



# Biological Resources Technical Memorandum

City of Encinitas, California

Verdi Avenue Pedestrian Rail Undercrossing  
Project

January 2025



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## Executive Summary

The City of Encinitas is proposing the Verdi Avenue Pedestrian Rail Undercrossing Project (project) to provide a safe and legal railroad crossing between two locations along San Elijo Avenue and South Coast Highway 101.

This Biological Resources Technical Memorandum integrates information collected from a variety of literature sources and field surveys to describe the biological resources within the vicinity of the biological study area (BSA), or geographic extent for the biological resources evaluation. Information was gathered from publicly available literature, reviews of aerial photography and U.S. Geological Survey (USGS) topographic maps, data from the State of California Department of Fish and Wildlife (CDFW), data from the U.S. Fish and Wildlife Service (USFWS), and the results of field surveys conducted in 2018. The purpose of the data collection and analysis for this report is to determine whether any sensitive species or habitats, including areas subject to jurisdiction by the U.S. Army Corps of Engineers (USACE), CDFW, and Regional Water Quality Control Board (RWQCB), could be significantly impacted by development of the project. The following best management practices (BMP) are considered to be part of the project and would be implemented by the City of Encinitas to reduce the potential for significant impacts to biological resources to occur:

- **BMP BIO-1 Environmentally Sensitive Area (ESA) Fencing:** ESA fencing shall be placed along the perimeter of the project footprint. Prior to vegetation clearing, the boundary of the project footprint shall be marked clearly in the field by the construction contractor and the City shall retain the services of a qualified biologist to confirm the limits of work. The marked boundaries will be maintained throughout the duration of construction. Staging areas, including lay down areas and equipment storage areas shall be flagged and fenced with ESA fencing.

No work activities, materials or equipment storage or access shall be permitted outside of the project footprint. All parking and equipment storage areas associated with the project shall be confined within the project footprint or to previously disturbed offsite areas. Undisturbed areas and off-site species habitat shall not be used for parking or equipment storage. Project related vehicle traffic shall be restricted to the railroad, established roads, construction areas, storage areas, and staging and parking areas.

- **BMP BIO-2 Migratory Birds:** When feasible, removal of nesting habitat shall occur outside of the bird breeding season. The bird breeding season generally extends from February 15 through August 31. If nesting habitat must be removed during the bird breeding season, the City shall retain the services of a qualified biologist to conduct pre-construction nest surveys within 7 days prior to vegetation clearing activities. If active nests are observed, an appropriate buffer would be determined by the project biologist, and a “no work zone” shall be established until the nest is abandoned or the young have fledged.

A summary of the results is provided below:

- The study area supports only urban/developed areas, disturbed habitat, and non-native vegetation. No impacts to special-status vegetation communities would occur.
- No suitable habitat for special-status species is present within the study area, therefore no direct impacts to special-status species would occur. Implementation of BMP BIO-1 and

BMP BIO-2 would avoid potential indirect effects to special-status species that may occur in the vicinity of the project.

- No California Coastal Commission (CCC) wetland or Environmentally Sensitive Habitat Areas or USACE/RWQCB/CDFW- regulated waters occur within the project footprint. Implementation of BMP BIO-1 would avoid potential indirect effects to potentially regulated features that may occur in the vicinity of the project.

# 1 Introduction

This Biological Resources Technical Memorandum provides a detailed description of the biological resources analysis conducted for the project. This report has been prepared to support documentation for compliance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and the Federal and California Endangered Species Acts. Biological resources discussed in this report include plant and wildlife species that have received special designation by federal, state, or local government agencies; vegetation communities that provide habitat for these species; and waters and wetlands potentially subject to jurisdiction by the USACE, CDFW, CCC, and RWQCB. This memorandum is intended to provide an overview of the biological resources in the vicinity of the project and serves as a foundation for the analysis of potential effects on biological resources.

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## 2 Project Location and Description

### 2.1 Project Location

The project is located in the Cardiff community generally between Verdi Avenue and Liszt Avenue in the City of Encinitas (Figure 1, Regional Vicinity and Project Location and Figure 2, Biological Survey Area). The project site (synonymous with project footprint) is approximately 4.06 acres located primarily within the railroad ROW owned by NCTD, and also includes portions of adjacent City streets (San Elijo Avenue and South Coast Highway 101).

A 1.3-mile segment of the Coastal Rail Trail was recently constructed through the project site parallel and to the east of the railroad tracks. The project site is approximately 870 feet north of the Montgomery Avenue pedestrian crossing location previously approved with the Encinitas Grade Separated Pedestrian Crossings Project.

Surrounding land uses include:

- North – railroad ROW. The undercrossing at Santa Fe Drive located 2/3 mile to the north of the project site provides a safe and legal railroad crossing.
- East – San Elijo Avenue; the land across San Elijo Avenue is occupied by single-family residences.
- South – railroad ROW. Chesterfield Drive is located 2/3 mile to the south of the project site provides a safe and legal railroad crossing.
- West – South Coast Highway 101; the land across South Coast Highway 101 is occupied by San Elijo State Beach.

### 2.2 Project Description

The project would provide a safe and legal railroad crossing between two locations along San Elijo Avenue and South Coast Highway 101 (Figure 3, Major Project Components).

A summary of the major project components and design elements is provided below:

- *Railroad Undercrossing* – The project includes a new three-span double-track undercrossing structure within the NCTD railroad ROW (perpendicular to the tracks) at approximately Milepost 239.3. The undercrossing includes a 10-foot-wide paved pathway, ramp, and stairs connecting to the paths of travel east of the railroad, and sidewalks connecting to South Coast Highway 101 west of the railroad.
- *Landscaping and Planting* - The proposed landscaping would resemble a unified palette that blends well with the appearance of recently completed undercrossing projects to the north and south of the project site (Santa Fe and El Portal crossings) and the adjacent Coastal Rail Trail project. The proposed plant material will consist of California and Baja natives. The design guidelines for the Coastal Rail Trail established by the Coastal Mobility and Livability Working Group were considered to achieve a seamless transition where the two projects adjoin.
- *Hardscape Elements* – The project theme would be “Land,” similar to the previously-approved theme for the Montgomery Avenue crossing, and would include hardscape

features that emphasize the coastal bluffs that occur within the City's coastline (Figure 3, Project Design Elements). The project includes 10-foot wide meandering pathways, new retaining walls, garden walls, and public art on the undercrossing that would complement the existing natural coastal environment and community aesthetics. Community input has been received through project specific outreach events where over 60 residents came to express their views.

Proposed hardscape features would include earth-tone colored concrete along the pedestrian ramps, a steel grate pathway with cobble and rip rap under the railroad tracks, stone facade at the access points on both sides of the undercrossing, and ADA ramps and stair access. Decorative garden walls would incorporate a special treatment to emulate natural bluff layers.

- *Fencing* - To promote use of the undercrossing, 4-foot-high post and cable fencing would be installed along the western perimeter of the railroad ROW for a distance to be determined by California Public Utilities Commission (CPUC). On the east side of the tracks, fencing will tie into the Coastal Rail Trail fencing already in place.
- *Lighting* – The project would include 70-watt, high-pressure sodium lights mounted on 42-inch-high bollards along the meandering pathways and near the undercrossing entrances, 25-watt fluorescent step lights mounted to the railings along pedestrian ramps, and 100-watt high-pressure sodium fixtures mounted below the undercrossing bridge. Lighting at the undercrossing would consist of a ceiling mounted fixture that is vandal resistant. Lighting would primarily consist of footpath lighting for pedestrian safety, with most lighting in the tunnel, and is not anticipated to impact residential land uses on San Elijo Avenue.
- *New Crosswalks* – The project includes new 15-foot wide yellow crosswalks located at the intersections of San Elijo Avenue/Verdi Avenue and San Elijo Avenue/Liszt Avenue that would direct pedestrians and bikers to enhanced entry points to the project site. These paths of travel would allow pedestrians and bikers to cross the surface features, fencing, and the segment of the Coastal Rail Trail through the project site. The project also includes a new 20-foot wide white crosswalks along the north and southbound lanes of South Coast Highway 101 that would be compatible with existing and planned bike lanes. Crosswalks along South Coast Highway 101 would be protected by a mid-block, pedestrian-activated signal and associated crosswalk infrastructure.
- *Grading and Drainage* – The project includes 2:1 manufactured slopes throughout the project site with new retaining walls up to 10 feet in height. The project would increase impervious surface area by 15,025 square feet, and would require 4,793 cubic yards of cut, 1,274 cubic yards of fill; thereby resulting in a total net export of 3,518 cubic yards of soil.

New drainage infrastructure and permanent Best Management Practices are proposed to withstand the concentrated flow from Verdi Avenue and the existing trackside ditch through the project limits. Storm drain design would adhere to the guidelines set forth in Chapter 6 of the City of Encinitas Engineering Design Manual dated October 2009. Proposed drainage infrastructure is described below:

- A 30-inch reinforced concrete pipe storm drain system is proposed to drain flows entering the proposed catch basin on San Elijo Avenue. This storm drain system is proposed to turn south and run under the Coastal Rail Trail, where it would join with the flows from the existing track side ditch.

- A 5-foot by 3-foot reinforced concrete block is proposed to route the existing track ditch flows through the project site. A headwall is proposed where the existing track ditch will be discharged. The flow from the 30-inch reinforced concrete pipe storm drain will join with the track ditch flow in the reinforced concrete box culvert under the CRT. Once the reinforced concrete box culvert crosses the southern access ramp down to the underpass, the reinforced concrete box culvert would turn and outlet into the track ditch.
- Trackside ditches are proposed where necessary to prevent onsite and offsite drainage into the ballast area. Lined ditches are proposed only where space is limited or slope or velocity constraints require their use.
- A 21-foot long catch basin in a sump condition is proposed on San Elijo Avenue at the outlet of the existing cross-gutter at Verdi Avenue. A 21-foot long catch basin, with a 4-foot depth is proposed.
- A pump station is proposed to capture runoff tributary to the undercrossing, and divert this water into the RCB culvert used to divert the trackside ditch and Verdi Avenue runoff. An 18-inch reinforced concrete pipe is proposed to convey runoff from the pumps to the proposed reinforced concrete box culvert under the CRT.
- An articulated concrete block ditch is proposed south of the underpass to prevent erosion and protect against higher velocities.

The proposed facilities would be sized to convey runoff and protect the undercrossing during a 100-year storm event. The 100-year storm event meets NCTD design requirements, and would maintain long-term functionality of the undercrossing. Water quality Best Management Practices would be incorporated into proposed infrastructure. The infiltration trenches constructed as part of the Coastal Rail Trail would be reconstructed, or the associated water quality volumes will be incorporated into proposed Best Management Practices.

### 2.2.1 Definitions

The following definitions are used to describe the location of the various survey activities conducted during onsite fieldwork:

- **Project area** is defined as the limits of impacts associated with full build-out of the proposed project, also known as the project footprint.
- **Biological Survey Area (BSA)** is defined as the area within the project area and a 35-foot buffer surrounding the project area. The BSA was mapped and evaluated for potential direct and indirect impacts to biological resources.

Figure 1. Regional Vicinity and Project Location

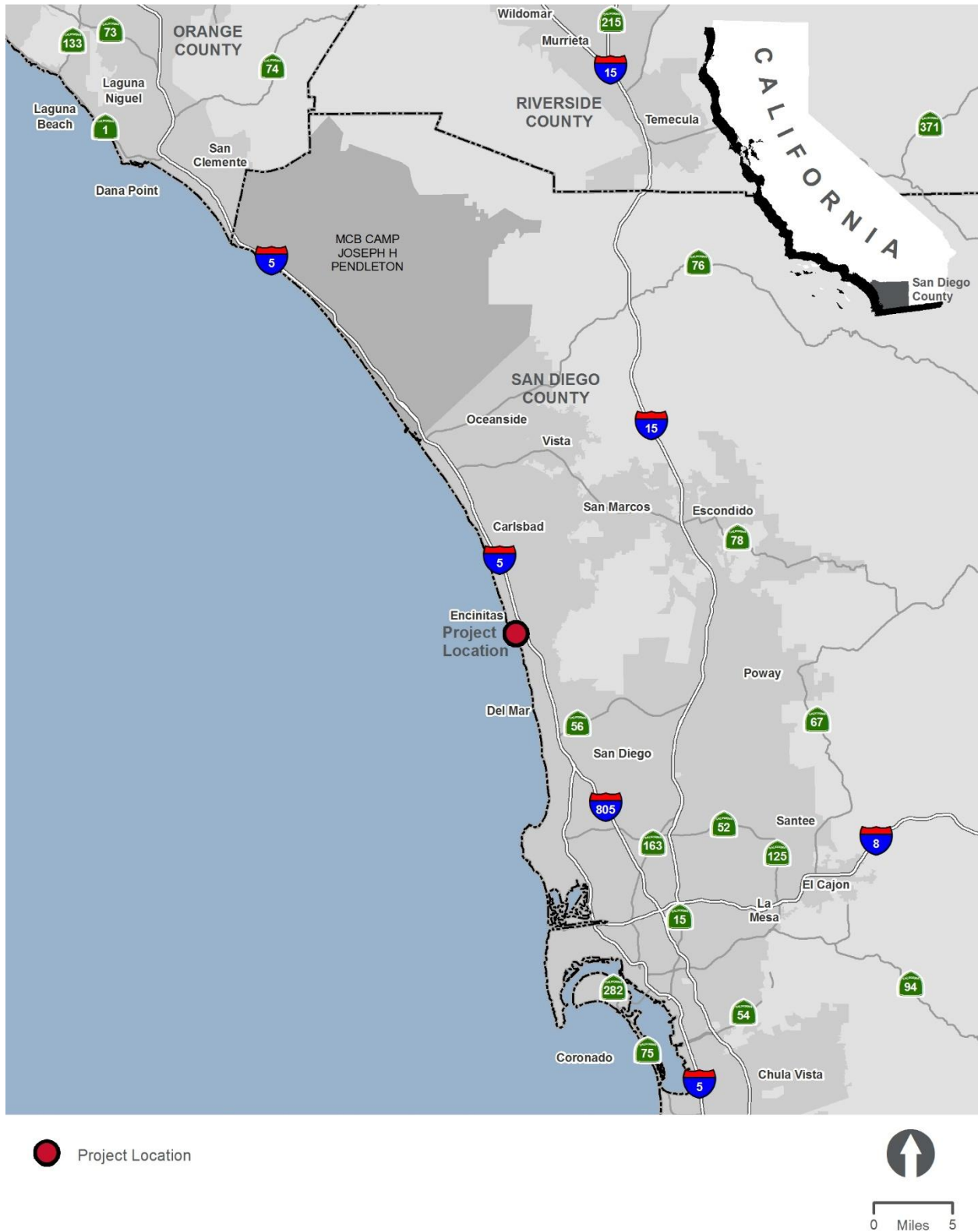
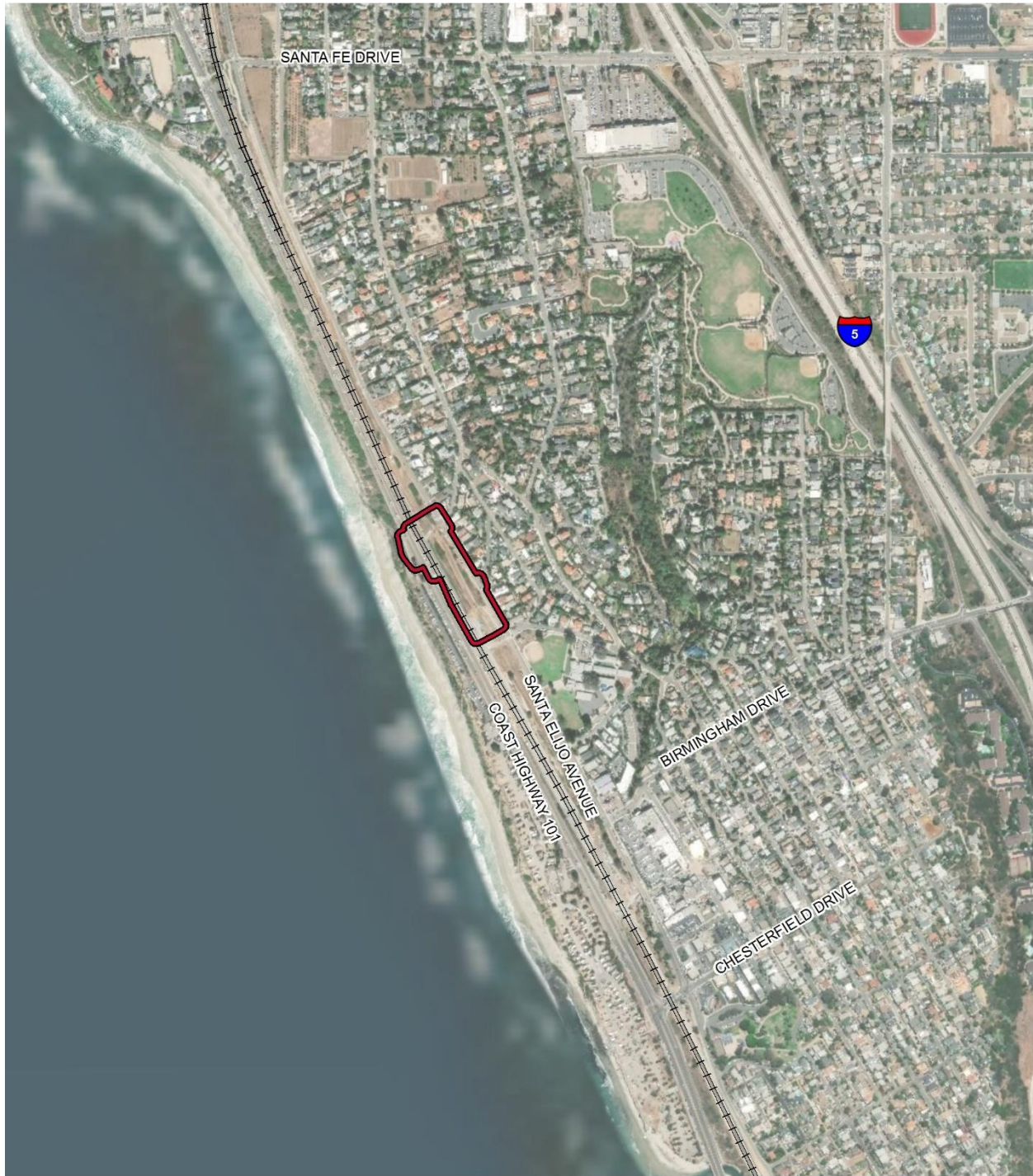




Figure 2. Biological Survey Area

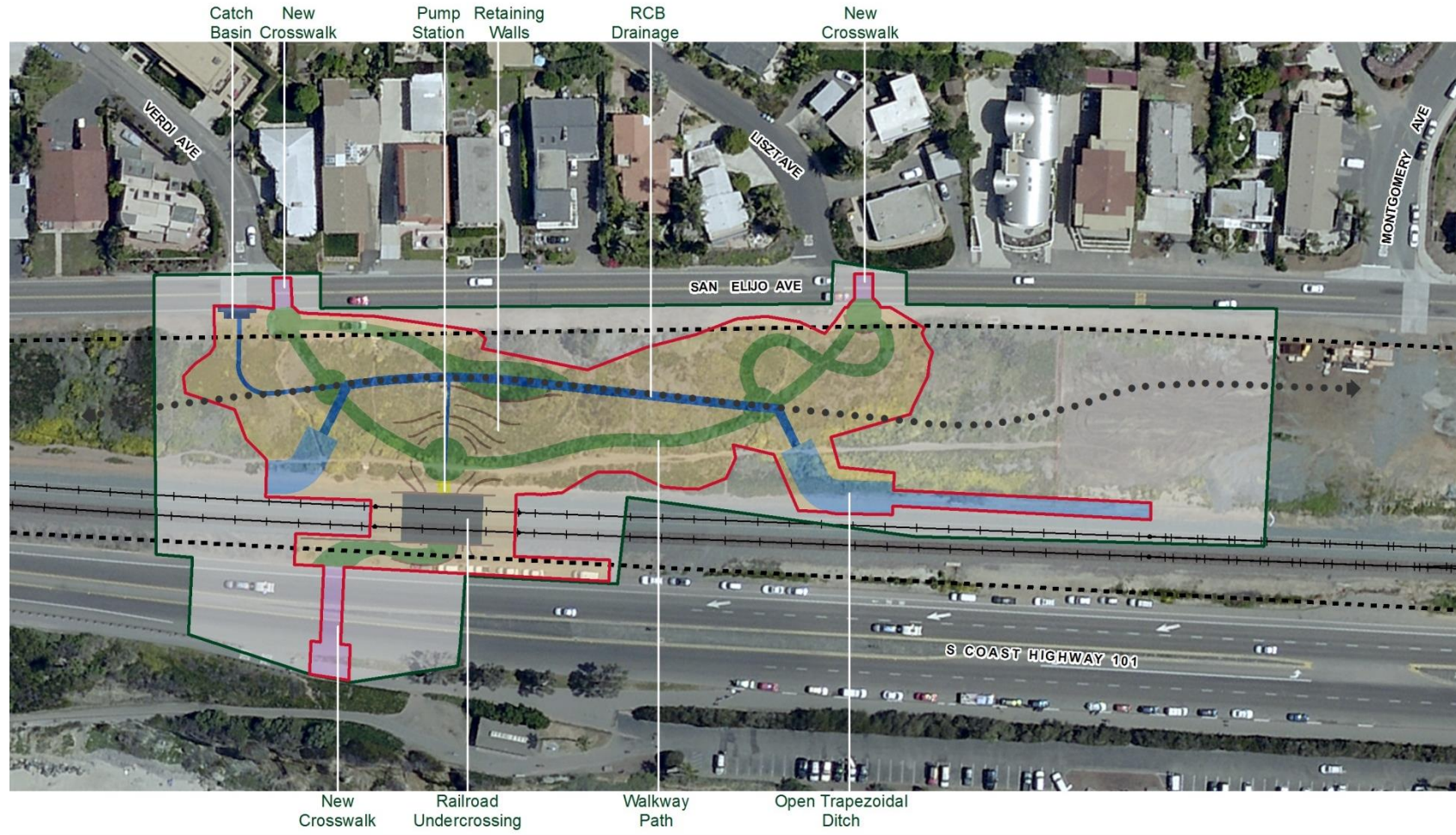


- Biological Survey Area
- LOSSAN Rail Corridor





Figure 3. Major Project Components



- Permanent Impacts
- Temporary Impacts
- Recontoured/Landscaped Area
- Temporary Work Area
- Railroad Right-of-Way
- Coastal Rail Trail (Not a Part)
- ++ Track Alignment



## 2.3 Construction

The majority of construction would occur Monday through Saturday between 7:00 a.m. and 7:00 p.m. in conformance with the Encinitas Municipal Code. However, to minimize disruption of passenger train operations, construction work for placement of the undercrossing beneath the tracks would occur during weekend nighttime hours (between 12:00 a.m. Saturday and 5:00 a.m. Monday). In order to allow limited nighttime construction, a variance from the Encinitas Municipal Code is required.

Anticipated construction equipment would include one or more of the following: excavator, front-end loader, hydraulic crane, drill rig with 24-inch-diameter auger, dump trucks, concrete ready-mix trucks, flatbed trucks, forklift, roller compactor, concrete boom pump, generators, compressors, welding machine, track tamper, regulator, and swivel dump.

Construction staging would occur on site within temporary work areas. Grading activity for the project would result in 3,280 cubic yards of cut and 407 cubic yards of fill, resulting in 2,873 cubic yard of exported material. It is anticipated that the project would encompass the following activities over a duration of 1 year.

- **Nighttime Activities** - It is anticipated that any nighttime construction required would be completed over four consecutive Saturday and Sunday nights (a total of two weekends). Bridge construction would begin with the drilling of holes and placement of H Piles. Once the piles are dropped in place, a maintenance window would be scheduled to take the track out of service over a weekend in order to allow for installation of the bridge caps and superstructure. This weekend work would be continuous over a 54 hour period, and would include 3 nights. The existing track would be cut, ballast would be removed, and piles would be uncovered to allow the piles to be trimmed to the bottom of cap elevation. Prefabricated abutments and caps would then be placed on top of the piles and welded into place followed by installation of the prefabricated superstructure over the pile caps and placement of deck plates and handrail assemblies. Finally, abutments would be backfilled and the track and ballast that was removed would be replaced.
- **Daytime Activities** - Once the bridge has been installed and the track has been restored to service, the undercrossing would be excavated, and the pedestrian path and other design features would be constructed during normal weekday hours.

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### 3 Methodology

The BSA was defined to include the areas around the project footprint that might be subject to direct and indirect impacts from the project (Figure 2). The following databases and resources were consulted to determine the potential for federally and/or state-listed and other special-status plant and animal species to occur in the BSA, as well as designated critical habitat for federally listed species:

- Information Planning and Conservation (IPaC) System (USFWS 2018a)
- California Natural Diversity Data Base (CNDDDB) [CDFW 2018]
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2018)

The CNDDDB and CNPS database searches included the six United States Geological Survey (USGS) 7.5-minute series quadrangles centered on the project site (*Encinitas, Oceanside, San Luis Rey, San Marcos, Rancho Santa Fe, and Del Mar*) and were refined based on the elevation range of the BSA. The IPaC, CNDDDB, and CNPS records search results are included in Appendix A.

HDR biologists Allegra Engleson and Ronell Santos conducted vegetation mapping within the BSA on March 20, 2018. In addition, a jurisdictional delineation was conducted to determine the limits of potential jurisdiction regulated by: (1) the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA); (2) the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA; (3) the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the Fish and Game Code, and (4) the California Coastal Commission (CCC) pursuant to the Coastal Zone Management Act (CZMA). The BSA was surveyed on foot. Vegetation communities in this report follow Holland (1986) and, where appropriate, are augmented by the modified classification system proposed by the County of San Diego (Oberbauer et al. 2008) to better reflect vegetation communities found within San Diego County. Botanical species discussed in this report follow both Latin and common names taken from Jepson eFlora (Jepson Flora Project 2018).

Other desktop resources included:

- USGS 7.5-minute Topographic Encinitas Quadrangle (USGS 2015)
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil mapping (USDA NRCS 2017)
- USFWS National Wetland Inventory mapping (USFWS 2018b)
- National List of Hydric Soils (USDA NRCS 2018)

Maps of potential waters of the U.S. were based upon the USFWS National Wetland Inventory combined with USDA NRCS soil mapping and a field delineation.

Appendix B includes a compiled list of special-status plant and wildlife species and their potential for occurrence within the BSA based on the records search and habitat, elevation, substrate, and hydrology present in the BSA. Appendix C includes site photographs.

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## 4 Regulatory Context

### 4.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code Section 4321-4347) is a federal statute requiring the identification and analysis of potential environmental impacts associated with proposed federal actions. The intent of NEPA is to help decision makers make well-informed decisions based on an understanding of the potential environmental consequences, and take actions to protect, restore, or enhance the environment. The process for implementing NEPA is outlined in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*.

NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations define major Federal actions to include adoption of official policy (i.e., rules and regulations), adoption of formal plans, adoption of programs, and approval of specific projects (40 CFR 1508.18). The CEQ regulations mandate that all Federal agencies use a prescribed structured approach to environmental impact analysis.

### 4.2 Federal Endangered Species Act

The federal Endangered Species Act (ESA) defines and lists species as “endangered” or “threatened” and provides regulatory protection for the listed species. The federal ESA provides a program for conservation and recovery of threatened and endangered species. It also ensures the conservation of designated critical habitat that the USFWS has determined is required for the survival and recovery of these listed species. Section 9 of the federal ESA prohibits the “Take” of species listed by the USFWS as threatened or endangered. Take is defined as: “...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct.” In recognition that Take cannot always be avoided, Section 10(a) of the federal ESA includes provisions for Take that is incidental to, but not the purpose of, otherwise lawful activities. Section 10(a)(1)(B) permits (incidental take permits) may be issued if Take is incidental and does not jeopardize the survival and recovery of the species.

Section 7(a)(2) of the federal ESA requires all federal agencies evaluate projects with respect to any species proposed for listing or already listed as endangered or threatened and any proposed or designated critical habitat for the species. Federal agencies must undertake programs for the conservation of endangered and threatened species and are prohibited from authorizing, funding, or carrying out any action that will jeopardize a listed species or destroy or modify its critical habitat.

As defined in the federal ESA, individuals, organizations, states, local governments, and other nonfederal entities are affected by the designation of critical habitat only if their actions occur on federal lands; require a federal permit, license, or other authorization; or involve federal funding.

### 4.3 Clean Water Act

#### 4.3.1 United States Army Corps of Engineers

Pursuant to Section 404 of the CWA, the USACE regulates the discharge (temporary or permanent) of dredged or fill material into waters of the U.S., including wetlands. A discharge of fill material

includes, but is not limited to, grading, placing rip rap for erosion control, pouring concrete, and stockpiling excavated material into waters of the U.S. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

## Waters of the U.S.

The term “waters of the United States” is currently defined as:

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

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the U.S.

Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA.

The limits of USACE jurisdiction in non-tidal waters extend to the ordinary high water mark (OHWM) which is defined at 33 CFR 328.3(e) as:

“...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

## Wetlands

The term “wetlands” (a subset of “waters of the U.S.”) is defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987, the USACE published a manual to guide its field personnel in determining jurisdictional wetland boundaries followed by the Arid West Supplement in 2008 (USACE 1987, USACE 2008b). The methodology set forth in the 1987 manual and 2008 supplement generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics.

## Supreme Court Decisions

### *Solid Waste Agency of North Cook County*

On January 9, 2001, the Supreme Court of the United States issued a decision on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.* with respect to whether the USACE could assert jurisdiction over isolated waters (U.S. Supreme Court 2001). The Solid Waste Agency of North Cook County ruling stated that the USACE does not have jurisdiction over “non-navigable, isolated, intrastate” waters.

### *Rapanos/Carabell*

In the Supreme Court cases of *Rapanos v. United States*, 547 U.S. 715 (2006) and *Carabell v. United States*, No. 03-1700 (6th Cir. 2007) (herein referred to as *Rapanos*), the court attempted to clarify the extent of USACE jurisdiction under the CWA. In light of the *Rapanos* decision, the USACE will assert jurisdiction over traditional navigable waters (TNWs), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

According to the USACE memorandum providing clarification on the limits of jurisdiction after the *Rapanos* decision (USACE 2008a), the USACE generally will not assert jurisdiction over the following features: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands that generally do not carry a relatively permanent flow of water.

## 4.3.2 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the federal CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters.

The RWQCB also regulates discharge of waste to waters of the state pursuant to California's Porter-Cologne Act, enacted in 1969, which provides the legal basis for water quality regulation within California. Under this Act, “waters of the state” is defined as “any surface water or

groundwater, including saline waters, within the boundaries of the state.” Should the RWQCB determine that discharge of pollutants (including fill) is proposed to waters that meet the definition of ‘waters of the state’ but not ‘waters of the U.S.,’ waste discharge requirements would be required.

Additionally, pursuant to an update made by the SWQCB (effective May 2020), “waters of the state” would also include natural wetlands, wetlands created by modification of a surface water of the state, and certain artificial wetlands.

## 4.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) provides special protection for migratory families of birds (i.e., those avian species that winter south of the U.S., but breed within the U.S.) by regulating hunting or trade. The Act prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (CFR) 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). “Take” is defined in 50 CFR 10.12 as “[t]ake means to pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect.” Only “collect” applies to nests. A December 22, 2017, Department of the Interior memorandum provides additional guidance, concluding that that the MBTA’s prohibition on “pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control.” Such activity is potentially punishable by fines and/or imprisonment. The use of families as opposed to individual species within the MBTA means that numerous non-migratory birds are extended protection under the MBTA. Most nesting birds are covered by the MBTA.

## 4.5 Coastal Zone Management Act

California Coastal Commission regulates development on the California coast. For the purposes of regulation, tidelands are defined as the lands lying between the lines of mean high tide and mean low tide and Wetlands are defined as “lands within the coastal zone that may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens.<sup>1</sup>” In addition to the more traditional fresh- and saltwater marshes, the California Coastal Zone also contains a number of riparian areas, most often occurring as corridors along streams and rivers.

In addition to regulating aquatic resources, the CCC regulates upland ESHA that occur within the Coastal Zone. The CCA provides a definition of “environmentally sensitive habitat area” as: “Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (Section 30107.5).

In compliance with the California Coastal Act of 1976, the City of Encinitas includes a Local Coastal Plan (LCP) and Land Use Plan (LUP) in its General Plan. The LUP identifies policies and provisions that serve to apply the Coastal Act. The majority of the City of Encinitas is located within the California Coastal Zone; therefore, issues and policies related to the requirements of the California Coastal Act are also included within the General Plan. These are combined to create the General Plan and Local Coastal Program Land Use Plan (LUP) for the city.

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<sup>1</sup> California Code of Regulations Section 13577 and California Coastal Act Sections 30121, respectively.

## 4.6 California Endangered Species Act

The California ESA prohibits the take of listed species, except as otherwise provided in state law. The take for the California ESA is defined as it is in the federal ESA; however, unlike the federal ESA, the California ESA also applies the take prohibitions to species petitioned for listing as state candidates rather than only state-listed species. State lead agencies are required to consult with the CDFW to ensure that any actions undertaken by the lead agency are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of required habitat. CDFW is authorized to enter into a Memorandum of Understanding (MOU) with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess listed species for scientific, educational, or management purposes.

## 4.7 Porter-Cologne Water Quality Control Act

The state also regulates activities that would involve “discharging waste, or proposing to discharge waste, within any region that could affect waters of the state” (California Water Code 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act. Waters of the state are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code 13050(e)). Such waters may include waters that are not subject to regulation under Section 404 (e.g., isolated features and ditches). These waters may include isolated vernal pools, isolated wetlands, or other aquatic habitats that are not normally subject to federal regulation under Section 404 of the CWA.

## 4.8 Sections 1600 to 1603 of the State Fish and Game Code

CDFW has jurisdiction over waters of the state, California Fish and Game Code Section 1600 et seq.; California Code of Regulations Title 14, Section 720 (CDFG 2004). Section 1602 of the California Fish and Game Code applies to natural rivers, streams, and lakes.

An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.



The California Fish and Game Code mandates that:

...it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the Department of such activity.

CDFW defines a stream as “a body of water that flows perennially or episodically and that is defined by the area in which water currently flows, or has flowed, over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators” (Brady and Vyverberg 2014). CDFW regulates wetland areas only to the extent that those wetlands are part of a stream, river, or lake, as defined by CDFW.

## 4.9 California Environmental Quality Act

CEQA requires state and local agencies to identify impacts to the environment that might be caused by their actions. Projects undertaken by public or private agencies must comply with CEQA if there is any approval given by a state agency (CEQA 2016). CEQA is a self-regulating statute; however, agencies that do not comply may face litigation from the public. CEQA is a statute that requires state agencies to provide information about environmental impacts of their actions and requires that actions be taken to avoid, minimize, or mitigate those impacts. All listed and candidate species are protected as well as those considered by the CNPS as rare, threatened, or endangered in California (California Rare Plant Ranks 1B and 2B) and CDFW (CEQA 2016). Any of these species occurring within the project area would be avoided to the extent possible.

## 4.10 San Diego Multiple Habitat Conservation Program

The San Diego Multiple Habitat Conservation Program (MHCP) is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species in northwestern San Diego County (USFWS and SANDAG 2003). The San Diego MHCP encompasses the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Its goal is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46 percent) are already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species.

The MHCP Subregional Plan and Final EIS/EIR were adopted and certified by the SANDAG Board of Directors on March 28, 2003.

## 4.11 City of Encinitas General Plan and Local Coastal Program Land Use Plan

The City of Encinitas General Plan (City of Encinitas 1986) serves as a blueprint for the long-range physical planning of the City and includes goals and policies designed to shape the long-term development of the City, as well as protect its environmental, social, cultural, and economic resources. The majority of the City of Encinitas is located within the California Coastal Zone; therefore, issues and policies related to the requirements of the California Coastal Act are also included within the General Plan. These are combined to create the General Plan and Local Coastal Program Land Use Plan (LUP) for the city. The remaining elements (Land Use, Housing, Circulation, Noise, Public Safety, Resource Management, and Recreation) include policies and provisions that serve to apply the Coastal Act in the city.



***Resource Management Element - Amended 03/09/2011.*** This Element is concerned with identifying goals and policies that are designed to preserve significant natural and cultural resources in the city. It also builds upon goals and policies in the other elements, especially the Land Use Element. This Element meets State requirements concerning the Conservation and Open Space Elements as defined in Sections 65302e and 65302f of the Government Code. According to these requirements, the Conservation Element must include goals and policies that further the protection and maintenance of the state's natural resources and prevents their wasteful exploitation, degradation, and destruction.

The goals and supporting policies included in this Element are concerned with a diverse range of issue and policy areas. A number of goals and policies focus on preserving significant habitats in the city, including habitats containing rare or endangered plant and animal species.

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## 5 Environmental Setting

### 5.1 Topography and Drainage

The BSA is located in the western part of San Diego County at elevations from 60 to 90 feet (18 to 27 meters) above mean sea level (AMSL).

The BSA occurs within the Carlsbad Hydrologic Unit (4.00) in San Diego County, specifically the Escondido Creek Hydrologic Area (HA 4.60). The Carlsbad Hydrologic Unit covers approximately 210 square miles of stormwater drains, natural creeks, and washes before draining into the Pacific Ocean. This watershed is bound by the cities of Oceanside and Vista to the north, Solana Beach and Escondido to the south, and Lake Wolhford to the east. It comprises two water storage reservoirs, three major creeks (Escondido, Batiquitos Lagoon, and Aqua Hedionda), and four lagoons (San Elijo, Batiquitos, Agua Hedionda, and Buena Vista). The Carlsbad Watershed is highly urbanized and encompasses seven cities: Vista, San Marcos, Escondido, Rancho Santa Fe, Encinitas, Carlsbad, and Oceanside (McPherson 2016).

### 5.2 Soils

The BSA generally consists of sandy loam soils. Soils within the BSA were identified using the USDA NRCS soil mapping data. The BSA contains two different soil series (Figure 4). Some soils in the Chesterton series are listed as hydric in the 2018 NRCS National Hydric Soils List (USDA NRCS 2018). Detailed descriptions of the soil types found within the BSA are provided below.


- **Chesterton Series** – This series consists of moderately well drained soils formed on old terraces and uplifted marine sediments. These soils range from medium acidic to strongly acidic. Runoff is slow to medium with very slow permeability. Chesterton soils occur in areas that are gradually sloping to moderately steep at elevations from 50 to 600 feet (15 to 183 meters) AMSL. Soils of this series occurring in depressions are considered hydric.
- **Marina Series** – This series consists of somewhat excessively drained soils formed in coastal sand dunes. These soils range from moderately acidic to strongly acidic. Runoff is slow to rapid with moderate permeability. Marina soils occur in areas that are gently sloping to moderately steep at elevations from 100 to 700 feet (30 to 213 meters) AMSL on rolling dune-like slopes. Soils in this series are not considered hydric.


### 5.3 Vegetation Communities and Other Land Cover Types

Descriptions of vegetation communities, modified from Holland (1986) and the County of San Diego (Oberbauer et al. 2008) based on the plant species found during the biological survey, are provided below. The majority of the BSA is made up of non-native vegetation, disturbed habitat, and urban/developed lands, with lesser amounts of native vegetation communities present (Figure 5). Acreages of vegetation communities and other land cover types occurring within the BSA are shown in Table 1.

Figure 4. Soils within the Biological Study Area



 Biological Survey Area  
 CfB-Chesterton fine sandy loam,  
2 to 5 percent slopes

 MIE-Marina loamy coarse sand, 9  
to 30 percent slopes



0 Feet 100



Figure 5. Vegetation Communities and Drainage Features in the Biological Study Area



- |                        |                      |                       |
|------------------------|----------------------|-----------------------|
| Biological Survey Area | No OHWM, bed or bank | Non-Native Vegetation |
| Permanent Impacts      | Disturbed Habitat    | Urban/Developed       |
| Temporary Impacts      | Ditch                |                       |
| Culvert                |                      |                       |



0 Feet 100

**Table 1. Vegetation Communities and Other Land Cover Types in the Biological Study Area**

Vegetation Community or Other Land Cover Type	Acreage
Disturbed Habitat	2.52
Non-vegetated Ditch	0.05
Non-native Vegetation	0.33
Urban/Developed	3.13
<b>TOTAL</b>	<b>6.03</b>

### 5.3.1 Disturbed Habitat (DH) (Holland Code 11300)

Disturbed habitat is primarily used to identify areas of severe impacts to natural communities to the extent where they are no longer sustaining or functioning naturally. These areas have been previously physically disturbed, but continue to retain a soil substrate. Disturbed areas consist predominantly of non-native weedy and ruderal species. This is not a natural community and generally does not provide habitat for wildlife or sensitive species. Examples of disturbed habitat include areas that have been graded, cleared areas for fuel management, staging areas, off-road vehicle trails, and abandoned home sites.

Within the BSA, DH consists primarily of railroad ROW, pedestrian paths, off street parking, and areas that have been graded, repeatedly cleared, and/or experienced repeated use that prevents natural revegetation (Appendix C, Photo 1). East of the railroad tracks, several large native laurel sumac (*Malosma laurina*) shrubs occur within DH along the boundary of San Elijo Avenue and provide marginal habitat for MBTA covered species and other urban-tolerant species. The laurel sumac does not appear to have been planted and is likely a natural recruit.

### 5.3.2 Non-Vegetated Ditch (No Holland Code)

Within the BSA, non-vegetated ditch consists of an ephemeral ditch constructed in upland that parallels the railroad to the east and conveys flows produced by the track underdrain system. Surface flows are diverted beneath the rail and South Coast Highway 101 to the coastal bluffs or continue south to an unnamed stream that originates at a storm drain outlet between the rail embankment and San Elijo Avenue at Liverpool Drive. The unnamed stream discharges to San Elijo Lagoon. This cover type is surrounded by disturbed habitat and urban/developed land cover (Appendix C, Photo 2 through Photo 7).

### 5.3.3 Non-Native Vegetation (NNV) (No Holland Code)

Non-native vegetation is primarily used to identify areas with a dominant cover of non-native species. Within the BSA, NNV occurs primarily along the coastal bluffs located west of South Coast Highway 101 and is vegetated by freeway iceplant (*Carpobrotus edulis*), crystalline iceplant (*Mesembryanthemum crystallinum*), pampas grass, western coastal wattle (*Acacia cyclops*), myoporum, tree tobacco (*Nicotiana glauca*), pockets of Mexican fan palm (*Washingtonia robusta*), and tamarisk (*Tamarix sp.*). In addition, there is low coverage of native species such as salt grass, coastal goldenbush (*Isocoma menziesii*), and four-wing saltbush (*Atriplex canescens*) (Appendix C, Photo 10).



Non-native vegetation also occurs as planted vegetation, including a stand of crimson bottlebrush (*Callistemon citrinus*) located along South Coast Highway 101 and western coastal wattle located along San Elijo Avenue (Appendix C, Photo 10). Although dominated by non-native plant species, NNV is differentiated from DH in that the plants are generally planted and/or provide a higher degree of wildlife habitat value than DH. Non-native vegetation may provide valuable foraging habitat for raptors (birds of prey). However, this community is not a sensitive plant community recognized by the USFWS.

#### 5.3.4 Urban/Developed (Holland Code 12000)

Urban/Developed land is comprised of areas of intensive use with much of the land constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is highly modified and characterized by permanent or semi-permanent structures, pavement, unvegetated areas, and landscaped areas that require irrigation.

Within the BSA, urban/developed areas are comprised of railroad tracks and associated ballast, railroad facilities/structures, paved roadways, and man-made structures (Appendix C, Photo 11).

### 5.4 Potential Special-Status Plant Species

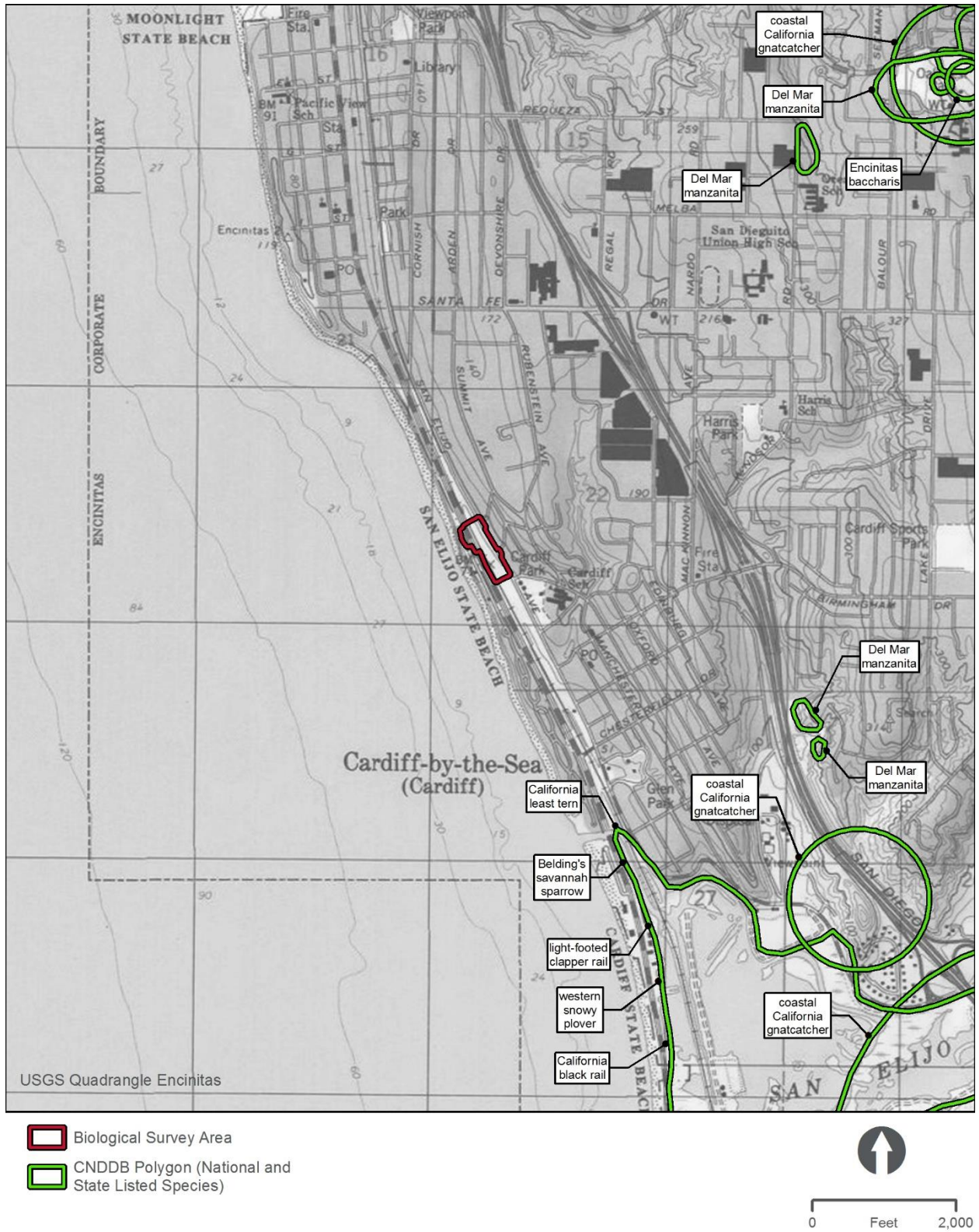
During the general biological surveys, all plants encountered were identified to species to the extent feasible and are included in Appendix D. A total of 41 plant species were observed in the BSA during general biological surveys. The species detected are representative of the vegetation communities located within the BSA. There are CNDDDB occurrences of one federally endangered plant, Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*) within 1 mile from the BSA (Figure 6). However, suitable habitat for this species (chaparral) is not present within the BSA. Other plant species that were evaluated for their potential to occur in the BSA are included in Appendix B.

No suitable habitat and soils for special-status plant species occur within or immediately adjacent to the project footprint.

### 5.5 Potential Special-Status Wildlife Species

Based on the IPaC and CNDDDB (Figure 6) record search results several federally or state-listed avian species occur within one mile of the BSA. However, suitable habitat for these species is not present within the BSA. The BSA does not include any federally designated critical habitat. Other sensitive species that may forage on site include northern harrier and white-tailed kite, however neither species would nest on-site. Wildlife species that were evaluated for their potential to occur in the BSA are included in Appendix B.

Figure 6. California Natural Diversity Data Base Search Results





## 5.6 Potential Jurisdictional Areas

The BSA supports an artificial ephemeral, unvegetated ditch constructed in upland (Figure 5).

### 5.6.1 Ditch

The California Coastal Commission (CCC) uses a single-parameter definition to determine if an area is a wetland. This definition is based on evidence of hydrology, which can include:

- **Hydric soils:** Soils that are predominantly undrained and saturated with water
- **Hydrophytic vegetation:** Vegetation that is predominantly hydrophytes, such as plants that can tolerate anaerobic conditions
- **Wetland hydrology:** Conditions that indicate the area is saturated by ground water or shallow surface water for a sufficient duration

Section 30121 of the Coastal Act defines wetlands as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens". The CCC follows a delineation protocol developed by the U.S. Army Corps of Engineers. However, the CCC only requires evidence of one parameter, while the Army Corps requires evidence of all three.

The CCC's one parameter definition is similar to the USFWS wetlands classification system, which states that wetlands must have one or more of the following three attributes: (1) at least periodically the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Within the BSA, approximately 300 feet north of Milepost 239.2, a non-vegetated soft-bottomed ephemeral ditch originates at an 18-inch diameter PVC track underdrain system outlet. The ditch parallels the railroad to the east, conveying flows southward where they are diverted beneath the rail and into a culvert under South Coast Highway 101. The terminal discharge of flows collected in the ditch was not observed within or adjacent to the BSA.

Approximately half of the feature is vegetated with non-native upland species, such as ice plant and jointed charlock (*Raphanus* sp.), along the channel bottom and banks (Appendix C, Photo 2 and Photo 3), which are not consider an indication of hydrophytic vegetation. There are no indications of drainage patterns or sediment deposits within this section of the ditch. Where the ditch exhibits indicators of an OHWM, including sediment deposition and shelving, it ranges from approximately 2 to 5 feet in width (Appendix C, Photo 4 through Photo 7). However, based on historic USGS topographic mapping, no historic channels or other aquatic features have occurred in this location and there is no indication of hydric soils present. The ditch was constructed in uplands for the purpose of managing overland sheet flow within the railroad ROW.

As the ditch is constructed in uplands for the purpose of managing stormwater within the ROW and the feature does not support environmentally sensitive habitat, hydrophytic vegetation, or hydric soils, it is not anticipated that it would be considered a wetland subject to CCC regulation.

Additionally, ditches constructed in upland and for the purpose of managing urban stormwater are generally not subject to USACE, RWQCB or CDFW jurisdiction<sup>2</sup>.

## 5.7 Migratory Birds

Suitable habitat that would support nesting migratory birds occurs offsite. Suitable habitat includes mature trees (>24-inch diameter), ballast, large shrubs, ornamental vegetation, non-native grassland and utility poles.

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<sup>2</sup> These findings represent professional opinion based on the most current guidance and experience of our regulatory specialists. Only the regulatory agencies can make a final determination of the regulatory status of an aquatic feature.

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## 6 Impact Assessment

Impacts to biological resources from the proposed project include direct and indirect effects. Direct effects are changes in the physical environment caused by the project that are immediately related to the project; they occur in the same time and place as the project (e.g., grading associated with construction of a project, etc.). Indirect effects are changes to the physical environment that occur later in time or farther removed in distance than direct effects (e.g., long-term changes in water quality, offsite impacts from noise, dust, lighting, etc.). Both direct and indirect effects may be considered temporary or permanent depending upon the situation. These effects are described in more detail below.

### 6.1 Vegetation Communities and Other Land Cover Types

Table 2 summarizes the anticipated impacts to vegetation communities. Implementation of the project would result in impacts to 4.06 acres of vegetation communities and other land cover types, of which 2.30 acres would be temporary and 1.76 acres would be permanent. No special-status vegetation communities would be impacted.

**Table 2. Vegetation Communities and Land Cover Types in the Project Footprint**

Vegetation Community or Land Cover Type	Existing Acres in the BSA	Temporary Impact (acres)	Permanent Impact (acres)	Total Impact (acres)
Disturbed Habitat	2.52	0.86	1.41	2.27
Ditch	0.09	0.04	0.00	0.04
Non-native Vegetation	0.33	0.06	0.13	0.19
Urban/Developed	3.13	1.34	0.22	1.56
<b>TOTAL</b>	<b>6.03</b>	<b>2.30</b>	<b>1.76</b>	<b>4.06</b>

### 6.2 Federally or State-listed Plant Species

The project footprint does not have a suitable combination of habitat and soils and/or is outside the known elevation range for federally or state-listed plant species. Therefore, implementation of the project would not result in adverse direct effects to any federally or state-listed plant species. As a result of implementation of BMP-BIO 1, adverse indirect effects to any federally or state-listed plant species that could occur outside of the BSA are also not expected.

### 6.3 Federally or State-listed Wildlife Species

The project footprint does not have suitable foraging or nesting habitat and/or is outside the known geographic range for federally or state-listed wildlife species. Therefore, implementation of the project would not result in adverse direct effects to federally or state-listed wildlife species. As a result of implementation of BMP-BIO 1 and BMP-BIO 2, adverse indirect effects to any federally or state-listed wildlife species that could occur outside of the BSA are also not expected.

## 6.4 Other Special-Status Species

The project footprint does not have a suitable combination of habitat and soils and/or is outside the known elevation range for non-listed, sensitive plant species. In addition, no sensitive plant species were observed during the general biological surveys. Therefore, implementation of the project would not result in adverse effects to non-listed, sensitive plant species.

The BSA supports suitable foraging habitat for two non-listed, sensitive wildlife species, northern harrier and white-tailed kite. However, the project would not significantly alter the existing land use. Therefore, implementation of the project would not result in adverse effects to non-listed, sensitive wildlife species. As a result of implementation of BMP-BIO 1 and BMP-BIO 2, adverse indirect effects to any non-listed, sensitive wildlife species that could occur outside of the BSA are also not expected.

## 6.5 Potential Jurisdictional Areas

The project is within a mapped ESA. However, no onsite resources exist onsite. Implementation of the project would not result in adverse direct effects to potential WOUS or areas potentially subject to CCC, RWQCB or CDFW jurisdiction. As a result of implementation of BMP-BIO 1, adverse indirect impacts to potential WOUS or areas potentially subject to CCC, RWQCB or CDFW jurisdiction are also not expected.

## 6.6 Migratory Birds

Implementation of the project has no substantial potential to adversely affect migratory bird species with implementation of BMP-BIO 2.

## 6.7 Regulatory Consistency

Implementation of the project and proposed avoidance and minimization measures would not conflict with the applicable Federal, State, and local regulations and laws, including the San Diego MHCP and the City of Encinitas General Plan.

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# Appendix A. Records Search Results



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## Appendix B. Species Evaluated for Potential to Occur in the BSA

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### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Acanthomintha ilicifolia</i> San Diego thorn-mint	Federal: FT State: SE CRPR: 1B.1	Annual herb. Friable or broken clay soils in grassy openings in chaparral and coastal sage scrub, grassland, and vernal pools; 33–3,150 ft. Blooming period: April–June	Not expected, BSA lacks suitable soils.
<i>Acmispon prostratus</i> Nuttall's acmispon	Federal: None State: None CRPR: 1B.1	Annual herb. Coastal dunes and sandy coastal scrub; 0–32 ft. Blooming period: March–July (synonym of <i>Lotus nuttallianus</i> )	Not expected, BSA occurs above known elevation range for this species.
<i>Adolphia californica</i> California adolphia	Federal: None State: None CRPR: 2B.1	Deciduous shrub. Clay soils in chaparral, coastal scrub, and grassland; 147–2,428 ft. Blooming period: December–May	Not expected, BSA lacks suitable soils and occurs above known elevation range for this species.
<i>Agave shawii</i> var. <i>shawii</i> Shaw's agave	Federal: None State: None CRPR: 2B.1	Perennial leaf succulent. Coastal bluff scrub, coastal scrub; 32–393 ft. Blooming period: September–May (synonym of <i>A. shawii</i> )	Not expected, not observed during biological surveys.
<i>Ambrosia pumila</i> San Diego ambrosia	Federal: FE State: None CRPR: 1B.1	Rhizomatous herb. Sandy loam or clay soils in chaparral, coastal sage scrub, grassland, vernal pools; often in disturbed areas. Sometimes alkaline areas, creek beds, seasonally dry drainages, or floodplains; 66–1,362 ft. Blooming period: April–October	Not expected, nearest known location is 8 miles southeast/inland from the BSA.
<i>Aphanisma blitoides</i> Aphanisma	Federal: None State: None CRPR: 1B.2	Annual herb. Sandy soils in coastal bluff scrub, coastal dunes, and coastal scrub; 3–1,000 ft. Blooming period: March–June	Not expected, BSA lacks suitable habitat.



### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> Del Mar manzanita	Federal: FE State: None CRPR: 1B.1	Evergreen shrub. Maritime chaparral with sandy soils; 0–1,197 ft. Blooming period: December–June	Not expected, BSA lacks suitable habitat.
<i>Astragalus tener</i> var. <i>titi</i> Coastal dunes milk-vetch	Federal: FE State: SE CRPR: 1B.1	Annual herb. Often in vernal mesic areas in sandy coastal bluff scrub, coastal dunes, and mesic coastal prairie; 3–164 ft. Blooming period: March–May	Not expected, BSA lacks suitable soils.
<i>Atriplex coulteri</i> Coulter's saltbush	Federal: None State: None CRPR: 1B.2	Perennial herb. Alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, and grassland; 9–1,509 ft. Blooming period: March–October	Not expected, BSA lacks suitable soils.
<i>Atriplex pacifica</i> South Coast saltscare	Federal: None State: None CRPR: 1B.2	Annual herb. Coastal bluff scrub, coastal dunes, coastal scrub, playas; 0–459 ft. Blooming period: March–October	Not expected, BSA lacks suitable habitat.
<i>Atriplex parishii</i> Parish's brittle scale	Federal: None State: None CRPR: 1B.1	Annual herb. Alkaline soils in chenopod scrub, playas, and vernal pools; 82–6,232 ft. Blooming period: June–October	Not expected, BSA lacks suitable soils.
<i>Baccharis vanessae</i> Encinitas baccharis	Federal: FT State: SE CRPR: 1B.1	Deciduous shrub. Sandstone in maritime chaparral and Cismontane woodland; 196–2,362 ft. Blooming period: August–November	Not expected, BSA lacks suitable elevation.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Bergerocactus emoryi</i> Golden-spined cereus	Federal: None State: None CRPR: 2B.2	Stem succulent. Sandy soils in costal scrub, chaparral, and closed-cone coniferous forest; 9–1,295 ft. Blooming period: May–June	Not expected, BSA lacks suitable habitat.
<i>Bloomeria clevelandii</i> San Diego goldenstar	Federal: None State: None CRPR: 1B.1	Perennial cormous herb. Clay soils in chaparral, coastal sage scrub, valley grasslands, and vernal pools; 164–1,526 ft. Blooming period: April–May	Not expected, BSA occurs below known elevation range for this species.
<i>Brodiaea filifolia</i> Thread-leaved brodiaea	Federal: FT State: SE CRPR: 1B.1	Perennial cormous herb. Mesic or clay soils in chaparral, Cismontane woodland, closed-cone coniferous forest, coastal scrub, meadows and seeps, grassland, and vernal pools; 82–3,673 ft. Blooming period: March–June	Not expected, BSA lacks suitable soils.
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	Federal: None State: None CRPR: 1B.1	Perennial cormous herb. Found on mesic, clay, sometimes serpentinite soils in closed-cone coniferous forest, chaparral, Cismontane woodland, meadows and seeps, grassland, and vernal pools; 98–5,550 ft. Blooming period: May–July	Not expected, BSA occurs below known elevation range for this species.
<i>Ceanothus cyaneus</i> Lakeside ceanothus	Federal: None State: None CRPR: 1B.2	Evergreen shrub. Closed-cone coniferous forest, dense chaparral; 771–2,543 ft. Blooming period: April–June	Not expected, BSA occurs below known elevation range for this species.
<i>Ceanothus verrucosus</i> Wart-stemmed ceanothus	Federal: None State: None CRPR: 2B.2	Evergreen shrub. chaparral; 3–1,247 ft. Blooming period: December–May	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Centromadia parryi</i> ssp. <i>australis</i> Southern tarplant	Federal: None State: None CRPR: 1B.1	Annual herb. Found within the margin of marshes and swamps, vernal mesic soils in grassland, and vernal pools; 0–1,574 ft. Blooming period: May–November	Not expected, BSA lacks suitable soils.
<i>Centromadia pungens</i> ssp. <i>laevis</i> Smooth tarplant	Federal: None State: None CRPR: 1B.1	Annual herb. Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, and grassland; 0–2,100 ft. Blooming period: April–September	Not expected, BSA lacks suitable soils.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i> Orcutt's pincushion	Federal: None State: None CRPR: 1B.1	Annual herb. Sandy soils in coastal bluff scrub and coastal dunes; 0–328 ft. Blooming period: January–August	Not expected, BSA lacks suitable habitat.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> Salt marsh bird's-beak	Federal: FE State: SE CRPR: 1B.2	Hemiparasitic annual herb. Coastal dunes and coastal salt marshes and swamps; 0–98 ft. Blooming period: May–October (synonym of <i>Cordylanthus maritimus</i> ssp. <i>maritimus</i> )	Not expected, BSA lacks suitable habitat.
<i>Chorizanthe orcuttiana</i> Orcutt's spineflower	Federal: FE State: SE CRPR: 1B.1	Annual herb. Sandy openings in closed-cone coniferous forest, maritime chaparral, and coastal scrub; 9–410 ft. Blooming period: March–May	Not expected, BSA lacks suitable habitat.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i> Long-spined spineflower	Federal: None State: None CRPR: 1B.2	Annual herb. Clay lenses, largely devoid of shrubs in chaparral, coastal scrub, meadows and seeps, grassland, and vernal pools; 98–5,018 ft. Blooming period: April–July	Not expected, BSA occurs below known elevation range for this species.
<i>Clarkia delicata</i> Delicate clarkia	Federal: None State: None CRPR: 1B.2	Annual herb. Oak woodlands and chaparral, often on gabbroic soils; 770–3,280 ft. Blooming period: April–June	Not expected, BSA occurs below known elevation range for this species.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> Summer holly	Federal: None State: None CRPR: 1B.2	Evergreen shrub. chaparral and Cismontane woodland; 98–2,591 ft. Blooming period: April–June	Not expected, BSA occurs below known elevation range for this species.
<i>Corethrogyne filaginifolia</i> var. <i>incana</i> San Diego sand aster	Federal: None State: None CRPR: 1B.1	Perennial herb. Coastal bluff scrub, chaparral, and coastal scrub; 9–377 ft. Blooming period: June–September	Not expected, BSA lacks suitable habitat.
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i> Del Mar Mesa sand aster	Federal: None State: None CRPR: 1B.1	Perennial herb. Sandy soils in coastal bluff scrub, coastal scrub, and openings in maritime chaparral; 49–492 ft. Blooming period: May–September	Not expected, BSA lacks suitable habitat.
<i>Croton wigginsii</i> Wiggins' croton	Federal: None State: None CRPR: 2B.2	Shrub. Desert dunes and sandy Sonoran desert scrub; 164–328 ft. Blooming period: March–May	Not expected, BSA lacks suitable habitat, soils, and occurs below known elevation range for this species.
<i>Cryptantha wigginsii</i> Wiggins' cryptantha	Federal: None State: None CRPR: 1B.2	Annual herb. Often in clay soils in coastal scrub; 65–902 ft. Blooming period: February–June	Not expected, BSA lacks suitable soils.
<i>Cylindropuntia californica</i> var. <i>californica</i> Snake cholla	Federal: None State: None CRPR: 1B.1	Stem succulent. chaparral and coastal scrub, typically on xeric hillsides; 98–492 ft. Blooming period: April–May	Not expected, BSA lacks suitable elevation.
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> Blochman's dudleya	Federal: None State: None CRPR: 1B.1	Perennial herb. Rocky, often clay or serpentine soils in coastal bluff scrub, chaparral, coastal scrub, and grassland; 16–1,476 ft. Blooming period: April–June	Not expected, BSA lacks suitable soils.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Dudleya brevifolia</i> Short-leaved dudleya	Federal: None State: SE CRPR: 1B.1	Perennial herb. Torrey sandstone in coastal scrub and openings in maritime chaparral; 98–820 ft. Blooming period: April–May (synonym of <i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i> )	Not expected, BSA occurs below known elevation range for this species.
<i>Dudleya variegata</i> Variegated dudleya	Federal: None State: None CRPR: 1B.2	Perennial herb. Clay soils in chaparral, Cismontane woodland, coastal scrub, grassland, and vernal pools; 9–1,903 ft. Blooming period: April–June	Not expected, BSA lacks suitable soils.
<i>Dudleya viscida</i> Sticky dudleya	Federal: None State: None CRPR: 1B.2	Perennial herb. Rocky soils in coastal bluff scrub, chaparral, Cismontane woodland, and coastal scrub; 32–1,804 ft. Blooming period: May–June	Not expected, BSA lacks suitable habitat.
<i>Eremothera boothii</i> ssp. <i>boothii</i> Booth's evening-primrose	Federal: None State: None CRPR: 2B.3	Annual herb. Joshua tree, pinyon, and juniper woodland; 2,673–7,872 ft. Blooming period: April–September	Not expected, BSA occurs below known elevation range for this species.
<i>Ericameria palmeri</i> var. <i>palmeri</i> Palmer's goldenbush	Federal: None State: None CRPR: 1B.1	Evergreen shrub. Coastal drainages, in mesic chaparral sites, or rarely in coastal sage scrub; 0–1,969 ft. Blooming period: August–October	Not expected, BSA lacks suitable habitat and soils.
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	Federal: FE State: SE CRPR: 1B.1	Annual/perennial herb. Mesic soils in coastal scrub, grassland, and vernal pools; 65–2,034 ft. Blooming period: April–June	Not expected, BSA lacks suitable habitat and soils.
<i>Eryngium pendletonense</i> Pendleton button-celery	Federal: None State: None CRPR: 1B.1	Perennial herb. Clay soils or vernal mesic areas in coastal bluff scrub, grassland, and vernal pools; 49–360 ft. Blooming period: April–July	Not expected, BSA lacks suitable habitat and soils.



### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Erysimum ammophilum</i> Sand-loving wallflower	Federal: None State: None CRPR: 1B.2	Perennial herb. Sandy, openings in maritime chaparral, coastal dunes, coastal scrub; 0-197 ft. Blooming period: February-June	Not expected, BSA lacks suitable habitat and soils.
<i>Euphorbia misera</i> Cliff spurge	Federal: None State: None CRPR: 2B.2	Shrub. Rocky areas in coastal bluff scrub, coastal scrub, and Mojavean desert scrub; 32-1,640 ft. Blooming period: December-October	Not expected, BSA lacks suitable habitat.
<i>Ferocactus viridescens</i> San Diego barrel cactus	Federal: None State: None CRPR: 2B.1	Stem succulent. Sandy to rocky areas; chaparral, coastal scrub, grassland, vernal pools; 9-1,476 ft. Blooming period: May-June	Not expected, BSA lacks suitable habitat.
<i>Frankenia palmeri</i> Palmer's frankenia	Federal: None State: None CRPR: 2B.1	Perennial herb. Coastal dunes, coastal salt marshes and swamps, playas; 0-32 ft. Blooming period: May-July	Not expected, BSA occurs below known elevation range for this species.
<i>Grindelia hallii</i> San Diego gumplant	Federal: None State: None CRPR: 1B.2	Perennial herb. Meadows, chaparral, lower montane coniferous forest, and grassland; 606-5,723 ft. Blooming period: May-October	Not expected, BSA lacks suitable habitat, soils, and occurs below known elevation range for this species.
<i>Hazardia orcuttii</i> Orcutt's hazardia	Federal: None State: ST CRPR: 1B.1	Evergreen shrub. Often in clay soils in maritime chaparral and coastal scrub; 262-279 ft. Blooming period: August-October	Not expected, BSA occurs below known elevation range for this species.
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i> Beach goldenaster	Federal: None State: None CRPR: 1B.1	Perennial herb. Coastal chaparral, dunes, and scrub; 0-4,018 ft. Blooming period: March-December	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Horkelia truncata</i> Ramona horkelia	Federal: None State: None CRPR: 1B.3	Perennial herb. Clay and gabbroic soils in chaparral and Cismontane woodland; 1,312–4,265 ft. Blooming period: May–June	Not expected, BSA occurs below known elevation range for this species.
<i>Isocoma menziesii</i> var. <i>decumbens</i> Decumbent goldenbush	Federal: None State: None CRPR: 1B.2	Shrub. Chaparral and in sandy coastal scrub, often in sandy disturbed areas; 33–443 ft. Blooming period: April–November	Not expected, BSA lacks suitable habitat.
<i>Iva hayesiana</i> San Diego marsh-elder	Federal: None State: None CRPR: 2B.2	Perennial herb. Marshes and swamps, wetland areas, and playas; 32–1,640 ft. Blooming period: April–October	Not expected, BSA lacks suitable habitat.
<i>Juncus acutus</i> ssp. <i>leopoldii</i> Southwestern spiny rush	Federal: None State: None CRPR: 4.2	Perennial rhizomatous herb. Mesic soils in coastal dunes, alkaline seeps in meadows and seeps, and coastal salt marshes and swamps; 9–2,953 ft. Blooming period: (March)May–June	Not expected, BSA lacks suitable habitat.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	Federal: None State: None CRPR: 1B.1	Annual herb. Coastal salt marsh, coastal salt swamps, playas, vernal pools; 3–4,001 ft. Blooming period: February–June	Not expected, BSA lacks suitable habitat.
<i>Leptosyne maritima</i> Sea dahlia	Federal: None State: None CRPR: 2B.2	Perennial herb. Coastal bluff scrub and coastal scrub; 16–492 ft. Blooming period: March–May	Not expected, BSA lacks suitable habitat.
<i>Monardella hypoleuca</i> ssp. <i>lanata</i> Felt-leaved monardella	Federal: None State: None CRPR: 1B.2	Rhizomatous herb. Chaparral and cismontane woodland; 984–5,040 ft. Blooming period: June–August	Not expected, BSA occurs below known elevation range for this species.
<i>Monardella viminea</i> Willow monardella	Federal: FE State: SE CRPR: 1B.1	Perennial herb. Alluvial ephemeral washes in chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland; 164–738 ft. Blooming period: June–August	Not expected, BSA occurs below known elevation range for this species.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Nama stenocarpa</i> Mud nama	Federal: None State: None CRPR: 2B.2	Annual/perennial herb. Marshes and swamps, also riverbanks and lake margins; 16–1,640 ft. Blooming period: January–July	Not expected, BSA lacks suitable habitat.
<i>Navarretia fossalis</i> Spreading navarretia	Federal: FT State: None CRPR: 1B.1	Annual herb. Chenopod scrub, assorted freshwater marshes and swamps, playas, and vernal pools; 98–2,149 ft. Blooming period: April–June	Not expected, BSA occurs below known elevation range for this species.
<i>Nemacaulis denudata</i> var. <i>denudate</i> Coast woolly-heads	Federal: None State: None CRPR: 1B.2	Annual herb. Coastal dunes; 0–328 ft. Blooming period: April–September	Not expected, BSA lacks suitable habitat.
<i>Nemacaulis denudata</i> var. <i>gracilis</i> Slender cottonheads	Federal: None State: None CRPR: 2B.2	Annual herb. Coastal dunes, desert dunes, and Sonoran desert scrub; -164–1,312 ft. Blooming period: March–May	Not expected, BSA lacks suitable habitat.
<i>Orcuttia californica</i> California Orcutt grass	Federal: FE State: SE CRPR: 1B.1	Annual herb. Vernal pools; 49–2,165 ft. Blooming period: April–August	Not expected, BSA lacks suitable habitat.
<i>Phacelia stellaris</i> Brand's star phacelia	Federal: None State: None CRPR: 1B.1	Annual herb. Coastal dunes, coastal scrub; 3–1,312 ft. Blooming period: March–June	Not expected, BSA lacks suitable habitat.
<i>Pinus torreyana</i> ssp. <i>torreyana</i> Torrey pine	Federal: None State: None CRPR: 1B.2	Evergreen tree. Sandstone in closed-cone coniferous forest and chaparral; 246–524 ft. Cone production: June–November	Not expected, BSA occurs below known elevation range for this species.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Pogogyne abramsii</i> San Diego mesa mint	Federal: FE State: SE CRPR: 1B.1	Annual herb. Vernal pools; 295–655 ft. Blooming period: Mar–July	Not expected, BSA occurs below known elevation range for this species.
<i>Pogogyne nudiuscula</i> Otay Mesa mint	Federal: FE State: SE CRPR: 1B.1	Annual herb. Vernal pools; 295–820 ft. Blooming period: May–July	Not expected, BSA occurs below known elevation range for this species.
<i>Quercus dumosa</i> Nuttall's scrub oak	Federal: None State: None CRPR: 1B.1	Evergreen shrub. Sandy or clay loam in closed-cone coniferous forest, chaparral, and coastal scrub; 49–1,312 ft. Blooming period: February–August	Not expected, BSA lacks suitable soils.
<i>Salvia munzii</i> Munz's sage	Federal: None State: None CRPR: 2B.2	Evergreen shrub. Chaparral and coastal sage scrub; 393–3,493 ft. Blooming period: February–April	Not expected, BSA occurs below known elevation range for this species.
<i>Senecio aphanactis</i> Chaparral ragwort	Federal: None State: None CRPR: 2B.2	Annual herb. chaparral, Cismontane woodland, coastal scrub, and alkaline flats; 49–2,624 ft. Blooming period: January–April	Not expected, BSA lacks suitable habitat.
<i>Sidalcea neomexicana</i> Salt spring checkerbloom	Federal: None State: None CRPR: 2B.2	Perennial herb. Alkaline and mesic soils within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas; 49–5,020 ft. Blooming period: March–June	Not expected, BSA lacks suitable habitat and soils.
<i>Stemodia durantifolia</i> Purple stemodia	Federal: None State: None CRPR: 2B.1	Perennial herb. Population wide, along minor creeks and seasonal drainages, often in mesic, sandy soils in Sonoran desert scrub. Within the coastal zone in streams and creeks, typically slow moving rocky streams; 590–984 ft. Blooming period: (Jan) April–D	Not expected, BSA occurs below known elevation range for this species.

### Potential Special-Status Plant Species in the Biological Study Area

Species	Sensitivity Status	Habitat Characteristics	Potential
<i>Suaeda esteroa</i> Estuary seablite	Federal: None State: None CRPR: 1B.2	Perennial herb. Coastal salt marshes and swamps; 0–16 ft. Blooming period: May–January	Not expected, BSA occurs below known elevation range for this species
<i>Tetradococcus dioicus</i> Parry's tetradococcus	Federal: None State: None CRPR: 1B.2	Deciduous shrub. chaparral and coastal sage scrub; 5-13,280 ft. Blooming period: April–May	Not expected, BSA occurs below known elevation range for this species.



### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<b><i>Invertebrates</i></b>			
<i>Branchinecta lynchi</i> <b>Vernal pool fairy shrimp</b>	Federal: FT State: None	Found only in vernal pools and vernal pool-like habitats. Distributed throughout the Central Valley, including Sacramento County (USFWS 2005a).	Not expected, BSA lacks suitable habitat.
<i>Branchinecta sandiegonensis</i> <b>San Diego fairy shrimp</b>	Federal: FE State: None	Small, shallow vernal pools. Occasionally occur in ditches and road ruts with suitable conditions. Have never been found in permanent water bodies (USFWS 1998a).	Not expected, BSA lacks suitable habitat.
<i>Streptocephalus woottoni</i> <b>Riverside fairy shrimp</b>	Federal: FE State: None	Restricted to vernal pools and non-vegetated ephemeral pools deeper than 1 ft. (0.3 m). Inland areas of Riverside, Orange, Ramona and San Diego counties. Coastal areas of San Diego County and Northwestern Baja California (USFWS 2008).	Not expected, BSA lacks suitable habitat.
<b><i>Fish</i></b>			
<i>Eucyclogobius newberryi</i> <b>Tidewater goby</b>	Federal: FE State: SSC	Shallow coastal lagoons and the uppermost brackish zone of larger estuaries. Rarely found in marine or freshwater environments. Typically associated with still water, less than 3.3 ft. (1 m) deep, with salinities of less than 12 parts per thousand (USFWS 2005b).	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<b>Amphibians</b>			
<i>Spea hammondi</i> <b>Western spadefoot</b>	Federal: None State: SSC	Open areas with sandy/gravelly soils. Variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools, which do not contain bullfrogs, fish, or crayfish, are necessary for breeding (Nafis 2017).	Not expected, lacks suitable habitat.
<b>Reptiles</b>			
<i>Arizona elegans occidentalis</i> <b>California glossy snake</b>	Federal: None State: SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Nocturnal. Burrows, hiding underground in daytime.	Not expected, BSA lacks suitable habitat.
<i>Aspidoscelis hyperythra</i> <b>Orange-throated whiptail</b>	Federal: None State: None	Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral (Nafis 2017).	Not expected, BSA lacks suitable habitat.
<i>Aspidoscelis tigris stejnegeri</i> <b>Coastal whiptail</b>	Federal: None State: SSC	This subspecies is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California. Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage - chaparral, woodland, and riparian areas. (Nafis 2017).	Not expected, BSA lacks suitable habitat.
<i>Crotalus ruber</i> <b>Red-diamond rattlesnake</b>	Federal: None State: SSC	Inhabits arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland and cultivated areas. Prefers rocky areas with dense vegetation (Nafis 2017).	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Diadophis punctatus similis</i> <b>San Diego ringneck snake</b>	Federal: None State: None	Prefers moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. From Santa Barbara area south along the coast to San Diego County, and inland into the San Bernardino Mountains.	Not expected, BSA lacks suitable habitat.
<i>Emys marmorata</i> <b>Western pond turtle</b>	Federal: None State: SSC	Found in a wide variety of habitats throughout California, but associated with permanent ponds, lakes, streams, irrigation ditches, and permanent pools along intermittent streams. Occurs throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Phrynosoma blainvillii</i> <b>Coast horned lizard</b>	Federal: None State: SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats. Ranges up to 4,000 ft. (1,219 m.) in the Sierra Nevada foothills, and up to 6,000 ft. (1,800 m.) in the mountains of southern California (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Plestiodon skiltonianus interparietalis</i> <b>Coronado skink</b>	Federal: None State: None	Occurs in grasslands, woodlands, pine forests, chaparral, especially in open sunny areas such as clearings and the edges of creeks and rivers. Prefers rocky areas near streams with lots of vegetation. Also found in areas away from water. Found in inland southern California south through the north Pacific coast regions of northern Baja California Norte.	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Salvadora hexalepis virgulata</i> <b>Coast patch-nosed snake</b>	Federal: None State: SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains at elevations from below sea level to around 7,000 ft. (2,134 m.) (Nafis 2017).	Not expected, BSA lacks suitable habitat.
<i>Thamnophis hammondi</i> <b>Two-striped gartersnake</b>	Federal: None State: SSC	Found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland and coniferous forest (Nafis 2017). Highly aquatic. Associated with permanent and semi-permanent water bordered by dense vegetation in a variety of habitats from sea level to 8,000 ft. (2,400 m) (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Thamnophis sirtalis</i> <b>South coast gartersnake</b>	Federal: None State: SSC	Southern California coastal plain from Ventura County to San Diego County, and from sea level to about 2,788 ft. (850 m). Marsh & upland habitats near permanent water with good strips of riparian vegetation.	Not expected, BSA lacks suitable habitat.
<b>Birds</b>			
<i>Accipiter cooperii</i> <b>Cooper's hawk</b>	Federal: None State: None	Inhabits forests and woodlands, often in suburbs, parks, quiet neighborhoods, fields, and golf courses. Usually nests in pines, oaks, Douglas-firs, beeches, spruces, and other tree species, often on flat ground rather than hillsides, and in dense woods. Nests typically 25 to 50 ft. (8 to 15 m) high, often about two-thirds of the way up the tree in a crotch or on a horizontal branch.	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Agelaius tricolor</i> <b>Tricolored blackbird</b>	Federal: None State: SE, SSC	Preferred nesting habitat includes cattails, bulrushes, Himalayan berry, and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 10 or more m wide but in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. (Hamilton 2004). Breeds locally in northeastern California. In winter, becomes more widespread along central coast and San Francisco Bay area and is found in portions of the Colorado Desert (CDFW 2017).	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Aquila chrysaetos</i> <b>Golden eagle</b>	Federal: BGEPA State: FP	Habitat includes rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops. Uncommon resident and migrant throughout California, except the center of the Central Valley. (CDFW 2017).	Not expected, BSA supports suitable foraging habitat for the species; however, given the urbanized nature of the surrounding area, it is unlikely that this species would forage there.
<i>Artemisospiza belli</i> <i>belli</i> <b>Bell's sage sparrow</b>	Federal: None State: None	Inhabits coastal sagebrush, chaparral, and other open, scrubby habitats. In mountains of southern California, they occur in big sagebrush. In the Mojave, they use low scrub including big sagebrush, saltbush, bitterbrush, shadscale, and creosote bush.	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Athene cunicularia</i> <b>Burrowing owl</b>	Federal: None State: SSC	Nesting habitat includes open areas with mammal burrows, including rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots and human disturbed lands. Soils must be friable for burrows (Bates 2006).	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Buteo swainsoni</i> <b>Swainson's hawk</b>	Federal: None State: ST	Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah. Forages in adjacent grasslands, agricultural fields and pastures. Breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley (CDFW 2017).	Not expected, BSA supports suitable foraging habitat for the species; however, given the urbanized nature of the surrounding area, it is unlikely that this species would forage there.
<i>Campylorhynchus brunneicapillus sandiegensis</i> <b>Coastal cactus wren</b>	Federal: None State: SSC	Frequents desert succulent shrub, Joshua tree and desert wash habitats. Found in arid parts of westward-draining slopes of southern California. Nests in cholla or other large, branching cactus, in yucca, or in stiff-twigged, thorny shrub or small tree (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Charadrius alexandrinus nivosus</i> <b>Western snowy plover</b>	Federal: FT State: SSC	Coastal populations nest on dune-backed beaches, sand spits, beaches at creeks and river mouths, and salt pans at lagoons and estuaries (USFWS 2007).	Not expected, BSA lacks suitable habitat.



### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Circus cyaneus</i> <b>Northern harrier</b>	Federal: None State: SSC	Nest on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats and desert sinks (Shuford and Gardali 2008).	Potential. Suitable foraging habitat occurs within the BSA; however, suitable nesting habitat does not.
<i>Elanus leucurus</i> <b>White-tailed kite</b>	Federal: None State: FP	Occurs in herbaceous and open stages of valley lowland habitats, usually near agricultural land. Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands (DFG 2005b). Typically nest in the upper third of trees that may be 10 to 160 ft. (33 to 525 m.) tall. These can be open-country trees growing in isolation, or at the edge of or within a forest.	Potential. Suitable foraging habitat occurs within the BSA; however, suitable nesting habitat does not.
<i>Empidonax traillii extimus</i> <b>Southwestern willow flycatcher</b>	Federal: FE State: SE	Dense riparian forest and scrub habitats associated with rivers, swamps, wetlands, lakes and reservoirs (USFWS 2002).	Not expected, BSA does not support suitable nesting or foraging habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Eremophila alpestris actia</i> <b>California horned lark</b>	Federal: None State: None	Open grasslands and fields, agricultural areas, and open montane grasslands. This subspecies is resident from northern Baja California northward throughout non-desert areas to Humboldt County, including the San Joaquin Valley and the western foothills of the Sierra Nevada (north to Calaveras County). Prefers bare ground such as plowed or fall-planted fields for nesting, but may also nest in marshy soil. During the breeding season, this is the only subspecies of horned lark in non-desert southern California; however, from September through April or early May, other subspecies visit the area.	Not expected, BSA lacks suitable habitat.
<i>Icteria virens</i> <b>Yellow-breasted chat</b>	Federal: None State: SSC	Nest in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs and rivers. Often nest in dense thicket plants such as blackberry and willow (Shuford and Gardali 2008).	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Laterallus jamaicensis coturniculus</i> <b>California black rail</b>	Federal: None State: ST, FP	Requires fresh, brackish, and pickleweed-dominated salt marshes. Appear to prefer tidal salt marshes with a heavy canopy of pickleweed and an open structure below the canopy for nesting and accessibility. Known from coastal California, San Francisco Bay south to Baja California, Colorado River, and isolated populations in the Sierra foothills. Begins nesting in February, in stands of pickleweed and tall grasses, near the upper limits of tidal flooding zone. Yearlong resident of saline, brackish, and fresh emergent wetlands (Zeiner 1988-1990).	Not expected, BSA does not support suitable nesting or foraging habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Passerculus sandwichensis beldingi</i> <b>Belding's savannah sparrow</b>	Federal: None State: SE	Resident in coastal salt marshes from Santa Barbara County south to Mexico. Nests in pickleweed from January to August. Also found in mudflats, sandflats, and rock jetties.	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Plegadis chihi</i> <b>White-faced ibis</b>	Federal: None State: None	Inhabits fresh marshes, irrigated fields, and flooded pastures. Breeds in colonies, shifting locations year to year based on water levels. Nest sites usually in dense marsh growth (bulrush or cattails) or in low shrubs or trees above water.	Not expected, BSA lacks suitable habitat.
<i>Polioptila californica californica</i> <b>Coastal California gnatcatcher</b>	Federal: FT State: SSC	Scrub dominated plant communities, strongly associated with coastal scrub, sage scrub, and coastal succulent scrub communities. Distribution ranges from southern Ventura County down through Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties (USFWS 2010).	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Rallus obsoletus levipes</i> <b>Light-footed ridgway's rail</b>	Federal: FE State: SE, FP	Coastal salt marshes, lagoons, and their maritime environs. Require shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high tide.	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Riparia riparia</i> <b>Bank swallow</b>	Federal: None State: ST	Riparian areas with sandy, vertical bluffs or riverbanks. Also nest in earthen banks and bluffs, as well as sand and gravel pits (CDFW 2017).	Not expected, BSA does not support suitable nesting or foraging habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Setophaga petechia</i> <b>Yellow warbler</b>	Federal: None State: SSC	Breeding occurs from the coast range in Del Norte county, east to the Modoc plateau, south along the coast range to Santa Barbara and Ventura counties, and along the western slope of the Sierra Nevada south to Kern county (CDFW 2017).	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Sternula antillarum browni</i> <b>California least tern</b>	Federal: FE State: SE, FP	Nest and roost in colonies on open beaches, forage near shore ocean waters and in shallow estuaries and lagoons (USFWS 2006).	Not expected, BSA does not support suitable nesting or foraging habitat.
<i>Vireo bellii pusillus</i> <b>Least Bell's vireo</b>	Federal: FE State: SE	Obligate riparian breeder. Cottonwood willow, oak woodlands, and mule fat scrub along watercourses (USFWS 1998b).	Not expected, BSA does not support suitable nesting or foraging habitat.
<b>Mammals</b>			
<i>Antrozous pallidus</i> <b>Pallid bat</b>	Federal: None State: SSC	Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Chaetodipus californicus femoralis</i> <b>Dulzura pocket mouse</b>	Federal: None State: SSC	Variety of habitats including chaparral, grassland and coastal sage scrub (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Chaetodipus fallax fallax</i> <b>Northwestern San Diego pocket mouse</b>	Federal: None State: SSC	Sandy herbaceous areas in coastal scrub, chaparral, sagebrush, desert scrub and washes, and annual grassland (Zeiner 1990).	Not Expected. 2007 trapping surveys <sup>1</sup> (for PPM) occurred approximately 2,000 feet south of the project area. The species was not found within transects conducted within similar habitat to what occurs within the BSA (disturbed and on-native vegetation on sandy loamy soils). However, Northwestern San Diego pocket mouse was found during the 2007 survey 3,000 feet south of the project study area within San Elijo Lagoon.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Choeronycteris Mexicana</i> <b>Mexican long-tongued bat</b>	Federal: None State: SSC	Occurs in a wide variety of habitats, from arid thorn scrub to tropical deciduous forest and mixed oak-conifer forest. Preferred roosting sites include mines, caves, and rock fissures. Found primarily in moist desert canyons (Bolster 1998).	Not expected, BSA lacks suitable habitat.
<i>Corynorhinus townsendii</i> <b>Townsend's big-eared bat</b>	Federal: None State: SSC	Cave-dwelling, also roosts in old mine-workings, occasionally found in buildings. Population concentrations in areas with cavity-forming rock and in old mining districts (Bolster 1998).	Not expected, BSA lacks suitable habitat.
<i>Dipodomys stephensi</i> <b>Stephens' kangaroo rat</b>	Federal: FE State: ST	Often found in transition areas between grassland and coastal sage scrub habitat where perennial vegetation is covering less than 50% of the ground, including disturbed areas. Deep, friable soil is needed for burrowing. Plants commonly associated with suitable habitat are chamise, buckwheat, brome grass and filaree (Dudek & Associates 2003).	Not expected, BSA lacks suitable habitat.
<i>Euderma maculatum</i> <b>Spotted bat</b>	Federal: None State: SSC	Mostly found in the foothills, mountains, and desert regions of southern California. Habitats occupied include arid deserts, grasslands, and mixed conifer forests from sea level to 10,000 ft. (3,048 m). Primarily feeds on moths. Prefers to roost in cliffs and rock crevices, occasionally in caves and buildings.	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Eumops perotis californicus</i> <b>Western mastiff bat</b>	Federal: None State: SSC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. Roosts in crevices on vertical cliff faces, high buildings, trees, and tunnels (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Lasiurus blossevillii</i> <b>Western red bat</b>	Federal: None State: SSC	Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Lasiurus xanthinus</i> <b>Western yellow bat</b>	Federal: None State: SSC	Associated with palm trees in valley foothill riparian, desert riparian, desert wash and palm oasis habitats below 2,000 ft. (600 m) (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Leptonycteris yerbabuena</i> <b>Lesser long-nosed bat</b>	Federal: FE State: None	Occurs in the Sonoran desert with columnar cacti and agaves. Requires columnar cacti and agaves for roosting and food. Day roosts include caves, mines, rock crevices, trees and shrubs, and occasionally abandoned buildings. Very sensitive to human disturbance. Requires columnar cactus flowers and fruits; agave flowers represent the core diet. Also important are nectar, pollen, and fruit produced by a variety of columnar cacti.	Not expected, BSA lacks suitable habitat.
<i>Lepus californicus bennettii</i> <b>San Diego black-tailed jackrabbit</b>	Federal: None State: SSC	Herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats (Zeiner 1988-1990).	Not expected, BSA lacks suitable habitat.



### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Myotis yumanensis</i> <b>Yuma myotis</b>	Federal: None State: None	Occurs from Contra Costa County south to the Mexico border, also on both west and east side of the Sierra Nevada, and in Great Basin and desert habitats from Modoc to Kern and San Bernardino Counties. Inhabits a variety of habitats, primarily arid wooded and brushy uplands near water from sea level to 8,900 ft. (2,712 m). Streams, ponds, springs, and stock tanks are used for drinking and feedings. Feeds on small flying insects including moths, flies, beetles, and bugs. Roosts in caves, buildings, mines, crevices, and under bridges and under bark.	Not expected, BSA lacks suitable habitat.
<i>Neotoma lepida intermedia</i> <b>San Diego desert woodrat</b>	Federal: None State: SSC	Common to abundant in Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats. Also found in a variety of other habitats. Moderate to dense canopies preferred. Desert woodrats are particularly abundant in rock outcrops and rocky cliffs and slopes. Most abundant in rocky areas with Joshua trees. Elevational range from sea level to 8500 ft. (2600 m) (CDFW 2017).	Not expected, BSA lacks suitable habitat.
<i>Nyctinomops femorosaccus</i> <b>Pocketed free-tailed bat</b>	Federal: None State: SSC	Associated with creosote scrub or chaparral, and large rock features such as boulder jumbles or rocky canyons (Bolster 1998). Colonial and roosts primarily in crevices of rugged cliffs, high rocky outcrops and slopes. It has been found in a variety of plant associations, including desert shrub and pine-oak forests. The species may also roost in buildings, caves, and under roof tiles (WBWG 2016).	Not expected, BSA lacks suitable habitat.

### Potential Special-Status Wildlife Species in the Biological Study Area

Scientific Name	Sensitivity Status	Habitat Characteristics	Potential
<i>Nyctinomops macrotis</i> <b>Big free-tailed bat</b>	Federal: None State: SSC	Inhabits crevices in high cliffs, rock outcrops, and other rugged rocky terrain below 8,200 ft. (2,500 m) in elevation. Roosts in buildings, caves, and occasionally in holes in trees.	Not expected, BSA lacks suitable habitat.
<i>Perognathus longimembris pacificus</i> <b>Pacific pocket mouse</b>	Federal: FE State: SSC	Historically occurred on fine, sandy soil within about 2.5 to 3.7 mi. (4 to 6 km) of the Pacific coast of southern California. Associates with open coastal scrub and grassland communities (Spencer 2005).	Not Expected. 2007 trapping surveys <sup>1</sup> for PPM occurred approximately 2,000 feet south of the project area. The species was not found within transects conducted within similar habitat to what occurs within the BSA (disturbed and non-native vegetation on sandy loamy soils).
<i>Taxidea taxus</i> <b>American badger</b>	Federal: None State: SSC	Open shrub, forest and herbaceous habitats with friable soils. Associated with treeless regions, prairies, park lands and cold desert areas. Range includes most of California, except the North Coast (CDFW 2017).	Not expected, BSA lacks suitable habitat.

Notes:

<sup>1</sup> Natural Resources Assessment, Inc. *Presence/Absence Trapping Studies for the Pacific Pocket Mouse – North County Transportation District*. San Diego County, California. October 10, 2007.

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## Appendix C. Site Photographs

**Photo 1. Disturbed Habitat, ground mostly covered by iceplant**



**Photo 2. Southern section of ditch, looking north**





**Photo 3. Southern section of ditch, covered by iceplant**



**Photo 4. Middle section of ditch, looking north**





**Photo 5. Middle section of ditch, sedimentation observed and iceplant on banks**



**Photo 6. Middle section of ditch, looking south**





**Photo 7. Northern section of ditch, looking south**



**Photo 8. Freshwater seep**





**Photo 9. Water flow from seep**



**Photo 10. Non-Native Vegetation, ground covered by ice plant (*Carpobrotus edulis*) and western coastal wattle (*Acacia cyclops*) found on the left along road**





Photo 11. Urban/Developed: construction south of BSA



Photo 12. Culvert feature on southwest side of ephemeral ditch



**Photo 13. Ponding immediately after culvert**



## Appendix D. Botanical Species Observed



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## Botanical Species Observed in the Biological Study Area

Scientific Name	Common Name	Status Federal/State/CNPS
<b>CONIFEROPHYTA - CONE-BEARING PLANTS</b>		
<b><i>Pinaceae</i> – Pine Family</b>		
<i>Pinus sp.</i>	pine (ornamental)	—
<b>DICOTYLEDONES – “DICOTS”</b>		
<b><i>Aizoaceae</i> -</b>		
* <i>Carpobrotus edulis</i>	freeway iceplant	—
* <i>Mesembryanthemum crystallinum</i>	crystalline iceplant	—
<b><i>Amaranthaceae</i> – Amaranth Family</b>		
<i>Atriplex canescens</i>	four-wing saltbush	—
<b><i>Anacardiaceae</i> – Sumac Family</b>		
<i>Malosma laurina</i>	laurel sumac	—
<b><i>Asteraceae</i> – Sunflower Family</b>		
<i>Ambrosia psilostachya</i>	western ragweed	—
<i>Baccharis pilularis</i>	coyote brush	—
<i>Baccharis salicifolia ssp. salicifolia</i>	Mule fat	—
<i>Erigeron sp.</i>	fleabane	—
* <i>Glebionis coronaria</i>	crown daisy	—
<i>Isocoma menziesii</i>	coastal goldenbush	—
<i>Xanthium strumarium</i>	cocklebur	—
<b><i>Boraginaceae</i> – Forget-Me-Not Family</b>		
<i>Heliotropium curassavicum var. oculatum</i>	seaside heliotrope	—
<b><i>Brassicaceae</i> – Mustard Family</b>		
* <i>Brassica sp.</i>	mustard	—
* <i>Raphanus raphanistrum</i>	jointed charlock	—
<b><i>Chenopodiaceae</i> – Goosefoot Family</b>		
* <i>Atriplex semibaccata</i>	Australian saltbush	—
* <i>Salsola tragus</i>	Russian thistle	—
<b><i>Convolvulaceae</i> – Morning Glory Family</b>		
<i>Convolvulus sp.</i>	morning glory	—
<b><i>Crassulaceae</i> – Stonecrop Family</b>		
* <i>Crassula ovata</i>	jade plant	—

## Botanical Species Observed in the Biological Study Area

Scientific Name	Common Name	Status Federal/State/CNPS
<b><i>Euphorbiaceae – Spurge Family</i></b>		
* <i>Ricinus communis</i>	castor bean	—
<b><i>Fabaceae – Pea Family</i></b>		
* <i>Acacia cyclops</i>	western coast wattle	—
<i>Acmispon glaber</i>	deerweed	—
<b><i>Saururaceae – Lizard-Tail Family</i></b>		
<i>Anemopsis californica</i>	yerba mansa	—
<b><i>Scrophulariaceae – Figwort Family</i></b>		
* <i>Myoporum laetum</i>	myoporum	—
<b><i>Myrtaceae – Myrtle Family</i></b>		
* <i>Callistemon citrinus</i>	crimson bottlebrush	—
* <i>Eucalyptus sp.</i>	gum tree	—
<b><i>Plumbaginaceae - Leadwort Family</i></b>		
* <i>Limonium perezii</i>	Perez's sea lavender	—
<b><i>Solanaceae – Nightshade Family</i></b>		
<i>Datura wrightii</i>	jimsonweed	—
* <i>Nicotiana glauca</i>	tree tobacco	—
<b><i>Tamaricaceae – Tamarisk Family</i></b>		
* <i>Tamarix sp.</i>	tamarisk	—
<b><i>Urticaceae – Nettle Family</i></b>		
<i>Urtica dioica</i>	stinging nettle	—
<b>MONOCOTS</b>		
<b><i>Arecaceae – Palm Family</i></b>		
* <i>Phoenix canariensis</i>	Canary Island palm	—
* <i>Washingtonia robusta</i>	Mexican fan palm	—
<b><i>Juncaceae – Rush Family</i></b>		
<i>Juncus acutus ssp. leopoldii</i>	southwestern spiny rush	-/-/4.2
<b><i>Poaceae – Grass Family</i></b>		
* <i>Avena sp.</i>	oats	—
* <i>Cortaderia sp.</i>	pampas grass	—
* <i>Distichlis spicata</i>	salt grass	—
* <i>Hordeum murinum</i>	wall barley	—

### Botanical Species Observed in the Biological Study Area

Scientific Name	Common Name	Status Federal/State/CNPS
* <i>Pennisetum setaceum</i>	crimson fountain grass	—
* <i>Schismus barbatus</i>	common Mediterranean grass	—
<b><i>Typhaceae – Cattail Family</i></b>		
<i>Typha sp.</i>	cattail	—

Notes:

\* Non-native species

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