | WITHERBY STREET UP | 0.1 MI N OF PAC. COAST HY | 4. Historical Significance not determined | 1924 | |
| 57C0075 | MIRAMAR ROAD OH | 1.2 MI E OF I-805 | 5. Bridge not eligible for NRHP | 1975 | 1989 |
| 57C0077 | ADAMS AVENUE OC | 0.5 M S/O ROUTE I-8 | 5. Bridge not eligible for NRHP | 1964 | |
| 57C0079 | UNIVERSITY AVENUE OC | 0.7 MI NW OF RTE 5 | 5. Bridge not eligible for NRHP | 1945 | |
| 57C0084 | 24TH STREET UP | 100 FT E/O RTE 5 | 5. Bridge not eligible for NRHP | 1951 | 1981 |
| 57C0085 | 18TH STREET UNDERPASS | 250' W/O WILSON AVE | 5. Bridge not eligible for NRHP | 1951 | 1981 |
| 57C0095 | MARKET ST/28TH ST SEPARATION | 0.1 M S/O ROUTE 94 | 5. Bridge not eligible for NRHP | 1928 | |
| 57C0097 | EL CAJON BLVD OH | 0.06 M E/O BALTIMORE DR. | 5. Bridge not eligible for NRHP | 1962 | |
| 57C0098 | SOLEDAD CANYON CREEK | 0.05 MI S/W SORENTO VL RD | 5. Bridge not eligible for NRHP | 1966 | 1990 |
| 57C0108 | LOS PENASOUITOS CREEK | 0.6 MI SW POMERADO RD | 5. Bridge not eligible for NRHP | 1928 | |
| 57C0109 | POWAY CREEK | 0.2 MI S POWAY RD | 5. Bridge not eligible for NRHP | 1988 | |
| 57C0120 | VIEJAS CREEK | 0.9 MI E/O ALPINE WILLOW | 5. Bridge not eligible for NRHP | 1933 | |
| 57C0133 | AQUA HEDIONDA LAGOON | 1 MI N CANNON RD FAU S349 | 5. Bridge not eligible for NRHP | 1986 | |
| 57C0134 | CARLSBAD OH | 0.6 MI NW ELM AVE | 5. Bridge not eligible for NRHP | 1925 | 1935 |
| 57C0135 | BUENA VISTA LAGOON | 0.3 MI S VISTA WAY | 5. Bridge not eligible for NRHP | 1914 | 1933 |
| 57C0142 | RAINBOW CREEK | 1.4 MI N MISSION RD | 5. Bridge not eligible for NRHP | 1984 | |
| 57C0144 | ESCONDIDO CREEK | 2.0 MI E VALLEY CENTER RD | 5. Bridge not eligible for NRHP | 1957 | |
| 57C0145 | SANTA MARIA CREEK | 0.2 MI N/W OF ROUTE 78 | 5. Bridge not eligible for NRHP | 1955 | |
| 57C0146 | SANTA MARIA CREEK | 0.3 MI N/W OF RTE 78 | 5. Bridge not eligible for NRHP | 1957 | |
| 57C0153 | COTTONWOOD CREEK | 0.3 MI W OF ROUTE 94 | 4. Historical Significance not determined | 1989 | |
| 57C0155 | ROSE CANYON CREEK | 0.1 MI N OF GARNET AVE | 5. Bridge not eligible for NRHP | 1930 | 1938 |
| 57C0156L | E. BEYER BLVD UNDERPASS | .05 E/O RTE 805 | 4. Historical Significance not determined | 1928 | |
| 57C0156R | E. BEYER BLVD UP | .05 E/O RTE 805 | 5. Bridge not eligible for NRHP | 1982 | |
| 57C0157 | OTAY RIVER | 0.5 MI N PALM AVE | 4. Historical Significance not determined | 1990 | |
| 57C0158 | GOPHER CANYON | 300' N ORMS BY FAS W951 | 5. Bridge not eligible for NRHP | 1940 | 1959 |
| 57C0165 | NORTH BRANCH MESA CREEK | 0.05 MI E OF DAIRY MART | 5. Bridge not eligible for NRHP | 1955 | 1984 |
| 57C0166 | FORESTER CREEK | 2 MI W OF ST RTE 67 | 5. Bridge not eligible for NRHP | 1960 | 2008 |
| 57C0171 | ROSE CANYON CREEK | 0.8 MI N OF GARNET AVE | 5. Bridge not eligible for NRHP | 1966 | |

# Appendix E

Hydrology and Water Quality Technical Memorandum

# MEMORANDUM

| | |
|---|---|
| **To:** | Matt Valerio, Principal/Coastal Services Director |
| **From:** | Nicole Rieger, PE, Principal Engineer |
| **Subject:** | San Dieguito Lagoon Shoreline Protection, Del Mar – Hydrology & Water Quality Tech Memo |
| **Date:** | 11/5/2025 |
| **cc:** | N/A |
| **Attachment(s):** | N/A |

# 1 Introduction

The purpose of this memorandum is to review the available floodplain, levee design, sea level rise analyses, storm water quality plans, and other relevant documents for the project area to provide analysis for the CEQA threshold questions for hydrology and water quality. Available materials include:

- Draft Project Description, Dudek – August 2025
- No Rise Analysis Report, GHD - October 3, 2025

## 1.1 Project Description

The purpose of the San Dieguito Lagoon Shoreline Protection Planning Project (project) is to reduce future river flooding along the San Dieguito River (river) along both sides of the river between the San Dieguito Railroad Trestle (bridge) and the Jimmy Durante Boulevard bridge. This will be accomplished by constructing earthen berms or levees and flood walls in strategic locations along portions of the riverbank. The Project Description splits the project area into three different subareas, the North Riverbank, the Southeast Riverbank and the Southwest Riverbank.

The North Riverbank is part of the Del Mar Fairgrounds property, and the proposed improvements will take place within a 100'-wide easement that exists along the shoreline which is designated for public access and habitat improvements. The proposed improvements include constructing an earthen levee at the north side of the easement and re-grading the terrain between the levee and the high-water line of the riverbank to a 37:1 (H:V) slope. It is understood that the proposed improvements will be constructed of pervious material including gravel, structural fill, decomposed granite, and/or new vegetation, No new or replaced impervious area will result from the improvements.

The Southeast Riverbank is subdivided into two areas: the west and the east. The west portion includes the shoreline along the existing City Public Works facility. Improvements within this area include construction of a flood wall along the northern limit of the facility, and where the floodway encroaches into the facility property, along the limits of the mapped FEMA floodway. The proposed wall will be constructed south of the existing trail that runs along the river. It is assumed that all improvements will be constructed of pervious materials. The east portion of the Southeast Riverbank includes a public park. Improvements within this area include removal of an existing levee along the shoreline and construction of a new levee further away from the shoreline and with a higher crest elevation. It is assumed that all improvements within this area will be constructed of pervious materials.

The Southwest Riverbank area is a reach that extends approximately 300 ft from the trail adjacent to the North Beach neighborhood to the existing railroad trestle bridge. This area is almost entirely within the North County Transit District (NCTD) right-of-way. Improvements include construction of flood wall in the western part of the area, and an earthen levee along the remaining portion of the shoreline. The existing trail in this area will maintain its existing elevation and alignment. There is an existing drainage swale adjacent to these proposed improvements, and it is assumed that its functionality will not be impacted. It is assumed that all improvements within this area will be constructed of pervious materials.

# 2 Water Quality

Due to the location and scope of work for this project, the following water quality regulations are applicable during and after construction:

## 2.1 During Construction

This project will involve construction activities that have potential to discharge pollutants into waterways, and therefore, is subject to regulatory requirements at the federal, state, and local level. In California, the requirements of the Clean Water Act the and administration of the National Pollutant Discharge Elimination System (NPDES) permit are delegated to the California State Water Resources Control Board (SWRCB). The state Water Board, via the Construction General Permit, requires that projects disturbing one (1) or more acre of land prepare a Storm Water Pollution Protection Plan (SWPPP) and meet requirements related to sediment control, erosion control and other preventative measures to manage stormwater and potential pollutants during construction. It is assumed that this project will disturb more than one acre, and therefore, a SWPPP will be required.

Typically, if a project disturbance is less than one acre, a SWPPP is not required by the State, but a local authority like a city or county may require a report be prepared to ensure construction activities do not cause storm water pollution. The City of Del Mar has a Clean Water Program which works with contractors to prioritize clean water and ensure stormwater compliance with local and state regulations by conducting regular site inspections. According to the Clean Water Construction Priority Form on the City website, the project will be considered a High Priority Construction Project, and the project will be covered under the Statewide Construction General Permit.

The purpose of a SWPPP is to identify potential sources of pollution and outline how a site will prevent and minimize the discharge of pollutants into stormwater runoff. The SWPPP will include calculations to determine site priority, inspection and monitoring requirements, details for Best Management Practices (BMPs), and other instructions for the contractor to follow before and during rain events to ensure that storm water pollution is reduced or eliminated.

To accommodate these requirements the project will implement construction BMPs in accordance with the Construction General Permit. Details for BMP requirements are published by CASQA via the BMP Design Manual for Construction. These include but are not limited to silt fence around the project perimeter, fiber rolls along open slopes, covering material stockpiles, gravel bags around storm drain inlets, and many others. Water quality parameters including dissolved oxygen (DO), PH, salinity, temperature, and turbidity shall be recorded daily during construction activities. Monitoring sites shall be placed upstream and downstream of construction areas.

Proper implementation of construction BMPs and adherence to the requirements of the Construction General Permit will ensure that impacts during construction are mitigated to be less than significant.

## 2.2 Post-Construction

Post-construction water quality requirements are set forth by the NPDES, but administration is delegated to regional and local Municipal Separate Storm System (MS4) permit areas within the State of California. The City of Del Mar has a Storm Water Management Program that enforces requirements according to the City BMP Design Manual. Based on the standards in the manual and the City of Del Mar Checklist for Determination of Development Project Category, the project would be considered a Standard Project. The applicable threshold for a Priority Development Project (PDP) is, "*New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharge directly to a City of Del Mar Environmentally Sensitive Area (ESA).*" The proposed improvements will be constructed of pervious materials, and no new or replaced impervious areas are proposed. Therefore, this project is not a Priority Development Project (PDP), it is a Standard Project, which means permanent pollution control BMPs are not required. Instead, a City of Del Mar Standard Project Stormwater Management Plan shall be prepared and source control and site design BMPs shall be implemented.

Source control BMPs are the minimum BMP standards and the first line of defense against storm water pollution. The BMPs are implements to eliminate or minimize contact between pollutant sources and storm water runoff. The project designer who will prepare the Standard Project Stormwater Plan shall review the list of potential Source Control BMPs (listed below for reference) and determine which are applicable to include in the report and implementation plan:

- Prevention of Illicit Discharges into the MS4 (SC-1)
- Storm drain system stenciling or signage (SC-2)
- Include properly designed outdoor material storage areas. Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal (SC-3&4)
- Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal (SC-5)
- Additional BMPs Based on Potential Sources of Runoff Pollutants – (SC-6)
    - Interior floor drains and elevator shaft sump pumps
    - Interior parking garages
    - Need for future indoor & structural pest control
    - Landscape/Outdoor Pesticide Use
    - Pools, spas, ponds, fountains, and other water features
    - Food service
    - Refuse areas
    - Industrial processes
    - Outdoor storage of equipment or materials
    - Vehicle and Equipment Cleaning
    - Vehicle/Equipment Repair and Maintenance
    - Fuel Dispensing Areas
    - Loading Docks
    - Fire Sprinkler Test Water

- Miscellaneous Drain or Wash Water
- Plazas, sidewalks, and parking lots

Site Design BMPs are elements of a design that minimize the impact of development on stormwater runoff. Examples include routing runoff from hard surfaces to pervious areas, collecting and storing runoff at the source, and preserving natural drainage pathways. The project designer who will prepare the Standard Project Stormwater Plan shall review the list of potential Site Design BMPs (listed below for reference) and determine which are applicable to include in the report and implementation plan:

- **SD-1:** Maintain Natural Drainage Pathways and Hydrologic Features
- **SD-2:** Conserve Natural Areas, Soils, and Vegetation
- **SD-3:** Minimize Impervious Area– Specify net change in impervious area in the adjacent box.
- **SD-4:** Minimize Soil Compaction
- **SD-5:** Impervious Area Dispersion – Route runoff from impervious surfaces such as hardscape, driveways and roofs to pervious areas (landscaping).
- **SD-6:** Runoff Collection – Collect and store runoff at the source to minimize the transport of runoff and pollutants.
- **SD-7:** Landscaping with Native or Drought Tolerant Species
- **SD-8:** Harvesting and Using Precipitation – Collect runoff in rain barrels or cisterns.

Proper implementation of Source Control and Site Design BMPs and adherence to the requirements of the City's Standard Project Stormwater Plan will ensure that impacts after construction are mitigated to be less than significant.

# 3 Hydrology

Based on the available project design data at the time of this memorandum, the project proposes to construct levees and flood walls to protect the existing developments along the shoreline from flooding due to major storm events. The project also includes re-grading portions of the riverbank and redesigning the alignment and elevation of the existing trail network along the banks of the river. The proposed improvements will impact the existing surface drainage courses, but proper design will ensure that impacts are less than significant.

On the North Riverbank on the Del Mar Fairgrounds property, drainage appears to flow from north to south via sheet flow across the existing paved and gravel parking lots. It appears that runoff sheet flows into the river. In the proposed condition, an earthen levee will be constructed parallel to the shoreline. This levee may interrupt the current flow of runoff that is sheet flowing to the river. Engineering design elements will be required to accommodate the runoff that flows to the toe of the levee and drainage features will need to be incorporated to route flows to the river without causing negative impacts like ponding or erosion. If flow is concentrated, attenuation may be required to maintain the existing condition flow rates and measure may be needed to prevent erosion at the discharge point.

The Southeast Riverbank includes the existing public works facility on the west and an existing public park on the east. Both portions of the area appear to drain north via sheet flow and shallow concentrated flow toward the river.

The proposed flood wall and proposed earthen berm will likely impede the existing surface drainage patterns and proposed storm drain infrastructure may be required to drain the area south of the flood wall and berms.

The proposed improvements in this area do not appear to have a negative impact on existing drainage patterns. It shall be confirmed in final engineering that the proposed improvements do not cause stormwater runoff to pond adequate drainage in this area is provided.

The Southwest Riverbank area comprises a portion of land between the northeast corner of the North Beach neighborhood and the existing railroad trestle bridge. This northeast portion of this area appears to drain via sheet flow towards the river. The southeast and southwest portions of this area appear to drain toward an existing drainage ditch that runs from south to north. It is assumed that there is a culvert at the north end of this ditch that runs below the existing trail and outlets to the river. The proposed improvements appear to generally follow the drainage divide between these two subareas, and therefore, no changes to drainage patterns are anticipated from the proposed improvements. If it is determined during final engineering that the proposed improvements will obstruct surface drainage patterns in a way that promotes ponding or flooding, then engineering design elements will be required so that runoff is routed in a way that generally matches the existing condition.

# 4 Conclusion

The requirements listed in this memorandum shall be adhered to during and after construction to ensure the project is compliant with local, state, and federal environmental regulations. With these requirements implemented, and based on the scope of work described in the reference documents available at the time of this report, the following is the anticipated result of the project in relation to the Sample Questions listed in *Section X Hydrology and Water Quality* of CEQA Appendix G:

A. The project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. ***Impacts will be less than significant with mitigation incorporated.***

B. The project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. ***No impact on groundwater is anticipated.***

C. The project will not 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:

    1. Result in substantial erosion or siltation on- or -off-site. **Impacts will be less than significant with mitigation incorporated. It is assumed that in final engineering there will be a proposed drainage design that ensures that water does not get impounded behind the proposed levees or flood walls and that existing drainage patterns will be maintained to the greatest extent practicable;**

    2. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site. **No impact is anticipated because there are no proposed impervious surfaces, and it is assumed that existing drainage patterns will generally be maintained;**

    3. 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. **No impact is anticipated because there are no proposed impervious surfaces;**

4. Impede or redirect flood flows. The impact will be less than significant with mitigation incorporated. **It is assumed that existing drainage patterns will generally be maintained. The final project design shall include design considerations so that surface runoff is not trapped behind proposed levees or flood walls. Mapped FEMA flood flows will not be impacted by the project according to the No Net Rise Analysis.**

D. The project will not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. ***No impact is anticipated.***

E. The project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. ***No impact is anticipated.***