**HELIX Environmental Planning, Inc.**
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

June 30, 2021 00343.00008.008

Ms. Tricia McColl
HNTB Corporation
401 B Street, Suite 510
San Diego, CA 92101

**Subject: Biological Resources Letter Report for the Del Mar Bluffs Stabilization Project 5**

Dear Ms. McColl:

This letter presents the results of a focused biological resources technical study performed by HELIX Environmental Planning, Inc. (HELIX) for the Del Mar Bluffs Stabilization Project 5 (proposed project) located within the City of Del Mar, San Diego County, California (Figure 1, *Regional Location*). The project is located along a portion of the existing North County Transit District (NCTD) railroad right-of-way (ROW) and consists of a continuation of the previous phases of the Del Mar Bluffs Stabilization Project to stabilize the coastal bluffs and preserve track bed support in order to maintain the use of the existing railroad track.

This letter report is intended to summarize the existing biological resources within the project site, provide a focused assessment of water and wetland resources potentially subject to regulatory agency jurisdiction, and provide an analysis of the proposed impacts in accordance with applicable federal regulations. The proposed project is not subject to state and local land use authority and permitting requirements based on the U.S. Department of Transportation, Surface Transportation Board ruling that "transportation by rail carrier" projects have a statutory preemption from state or local permitting or environmental laws under Section 10501(b) of Title 49, United States Code.

## INTRODUCTION

### Project Location

The project site is located along a 1.6-mile portion of the existing NCTD railroad ROW in the City of Del Mar. The project site extends from rail Milepost (MP) 244.1 near Coast Boulevard south to MP 245.7 at Torrey Pines State Beach (Figure 2a, *Project Vicinity [Aerial Photograph]*). Within this reach, the NCTD rail alignment runs atop the coastal bluffs, which are generally 50 to 70 feet high. Railroad ROW varies between approximately 100 feet and 235 feet in width and, in some places, extends onto the beach below. The project site is depicted within Sections 14 and 23 of Township 14 South, Range 4 West of the

Del Mar, California U.S. Geological Survey (USGS) 7.5-minute quadrangle (Figure 2b, *Project Vicinity [USGS Topography])*.

The project site is located entirely within the Coastal Zone. No portion of the site is within or adjacent to U.S. Fish and Wildlife Service (USFWS) Critical Habitat (Figure 3, *Coastal Zone and Critical Habitat*).

## PROJECT BACKGROUND

The coastal bluffs supporting the rail alignment in the project area have a history of landslides and surficial failures and are subject to ongoing erosion and failures that could threaten the viability of rail service. It is critical that a means of stabilizing the bluffs and preserving track bed support be implemented in order to maintain the use of the existing railroad track. This track is part of the Los Angeles to San Diego (LOSSAN) rail corridor and represents the only operating rail link to southern San Diego County.

The project is part of a multi-phase approach to preserving the track bed. To date, extensive field investigations and geotechnical studies have been completed which characterize the nature and cause of bluff erosion, identify and prioritize the areas in need of stabilization, and introduce conceptual stabilization alternatives. Several construction projects have been completed as part of the phased approach, dating back to 1996. Phase 1 improvements were completed between 1996 and 2003, Phase 2 in 2007, Phase 3 in 2012, and Phase 4 improvements are currently being constructed and are anticipated to be completed in 2021. Emergency repairs for a bluff and seawall collapse that occurred in February 2021 will be completed by summer 2021.

### Project Description

The proposed project is a continuation of the previous phases of bluff stabilization improvements and includes the design and installation of additional bluff stabilization measures intended to preserve track bed support for maintenance of railway operations. Specific components include (1) trackbed support and retrofit stabilization improvements in conjunction with bluff toe stabilization improvements, (2) drainage improvements, and (3) minor improvements.

#### Trackbed Support Stabilization Areas

Trackbed support stabilization improvements for most of the 17 new stabilization areas (SA) entail the installation of soldier piles at the bluff top to provide track bed support. The SAs along the project site that are identified as priority include (listed from north to south):

- SA 16: extends approximately 150 feet near the terminus of 15$^{th}$ Street
- SA 21: extends approximately 59 feet, north of 13$^{th}$ Street
- SA 20: extends approximately 97 feet between 13$^{th}$ Street and Lois Lane
- SA 23: extends approximately 52 feet, near the terminus of Sea Orbit Lane
- SA 22 and SA 24: extends approximately 1,000 feet between 11$^{th}$ Street and Shippey Lane
- SA 3: extends approximately 227 feet between Shippey Lane and 8$^{th}$ Street

- SA 5 and SA 15: extends approximately 226 feet between 7th Street and Sherrie Lane
- SA 14: extends approximately 150 feet between Sherrie Lane and 6th Street
- SA 13: extends approximately 500 feet, south of 4th Street
- SA 6N: extends approximately 357 feet in the southern portion of the project site
- SA 12: extends approximately 165 feet in the southern portion of the project site
- SA 8: extends approximately 155 feet in the southern portion of the project site
- SA 9 and SA 11: extends approximately 256 feet in the southern portion of the project site
- SA 10: extends approximately 150 feet at the southern end of the project site

The soldier pile type of stabilization consists of a wall of vertical piles placed approximately 10 feet on-center with a connecting cast-in-place concrete grade beam at the top. The piles would be installed by drilling a 36- to 42-inch diameter hole, placing a W-shaped steel beam in the hole, and filling the hole with concrete. If the wall needs to retain soil, the exposed surface between the piles is in-filled with facing material (lagging), which may be timber, precast concrete planks, or shotcrete. For taller walls, tiebacks may be required to anchor the soldier piles into the existing slope. The soldier piles would be placed 11 to 21 feet seaward of the track centerline with the top of the wall about one foot below the top of tie. Generally, this would result in a wall that is initially buried; however, due to the natural bluff retreat, the top of the system may become exposed over time.

Stabilization improvements for SA 22 and SA 24 consist of grading to remove the existing berm that extends between the face of the bluff and the railroad tracks. Instability in this area is not due to bluff retreat but associated with the added weight of the existing berm. Removal of the berm would reduce the weight of the overburden and the hazard for rock and mudslide to the beach below, as well as provide for a wider path west of the tracks.

### Trackbed Support Retrofit Areas

Trackbed support retrofit improvements generally entail installation of lagging and/or tieback anchors in bluff areas that were previously stabilized as part of Phase 2 and Phase 3 improvements. Currently, many of these existing areas have undergone substantial erosion and are nearing their service life. The following 18 areas are proposed for retrofit improvements (listed from north to south) and the phase in which initial stabilization improvements were completed is indicated in parentheses:

- SN 5 (Phase 2)
- SN 7N and SN 7S (Phase 2)
- SP-1 (Phase 3)
- SN 3 (Phase 2)
- SN 1N and SN 1S (Phase 2)
- SN 2 (Phase 2)

- Pile 1 to 3 (Phase 4)
- SP-2 (Phase 3)
- SN 6 (Phase 2)
- 2001 Emergency Repair near Little Orphan Alley
- SP-3 (Phase 3)
- SP-5 (Phase 3)
- SP-6 (Phase 3)
- SP-7 (Phase 3)
- SP-4 (Phase 3)
- SN 8 (Phase 2)

## Bluff Toe Protection

Bluff toe protection improvements entail the construction of seawalls in select locations to protect the base of the bluffs from erosion. Sea walls provide longer term bluff stability and can reduce the rate of bluff retreat towards the track. Seawalls are proposed at locations where soldier piles are installed for trackbed stabilization, to prevent the lower piles from becoming exposed and destabilized. Seawalls identified below as Phase 1 are prioritized at locations where the seawalls would provide the maximum benefit and stabilize the trackbed for 30-year bluff retreat. The Phase 2 seawalls are required to extend the service life of trackbed stabilizations beyond 30 years, to protect against 50-year bluff retreat, and would be constructed as a future phase at remaining locations based on priority and funding availability.

In addition to seawalls, the project proposes bluff face stabilization through regrading of the slopes to a 1.5:1 ratio, stabilizing the surface with engineered reinforced mat, placing fill on top the mat, and then revegetating the slope to reduce erosion and improve lower slope stability. Bluff stabilization measures are proposed at some locations with existing seawalls as well as select locations of proposed seawalls.

Seawalls are proposed at the following 12 stabilization areas. Bluff stabilization also is noted below, if proposed along all or portions of the identified locations:

- SA 16 (Phase 2, including bluff stabilization)
- SA 21 (Phase 1, including bluff stabilization)
- SA 20 (Phase 1, including bluff stabilization)
- SA 3 (Phase 2)
- SA 15 (Phase 2)
- SA 5 (Phase 2)
- SA 14 (Phase 2)

- SA 13 (Phase 2)
- SA 12 (Phase 1)
- SA 11 (Phase 2)
- SA 9 (Phase 2)
- SA 10 (Phase 2)

Seawalls are proposed at the following 15 retrofit locations. Bluff stabilization also is noted below, if proposed along all or portions of the identified locations:

- SN 5 (DMB2) – Phase 1, including bluff stabilization
- SN 7N and SN 7S (DMB2) – Phase 1, including bluff stabilization
- SP-1 (DMB3) – Phase 1, including bluff stabilization
- SN 1N and SN 1S (DMB2) – Phase 1, including bluff stabilization
- SP-2 (DMB3) – Phase 1, including bluff stabilization
- SN 6 (DMB2) – Phase 1, including bluff stabilization
- SP-3 (DMB3) – Phase 1, including bluff stabilization
- SP-5 (DMB3) – Phase 1
- SP-6 (DMB3) – Phase 1
- SP-7 (DMB3) – Phase 1
- SP-4 (DMB3) – Phase 1
- SN 8 (DMB2) – Phase 1

The following nine stabilization and retrofit areas have existing seawalls where bluff face stabilization is proposed:

- SA 23
- SA 6N
- SA 8
- SN 3 (DMB2)
- SN 1S (DMB2)
- Pile 1 to 3 (DMB4)
- SN 2 (DMB2)
- SP-2 (DMB3)

- SP-3 (DMB3)

### Drainage Improvements

The proposed project includes the construction of a series of drainage improvements along the project site including:

- New storm drain pipelines and outlets to the beach
- Concrete-lined trackside ditches
- Underdrains
- New/modified inlets to existing storm drain systems
- Concrete channels
- Splash walls
- Seat walls
- New channel aprons
- New/modified drainage structures
- Soil nail walls
- Energy dissipators

### Access Road Improvements

Access road improvements entail re-grading the existing access road at the south end of the project site and adding six inches of decomposed granite (DG) surface on the regraded access road. An existing access road on the west side of the railroad tracks generally between 6th Street and 4th Street would also be regraded and surfaced.

## Construction Access and Staging

Potential construction entrance areas would be located near the northern project limits at Coast Boulevard, at the termini of 8th and 7th Streets, and near the southern project limits at Torrey Pines State Beach. For project features requiring beach access to construct, vehicles accessing from the north would use the existing paved lifeguard vehicle access immediately north of the study area (Figure 4a*, Site Plan*), and vehicles accessing from the south would use the existing maintenance access road that begins at the north end of the Torrey Pines State Beach parking lot (Figure 4d). These entrances would provide construction access along the east and west sides of the railroad tracks within the project limits using existing NCTD maintenance access roads, in addition to providing construction access from the beach along the base of the bluff in locations where seawalls would be constructed. A temporary rail crossing would also be provided at 7th Street to allow construction vehicles to cross the tracks to access improvement areas and staging locations. Potential construction staging areas could be located at the following locations:

- Staging Area 1 – Adjacent to the Coast Boulevard construction entrance west of the tracks
- Staging Area 2 – Terminus of 12th Street east of the tracks
- Staging Area 3A – West of the 8th Street construction entrance west of the tracks
- Staging Area 3B – Adjacent to the 8th Street construction entrance east of the tracks
- Staging Area 4 – Near MP 245.2 west of the tracks
- Staging Area 5A and 5B – Adjacent to the southern construction entrance near MP 245.7

In addition to the above construction staging areas along the rail alignment, a temporary beach laydown area would be located on the beach near the base of the bluff just southwest of MP 245.1.

## METHODS

### Pre-survey Investigation

Prior to conducting the field survey, a review of previous maps, databases, and literature pertaining to biological resources known to occur within the project vicinity was performed. Recent aerial imagery, topographic maps, and soils maps (NRCS 2020) were acquired and reviewed to obtain updated information on the natural environmental setting.

In addition, a query of sensitive species and habitats databases was conducted, including the USFWS species records (USFWS 2020a), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2020), and California Native Plant Society (CNPS) Electronic Inventory (CNPS 2020). The USFWS' National Wetland Inventory (NWI) was also reviewed (USFWS 2020b). Recorded locations of sensitive species, habitat types, wetlands, and other resources were overlaid onto aerial imagery using Geographic Information Systems (GIS) software.

### General Biological Survey

A 58.5-acre study area was established along the 1.6-mile linear project length, ranging in width from 220 to 390 feet. HELIX biologists Stacy Nigro and Ben Rosenbaum conducted a general biological survey of the study area on April 28 and April 29, 2020. The general biological survey included an inventory of existing conditions and focused primarily on verifying and updating existing vegetation communities, assessing suitability for sensitive plant and animal species, and identifying potential sensitive resources. Vegetation mapping along the beach access routes north and south of the study area was conducted by Stacy Nigro on February 22, 2021. Representative photographs of the site were taken during the general biological survey and beach access route survey (Attachment A).

Vegetation communities were mapped on 1"=100' scale aerial imagery. Plant and animal species observed or otherwise detected during HELIX's biological survey were noted during the survey (Attachments B and C). Incidental observations of sensitive plant species also were recorded. Animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs.

Plants were identified according to Baldwin et al. (2012), and Rebman and Simpson (2014), and Calflora (2020) were used to update scientific names and augment common names. Vegetation communities or land cover types are classified in this report according to Holland (1986), with further guidance from Oberbauer et al. (2008). The second edition of the Manual of California Vegetation (MCV2; 2009) was used to assist in identification of potential Environmentally Sensitive Habitat Areas (ESHAs) as defined by the California Coastal Commission (CCC). Soils information was taken from the U.S. Department of Agriculture's (USDA's) Web Soil Survey (2020). Nomenclature used in this report is from Glassberg (2001) for butterflies, Collins and Taggart (2011) for reptiles and amphibians; American Ornithologists' Union (2016) for birds; and Bradley et al. (2014) for mammals.

## Jurisdictional Delineation

HELIX biologists Stacy Nigro and Ben Rosenbaum conducted a jurisdictional delineation of the study area on April 28 and April 29, 2020. The focus of the delineation was to delineate water and wetland resources potentially subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the federal Clean Water Act (CWA) or Section 10 of the Rivers and Harbors Act (RHA); Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA; and/or wetlands regulated by the CCC, pursuant to the California Coastal Act (i.e., coastal wetlands).

### U.S. Army Corps of Engineers

Potential USACE wetland boundaries were determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Regional Supplement (USACE 2008). USACE jurisdictional boundaries along the beach were determined by overlaying the elevations of the high tide line (HTL). The HTL is the vertical extent of USACE jurisdiction under the CWA and is landward of the Mean High Water (MHW) line. The MHW is the extent of USACE jurisdiction under Section 10 of the RHA. The CWA regulates fill below the HTL. Section 10 regulates all work over, under, and in navigable waters, which are a subset of waters of the U.S.

Areas were determined to be potential non-wetland waters of the U.S. if there was evidence of regular surface flow (e.g., bed and bank) but soils and/or hydrology criteria were not met. Jurisdictional limits for these areas were defined by the ordinary high water mark (OHWM), which is defined in 33 Code of Federal Regulations (CFR) Section 328.3 as, "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas."

### Regional Water Quality Control Board

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the State, pursuant to Section 401 of the CWA; and the State Porter-Cologne Water Quality Control Act. The Porter-Cologne Act does not apply to this project (proposed project is not subject to state and local land use authority and permitting requirements), thus, potential RWQCB jurisdiction within the study area follows the boundaries of potential USACE jurisdiction for waters of the U.S. under the CWA.

### California Coastal Commission

Potential coastal wetlands under jurisdiction of the CCC were determined based on the "one-parameter" definition, which only requires evidence of a single parameter to establish wetland conditions: "Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate" (California Code of Regulations [CCR] Title 14, Section 13577).

## RESULTS

## Existing Conditions

### General Land Use

The coastal bluffs supporting the rail alignment in the project area is part of the LOSSAN rail corridor and represents the only operating rail link to southern San Diego County.

Areas adjacent to the NCTD ROW in Del Mar consist of undeveloped coastal bluff, beach, and the Pacific Ocean to the west, residential and commercial development to the north and east, and Torrey Pines State Beach to the south.

### Disturbance

The NCTD ROW is subject to regular, ongoing disturbance associated with train traffic, track and ROW maintenance, and numerous informal pedestrian foot trails. For operational and safety reasons, the train tracks have been laid on a bed of crushed rock (i.e., ballast) that nearly excludes all plant growth and the area directly adjacent to the track is maintained to be kept free of weeds. Concrete ditches in portions of the ROW collect runoff from adjacent urbanized areas, and several culverts and pipe outlets are in or adjacent to the ROW. Irrigation from landscaping contributes to extensive seepage along portions of the bluff faces.

### Topography and Soils

Elevations within the study area vary from near sea level at the base of the bluffs to approximately 50 feet above mean sea level at the NCTD railroad ROW to approximately 60 to 70 feet above mean sea level along the bluff tops inland of the tracks.

Two soil mapping units are identified for the study area: coastal beaches along the immediate western edge of the study area, and Marina loamy coarse sand in the remainder of the study area.

### Vegetation Communities and Land Cover Types

Thirteen vegetation community or land cover types were mapped in the study area (Table 1, *Vegetation Communities and Land Cover Types within the Study Area*; Figures 5a-5c, *Vegetation*): freshwater marsh (including disturbed), cismontane alkali marsh (including disturbed), arrow weed scrub,

arundo-dominated riparian, beach, Torrey pine forest, saltgrass grassland, Diegan coastal sage scrub, coastal bluff scrub (including disturbed), unvegetated bluff, non-native vegetation, disturbed habitat, and developed land.

**Table 1**
**VEGETATION COMMUNITIES AND LAND COVER TYPES**
**WITHIN THE STUDY AREA**

| Vegetation Type | Area (ac)[1] |
|---|---|
| *Wetland/Riparian/Other Waters* | |
| Freshwater Marsh (including disturbed) | 0.30 |
| Cismontane Alkali Marsh (including disturbed) | 0.46 |
| Arrow Weed Scrub | 0.01 |
| Arundo-dominated Riparian | 0.02 |
| Beach | 15.76 |
| **Subtotal** | **16.55** |
| *Upland* | |
| Torrey Pine Forest | 0.3 |
| Saltgrass Grassland | 0.3 |
| Diegan Coastal Sage Scrub (including disturbed) | 3.3 |
| Coastal Bluff Scrub (including disturbed) | 1.8 |
| Unvegetated Bluff | 6.4 |
| Non-native Vegetation | 9.7 |
| Disturbed Habitat | 5.4 |
| Developed Land | 14.8 |
| **Subtotal** | **42.0** |
| **TOTAL** | **58.5** |

[1] Presented in acre(s) rounded to the nearest hundredth for wetlands/riparian and beach, and to the nearest tenth for uplands.

## Freshwater Marsh (Including Disturbed)

Freshwater marsh is dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986).

Approximately 0.30 acre (including 0.23 acre disturbed) of freshwater marsh was mapped in the study area. It occurs primarily as narrow bands of habitat in stormwater swales paralleling the railroad, and occasionally as seeps along the bluff face. Disturbed phase of this habitat is represented by sparsely to moderately vegetated swales that are maintained (periodically cleared) by NCTD to help protect the railroad from flooding and erosion. Southern cattail (*Typha domingensis*) is the dominant species present.

## Cismontane Alkali Marsh (Including Disturbed)

Cismontane alkali marsh (including disturbed) is characterized by wet or inundated areas dominated by emergent, but often with an understory of grasses or sedges (*Cyperus* spp.). Standing water or saturated soil is present during all or most of the year. High evaporation and low input of freshwater results in high salinity, especially during the summer.

Approximately 0.46 acre (including 0.12 acre disturbed) of cismontane alkali marsh is present within the study area. It is associated with seeps along the bluff faces, occurring in isolated patches, and as longer, linear features. Characteristic species observed include southwestern spiny rush (*Juncus acutus ssp. leopoldii*) and wire rush (*Juncus balticus*).

## Arrow Weed Scrub

Arrow weed scrub is a riparian scrub dominated by arrow weed (*Pluchea sericea*), other small trees or shrubs, and lacking taller riparian trees. It occurs mostly in major river systems where flood scour occurs but has expanded to areas with increased urban or agricultural runoff.

Approximately 0.01 acre of arrow weed scrub occurs within the study area as a single stand of arrow weed along the bluff face in the northern part of the study area.

## Arundo-dominated Riparian

Arundo-dominated riparian is characterized by densely vegetated riparian thickets dominated almost exclusively by giant reed (*Arundo donax*). Giant reed accounts for at least 50 percent of the vegetative cover within this vegetation community. This habitat typically occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows, but this species can also occur in a variety of landscape positions in association with urban runoff.

Approximately 0.02 acre of arundo-dominated riparian occurs within the study area. It occurs in the central portion of the study area as a stand of giant reed along a stream channel immediately downstream of a culvert outlet.

## Beach

Beach is characterized by sandy and/or cobbly habitat on coastal strands, lagoons, or lakes. Ocean beaches are a shoreline feature of deposited sand formed by waves and tides off the coast (Holland 1986). Ocean beaches have high exposure to salt spray and sand blast, and a shifting sandy substrate with low water-holding capacity and low organic matter content. Beach steepness, height, and width are affected by wave height, tidal range, sand grain size and supply.

Approximately 15.76 acres of beach are present in the study area. Beach habitat was mapped from the base of the bluffs to the western boundary of the study area. The habitat consists of bare, sandy areas, most of which is below the high tide line and was therefore identified as “other waters” rather than upland habitat (see Table 1).

## Torrey Pine Forest

Torrey pines forest is a relatively open canopy forest characterized by the presence of Torrey pine (*Pinus torreyana*), a rare pine tree that is restricted to sandstone soils in a few areas of coastal San Diego County.

Approximately 0.3 acre of Torrey pine forest was mapped in the study area. This habitat occurs in three locations in the southern part of the study area, two of which are small, remnant disturbed stands among walking paths adjacent to Camino del Mar, and one larger stand on the upper slopes and perimeter of a canyon.

## Saltgrass Grassland

Saltgrass grassland is a low grassland dominated by saltgrass (*Distichlis spicata*). Salt grass is an alkali plant species that occurs in and around coastal salt marshes as well as upland meadows in alkaline areas.

Approximately 0.3 acre of saltgrass grassland occurs within the study area. It occurs as scattered patches along the bluff face. These areas may be remnants of coastal bluff scrub, where shrubs have been eliminated by disturbances such as erosion.

## Diegan Coastal Sage Scrub

Diegan coastal sage scrub is a subset of one of the two major vegetation types in California (i.e., coastal sage scrub and chaparral). In coastal areas this habitat intergrades with coastal bluff scrub, sharing many of the same plant species.

Approximately 3.3 acres of the study area consist of Diegan coastal sage scrub, including disturbed. Characteristic species observed in this habitat include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and goldenbush (*Isocoma menziesii*).

## Coastal Bluff Scrub (including disturbed)

Coastal bluff scrub is a low scrub community restricted to the coastal bluffs directly adjacent to the Pacific Ocean. Most plants are woody and/or succulent growth forms; herbaceous perennials and annuals are also important habitat components. This vegetation community is exposed to nearly constant winds with high salt content and the soil is usually poorly developed.

Approximately 1.8 acres of coastal bluff scrub (including disturbed) occurs within the study area. This habitat occurs in scattered areas along the bluff face in the study area. Species present include four-wing saltbush (*Atriplex canescens*), California sagebrush, ladies' fingers (*Dudleya edulis*), hottentot-fig (*Carpobrotus* sp.), crystalline iceplant (*Mesembryanthemum crystallinum*), California buckwheat, goldenbush, saltgrass, and occasional California boxthorn (*Lycium californicum*).

## Unvegetated Bluff

Unvegetated bluff consists of portion of coastal bluff that are lacking in vegetation. Lack of vegetation may be attributable to a combination of steepness and erodible surface. Urban and landscaping runoff

from adjacent urban development contributes to erosion along unvegetated bluffs within the study area. Approximately 6.4 acres of unvegetated bluff was mapped in the study area.

### Non-native Vegetation

Non-native vegetation is a category describing stands of naturalized vegetation (e.g., acacia [*Acacia* sp.], peppertree [*Schinus* sp.], hottentot-fig), many of which are also used in landscaping.

Approximately 9.7 acres of non-native vegetation occurs within the study area and is overwhelmingly dominated by Perez's marsh-rosemary (*Limonium perezii*), an upland weed that is native to the Canary Islands. Several other non-native species also occur in this habitat, including hottentot-fig, garland daisy (*Glebionis coronaria*), myoporum (*Myoporum laetum*), as well as patches of giant reed that are not associated with wetland conditions or streams. This habitat is widespread within the study area, both on the bluff face and atop the bluff on both sides of railroad.

### Disturbed Habitat

Disturbed habitat or disturbed land includes land cleared of vegetation; sparsely vegetated areas supporting weedy, disturbance-tolerant species; or land showing signs of past or present usage that removes any capability of providing viable habitat.

Approximately 5.4 acres of disturbed habitat were mapped within the study area. It consists primarily of unvegetated dirt areas adjacent to the railroad, dirt trails, and soil stockpiles from maintenance activities along the railroad. Characteristic species present include garland daisy, pineapple-weed (*Matricaria discoidea*), Russian thistle (*Salsola tragus*), and Australian saltbush (*Atriplex semibaccata*).

### Developed

Developed land has been built upon or physically altered to the point that it no longer supports native or naturalized vegetation. It is characterized by permanent or semi-permanent structures, pavement, or irrigated landscaping. Approximately 14.8 acres of developed land occurs within the study area.

## General Fauna

The study area provides mainly low-quality habitat due to previous and ongoing disturbance associated with the railroad and foot traffic; steep, erosive bluff faces; extensive non-native vegetation; and constrained location between urban development and the ocean. Habitat values increase moderately within the southern part of the study area where more native habitat is present to the east of the railroad and there is a connection below the North Torrey Pines Road bridge to undeveloped lands near Los Peñasquitos Lagoon.

Animal species observed or otherwise detected within the study area during the April 2020 general biological survey included a variety of common species. These included butterfly species such as cabbage white (*Pieris rapae*) and common buckeye (*Junonia coenia*); reptile species such as western fence lizard (*Sceloporus occidentalis*) and California kingsnake (*Lampropeltis getula californiae*); bird species such as house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), and Anna's hummingbird (*Calypte*

*anna*); and mammals such as desert cottontail (*Sylvilagus audubonii*) and California ground squirrel (*Spermophilus beecheyi*).

## Sensitive Biological Resources

### Vegetation Communities

A total of nine sensitive vegetation community types occur within the study area: freshwater marsh (including disturbed), cismontane alkali marsh (including disturbed), arrow weed scrub, arundo-dominated riparian, beach, Torrey pine forest, saltgrass grassland, Diegan coastal sage scrub, and coastal bluff scrub (including disturbed).

### ESHA

Potential ESHA areas were identified in the study area and are discussed below. Only the CCC can make a final determination of ESHA. Potential ESHA identified in the study area was generally based on habitat and/or species rarity, including global and state rarity rankings for habitats, and presence of listed plant or animal species, or species with other high sensitivity rankings.

Based on numerous records of the federally listed coastal California gnatcatcher (*Polioptila californica californica*) in the vicinity of the Torrey Pines Road bridge near the southern part of the study area, all Diegan coastal sage scrub (including disturbed phase) in this area was considered potential ESHA for the CCC (Figure 5c). A total of 3.1 acres of potential ESHA Diegan coastal sage scrub occurs within the study area.

Based on MCV2 alliance type and associated global and state rarity rankings, two of the vegetation communities mapped in the study area may be considered ESHA by the CCC: arrow weed scrub (Figure 5a) and Torrey pine forest (Figure 5c). Arrow weed scrub (*Pluchea sericea* alliance) has a global rank of G4 and state rank of S3, while Torrey pine forest (*Pinus torreyana* alliance) has a global rank of G1 and a state rank of S1.

Arrow weed scrub is very small, totaling only 0.01 acre within the study area and does not support rare, threatened, or endangered plant or animal species. Its presence is due to seepage of urban runoff through the bluff face and associated saline soil conditions. While it is assigned a state rank of S3, due to its small size, lack of rare, threatened, or endangered species, and formation due to stormwater and irrigation seepage, it is possible that the CCC may not consider this area to meet the definition of ESHA. It was considered potential ESHA in this document.

Torrey pine forest occurs in three locations in the southern part of the study area, two of which are small, remnant disturbed stands among high use walking paths adjacent to the high vehicle use Camino del Mar, and one larger stand on the upper slopes and perimeter of a canyon that extends off-site to the east. Due to the rarity of this species, this habitat was considered ESHA.

## Special-Status Plant and Animal Species

### Special-Status Plant Species

Special-status plant species are those listed as federally threatened or endangered by the USFWS; State listed as threatened or endangered or considered sensitive by the CDFW; and/or, are CNPS California Rare Plant Rank (CRPR) List 1A, 1B, or 2 species, as recognized in the CNPS's Inventory of Rare and Endangered Vascular Plants of California.

One special-status plant species was observed during the April 2020 biological surveys: Torrey pine (*Pinus torreyana* ssp*. torreyana*). It is further discussed below.

**Torrey Pine (*Pinus torreyana* ssp. *torreyana*)**
**Listing:** --[1]/--[2]; CRPR 1B.2; CA Endemic
**Distribution:** Occurs naturally in only two locations: along the coast near Del Mar (*Pinus torreyana* ssp. *torreyana*) and on Santa Rosa Island (*P. t.* ssp. *insularis*)
**Habitat:** Sandstone soil in Torrey pine woodlands and southern maritime chaparral
**Presence on site**: Occurs in three locations in the southern part of the study area, two of which are small, remnant disturbed stands among high use walking paths adjacent to Camino del Mar, and one larger stand on the upper slopes and perimeter of a canyon.

Two CRPR List 4.2 species also were observed: southwestern spiny rush (*Juncus acutus* ssp*. leopoldii*) and California box-thorn (*Lycium californicum*). CRPR 4 species are considered watch list species; they are not afforded special status or recognition by the USFWS or CDFW but may be considered sensitive by local jurisdictions. Within the study area, southwestern spiny rush occurs in cismontane alkali marsh as a dominant species, and California box-thorn occurs in a scattered distribution in coastal bluff scrub.

### Special-Status Animal Species

Special-status animal species are those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS or CDFW, and those considered sensitive animals by the CDFW.

Two special-status animal species were observed during the April 2020 biological surveys: osprey (*Pandion haliaetus*) and California brown pelican (*Pelecanus occidentalis californicus*), further discussed below.

**Osprey (*Pandion haliaetus*)**
**Status**: --/WL[3]
**Distribution**: Occurs throughout San Diego County in small numbers year-round but more common during winter. Large stick nests are constructed near water on snags, wooden platforms, bridge pilings, etc.
**Habitat**: Coasts and inland lakes

[1] Federal listing
[2] State listing
[3] CDFW Watch List

**Presence on Site**: One individual observed flying over the bluff face. Species is known to occur along the San Diego coastline and forage in the ocean and lagoons. There are no suitable nesting sites in the study area.

**California Brown Pelican (*Pelecanus occidentalis*)**
**Status:** --/FP[4]. Nesting colonies and communal roosts are protected. Species was delisted as a federal and state listed species in 2009.
**Distribution:** A year-round resident along the west coast of the U.S. and Baja California, Mexico.
**Habitat(s):** Open salt water, bays, and beaches.
**Status on site:** Observed flying over the beach. There are no nesting colony sites or communal roosts within the study area.

In addition to the special-status animal species detected above, the federally threatened and state species of special concern coastal California gnatcatcher also has potential to occur in sage scrub in the southernmost portion of the study area. There are numerous records of this species near the Torrey Pines Road bridge and it could utilize sage scrub in this portion of the study area. The area of potential use was conservatively estimated based on proximity of sage scrub patches in the study area to more extensive stands of sage scrub occurring below and east of the bridge/south of Carmel Valley Road.

## Nesting Birds and Raptors

The study area contains suitable nesting habitat for several common bird species, including raptors, that are protected under the Migratory Bird Treaty Act (MBTA). Raptors such as American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus*) have potential to nest in Torrey pine trees and non-native trees within the study area. No raptor nests were observed during the general biological survey.

## Jurisdictional Waters and Wetlands

USACE and RWQCB wetlands and non-wetland waters of the U.S., and CCC coastal wetlands are present in the study area (Table 2, *Potential Waters of the U.S. and Coastal Wetland within the Study Area*; Figures 6a-6c, *Waters of the U.S.*, and 7a-7c, *Coastal Wetlands*).

**Table 2**
**POTENTIAL WATERS OF THE U.S. AND COASTAL WETLANDS**
**WITHIN THE STUDY AREA**

| Habitat Type | Waters of the U.S.† | Coastal Wetlands† |
|---|---|---|
| **Wetlands** | | |
| Freshwater Marsh (including disturbed) | 0.02‡ | 0.30 |
| Cismontane Alkali Marsh (including disturbed) | 0.46 | 0.46 |
| Arrow Weed Scrub | 0.01 | 0.01 |
| Arundo-dominated Riparian | -- | 0.02 |
| **Subtotal** | **0.49** | **0.79** |

[4] CDFW Fully Protected

| Non-wetland Waters/Other Waters | | |
|---|---|---|
| Beach | 12.08 | 15.76 |
| Stream channel – natural bottom | 0.03 | -- |
| Stream channel – concrete-lined | < 0.01 (0.002) | -- |
| **Subtotal** | **12.11** | **15.76** |
| **TOTAL** | **12.60** | **16.55** |

† Presented in acre(s) rounded to the nearest hundredth.
‡ Occurs on the bluff face. Freshwater marsh occurring in upland-excavated trackside swales are not included in this acreage. See discussion of vegetated earthen swales under Non-jurisdictional Features.

## Waters of the U.S. (USACE and RWQCB Jurisdiction)

Waters of the U.S. delineated within the study area include freshwater marsh, cismontane alkali marsh (including disturbed), arrow weed scrub, beach, and stream non-wetland waters. The HTL is the upper limit of USACE jurisdiction on the beach. Approximately 12.60 acres of waters of the U.S., including 0.49 acre of wetlands, 0.03 acre of stream channel, and 12.08 acres of beach below the HTL, were mapped in the study area.

Due to changing regulations and interpretations of what constitutes waters of the U.S., it is possible that the USACE may not take jurisdiction over some of these habitats, which were mapped conservatively based on prior experience with local USACE staff. For example, the landscape position for many of the potentially jurisdictional areas is atypical and likely the result of decades of landscape irrigation in the urbanized areas above the bluffs. This has resulted in the formation of seep wetlands along portions of the bluffs. Although the origin of this water is likely from imported water used for landscaping, under the USACE delineation guidelines they are considered the new "normal circumstances." The normal circumstance in this case is the water that seeps out of the bluff in an area that historically was much drier and would have previously supported upland vegetation. This new hydrological regime is expected to persist along with its effects on soils and vegetation. These seep wetlands on the bluff faces were considered to meet the definition of adjacent wetland under the 2020 Navigable Waters Protection Rule (Federal Register 2020) given their proximity to the Pacific Ocean, a traditional navigable waterway, and their hydrological connection to the ocean through trackside swales connecting to culverts below the rail line that outlet onto the beach. The Navigable Waters Protection Rule became effective on June 22, 2020.

### *Coastal Wetlands (CCC)*

Coastal wetlands delineated within the study area include freshwater marsh (including disturbed), cismontane alkali marsh (including disturbed), arrow weed scrub, arundo-dominated riparian, and beach. Approximately 16.55 acres of coastal wetlands, including 0.79 acre of vegetated wetlands and 15.76 acres of beach, were mapped in the study area.

### *Non-jurisdictional Features*

Concrete-lined channels paralleling portions of the railroad were considered non-jurisdictional features as they do not support hydrophytic vegetation or hydric soils and were completely constructed in uplands. Several culverts and drain inlets/outlets also have been constructed within the ROW. The landscape position and historical topography indicate that these features were also constructed in

uplands and are not waters of the U.S. These features also do not meet the definition of coastal wetlands for the CCC.

Vegetated earthen swales parallel to portions of the east side of the tracks support narrow bands of freshwater marsh. These swales, which were constructed in uplands to store and convey stormwater runoff and help protect the track bed, are not waters of the U.S. under the 2020 Navigable Waters Protection Rule. However, because they support a dominance of wetland plants, they were considered to meet the definition of coastal wetland for the CCC.

### *Wildlife Corridors and Linkages*

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

The study area is narrow and disturbed, has limited resources and accessibility, is subject to continual noise and disturbance from the railroad, and is bounded by dense urban development to the east and the Pacific Ocean to the west. While there is connectivity between the study area and off-site habitat associated with Los Peñasquitos Lagoon further to the south, the study area itself does not function as a wildlife corridor or linkage.

## REGIONAL AND REGULATORY CONTEXT

The following federal laws and regulations may apply to biological resources on site.

### Federal Endangered Species Act

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

Sections 7 and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 generally describes a process of federal interagency consultation and issuance of a biological opinion and incidental take statement when federal actions may adversely affect listed species. Section 10(a) generally describes a process for preparation of a Habitat Conservation Plan and issuance of an incidental take permit.

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. The ultimate goal is to restore healthy populations of listed species within their native habitats so they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to the FESA, federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat.

USFWS-designated critical habitat is not present within the study area. Coastal California gnatcatcher is the only federally listed species with moderate potential to occur in or near the study area. Formal or informal consultation with the USFWS under Section 7 of the ESA may be required if this species is present.

### Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA as amended under the Migratory Bird Treaty Reform Act of 2004 (Federal Record [FR] Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, USFWS places restrictions on disturbances allowed near active raptor nests.

The study area provides habitat for migratory bird species and the MBTA would apply.

### Clean Water Act

The USACE regulates impacts to waters of the U.S. under Section 404 of the Clean Water Act (CWA; 33 USC 401 et seq.; 33 USC 1344; USC 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323). The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. A federal CWA Section 404 Permit and CWA Section 401 Water Quality Certification would be required for the project to place fill in waters of the U.S. A CWA Section 401 Water Quality Certification administered by the RWQCB must be issued prior to issuance of a Section 404 Permit by the USACE.

The study area contains areas that are anticipated to be regulated as waters of the U.S. under the CWA, and any impacts to such areas would require compliance with Sections 404 and 401 of the CWA.

### Rivers and Harbors Act

Section 10 of the RHA, administered by the USACE, requires permits for all structures and activities in navigable waters of the U.S. The study area may contain areas below the MHW; thus, discussion was included herein.

### Coastal Zone Management Act

The federal Coastal Zone Management Act of 1972 (CZMA) is administered by the National Oceanic and Atmospheric Administration and provides for the management of the nation's coastal resources. Federal consistency with the CZMA is required when federal agency activities have reasonably foreseeable

effects on any land or water use or natural resource of the coastal zone. Federal projects must be consistent to the maximum extent practicable with the enforceable policies of a coastal state's federally approved coastal management program. California's coastal management program is the California Coastal Management Program (CCMP), administered and enforced by the CCC. The enforceable policies of the CCMP are contained in Chapter 3 of the California Coastal Act (CCA). For federal-only projects, a request for a Federal Coastal Consistency Certification must be submitted to the CCC Federal Consistency Unit in San Francisco. The CCC Federal Consistency Unit is responsible for reviewing federal coastal consistency requests and issuing a determination as to whether a project is consistent, to the maximum extent practicable, with the CCA.

The study area is within the coastal zone and the CZMA would apply.

## IMPACTS

Direct and indirect impacts are discussed within this section. A direct impact occurs when the effects are immediate localized consequences of project activities such as vegetation removal, physical contact with plants and animals, or habitat conversion. Direct impacts usually occur only within the project footprint.

Indirect impacts consist of secondary effects of a project or action, including habitat insularization, erosion, edge effects, exotic species invasion and wildlife behavior changes resulting from increased lighting, vehicular and equipment noise, and increased human or pet intrusion. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent.

### Direct Impacts

#### Vegetation Communities

Project implementation would impact 0.20 acre of freshwater marsh, 0.07 acre of cismontane alkali marsh, 0.01 acre of arrow weed scrub, 0.001 acre of arundo-dominated riparian, 0.62 acre of beach, 0.05 acre of Diegan coastal sage scrub, 0.21 acre of saltgrass grassland, and 0.65 acre of coastal bluff scrub (Table 3, *Project Impacts to Vegetation Communities and Land Cover Types;* Figures 8a-8d, *Vegetation/Impacts*). All other proposed impacts are to non-sensitive habitats/land cover types.

**Table 3**
**PROJECT IMPACTS TO VEGETATION COMMUNITIES AND LAND COVER TYPES**

| Vegetation Type | Existing Area (ac)[1] | Impacts | | |
|---|---|---|---|---|
| | | Temporary | Permanent | TOTAL |
| *Wetland/Riparian/Other Waters* | | | | |
| Freshwater Marsh (including disturbed) | 0.30 | 0 | 0.20 | 0.20 |
| Cismontane Alkali Marsh (including disturbed) | 0.46 | 0 | 0.07 | 0.07 |
| Arrow Weed Scrub | 0.01 | 0 | 0.01 | 0.01 |
| Arundo-dominated Riparian | 0.02 | <0.01 (0.001) | 0 | <0.01 (0.001) |
| Beach | 15.76 | 0.04 | 0.58 | 0.62 |
| **Subtotal** | **16.55** | **0.04** | **0.86** | **0.90** |

**Table 3 (cont.)**
**PROJECT IMPACTS TO VEGETATION COMMUNITIES AND LAND COVER TYPES**

| Vegetation Type | Existing Area (ac)[1] | Impacts | | |
|---|---|---|---|---|
| | | Temporary | Permanent | TOTAL |
| *Sensitive Upland* | | | | |
| Torrey Pine Forest | 0.3 | 0 | 0 | 0 |
| Saltgrass Grassland | 0.3 | 0 | 0.21 | 0.21 |
| Diegan Coastal Sage Scrub (including disturbed) | 3.3 | 0.03 | 0.02 | 0.05 |
| Coastal Bluff Scrub (including disturbed) | 1.8 | 0 | 0.65 | 0.65 |
| **Subtotal** | **5.7** | **0.03** | **0.88** | **0.91** |
| *Non-sensitive Habitat/Land Covers* | | | | |
| Unvegetated Bluff | 6.4 | 0 | 1.2 | 1.2 |
| Non-native Vegetation | 9.7 | 0.6 | 3.4 | 4.0 |
| Disturbed Habitat | 5.4 | 1.1 | 2.2 | 3.3 |
| Developed Land | 14.8 | 1.0 | 1.3 | 2.3 |
| **Subtotal** | **36.3** | **2.7** | **8.1** | **10.8** |
| **TOTAL** | **58.5** | **2.8** | **8.9** | **11.7** |

[1] Presented in acre(s) rounded to the nearest hundredth for wetlands/riparian, beach, and sensitive uplands, and to the nearest tenth for non-sensitive habitats/land cover types. Totals reflect rounding.

Freshwater marsh in the impact footprint, totaling 0.20 acre, is within existing trackside swales (Figures 8a, 8c, and 8d). These swales were constructed in uplands to store and convey stormwater runoff and help protect the track bed. These areas will be converted to concrete-lined trackside ditches to improve and increase stormwater capture and conveyance capabilities and help further protect the track bed, which is subject to flooding and erosion when water overtops the swales. Impacts to 0.07 acre of cismontane alkali marsh are also associated with converting the swales to concrete-lined ditches (Figures 8c and 8d). Impacts to freshwater marsh and cismontane alkali marsh are considered potentially significant; however, it is notable that these habitats occur in association with upland excavated trackside swales and urban runoff seeping through the bluff (human-induced circumstances); they are not naturally occurring wetlands or areas of historic wetland.

Impacts to 0.01 acre of arrow weed scrub would result from construction of a seawall in the northern part of the alignment (Figure 8a). This impact is considered potentially significant; however, like the marsh habitats discussed above, this habitat established from urban/irrigation runoff seeping through the bluff (human-induced circumstances); it is not a naturally occurring wetland or area of historic wetland.

A small area of arundo-dominated riparian would be impacted by the project (0.001 acre; Figure 8b). Impacts are associated with modification of an existing stormwater outlet constructed in previous phases. This impact is not significant given the very small area affected and the fact that giant reed is a highly invasive species and eradication programs are widely implemented to remove this species.

Impacts on the beach totaling 0.62 acre would occur almost entirely above the HTL. These impacts are associated with construction of proposed seawalls, new headwalls/outfalls in six locations, as well as replacing or modifying one existing outlet structure (Figures 8a, 8b, and 8c). Impacts to beach are not

significant given the small acreage involved relative to existing beach acreage and absence of vegetation in the impact area.

Impacts to 0.05 acre of Diegan coastal sage scrub are associated with grading near Milepost 245.0 for a new decomposed granite access road (0.03 acre impact; Figure 8b), and construction of a concrete-lined trackside ditch south of Milepost 245.6 at the southern end of the study area (0.02 acre impact; Figure 8d). Impacts to the 0.02 acre of potential ESHA Diegan coastal sage scrub with potential to support coastal California gnatcatcher in the southern part of the study area are considered potentially significant. Impacts to 0.03 acre of non-ESHA Diegan coastal sage scrub near Milepost 245.0 are not considered significant due to the very small size of both the impact and the habitat, isolation from other habitat areas, ongoing disturbance, and lack of potential to support sensitive species.

Impacts to 0.65 acre of coastal bluff scrub are associated with grading west of the tracks between Mileposts 244.5 and 244.7, retrofit areas north of Milepost 244.8, construction of a trackside ditch near stabilization area SA5 between Mileposts 244.8 and 244.9, and proposed seawalls and associated surface stabilization (Figures 8a and 8b). These impacts are considered significant. Impacts to 0.21 acre of saltgrass grassland on the bluff face are associated with proposed seawalls and associated surface stabilization between Mileposts 244.3 and 244.4 (Figure 8a) and Mileposts 245.2 and 245.4 (Figure 8c). These impacts are considered significant.

Implementation of mitigation measures **BIO-1a** through **BIO-1f** (habitat mitigation), **BIO-2** (construction fencing), **BIO-3** (biological monitor), and **BIO-4** (BMPs) would avoid or minimize potentially significant impacts to sensitive vegetation communities and ESHA. Refer to the Mitigation section of this document for the mitigation measures.

### Potential ESHA Impacts

Approximately 0.03 acre of impact would occur within areas identified herein as potential ESHA for the CCC, consisting of 0.02 acre of Diegan coastal sage scrub in the southernmost portion of the study area (Figure 8d) and 0.01 acre of arrow weed scrub in the northern portion of the study area (Figure 8a).

### Special-status Plant Species

No impact to special-status plant species (federal or state listed species, CDFW sensitive, and/or identified as CNPS CRPR 1 or 2) is anticipated from the proposed project due to lack of observations within the impact area and the highly disturbed condition of the project area together with regular maintenance activities conducted therein.

### Special-status Animal Species

The project would impact 0.02 acre of Diegan coastal sage scrub in the southern part of the study area that could be used as nesting or foraging habitat for coastal California gnatcatcher. No other impacts to special-status animal species are anticipated.

Implementation of mitigation measure **BIO-1c** for impacts to habitat and **BIO-5** (gnatcatcher avoidance) would avoid or minimize potentially significant impacts on gnatcatcher. Consultation with the USFWS

under Section 7 of the ESA may be required if this species is present. It is assumed that consultation, if required, would be initiated either by the USACE or the Federal Railroad Administration.

Potential indirect impacts are discussed under the "Indirect Impacts" section below.

### Nesting Birds and Raptors

The study area contains trees, shrubs, and other vegetation that provide suitable nesting habitat for common birds, including raptors, protected under the MBTA. Construction of the proposed project could result in the removal or trimming of trees and other vegetation during the general bird nesting season (February 15 through August 31) and raptor nesting season (January 15 through July 15) and, therefore, could result in impacts to nesting birds in violation of the MBTA. Direct impacts could occur as a result of removal of vegetation supporting an active nest, and such impacts would be considered significant.

Implementation of mitigation measure **BIO-6** (nesting bird/raptor avoidance) would avoid or minimize potentially significant impacts on nesting birds and raptors.

### Jurisdictional Waters and Wetlands

Waters of the U.S.

The project would impact a total of 0.17 acre of wetlands and waters under the potential jurisdiction of the USACE and RWQCB (Figures 9a-9d, *Waters of the U.S./Impacts*), consisting of 0.07 acre of impact to cismontane alkali marsh wetland, 0.01 acre of arrow weed scrub wetland, and 0.09 acre of non-wetland waters (unvegetated beach) below the HTL (Table 4, *Project Impacts to Waters of the U.S.*).

Impacts to cismontane alkali marsh are associated with the proposed conversion of a trackside swale to a concrete-lined ditch in the southern part of the project site between Mileposts 245.5 and 245.6 (Figures 9c and 9d). While the trackside swale was not considered to meet the definition of waters of the U.S., the adjacent seep wetlands composed of cismontane alkali marsh on the bluff face were considered wetland waters of the U.S. herein. Construction associated with conversion of the trackside swale to a concrete-lined ditch would impact portions of the lowermost bluff face on which these seep wetlands occur, resulting in impacts to cismontane alkali marsh. Impacts to cismontane alkali marsh are considered potentially significant; however, it is notable that this habitat is only present due to urban runoff seeping through the bluff (human-induced circumstances); it is not a naturally occurring wetland or area of historic wetland.

Impacts to 0.01 acre of arrow weed scrub would result from construction of a seawall (Figure 9a). Impacts to arrow weed scrub are considered potentially significant; however, it is notable that this habitat is only present due to urban runoff seeping through the bluff (human-induced circumstances); it is not a naturally occurring wetland or area of historic wetland.

Impacts to 0.09 acre of beach non-wetland waters below the HTL would result from construction of seawalls, as shown on Figures 9a and 9b. Impacts to non-wetland waters composed of unvegetated beach habitat below the HTL were not considered significant given the small acreage involved relative to the amount of existing beach habitat.

Impacts to waters of the U.S. would require a CWA Section 404 Permit from the USACE and a CWA Section 401 Water Quality Certification from the RWQCB. An additional 0.20 acre of vegetated earthen trackside swales also would be impacted, which were not considered waters of the U.S. These swales parallel the east side of the tracks and support narrow bands of freshwater marsh. They were constructed in uplands to store and convey stormwater runoff and help protect the track bed and do not meet the definition of waters of the U.S. under the 2020 Navigable Waters Protection Rule.

Only the USACE and RWQCB can determine limits of waters of the U.S.; it is recommended that these agencies be contacted to confirm the limits of their jurisdiction within the proposed project area.

**Table 4**
**PROJECT IMPACTS TO WATERS OF THE U.S. (acre[s])[1]**

| Waters of the U.S. | Existing | Impacts | | |
|---|---|---|---|---|
| | | Temporary | Permanent | TOTAL |
| **Wetlands/Riparian** | | | | |
| Freshwater Marsh | 0.02 | 0 | 0 | 0 |
| Cismontane Alkali Marsh | 0.46 | 0 | 0.07 | 0.07 |
| Arrow Weed Scrub | 0.01 | 0 | 0.01 | 0.01 |
| **Subtotal** | **0.49** | **0** | **0.08** | **0.08** |
| **Non-wetland Waters** | | | | |
| Beach (below HTL) | 12.08 | 0 | 0.09 | 0.09 |
| Stream channel – natural bottom | 0.03 | 0 | 0 | 0 |
| Stream channel – concrete-lined | < 0.01 (0.002) | 0 | 0 | 0 |
| **Subtotal** | **12.11** | 0 | 0.09 | 0.09 |
| **TOTAL** | **12.60** | **0** | **0.17** | **0.17** |

[1] Areas are presented in acre(s) rounded to the nearest 0.01.

Implementation of mitigation measures **BIO-8** (Waters of the U.S.) would avoid or minimize potentially significant impacts on waters of the U.S.

Coastal Wetlands

The project would impact coastal wetlands under jurisdiction of the CCC, including freshwater marsh (0.20 acre), cismontane alkali marsh (0.07 acre), arrow weed scrub (0.01 acre), arundo-dominated riparian (0.001 acre), and beach (0.62 acre; Table 5, *Project Impacts to Coastal Wetlands*; Figures 10a-10d, *Coastal Wetlands/Impacts*). A Federal Coastal Consistency Certification from the CCC would be required in accordance with the CZMA.

Impacts to freshwater marsh would occur in two locations: (1) at the northern end of the project site near Milepost 244.2 (Figure 10a), and (2) at the southern end of the project between Mileposts 245.5 and 245.6 (Figures 10c and 10d). Impacts to cismontane alkali marsh would occur parallel to the southerly freshwater marsh impacts. These impacts are associated with the proposed conversion of trackside swales to concrete-lined ditches. These swales were constructed in uplands to store and convey stormwater runoff and help protect the track bed. Conversion of these swales to concrete-lined trackside ditches would improve and increase stormwater capture and conveyance capabilities and help

further protect the track bed, which is subject to flooding and erosion when water overtops the swales. Impacts to arrow weed scrub would occur in association with future construction of a proposed 50-year seawall (Figure 10a). Impacts to freshwater marsh, cismontane alkali marsh, and arrow weed scrub are considered potentially significant; however, it is notable that these habitats occur in association with upland excavated trackside swales and urban runoff seeping through the bluff (human-induced circumstances); they are not naturally occurring wetlands or areas of historic wetland.

Impacts to arundo-dominated riparian are associated with modification of an existing stormwater outlet constructed in previous phases between Mileposts 244.7 and 244.8 (Figure 10b). This impact is not significant given the very small area affected and the fact that giant reed is a highly invasive species and eradication programs are widely implemented to remove this species.

Impacts on the beach are associated with replacing or modifying one existing outlet structure between Mileposts 244.7 and 244.8 (Figure 10b), construction of new headwalls/outfalls in six locations: north of Milepost 244.2 (Figure 10a), between Mileposts 244.4 and 244.5 (Figure 10a), south of Milepost 244.5 (Figure 10a), between Mileposts 244.9 and 245.0 (Figure 10b), between Mileposts 245.0 and 245.1 (Figure 10c), and between Mileposts 245.2 and 245.3 (Figure 10c); and construction of seawalls along portions of the bluff face (Figures 10a, 10b, and 10c). Impacts to beach are not significant given the small acreage involved relative to the amount of existing beach habitat and absence of vegetation in the impact area.

**Table 5**
**PROJECT IMPACTS TO COASTAL WETLANDS (acre[s])[1]**

| Coastal Wetlands | Existing | Impacts | | |
|---|---|---|---|---|
| | | Temporary | Permanent | TOTAL |
| **Wetlands/Riparian** | | | | |
| Freshwater Marsh | 0.30 | 0 | 0.20 | 0.20 |
| Cismontane Alkali Marsh | 0.46 | 0 | 0.07 | 0.07 |
| Arrow Weed Scrub | 0.01 | 0 | 0.01 | 0.01 |
| Arundo-dominated Riparian | 0.02 | 0.001 | 0 | 0.001 |
| **Subtotal** | **0.79** | **0.001** | **0.28** | **0.28** |
| **Non-wetland Waters/Other Waters** | | | | |
| Beach | 15.76 | 0.04 | 0.58 | 0.62 |
| **Subtotal** | **15.76** | **0.04** | **0.58** | **0.62** |
| **TOTAL** | **16.55** | **0.04** | **0.86** | **0.90** |

[1] Areas are presented in acre(s) rounded to the nearest 0.01.

Implementation of mitigation measures **BIO-1a** (habitat mitigation), **BIO-1b** (habitat mitigation), **BIO-1c** (habitat mitigation), and **BIO-9** (Coastal Wetlands) would avoid or minimize potentially significant impacts on coastal wetlands.

## Indirect Impacts

The primary indirect impacts of the proposed project to biological resources would be short-term and include increased noise during construction and the potential for night-lighting spilling into adjacent

habitats during construction. The project would not result in other indirect impacts, such as increased human intrusion or exotic species invasion, as the study area is already subject to regular human presence (pedestrians running, walking, and sitting on the informal trails and bluff) and non-native plant species are prevalent throughout the study area.

### Noise

The project could generate construction noise between February 15 and August 31 in the southern portion of the project area within 300 feet of habitat that could be occupied by coastal California gnatcatcher. If nesting gnatcatchers are present, indirect noise impacts could occur.

Implementation of mitigation measure **BIO-5** (gnatcatcher avoidance) would avoid or minimize potentially significant noise impacts on gnatcatchers.

### Night Lighting

Night lighting on habitats can prevent nocturnal wildlife from using an area, provide nocturnal predators with an unnatural advantage over their prey, or affect breeding. It is anticipated that the proposed project would require lighting during night construction. Although there is some amount of existing lighting spillover into portions of the study area from adjacent development, night lighting for project construction would likely be brighter, and impacts to wildlife due to lighting is potentially significant.

Implementation of mitigation measure **BIO-7** (night lighting) below would avoid or minimize potentially significant lighting impacts on wildlife.

## MITIGATION

SANDAG and the California Department of Transportation (Caltrans) collaborated with the CCC, local cities, resources agencies, and the public to develop the *North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program* (NCC PWP/TREP). The NCC PWP/TREP serves as a master federal consistency certification document for the transportation, community and resource enhancement projects included in the PWP/TREP. In addition, the PWP/TREP Resource Enhancement and Mitigation Program (REMP; Appendix H of the PWP/TREP) provides a regional approach to identifying, developing, and implementing biological mitigation for north coast transportation projects, including the proposed project. Thus, mitigation for direct impacts to wetlands and sensitive upland habitats for this project are proposed to be provided by allocation of REMP mitigation credits.

### Vegetation Communities

The project would impact sensitive vegetation communities within the study area. The project alignment has been refined through design to avoid and minimize impacts to sensitive biological resources; however, mitigation would be necessary to compensate for proposed impacts to sensitive vegetation types. As part of the NCC Program, a REMP has been established to provide a package of natural resource establishment, restoration, and preservation/enhancement opportunities. The REMP seeks to mitigate potential resource impacts caused by implementation of the NCC Program transportation and community enhancement projects. In addition, the REMP allocates the SANDAG Environmental Mitigation Program funds to regionally significant lagoon restoration opportunities and endowments for long-term resource maintenance needs. Mitigation measures for impacts to vegetation communities are

presented below, along with Table 6, which presents potential mitigation ratios for habitat impacts that were considered significant or potentially significant.

**Table 6**
**MITIGATION FOR POTENTIALLY SIGNIFICANT IMPACTS TO VEGETATION COMMUNITIES (acre[s])[1]**

| Vegetation Community | Existing | Impacts | Ratio Range | Potential Mitigation Acreage |
|---|---|---|---|---|
| **Wetlands/Riparian** | | | | |
| Freshwater Marsh | 0.30 | 0.20 | 0:1 – 4:1[2] | 0 – 0.80 |
| Cismontane Alkali Marsh | 0.46 | 0.07 | 0:1 – 4:1[3] | 0 – 0.28 |
| Arrow Weed Scrub | 0.01 | 0.01 | 0:1 – 4:1[4] | 0 – 0.04 |
| **Subtotal** | **0.77** | **0.28** | **--** | **0 – 1.12** |
| **Uplands** | | | | |
| Diegan Coastal Sage Scrub | 3.3 | 0.02 | 1:1 – 2:1[5] | 0.02 - 0.04 |
| Coastal Bluff Scrub | 1.8 | 0.65 | 1:1 – 2:1[6] | 0.65 – 1.30 |
| Saltgrass Grassland | 0.3 | 0.21 | 1:1 – 2:1[7] | 0.21 – 0.42 |
| **Subtotal** | **5.4** | **0.88** | **--** | **0.88 – 1.76** |
| **TOTAL** | **6.17** | **1.16** | **--** | **0.88 – 2.88** |

[1] Areas are presented in acre(s) rounded to the nearest 0.10 or 0.01.
[2] See Mitigation Measure (MM) BIO-1a.
[3] See MM BIO-1b.
[4] See MM BIO-1c.
[5] See MM BIO-1d.
[6] See MM BIO-1e.
[7] See MM BIO-1f.

**BIO-1a Habitat Mitigation.** If mitigation is required by the CCC for the combined permanent and temporary impacts to 0.20 acre of freshwater marsh within trackside upland-cut swales, it shall be provided in the context of the REMP. A 1:1 ratio would apply if mitigation is completed prior to the impact, up to a 4:1 ratio if mitigation is completed at or after the time of project impacts.

**BIO-1b Habitat Mitigation.** If mitigation is required by the CCC and/or USACE and RWQCB for the combined permanent and temporary impacts to 0.07 acre of cismontane alkali marsh, it shall be provided in the context of the REMP. A 1:1 ratio would apply if mitigation is completed prior to the impact, up to a 4:1 ratio if mitigation is completed at or after the time of project impacts.

**BIO-1c** **Habitat Mitigation.** If mitigation is required by the CCC and/or USACE and RWQCB for the impacts to 0.01 acre of arrow weed scrub, it shall be provided in the context of the REMP. A 1:1 ratio would apply if mitigation is completed prior to the impact, up to a 4:1 ratio if mitigation is completed at or after the time of project impacts.

**BIO-1d** **Habitat Mitigation.** Mitigation for impacts to 0.02 acre of potential ESHA Diegan coastal sage scrub shall be provided in the context of the REMP. A 1:1 ratio would apply if mitigation is completed prior to the impact, and a 2:1 ratio if mitigation is completed at or after the time of project impacts.

**BIO-1e** **Habitat Mitigation.** Mitigation for combined permanent impacts to 0.65 acre of coastal bluff scrub shall be provided in the context of the REMP. A 1:1 ratio would apply if mitigation is completed prior to the impact, and a 2:1 ratio if mitigation is completed at or after the time of project impacts.

**BIO-1f** **Habitat Mitigation.** Mitigation for combined permanent impacts to 0.21 acre of saltgrass grassland shall be provided in the context of the REMP. A 1:1 ratio would apply if mitigation is completed prior to the impact, and a 2:1 ratio if mitigation is completed at or after the time of project impacts.

**BIO-2** **Construction Fencing.** Prior to construction, temporary construction fencing shall be installed around the perimeter of the work area where located adjacent to sensitive vegetation communities. Fencing shall remain in place during all construction activities.

**BIO-3** **Biological Monitor.** Prior to construction, SANDAG shall retain a qualified biologist to monitor clearing and/or grubbing activities. The biological monitor shall attend pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas, and protective fencing. Before construction activities occur in areas containing sensitive biological resources, all workers shall be educated by the biologist to recognize and avoid those areas that have been marked as sensitive biological resources.

**BIO-4** **Best Management Practices.** SANDAG shall ensure that the construction contractor implements best management practices (BMPs) including but not limited to: maintaining the project area free of trash and debris; employing appropriate standard spill prevention practices and clean-up materials; installing and maintaining sediment and erosion control measures; maintaining effective control of fugitive dust; and properly storing, handling, and disposing of all toxins and pollutants including waste materials.

Prior to construction, the following notes shall be included on the applicable construction plans to the satisfaction of SANDAG (or their designee):

- A qualified biologist shall be on site to monitor all vegetation clearing within sensitive habitats and periodically thereafter to ensure implementation of appropriate resource protection measures.

- During construction, material stockpiles shall be placed such that they (1) cause minimal interference with on-site drainage patterns, and (2) are outside the high tide line. This will protect sensitive vegetation and ocean waters from sediment-laden runoff.
- Material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive vegetation communities.

## Special-status Animal Species and Nesting Birds

**BIO-5** **Gnatcatcher Avoidance**. If operation of construction equipment starts during the breeding season for the coastal California gnatcatcher (February 15 to August 31), a pre-construction survey shall be conducted by a USFWS-permitted biologist to determine whether this species occurs within potential ESHA Diegan coastal sage scrub in the southern part of the study area that is located within 300 feet of the construction activities. If it is determined at the completion of pre-construction surveys that active nests belonging to this species are absent from the potential impact area, construction shall be allowed to proceed. If pre-construction surveys determine the presence of active nests belonging to this species, then construction within 300 feet of the nest location shall: (1) be postponed until a permitted biologist determines the nest(s) is no longer active; or (2) not occur until a temporary noise barrier or berm is constructed at the edge of the development footprint and/or around the piece of equipment to ensure that noise levels are reduced to below 60 A-weighted decibels (dBA) or ambient at the nest location. Decibel output will be confirmed by a qualified noise specialist and intermittent monitoring by a qualified biologist will be required to ensure that conditions have not changed.

**BIO-6** **Nesting Bird and Raptor Avoidance.** If initial grading and vegetation removal activities (i.e., earthwork, clearing, and grubbing) must occur during the general bird breeding season for migratory birds (February 15 to August 31) or raptors (January 15 to July 31), a qualified biologist shall conduct a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the MBTA. The pre-construction survey shall be performed no more than three days prior to the commencement of the activities. If the qualified biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, no impacts shall occur until the young have fledged the nest and the nest is confirmed to no longer be active, as determined by the qualified biologist.

**BIO-7:** **Night Lighting.** Night lighting within the project area shall be of the lowest illumination allowed for construction and human safety, selectively placed, shielded, and directed parallel to the NCTD railroad ROW and away from sensitive vegetation communities and the ocean to the maximum extent practicable.

## Jurisdictional Wetlands and Waters

The proposed project would result in impacts to potentially jurisdictional waters including waters of the U.S. and coastal wetlands (Tables 4 and 5, Figures 9a-d and 10a-d).

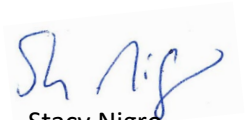
**BIO-8** **Waters of the U.S.** Mitigation for impacts to waters of the U.S. shall be provided in the context of the REMP, as noted above, or as otherwise determined in consultation with the USACE and RWQCB during the Clean Water Act Section 404 and Section 401 wetland permitting processes.

**BIO-9** **Coastal Wetlands.** Mitigation for impacts to coastal wetlands shall be provided in the context of the REMP, as noted above, or as otherwise determined in consultation with the Coastal Commission during the Coastal Zone Management Act consistency process.

Implementation of the mitigation measures outlined above would avoid or minimize potentially significant impacts to biological resources from the proposed project.

We appreciate the opportunity to provide you with this letter report. Please do not hesitate to contact me at (619) 462-1515 or StacyN@helixepi.com if you have any questions or require further assistance.

Sincerely,



Stacy Nigro
Principal Biologist

Enclosures:

| | |
|---|---|
| Figure 1: | Regional Location |
| Figure 2a: | Project Vicinity (Aerial Photograph) |
| Figure 2b: | Project Vicinity (USGS Topography) |
| Figure 3: | Coastal Zone and Critical Habitat |
| Figures 4a-d: | Site Plan |
| Figures 5a-c: | Vegetation |
| Figures 6a-c: | Waters of the U.S. |
| Figures 7a-c: | Coastal Wetlands |
| Figures 8a-d: | Vegetation/Impacts |
| Figures 9a-d: | Waters of the U.S./Impacts |
| Figure 10a-d: | Coastal Wetlands/Impacts |
| Attachment A: | Representative Site Photos |
| Attachment B: | Plant Species Observed |
| Attachment C: | Animal Species Observed or Detected |

## REFERENCES

American Ornithologists' Union (AOU). 2016. American Ornithologists' Union Checklist of North and Middle American Birds. 7th Edition and Supplements. Available at: http://www.aou.org/checklist/north/.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley.

Bowman, R. 1973. *Soil Survey of the San Diego Area*. U.S. Department of Agriculture in cooperation with the USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

Bradley, R.D., Ammerman, L.K., Baker, R.J., Bradley, L.C., Cook, J.A., Dowler, R.D. Jones, C., Schmidly, D.J, Stangi, F.B., Van De Bussche, R.A., Wursig, B. 2014. Revised checklist of North American mammals north of Mexico. Museum of Texas Tech University Occasional Papers. 327:1-27.

Calflora. 2020. http://www.calflora.org/. Berkeley, California. Accessed May 15, 2020.

California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB). 2020. RareFind Database Program, Version 5.2.14.

California Native Plant Society (CNPS), Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Available at: http://www.rareplants.cnps.org/.

Collins, Joseph T. and Travis W. Taggart. 2011. Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians Online Publication of The Center for North American Herpetology. The Academic Portal to North American Herpetology, Lawrence, Kansas. Available at: www.cnah.org.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.

Federal Register. 2020. The Navigable Waters Protection Rule: Definition of "Waters of the United States." 85 FR 22250. 33 CFR Part 328 and 40 CFR Parts 110, 112, 116, 117, 120, 122, 230, 232, 300, 302, and 401. Vol. 85, No. 77. April 21. https://www.govinfo.gov/content/pkg/FR-2020-04-21/pdf/2020-02500.pdf.

Glassberg, J. 2001. Butterflies through Binoculars. The West: A Field Guide to the Butterflies of Western North America. New York: Oxford University Press.

Holland R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento, 156 pp.

National Resource Conservation Service (NRCS). 2020. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R. F. Holland, Ph.D., October 1986. March. Revised from 1996 and 2005. July.

Rebman, Jon P. and Michael G. Simpson. 2014. Checklist of the Vascular Plants of San Diego County. 5th Edition. San Diego Natural History Museum, San Diego, California. 132 pp.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, CA. 1300 pp.

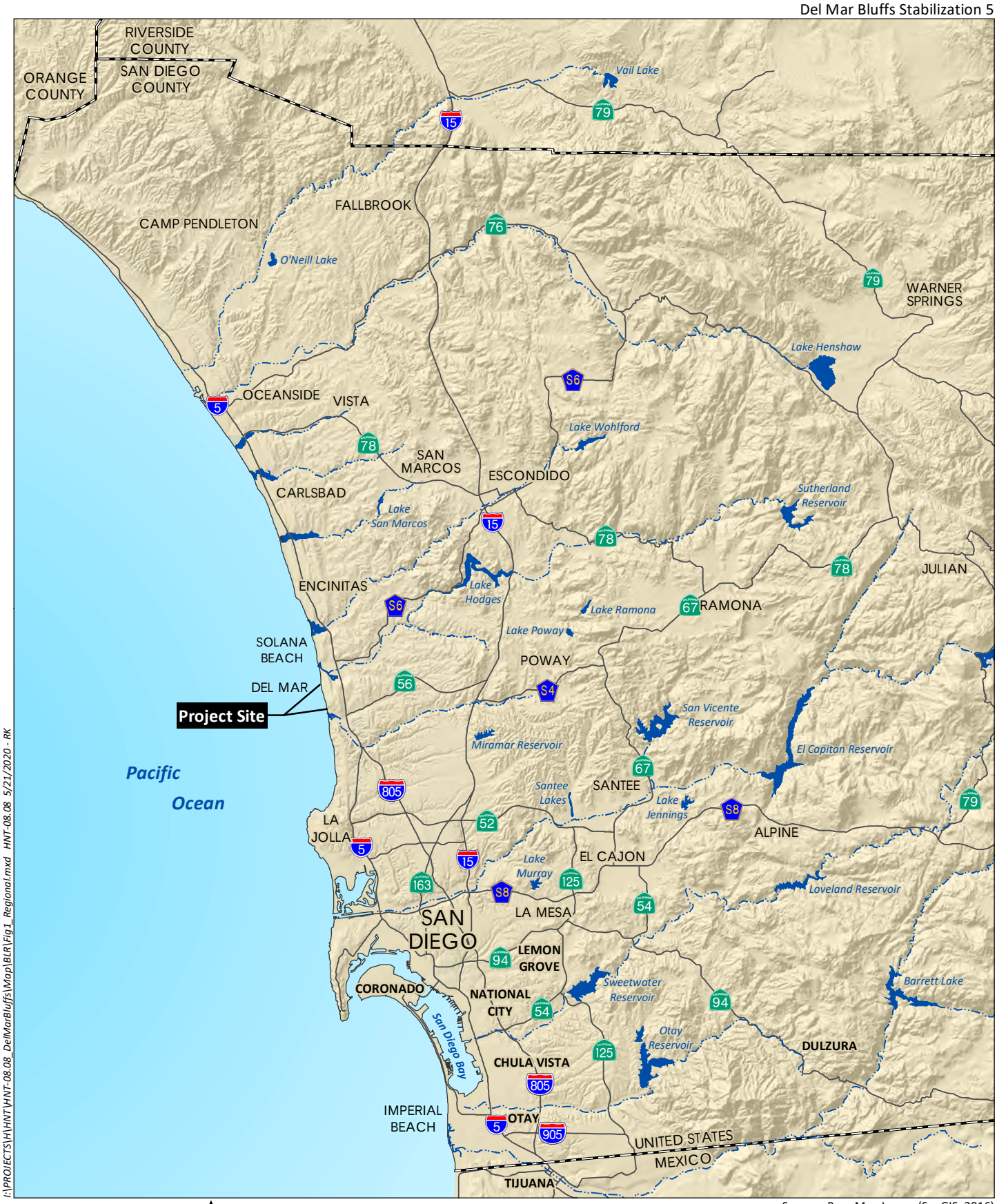
U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Eds. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture. 2020. Natural Resource Agency. Web Soil Survey. Retrieved from: http://websoilsurvey.sc.egov.usda.gov/app/WebSoilSurvey.aspx.

U.S. Fish and Wildlife Service (USFWS). 2020a. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office (CFWO). Available at: http://www.fws.gov/carlsbad/gis/cfwogis.html.

2020b. National Wetlands Inventory. Available at: https://fws.gov/wetlands/Wetlands-Data.kml.

# Figures




I:\PROJECTS\HT\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig1_Regional.mxd HNT-08.08 5/21/2020 - RK

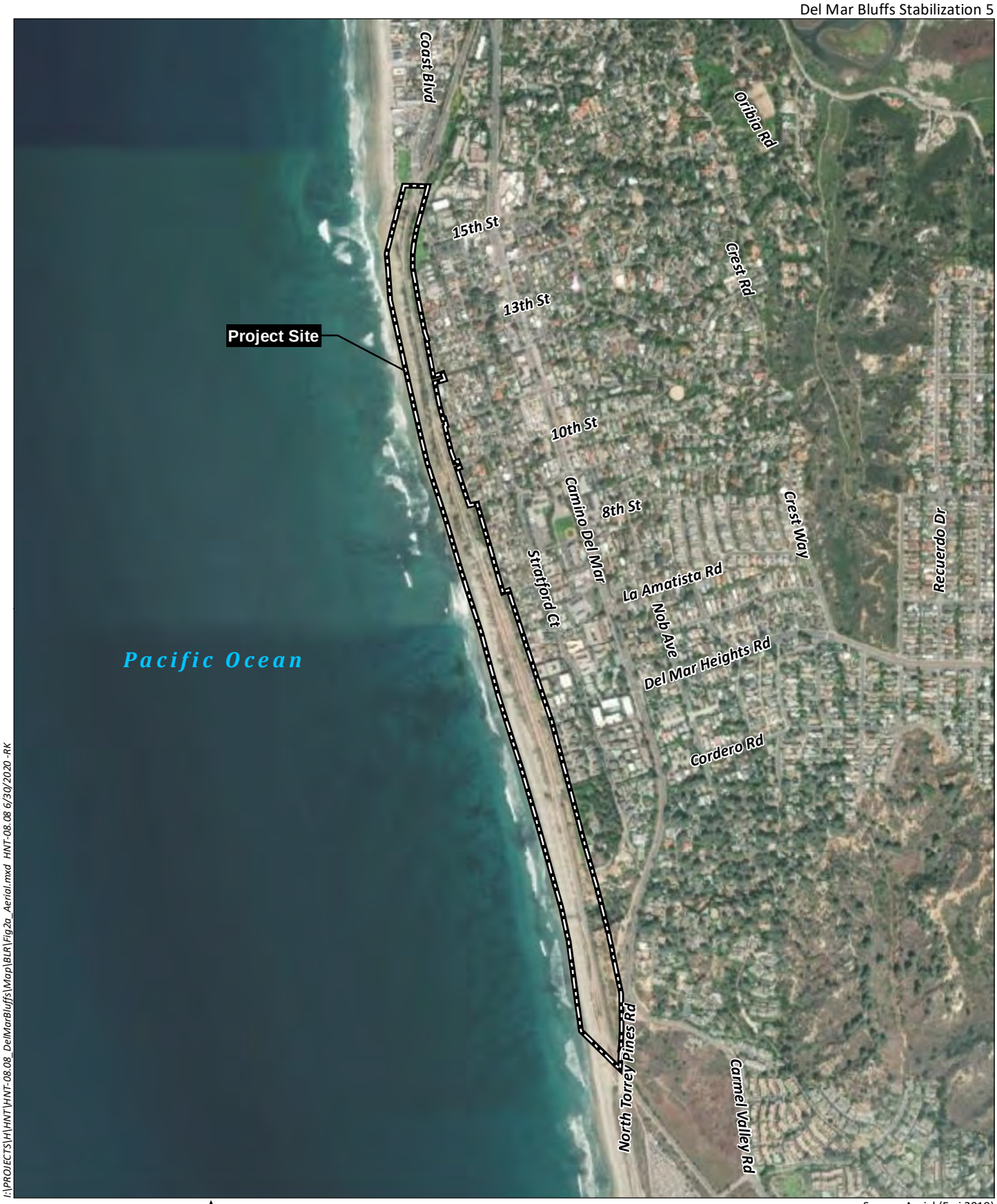
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

# Regional Location

Figure 1




I:\PROJECTS\HT\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig2a_Aerial.mxd HNT-08.08 6/30/2020 -RK

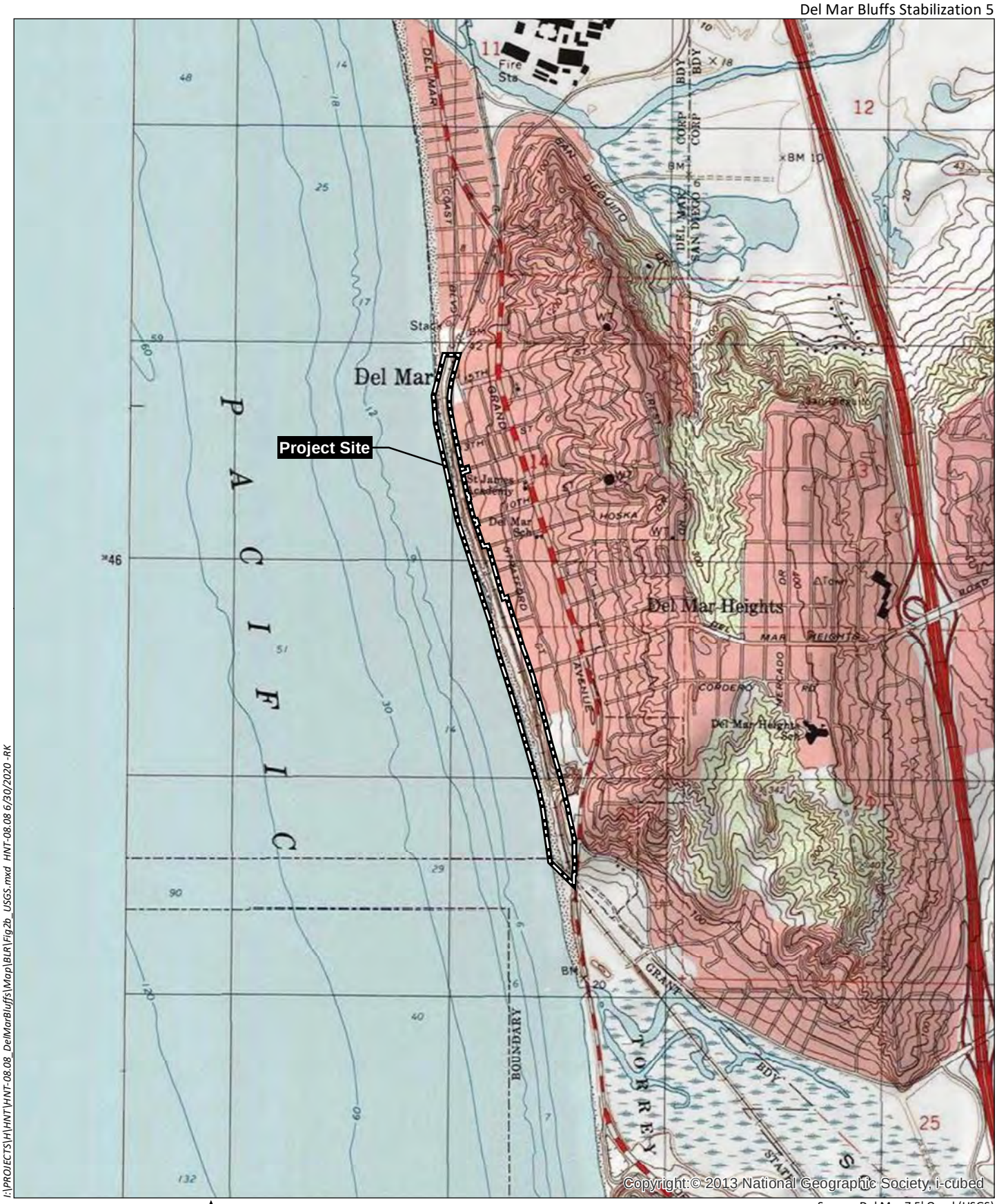
0 1,200 Feet

Source: Aerial (Esri 2019)

HELIX Environmental Planning

# Project Vicinity (Aerial Photograph)

Figure 2a




0 2,000 Feet

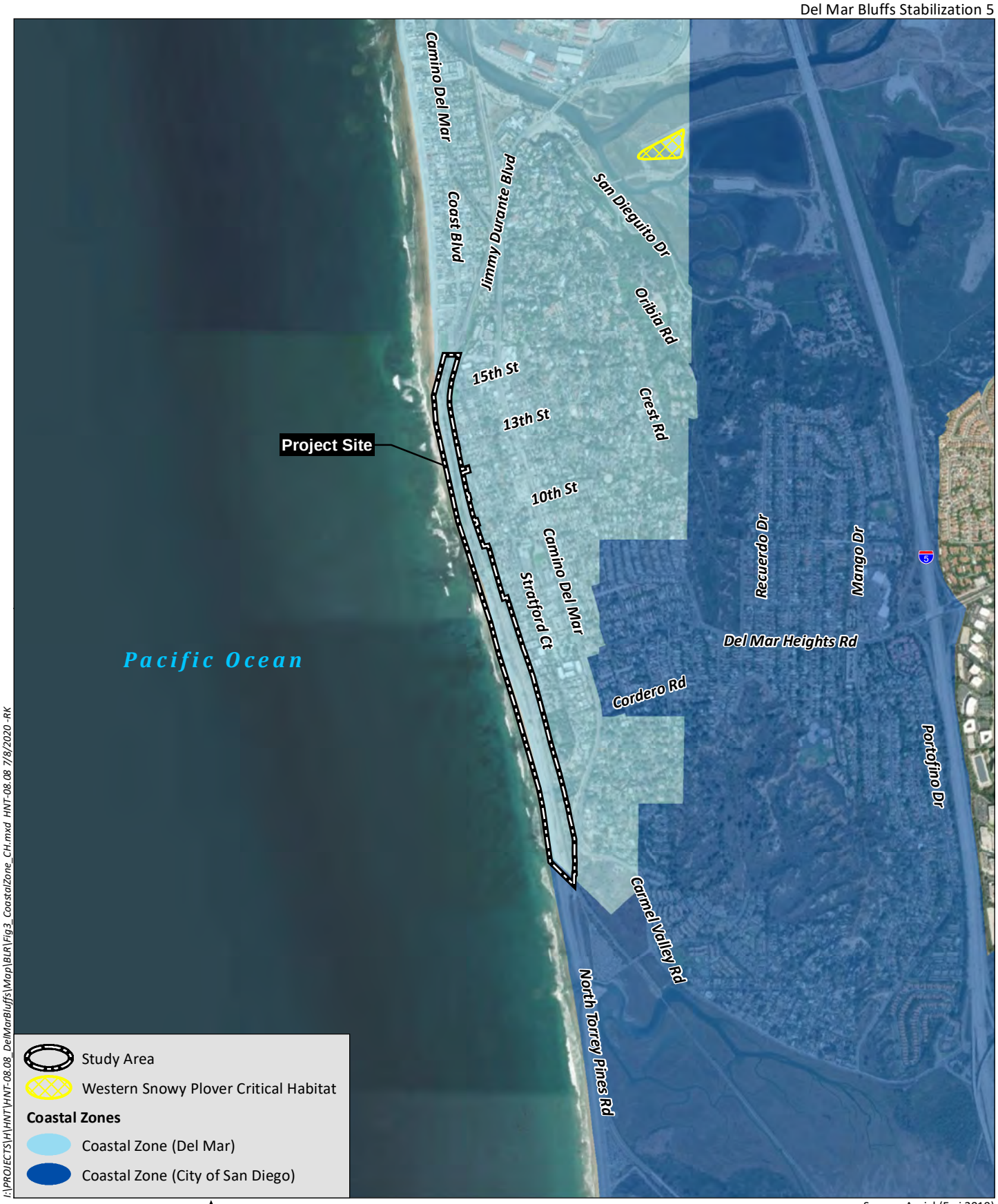
Source: Del Mar 7.5' Quad (USGS)

I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig2b_USGS.mxd HNT-08.08 6/30/2020 -RK

HELIX Environmental Planning

# Project Vicinity (USGS Topography)

Figure 2b




I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig3_CoastalZone_CH.mxd HNT-08.08 7/8/2020 -RK

Source: Aerial (Esri 2019)

HELIX Environmental Planning

# Coastal Zone and Critical Habitat

Figure 3


I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig4_SitePlan.mxd HNT-08-08 6/29/2021 -RK

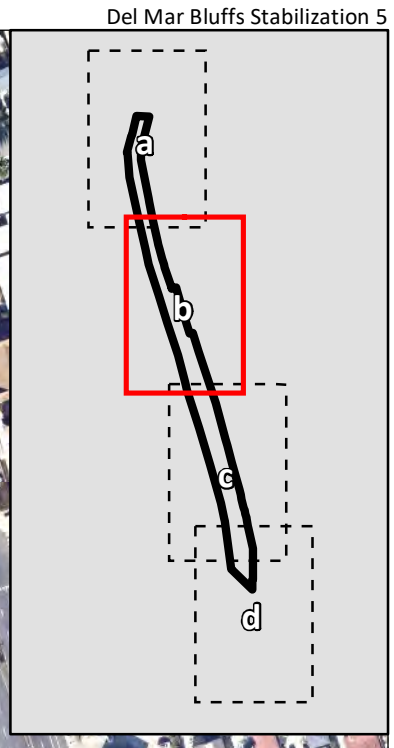
Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Site Plan

Figure 4a

2 5'x5' Inlet
1 22'x1' Headwall
Existing Seawall
Retrofit Area
DMB2 SN2
Stabilization
DMB4
Stabilization
DMB5 SA23
Seawall
L= 200'
2 5'x5' Inlet and
1 12''x1' Headwall
Stabilization
DMB5 SA24
Concrete Drainage Ditch 8'x1012'
Stabilization
DMB5 SA22
Modify/Replace
Existing Structure
50-yr Seawall
L= 230'
Modify/Replace
Existing Structure
Seawall
L= 200'
Seawall
L= 64'
50-yr Seawall
L= 378'
Drainage Ditch 4'x580'
New Structure and Downdrain
Replaces the Existing
Retrofit Area
DMB3 SP2
Improved Ditch 5'x1100'
Drainage Ditch 5'x605'
Stabilization
DMB5 SA3
Retrofit Area
DMB2 SN6
Retrofit Area
2001 Emergency Repair
Retrofit Area
DMB3 SP3
Stabilization
DMB5 SA15
Stabilization
DMB5 SA5
Stabilization
DMB5 SA14
Drainage Ditch 5'x378'
2 5'x5' Inlets
Modify/Replace
Existing Structure
2 5'x5' Inlets and
1 12''x1' Headwall
Access Road
Improvements
Graded Area
244.5
244.6
244.7
244.8
244.9
245.0
Sea Orbit Ln
Stratford Ct
11th St
Penny Ln
10th St
Melanie Way
Ocean Ave
9th St
Shippey Ln
8th St
8th St
Little Orphan Alley
Camino Del Mar
7th St
Sherry Ln
Stratford Ct
6th St
Pacific
Ocean




Study Area
Mile Post

**Impact Type**

- Surface Stabilization
- Seawall (Phase 1)
- 50-year Seawall (Phase 2)
- Soldier Piles
- Headwall
- Inlets
- Improved Ditch/Drainage Ditch
- Graded Area
- Modify/Replace Existing Structure
- Retrofit Area
- Access Road Improvements
- Staging Area
- Beach Access Route

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig4_SitePlan.mxd HNT-08-08 6/29/2021 -RK

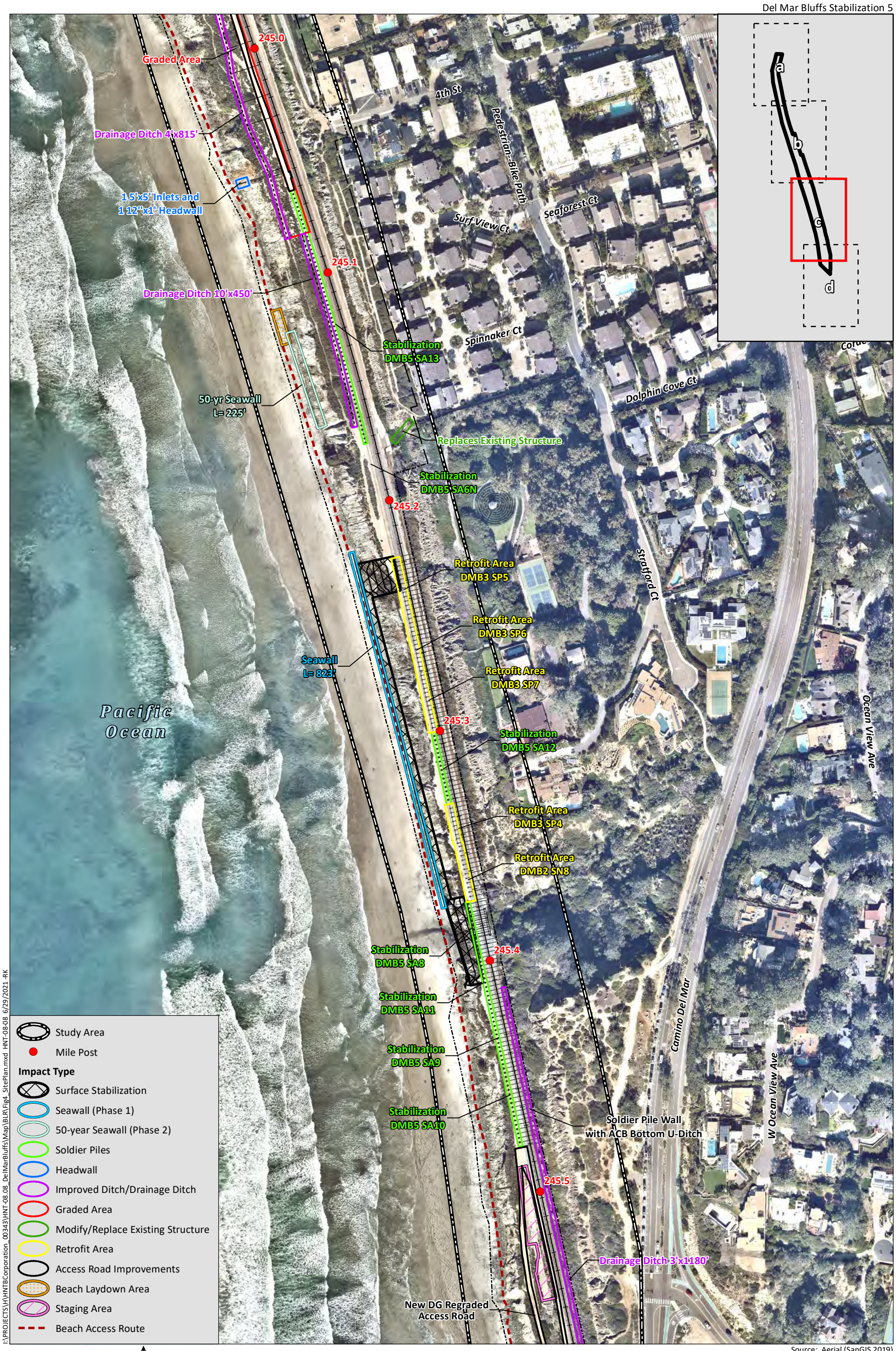
0 200 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Site Plan

Figure 4b




Study Area
Mile Post

**Impact Type**

- Surface Stabilization
- Seawall (Phase 1)
- 50-year Seawall (Phase 2)
- Soldier Piles
- Headwall
- Improved Ditch/Drainage Ditch
- Graded Area
- Modify/Replace Existing Structure
- Retrofit Area
- Access Road Improvements
- Beach Laydown Area
- Staging Area
- Beach Access Route

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig4_SitePlan.mxd HNT-08-08 6/29/2021 -RK

0 200 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Site Plan

Figure 4c

Stabilization
DMB5 SA10

Soldier Pile Wall
with ACB Bottom U-Ditch

245.5

Drainage Ditch 3' x 1180'

New DG Regraded
Access Road

245.6

W Ocean Vi

Carmel Valley Rd

North Torrey Pines Rd

Pacific
Ocean

Torrey Pines Beach
Parking Lot

a

b

c

d

Study Area

Mile Post

**Impact Type**

Soldier Piles

Improved Ditch/Drainage Ditch

Access Road Improvements

Staging Area

Beach Access Route

0 200 Feet

N

Source: Aerial (SanGIS 2019)

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig4_SitePlan.mxd HNT-08-08 6/29/2021 -RK

HELIX
Environmental Planning

# Site Plan

Figure 4d

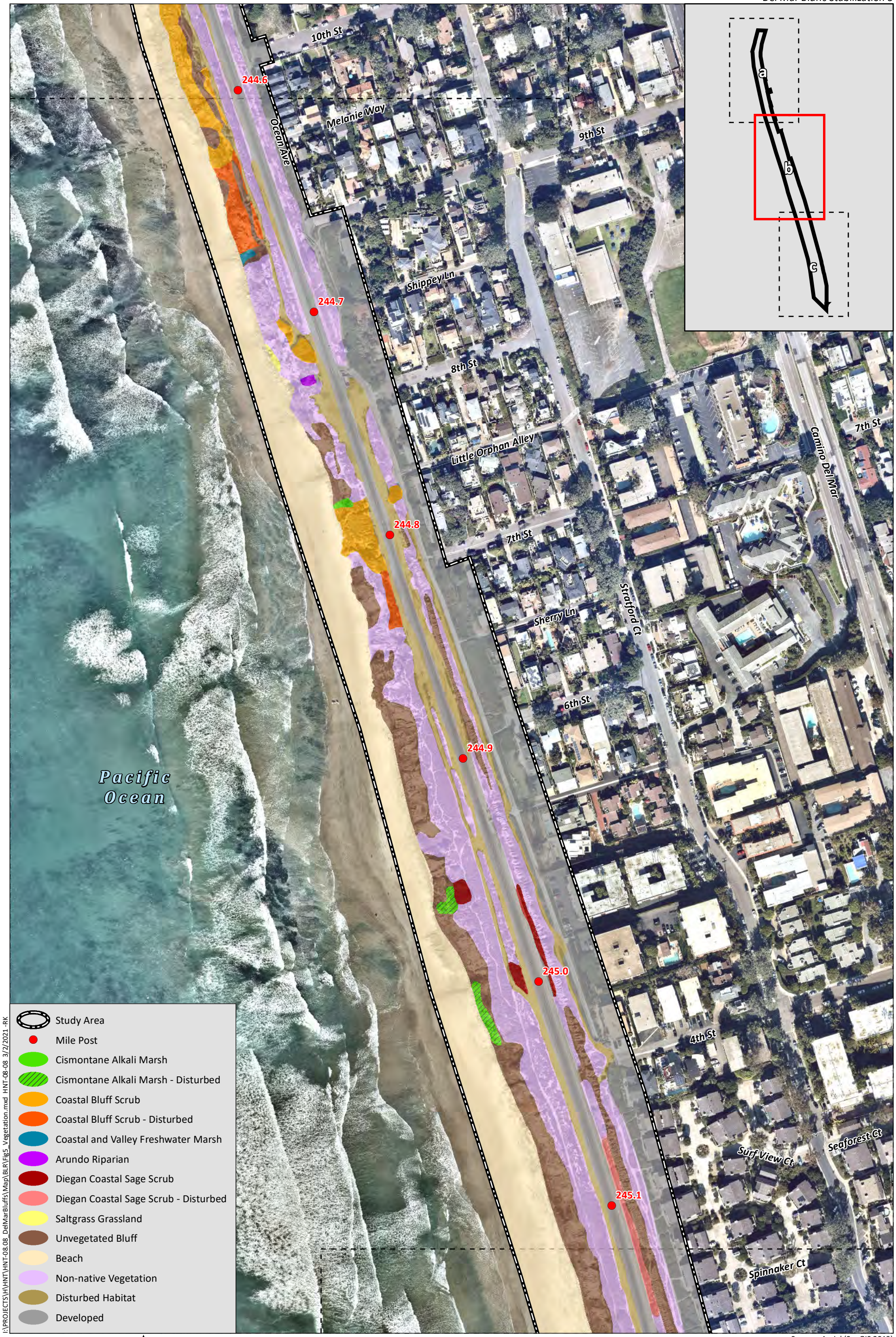

I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig5_Vegetation.mxd HNT-08-08 3/2/2021 - RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Vegetation

Figure 5a




I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig5_Vegetation.mxd HNT-08-08 3/2/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Vegetation

Figure 5b


I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig5_Vegetation.mxd HNT-08-08 3/2/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Vegetation

Figure 5c


I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig6_USACE.mxd HNT-08-08 2/24/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Waters of the U.S.

Figure 6a


I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig6_USACE.mxd HNT-08-08 2/24/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Waters of the U.S.

Figure 6b


Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Waters of the U.S.

Figure 6c


I:\PROJECTS\H\HNT\HNT-08.08_DelMarBluffs\Map\BLR\Fig7_CCC.mxd HNT-08-08 2/24/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Coastal Wetlands

Figure 7a


HELIX Environmental Planning

# Coastal Wetlands

Figure 7b


Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Coastal Wetlands

Figure 7c

Study Area
Beach Access Route Vegetation Mapping
Mile Post
Potential ESHA
Beach Access Route
Permanent Impacts
Temporary Impacts

**Impact Type**

Surface Stabilization
Seawall (Phase 1)
50-year Seawall (Phase 2)
Soldier Piles
Headwall
Inlets
Improved Ditch/Drainage Ditch
Retrofit Area
Staging Area

**Vegetation**

Coastal Bluff Scrub - Disturbed
Coastal and Valley Freshwater Marsh
Arrow Weed Scrub
Saltgrass Grassland
Unvegetated Bluff
Beach
Non-native Vegetation
Disturbed Habitat
Developed

17th Street Lifeguard Tower
17th St
Coast Blvd
Pacific Ocean
244.1
2 5'x5' Inlets
1 12'x1' Headwall
Stabilization DMB5 SA16
Improved Ditch 5'x745'
244.2
50-yr Seawall L= 144'
Improved Ditch 3'x480'
Seawall L= 424'
Retrofit Area DMB2 SN5
Improved Ditch 4'x392'
Retrofit Area DMB2 SN7N
5'x5' Inlet
Stabilization DMB5 SA21
244.3
Seawall L= 120'
Retrofit Area DMB2 SN7S
Improved Ditch 5'x335'
Retrofit Area DMB3 SP1
Soil Nail Wall
Retrofit Area DMB2 SN3
Retrofit Area DMB2 SN1N
Existing Seawall
Improved Ditch 4'x345'
Stabilization DMB5 SA20
Seawall L= 294'
244.4
Retrofit Area DMB2 SN1S
2 5'x5' Inlet
1 22'x1' Headwall
Existing Seawall
15th St
Camino Del Mar
Maiden Ln
Parish Ln
14th St
Ocean Ave
Stratford Ct
Pacific Ln
13th St
Lois Ln
12th St
Sea Orbit Ln
Stratford Ct

0 200 Feet

Source: Aerial (SanGIS 2019)

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig8_Vegetation_Impacts.mxd HNT-08-08 6/29/2021 - RK

HELIX Environmental Planning

# Vegetation/Impacts

Figure 8a

2 5'x5' Inlet
1 22'x1' Headwall
Existing Seawall
Retrofit Area
DMB2 SN2
Stabilization
DMB4
Stabilization
DMB5 SA23
Seawall
L= 200'
2 5'x5' Inlet and
1 12"x1' Headwall
Stabilization
DMB5 SA24
Concrete Drainage Ditch 8'x1012'
Stabilization
DMB5 SA22
Modify/Replace
Existing Structure
50-yr Seawall
L= 230'
Modify/Replace
Existing Structure
Seawall
L= 200'
Seawall
L= 64'
50-yr Seawall
L= 378'
Drainage Ditch 4'x580'
New Structure and Downdrain
Replaces the Existing
Retrofit Area
DMB3 SP2
244.5
Pedestrian Access
Improved Ditch 5'x1100'
244.6
Ocean Ave
244.7
Stabilization
DMB5 SA3
Retrofit Area
DMB2 SN6
Retrofit Area
2001 Emergency Repair
Retrofit Area
DMB3 SP3
244.8
Drainage Ditch 5'x605'
Stabilization
DMB5 SA15
Stabilization
DMB5 SA5
Stabilization
DMB5 SA14
Drainage Ditch 5'x378'
244.9
2 5'x5' Inlets
Modify/Replace
Existing Structure
2 5'x5' Inlets and
1 12"x1' Headwall
Access Road
Improvements
245.0
Graded Area
Pacific
Ocean
Sea Orbit Ln
Stratford Ct
11th St
Penny Ln
10th St
Melanie Way
9th St
Shippey Ln
8th St
Little Orphan Alley
Camino Del Mar
7th St
Sherry Ln
6th St

Study Area
Mile Post
Beach Access Route
Permanent Impacts
Temporary Impacts

**Impact Type**
Surface Stabilization
Seawall (Phase 1)
50-year Seawall (Phase 2)
Soldier Piles
Headwall
Inlets
Improved Ditch/Drainage Ditch
Graded Area
Modify/Replace Existing Structure
Retrofit Area
Access Road Improvements
Staging Area

**Vegetation**
Cismontane Alkali Marsh
Cismontane Alkali Marsh - Disturbed
Coastal Bluff Scrub
Coastal Bluff Scrub - Disturbed
Coastal and Valley Freshwater Marsh
Arundo Riparian
Diegan Coastal Sage Scrub
Saltgrass Grassland
Unvegetated Bluff
Beach
Non-native Vegetation
Disturbed Habitat
Developed

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig8_Vegetation_Impacts.mxd HNT-08-08 6/29/2021-RK

0 200 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Vegetation/Impacts

Figure 8b

245.0
Graded Area
Drainage Ditch 4'x815'
1 5'x5' Inlets and
1 12"x1' Headwall
245.1
Drainage Ditch 10'x450'
Stabilization
DMB5 SA13
50-yr Seawall
L= 225'
Replaces Existing Structure
Stabilization
DMB5 SA6N
245.2
Retrofit Area
DMB3 SP5
Retrofit Area
DMB3 SP6
Seawall
L= 823'
Retrofit Area
DMB3 SP7
245.3
Stabilization
DMB5 SA12
Retrofit Area
DMB3 SP4
Retrofit Area
DMB2 SN8
Stabilization
DMB5 SA8
245.4
Stabilization
DMB5 SA11
Stabilization
DMB5 SA9
Stabilization
DMB5 SA10
Soldier Pile Wall
with ACB Bottom U-Ditch
245.5
Drainage Ditch 3'x1180'
New DG Regraded
Access Road
Pacific
Ocean
4th St
Pedestrian-Bike Path
Surf View Ct
Seaforest Ct
Spinnaker Ct
Camino Del Mar
Ocean View Ave
W Ocean View Ave

- Study Area
- Mile Post
- Potential ESHA
- Beach Access Route
- Permanent Impacts
- Temporary Impacts

**Impact Type**

- Surface Stabilization
- Seawall (Phase 1)
- 50-year Seawall (Phase 2)
- Soldier Piles
- Headwall
- Improved Ditch/Drainage Ditch
- Graded Area
- Modify/Replace Existing Structure
- Retrofit Area
- Access Road Improvements
- Beach Laydown Area
- Staging Area

**Vegetation**

- Cismontane Alkali Marsh
- Cismontane Alkali Marsh - Disturbed
- Coastal Bluff Scrub
- Coastal Bluff Scrub - Disturbed
- Coastal and Valley Freshwater Marsh
- Coastal and Valley Freshwater Marsh - Disturbed
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Saltgrass Grassland
- Torrey Pines Forest
- Unvegetated Bluff
- Beach
- Non-native Vegetation
- Disturbed Habitat
- Developed

a
b
c
d

0 200 Feet

N

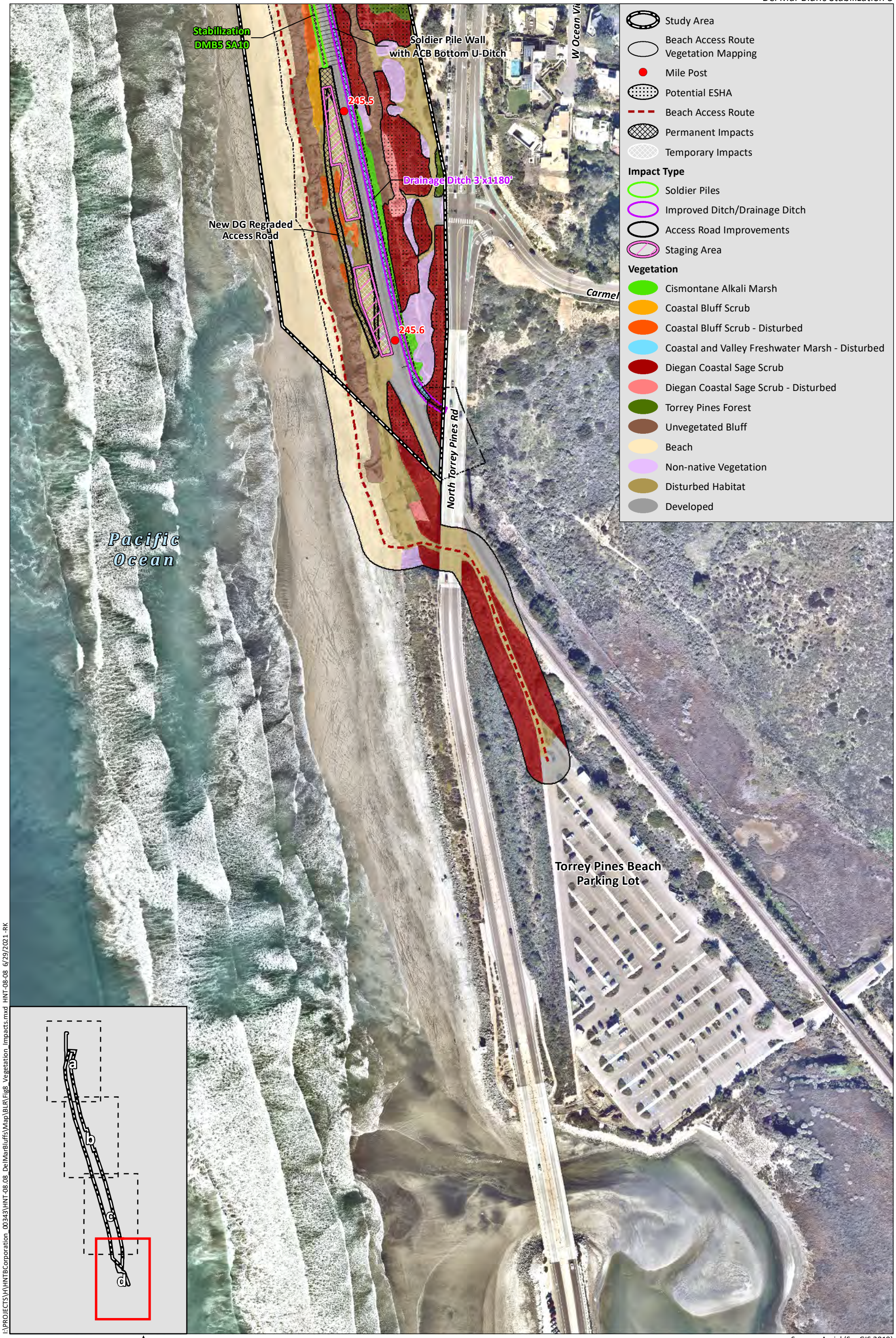
Source: Aerial (SanGIS 2019)

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig8_Vegetation_Impacts.mxd HNT-08-08 6/29/2021 RK

HELIX Environmental Planning

# Vegetation/Impacts

Figure 8c




I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig8_Vegetation_Impacts.mxd HNT-08-08 6/29/2021 - RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Vegetation/Impacts

Figure 8d

Study Area
Mile Post
Approximate High Tide Line
Beach Access Route
Permanent Impacts
Temporary Impacts

**Impact Type**

Surface Stabilization
Seawall (Phase 1)
50-year Seawall (Phase 2)
Soldier Piles
Headwall
Inlets
Improved Ditch/Drainage Ditch
Retrofit Area
Staging Area

**Non-jurisdictional Features**

Concrete-lined Drainage Ditch
Culvert Outlet
Vegetated Earthen Swale

**Wetland Waters**

Arrow Weed Scrub

**Non-wetland Waters**

Beach

17th Street Lifeguard Tower
Pacific Ocean
244.1
244.2
244.3
244.4
2 5'x5' Inlets
1 12'x1' Headwall
Stabilization DMB5 SA16
50-yr Seawall L= 144'
Improved Ditch 3'x480'
Seawall L= 424'
Retrofit Area DMB2 SN5
Retrofit Area DMB2 SN7N
Stabilization DMB5 SA21
Seawall L= 120'
Retrofit Area DMB2 SN7S
Retrofit Area DMB3 SP1
Existing Seawall
Stabilization DMB5 SA20
Seawall L= 294'
Retrofit Area DMB2 SN1S
2 5'x5' Inlet
1 22'x1' Headwall
Existing Seawall
Improved Ditch 5'x745'
Improved Ditch 4'x392'
5'x5' Inlet
Improved Ditch 5'x335'
Soil Nail Wall
Retrofit Area DMB2 SN3
Retrofit Area DMB2 SN1N
Improved Ditch 4'x345'
Coast Blvd
15th St
Camino Del Mar
Maiden Ln
Parish Ln
Ocean Ave
Stratford Ct
Pacific Ln
14th St
13th St
Lois Ln
12th St
Sea Orbit Ln
Stratford Ct
a
b
c
d
0
200 Feet
N

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig9_USACE_Impacts.mxd HNT-08-08 6/29/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Waters of the U.S./Impacts

Figure 9a

2 5'x5' Inlet
1 22'x1' Headwall
Existing Seawall
Retrofit Area
DMB2 SN2
Stabilization
DMB4
Stabilization
DMB5 SA23
Seawall
L= 200'
2 5'x5' Inlet and
1 12"x1' Headwall
Stabilization
DMB5 SA24
Concrete Drainage Ditch 8'x1012'
Stabilization
DMB5 SA22
Modify/Replace
Existing Structure
50-yr Seawall
L= 230'
Modify/Replace
Existing Structure
Seawall
L= 200'
Seawall
L= 64'
50-yr Seawall
L= 378'
Drainage Ditch 4'x580'
2 5'x5' Inlets and
1 12"x1' Headwall
Graded Area
New Structure and Downdrain
Replaces the Existing
Retrofit Area
DMB3 SP2
244.5
Improved Ditch 5'x1100'
244.6
244.7
Stabilization
DMB5 SA3
Retrofit Area
DMB2 SN6
Retrofit Area
2001 Emergency Repair
Retrofit Area
DMB3 SP3
244.8
Drainage Ditch 5'x605'
Stabilization
DMB5 SA15
Stabilization
DMB5 SA5
Stabilization
DMB5 SA14
Drainage Ditch 5'x378'
244.9
2 5'x5' Inlets
Modify/Replace
Existing Structure
Access Road
Improvements
245.0
Sea Orbit Ln
Stratford Ct
11th St
Penny Ln
Pedestrian Access
10th St
Melanie Way
Ocean Ave
9th St
Shippey Ln
8th St
Camino Del Mar
Little Orphan Alley
7th St
Sherry Ln
Stratford Ct
6th St
Pacific Ocean

Study Area
Mile Post
Approximate High Tide Line
Beach Access Route
Permanent Impacts
Temporary Impacts

**Impact Type**
Surface Stabilization
Seawall (Phase 1)
50-year Seawall (Phase 2)
Soldier Piles
Headwall
Inlets
Improved Ditch/Drainage Ditch
Graded Area
Modify/Replace Existing Structure
Retrofit Area
Access Road Improvements
Staging Area

**Non-jurisdictional Features**
Concrete-lined Drainage Ditch
Culvert
Culvert Inlet
Culvert Outlet

**Wetland Waters**
Cismontane Alkali Marsh
Cismontane Alkali Marsh - Disturbed
Coastal and Valley Freshwater Marsh

**Non-wetland Waters**
Beach
Stream

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig9_USACE_Impacts.mxd HNT-08-08 6/29/2021 -RK

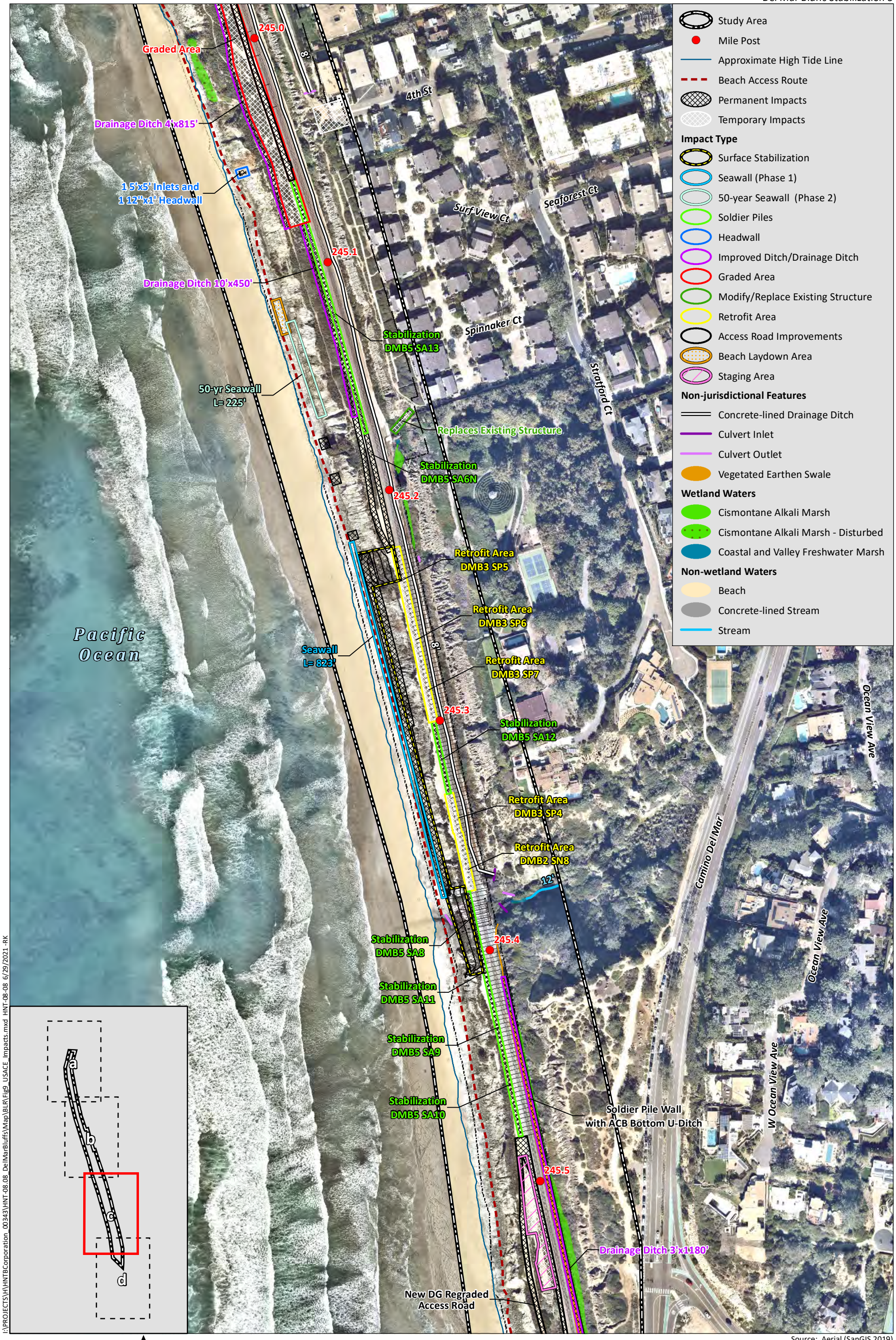
0 200 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Waters of the U.S./Impacts

Figure 9b




I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig9_USACE_Impacts.mxd HNT-08-08 6/29/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Waters of the U.S./Impacts

Figure 9c

Stabilization DMB5 SA10
Soldier Pile Wall with ACB Bottom U-Ditch
245.5
Drainage Ditch 3' x 1180'
New DG Regraded Access Road
245.6
W Ocean Vi
Carmel Valley Rd
North Torrey Pines Rd
Pacific Ocean
Torrey Pines Beach Parking Lot

Study Area
Mile Post
Approximate High Tide Line
Beach Access Route
Permanent Impacts
Temporary Impacts
**Impact Type**
Soldier Piles
Improved Ditch/Drainage Ditch
Access Road Improvements
Staging Area
Vegetated Earthen Swale
**Wetland Waters**
Cismontane Alkali Marsh
**Non-wetland Waters**
Beach

a
b
c
d

0 200 Feet

Source: Aerial (SanGIS 2019)

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig9_USACE_Impacts.mxd HNT-08-08 6/29/2021 -RK

HELIX Environmental Planning

# Waters of the U.S./Impacts

Figure 9d


I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig10_CCC_Impacts.mxd HNT-08-08 6/29/2021 -RK

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Coastal Wetlands/Impacts

Figure 10a

2 5'x5' Inlet
1 22'x1' Headwall
Existing Seawall
Retrofit Area
DMB2 SN2
Stabilization
DMB4
Stabilization
DMB5 SA23
Seawall
L= 200'
2 5'x5' Inlet and
1 12"x1' Headwall
Stabilization
DMB5 SA24
Concrete Drainage Ditch 8'x1012'
Stabilization
DMB5 SA22
Modify/Replace
Existing Structure
50-yr Seawall
L= 230'
Modify/Replace
Existing Structure
Seawall
L= 200'
Seawall
L= 64'
50-yr Seawall
L= 378'
Drainage Ditch 4'x580'
2 5'x5' Inlets and
1 12"x1' Headwall
Graded Area
New Structure and Downdrain
Replaces the Existing
Retrofit Area
DMB3 SP2
244.5
Improved Ditch 5'x1100'
244.6
244.7
Stabilization
DMB5 SA3
Retrofit Area
DMB2 SN6
Retrofit Area
2001 Emergency Repair
Retrofit Area
DMB3 SP3
244.8
Drainage Ditch 5'x605'
Stabilization
DMB5 SA15
Stabilization
DMB5 SA5
Stabilization
DMB5 SA14
Drainage Ditch 5'x378'
244.9
2 5'x5' Inlets
Modify/Replace
Existing Structure
Access Road
Improvements
245.0
Pacific
Ocean
Sea Orbit Ln
Stratford Ct
11th St
Penny Ln
10th St
Melanie Way
9th St
Ocean Ave
Shippey Ln
8th St
Camino Del Mar
8th St
Little Orphan Alley
7th St
Sherry Ln
Stratford Ct
6th St

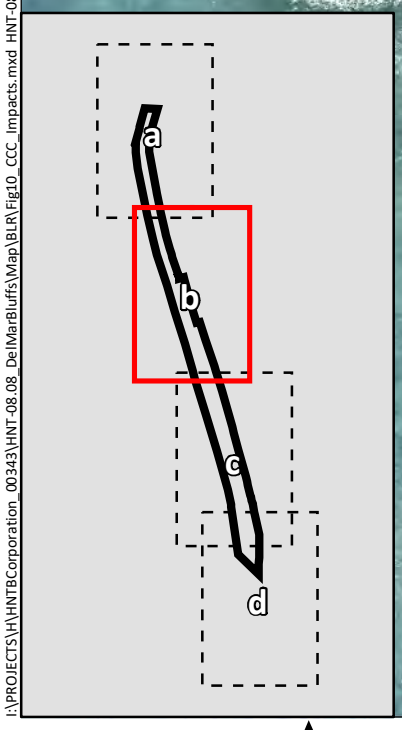
- Study Area
- Approximate High Tide Line
- Mile Post
- Beach Access Route
- Permanent Impacts
- Temporary Impacts

**Impact Type**

- Surface Stabilization
- Seawall (Phase 1)
- 50-year Seawall (Phase 2)
- Soldier Piles
- Headwall
- Inlets
- Improved Ditch/Drainage Ditch
- Graded Area
- Modify/Replace Existing Structure
- Retrofit Area
- Access Road Improvements
- Staging Area

**Coastal Wetlands**

- Cismontane Alkali Marsh
- Cismontane Alkali Marsh - Disturbed
- Coastal and Valley Freshwater Marsh
- Arundo Riparian
- Beach




I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig10_CCC_impacts.mxd HNT-08-08 6/29/2021 -RK

0 200 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

# Coastal Wetlands/Impacts

Figure 10b

245.0
Graded Area
Drainage Ditch 4'x815'
1 5'x5' Inlets and
1 12"x1' Headwall
245.1
Drainage Ditch 10'x450'
Stabilization
DMB5 SA13
50-yr Seawall
L= 225'
Replaces Existing Structure
Stabilization
DMB5 SA6N
245.2
Retrofit Area
DMB3 SP5
Retrofit Area
DMB3 SP6
Seawall
L= 823'
Retrofit Area
DMB3 SP7
245.3
Stabilization
DMB5 SA12
Retrofit Area
DMB3 SP4
Retrofit Area
DMB2 SN8
Stabilization
DMB5 SA8
245.4
Stabilization
DMB5 SA11
Stabilization
DMB5 SA9
Stabilization
DMB5 SA10
Soldier Pile Wall
with ACB Bottom U-Ditch
245.5
Drainage Ditch 3'x1180'
New DG Regraded
Access Road
Pacific
Ocean
4th St
Surf View Ct
Seaforest Ct
Spinnaker Ct
Ocean View Ave
Ocean View Ave
W Ocean View Ave
Camino Del Mar
Carmel Valle

- Study Area
- Approximate High Tide Line
- Mile Post
- Beach Access Route
- Permanent Impacts
- Temporary Impacts

**Impact Type**

- Surface Stabilization
- Seawall (Phase 1)
- 50-year Seawall (Phase 2)
- Soldier Piles
- Headwall
- Improved Ditch/Drainage Ditch
- Graded Area
- Modify/Replace Existing Structure
- Retrofit Area
- Access Road Improvements
- Beach Laydown Area
- Staging Area

**Coastal Wetlands**

- Cismontane Alkali Marsh
- Cismontane Alkali Marsh - Disturbed
- Coastal and Valley Freshwater Marsh
- Coastal and Valley Freshwater Marsh - Disturbed
- Beach

a
b
c
d

0 200 Feet

N

Source: Aerial (SanGIS 2019)

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig10_CCC_Impacts.mxd HNT-08-08 6/29/2021 -RK

HELIX Environmental Planning

# Coastal Wetlands/Impacts

Figure 10c

Stabilization DMB5 SA10

Soldier Pile Wall with ACB Bottom U-Ditch

245.5

Drainage Ditch 3'x1180'

New DG Regraded Access Road

245.6

Camino Del Mar

W Ocean Vi

Carmel Valley Rd

North Torrey Pines Rd

Pacific Ocean

Torrey Pines Beach Parking Lot

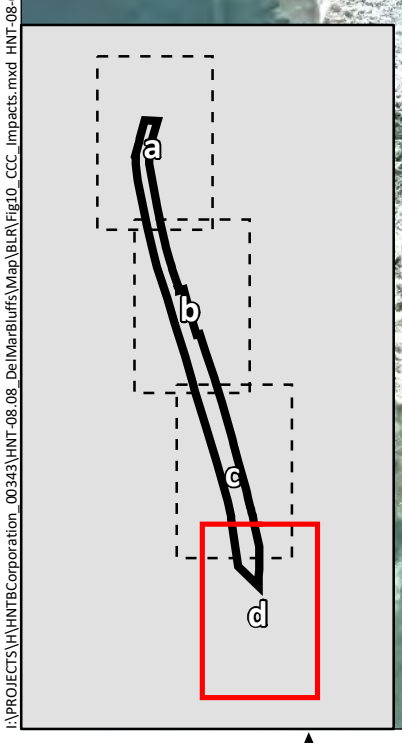
Study Area
Approximate High Tide Line
Mile Post
Beach Access Route
Permanent Impacts
Temporary Impacts

**Impact Type**

Soldier Piles
Improved Ditch/Drainage Ditch
Access Road Improvements
Staging Area

**Coastal Wetlands**

Cismontane Alkali Marsh
Coastal and Valley Freshwater Marsh - Disturbed
Beach




0 200 Feet

N

Source: Aerial (SanGIS 2019)

I:\PROJECTS\H\HNTBCorporation_00343\HNT-08.08_DelMarBluffs\Map\BLR\Fig10_CCC_Impacts.mxd HNT-08-08 6/29/2021 -RK

HELIX Environmental Planning

# Coastal Wetlands/Impacts

Figure 10d

# Attachment A

## Representative Site Photos

Photo 1. Looking north at eroded, unvegetated bluff adjacent to railroad in the northern part of the study area.

Photo 2. Looking south at freshwater marsh within an upland-constructed swale adjacent to the railroad in the northern part of the study area.

Photo 3. Looking north at a small stand of arrow weed scrub on the eroded bluff face in the northern part of the study area.

Photo 4. Looking south at disturbed bluff and a concrete storm water outlet onto the beach in the northern part of the study area.

Photo 5. Looking south at the bluff adjacent to the railroad in the central part of the study area. Cismontane alkali marsh is growing on a small portion of the bluff face, with coastal bluff scrub immediately to the south.

Photo 6. Looking south at non-native vegetation along the railroad and adjacent unvegetated, eroding bluff in the central part of the study area.

Photo 7. Looking northeast at cismontane alkali marsh and a small stand of freshwater marsh near the base of the bluff east of the railroad in the southern part of the study area. A concrete-lined ditch parallels the railroad in this location. Non-native vegetation is present on the slopes and in the foreground.

Photo 8. Looking south at the railroad in the southern part of the study area. An upland-constructed swale vegetated with freshwater marsh parallels the railroad, and cismontane alkali marsh is present along portions of the adjacent bluff.

Photo 9. Looking north at the railroad in the southern part of the study area. Cismontane alkali marsh is present on the bluff face east of the railroad where seepage from irrigation and urban runoff provides a source of hydrology. Disturbed freshwater marsh occurs in the upland-constructed swale at the base of the bluff, paralleling the railroad.

Photo 10. Looking southeast at the southern end of the study area. Disturbed freshwater marsh occurs in the upland-constructed swale paralleling the railroad and Diegan coastal sage scrub is adjacent, extending offsite to the east below the North Torrey Pines Road bridge.

Photo 11. Looking south at the beach access route from in front of the 17th Street Lifeguard Tower.

Photo 12. Looking south near the start of the beach access route beginning at Torrey Pines State Beach parking lot.

Photo 13. Looking west at the southerly beach access route where it crosses below North Torrey Pines Road bridge.

Photo 14. Looking north at the southerly beach access route near the south end of the project study area.

# Attachment B

## Plant Species Observed

# Attachment B
# Plant Species Observed

| Family | Scientific Name* | Common Name | Habitat** |
|---|---|---|---|
| **Native Species** | | | |
| Anacardiaceae | *Malosma laurina* | laurel sumac | DCSS |
| | *Rhus integrifolia* | lemonadeberry | CBS, DCSS, NNV |
| Asteraceae | *Ambrosia psilostachya* | western ragweed | DCSS |
| | *Artemisia californica* | California sagebrush | CBS, DCSS |
| | *Artemisia dracunculus* | tarragon | DCSS |
| | *Baccharis salicifolia* | mule fat | CAM |
| | *Encelia californica* | California encelia | CBS, DCSS, NNV, TPF |
| | *Erigeron canadensis* | horseweed | NNV |
| | *Eriophyllum confertiflorum* | golden-yarrow | DCSS |
| | *Isocoma menziesii var. menziesii* | goldenbush | CBS, DCSS, NNV |
| | *Pluchea odorata* | salt marsh fleabane | CAM, FWM |
| | *Pluchea sericea* | arrow weed | AWS, NNV |
| | *Pseudognaphalium canescens* | everlasting | DCSS |
| | *Stephanomeria diegensis* | San Diego wreath-plant | DCSS, TPF |
| | *Stylocline gnaphaloides* | everlasting nest straw | DCSS |
| Boraginaceae | *Cryptantha sp.* | cryptantha | DCSS |
| | *Heliotropium curassavicum var. oculatum* | salt heliotrope | DH, NNV |
| | *Lepidium nitidum* | shining peppergrass | CBS |
| Cactaceae | *Opuntia littoralis* | coastal prickly pear | DCSS, NNV, TPF |
| Capparaceae | *Peritoma arborea* | bladderpod | CBS, DCSS |
| Chenopodiaceae | *Atriplex canescens ssp. canescens* | shad scale | CBS |
| Convolvulaceae | *Calystegia macrostegia* | morning-glory | CBS, DCSS, TPF |
| Crassulaceae | *Crassula connata* | pygmy-weed | DCSS, DH |
| | *Dudleya edulis* | ladies-fingers | CBS, DCSS, NNV |
| Cupressaceae | *Hesperocyparis macrocarpa* | Monterey cypress | NNV |
| Cyperaceae | *Eleocharis macrostachya* | pale spike-rush | FWM |
| | *Schoenoplectus americanus* | American rush | FWM |
| Euphorbiaceae | *Croton setigerus* | dove weed | DCSS |
| Fabaceae | *Acmispon glaber* | deerweed | DCSS, NNV, TPF |
| Juncaceae | *Juncus acutus ssp. leopoldii** | southwestern spiny rush | CAM |
| | *Juncus balticus ssp. ater* | Baltic rush | CAM, FWM |
| Lamiaceae | *Salvia mellifera* | black sage | DCSS |
| Nyctaginaceae | *Abronia umbellata ssp. umbellata* | beach sand verbena | DCSS |
| | *Mirabilis laevis ssp. crassifolia* | wishbone bush | DCSS |
| Onagraceae | *Camissoniopsis bistorta* | California sun cup | DCSS |
| Pinaceae | *Pinus torreyana ssp. torreyana** | Torrey pine | TPF |
| Poaceae | *Distichlis spicata* | saltgrass | NNV, SGR |

# Attachment B (cont.)
# Plant Species Observed

| Family | Scientific Name* | Common Name | Habitat** |
|---|---|---|---|
| **Native Species (cont.)** | | | |
| Polygonaceae | *Eriogonum fasciculatum* | buckwheat | CBS, DCSS, TPF |
| Salicaceae | *Salix lasiolepis* | arroyo willow | NNV |
| Saururaceae | *Anemopsis californica* | yerba mansa | CAM, FWM |
| Simmondsiaceae | *Simmondsia chinensis* | jojoba | CBS, DCSS |
| Solanaceae | *Lycium californicum** | California box-thorn | CBS |
| | *Solanum douglasii* | Douglas nightshade | CBS, NNV |
| Typhaceae | *Typha domingensis* | southern cattail | CAM, FWM |
| **Non-native Species** | | | |
| Agavaceae | *Agave americana* | century plant | NNV |
| Aizoaceae | *Carpobrotus edulis* | hottentot-fig | ADR, CAM, CBS, DCSS, DH, NNV, SGR, TPF |
| | *Malephora crocea* | Iceplant | NNV |
| | *Mesembryanthemum crystallinum* | crystalline iceplant | CBS, NNV |
| | *Mesembryanthemum nodiflorum* | slender-leaved iceplant | NNV |
| Asteraceae | *Centaurea melitensis* | tocalote | DH, NNV |
| | *Gazania linearis* | treasure flower | CBS |
| | *Glebionis coronaria* | garland daisy | DH, NNV |
| | *Matricaria discoidea* | pineapple weed | DH, NNV |
| | *Sonchus oleraceus* | common sow thistle | NNV, SGR |
| Brassicaceae | *Matthiola incana* | common stock | CBS, DH |
| | *Raphanus sativus* | wild radish | CBS |
| Brassicaceae | *Sisymbrium sp.* | Mustard | DCSS |
| Cactaceae | *Opuntia ficus-indica* | Indian-fig cactus | NNV |
| Caryophyllaceae | *Spergularia sp.* | sand-spurrey | DH |
| Chenopodiaceae | *Atriplex semibaccata* | Australian saltbush | DH, SGR |
| | *Salsola tragus* | Russian thistle | DH, NNV, SGR |
| Crassulaceae | *Crassula ovata* | jade plant | NNV |
| Cyperaceae | *Cyperus involucratus* | umbrella plant | ADR, FWM |
| Euphorbiaceae | *Chamaesyce albomarginata* | rattlesnake weed | DCSS |
| | *Euphorbia peplus* | petty spurge | DCSS |
| Fabaceae | *Melilotus indicus* | Indian sweet clover | CBS, NNV |
| Malvaceae | *Malva parviflora* | cheeseweed | NNV |
| Myrsinaceae | *Anagallis arvensis* | scarlet pimpernel | ADR, DH, SGR |
| Oxalidaceae | *Oxalis pes-caprae* | Bermuda buttercup | CBS |
| Plumbaginaceae | *Limonium perezii* | statice | AWS, DCSS, DH, NNV |
| | *Limonium sinuatum* | sea-lavender | NNV |
| Poaceae | *Arundo donax* | giant reed | ADR, NNV |

# Attachment B (cont.)
# Plant Species Observed

| Family | Scientific Name* | Common Name | Habitat** |
|---|---|---|---|
| **Non-native Species (cont.)** | | | |
| Poaceae (cont.) | *Bromus diandrus* | common ripgut grass | DCSS, NNV |
| | *Cortaderia selloana* | white pampas grass | DCSS |
| | *Hordeum murinum* | hare barley | NNV |
| | *Pennisetum setaceum* | purple fountain grass | DCSS |
| Scrophulariaceae | *Myoporum laetum* | false sandalwood | NNV |
| Solanaceae | *Nicotiana glauca* | tree tobacco | DCSS |
| Tamaricaceae | *Tamarix ramosissima* | saltcedar | NNV |
| Tropaeolaceae | *Tropaeolum majus* | nasturtium | ADR |

*Sensitive species (California Rare Plant Rank 1 to 4)

**ADR=arundo-dominated riparian; AWS=arrowweed scrub; CAM=cismontane alkali marsh; CBS=coastal bluff scrub; DCSS=Diegan coastal sage scrub; DH=disturbed habitat; FWM=freshwater marsh; NNV=non-native vegetation; SGR=saltgrass grassland; TPF=Torrey pine forest

# Attachment C

## Animal Species Observed or Detected

# Attachment C
# Animal Species Observed or Detected

| Taxon | | Scientific Name† | Common Name |
|---|---|---|---|
| **Order** | **Family** | | |
| **INVERTEBRATES** | | | |
| Hymenoptera | Apidae | *Apis mellifera* | western honey bee |
| Lepidoptera | Nymphalidae | *Junonia coenia* | common buckeye |
| | Pieridae | *Pieris rapae* | cabbage white |
| **VERTEBRATES** | | | |
| **Amphibians and Reptiles** | | | |
| Anura | Hylidae | *Pseudacris hypochondriaca* | Baja California treefrog |
| Squamata | Colubridae | *Lampropeltis californiae* | California kingsnake |
| | Phrynosomatidae | *Sceloporus occidentalis* | western fence lizard |
| | Phrynosomatidae | *Uta stansburiana* | side-blotched lizard |
| **Birds** | | | |
| Accipitriformes | Pandionidae | *Pandion haliaetus†* | osprey |
| Apodiformes | Trochilidae | *Calypte anna* | Anna's hummingbird |
| Charadriiformes | Laridae | *Larus sp.* | gull |
| | Laridae | *Thalasseus maximus* | royal tern |
| Columbiformes | Columbidae | *Zenaida macroura* | mourning dove |
| Passeriformes | Aegithalidae | *Psaltriparus minimus* | bushtit |
| | Corvidae | *Corvus brachyrhynchos* | American crow |
| | Fringillidae | *Haemorhous mexicanus* | house finch |
| | Mimidae | *Mimus polyglottos* | northern mockingbird |
| | Parulidae | *Geothlypis trichas* | common yellowthroat |
| | Passerellidae | *Melospiza melodia* | song sparrow |
| | Passeridae | *Passer domesticus* | house sparrow |
| | Tyrannidae | *Sayornis nigricans* | black phoebe |
| Pelecaniformes | Ardeidae | *Egretta thula* | snowy egret |
| | Pelecanidae | *Pelecanus occidentalis†* | brown pelican |
| **Mammals** | | | |
| Lagomorpha | Leporidae | *Sylvilagus audubonii* | desert cottontail |
| Rodentia | Sciuridae | *Otospermophilus beecheyi* | California ground squirrel |

† Special Status Species