Biological Technical Report for the

Beach Access Repair Project

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Addendum

This document contains information and data from a study that was prepared for a prior version of the proposed Project. The data contained within remains relevant and applicable to the proposed Project; however, may contain information that is no longer representative of the proposed Project. Please reference the Initial Study Mitigated Negative Declaration document for any information pertinent to the proposed Project description.

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1.0 INTRODUCTION

On behalf of the City of Carlsbad, VCS Environmental (VCS) prepared this Biological Technical Report, which incorporates the findings from a general biological assessment and jurisdictional delineation conducted by VCS on July 10, 2018 and June 3, 2020. VCS prepared this report for the Beach Access Repair Project (Project).

1.1 Purpose and Approach

This report provides a summary of the conditions present during the July 2018 and June 2020 surveys, an assessment of the potential presence of sensitive biological resources, and an analysis of the potential impacts to those resources with implementation of the Project. This report presents the current biological resources present within the Project site including habitat communities, potential jurisdictional waters, and the potential occurrence of listed and special status plant and wildlife species. The potential biological impacts in view of federal, state, and local laws and regulations are also identified in this report. While general biological resources are discussed, the focus of this assessment is on those resources considered to be sensitive. The report also recommends, as appropriate, Best Management Practices (BMPs), avoidance, minimization, and mitigation measures to reduce or avoid potential impacts. This report was prepared based upon results of a literature review and field survey.

1.2 Terms

The following terms will be used throughout this document and are defined as follows:

- Project site: location where improvements to Carlsbad Boulevard beach access will be made and primary area subject to assessment during the biological survey. The Project site is also referred to as 'Limit of Project' on attached graphics. The construction activities will occur west of Carlsbad Boulevard. Specifically, improvements will be made to pedestrian paths and to the four stairways that provide access to the beach.
- Survey Area: area subject to general assessment during the biological survey. The focus of the biological survey was the Project site; however, resources were also surveyed within a 100-foot buffer around the Project site, as directed in the City's *Guidelines for Biological Studies* (TAIC, 2008).

Biological resources may be either directly or indirectly impacted by a project. Direct and indirect impacts may be either permanent or temporary in nature. These impact categories are defined below.

- Direct impact: any loss, alteration, disturbance, or destruction of biological resources that would result from project-related activities is a direct impact. Examples include

vegetation clearing, encroaching into wetlands, diverting natural surface water flows, and the loss of individual species and/or their habitats. Direct impacts are long-term.

- Indirect impact: as a result of project-related activities, biological resources may also be affected in a manner that is not direct. Examples of indirect impacts include elevated noise, light, and dust levels, increased human activity, decreased water quality, erosion created by the removal of vegetation, and the introduction of invasive plants and unnatural predators (e.g., domestic cats and dogs). These indirect impacts may be both short-term and long-term in their extent.
- Permanent impacts: all impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.
- Temporary impacts: any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include removing vegetation and either allowing the natural vegetation to recolonize or actively revegetating the impact area.

Potential impacts to resources are discussed within Sections 4.0, 5.0, and 6.0.

1.3 Project Site Location

The Project site is located along the west side of Carlsbad Boulevard from Pine Avenue to Tamarack Avenue within the City of Carlsbad (City), San Diego County, California. The Project site is bounded by Carlsbad Boulevard to the east, Carlsbad State Beach to the east, a parking lot and Agua Hedionda Lagoon inlet to the south, and commercial and residential development to the north. The Project site is regionally accessible from Interstate 5 to the west. Regional and Vicinity Maps are included as Figures 1 and 2, respectively. The Project site is located within Township 12 South and Ranges 04 and 05 West of the United States Geological Survey (USGS) Topographic Map, 7.5 Minute Series, San Luis Rey Quadrangle.

2.0 PROJECT DESCRIPTION

The Project proposes structural repairs and beach access improvements to the existing reinforced concrete sidewalks, access stairways and seawall located along Carlsbad Boulevard and Carlsbad State Beach. The Project is within City limits and portions of the Project are within California State Parks jurisdiction; however, the City maintains a memorandum of understanding (MOU) with State Parks to maintain the bluff and sidewalks.

The beach and the sidewalks are heavily used by the public for passive and active recreation and is the most popular beach in the City. Access to the beach along the bluff is via the upper sidewalk (at the top of bluff) and lower sidewalk (at the base of bluff), with a ramp down the bluff at each end of the Project limits and five (5) sets of stairways connecting the two sidewalks. The sidewalks and stairways were built in the 1980's and are in need of repair for general upkeep and structural integrity. The repair recommendations and extent of the repairs are outlined in the *TTG Carlsbad Boulevard Seawall Sidewalk and Beach Access Stairs, Structural Evaluation*, dated February 24, 2017.

Project repair elements include:

- Replacing 1,087 feet of elevated pile-supported upper sidewalk and overlooks between Pine Avenue and Maple Avenue and repairing various sections of the on-grade upper sidewalk south of Maple Avenue.
- Replacing the existing upper sidewalk surface-mounted 42-inch high handrail between Pine Avenue and Cherry Avenue with a side-mounted railing to provide an additional approximately 0.5 feet of extra sidewalk walking width.
- Replacing the elevated painted steel access stairways and elevated reinforced concrete pile-supported landings from the top of bluff to the beach at the bottom of bluff, in same configuration in four (4) separate access locations.
- Replacing the on-grade concrete stairway treads and landing near the south access at Tamarack Avenue within the footprint of the existing stair curbs.
- Repairing localized concrete cracks and spalls on the lower sidewalk, beach access stairs and seawall within the City Local Coastal Plan (LCP) jurisdictional limits.
- Extending the existing short retaining wall at the base of the Maple Avenue stairway by 12 feet and at the base of the Sycamore and Hemlock Avenue stairways by 8 feet to prevent excess soil sloughing off the bluff from impacting use of the stairs.

During Project implementation, there is a unique opportunity to widen the upper sidewalk since the existing precast sidewalk has significantly deteriorated and is in need of full replacement. Replacement of the elevated sidewalk will be a long-term solution to the existing deteriorated

sidewalk, with the new beams anticipated to be designed with high-strength, corrosion resistant precast concrete with an anticipated service life of at least 50 years before needing attention again. Project access improvement elements related to the upper sidewalk widening include:

- Widening during replacement of 1,087 feet of the existing elevated upper sidewalk by 1.5 feet along Carlsbad Boulevard towards the bluff from Pine Avenue to Maple Avenue.
- Widening and replacement of 759 feet of the existing on-grade upper sidewalk by 1.5 feet along Carlsbad Boulevard towards the bluff from Maple Avenue to Cherry Avenue.

2.1 Current Conditions

The Survey Area is comprised of approximately 23 acres within a highly recreated area situated between Carlsbad Boulevard and Carlsbad State Beach. The Survey Area is comprised of several different land use types: bare sandy beach, paved road and walking paths with ornamental landscaping, and a mostly continuous stretch of native coastal scrub habitat punctuated by five concrete stairways. The areas to the north and east of the Survey Area are fully developed including residential neighborhoods and commercial buildings. The area to the south of the Project site includes a small paved parking lot and a tidal inlet to Agua Hedionda Lagoon. The area to the west of the Project is Carlsbad State Beach.

The topography of the Survey Area includes a flat or gently-sloping developed area on the east side, located at the highest elevation. A steep bluff habitat lies just west of this developed area, with a paved walking path, retaining wall, and sea wall at the bottom of the bluffs. West of the sea wall lies a sandy beach area, which sits at the lowest elevation within the Survey Area. Elevations within the Survey Area range from approximately 13 feet to 52 feet above mean sea level (MSL).

3.0 REGULATORY CONTEXT

The following is a list of the relevant federal, state, and local laws and regulations that apply to protecting plant communities, plants, wildlife, and water quality from impacts within the Project site.

Agency/ Organization	Laws/Regulations	Notes
Federal	Clean Water Act (CWA) Section 404	Jurisdictional Waters of the United States (WOUS) may be present within the Project site but will not be impacted during Project activities; therefore, a Section 404 Permit from the United States Army Corps of Engineers (USACE) is not required.
	CWA Section 401	Jurisdictional WOUS and Waters of the State (WOS) may be present within the Project site but will not be impacted during Project activities; therefore, a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB) is not required.
	CWA Section 408	No facilities subject to Section 408 occur within the Project.
	Migratory Bird Treaty Act (MBTA)	Compliance with the MBTA will be achieved with pre-construction surveys for nesting birds within three days prior to initiation of work during the nesting bird season (February 15 – September 15).
	Endangered Species Act (ESA)	As discussed in Section 5.0, there is a moderate potential for the federally threatened coastal California gnatcatcher (*Polioptila californicacalifornica;* "gnatcatcher") to occur onsite in a transitory nature; however, this species is not likely to utilize the Project site as nesting habitat. See Section 7.0 for recommendations regarding pre-construction surveys during the gnatcatcher breeding season. Should an active gnatcatcher nest occur within or adjacent to the Project site, consultation with the United States Fish and Wildlife Service (USFWS) will need to occur.
State	Section 1600 of the Fish and Game Code (FGC)	Jurisdictional WOS may be present within the Project site but will not be impacted during Project activities; therefore, a Section 1600 Permit through the California Department of Fish and Wildlife (CDFW) is not required.
	Sections 3503, 3503.5, and 3513 of the FGC	These FGC sections offer protection of nesting birds, birds-of-prey, and migratory birds. Compliance will be maintained with a pre-construction survey for nesting birds (including birds-of-prey and migratory birds) within three days prior to initiation of work during the nesting bird season (February 15 – September 15).

Agency/ Organization	Laws/Regulations	Notes
	Section 4150 of the FGC	Prohibits incidental or deliberate "take" of non-game mammals, including bats. Potential impacts to bats will be avoided with a pre-construction survey conducted prior to initiation of work.
	Porter-Cologne Water Quality Control Act and Water Discharge Requirements (WDR)	WOS and WOUS may be present within the Project site but will not be impacted during Project activities; therefore, a Water Quality Certification is not required.
City of Carlsbad	Habitat Management Plan (HMP)	The Project is located within the City of Carlsbad and is subject to the requirements of the City's HMP, which functions as Carlsbad's Subarea Plan within the North County Multiple Habitat Conservation Plan (MHCP) as well as an Ongoing Multi-Species Plan (OMSP) consistent with California's Natural Community Conservation Planning (NCCP) program. The HMP also constitutes a habitat conservation plan (HCP) pursuant to the ESA and the California Endangered Species Act (CESA) for authorization to take certain listed species. The Project site lies within Local Facilities Management Zone 1, within the portion of the City labeled "Development Areas", outside of the HMP planning area.
	Carlsbad HMP Permit	A Minor HMP Permit or HMP Permit is required for any project that directly or indirectly impacts natural habitat and/or sensitive species within the City of Carlsbad (Section 21.210.070 of City Zoning Ordinance).
	Carlsbad HMP Incidental Take Permit	A Carlsbad HMP Incidental Take Permit is required for take of a state or federally listed species within the City of Carlsbad that is covered by the HMP (Section 21.210.075 of City Zoning Ordinance). It is unlikely that this permit will be necessary as no state or federally listed species were observed during the general biological field surveys nor have any been previously documented within the Survey Area. A discussion of the potential for gnatcatcher to occur onsite is included in Section 5.0.
	Coastal Development Permit (CDP)	A CDP is required for the Project as it lies within the Coastal Zone. The City of Carlsbad has an approved LCP.

4.0 VEGETATION

4.1 Literature Review

4.1.1 Sensitive Plant Communities

Sensitive plant communities (sensitive habitats) as defined below, are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. Sensitive habitats are often threatened with local extirpation, and therefore considered valuable biological resources. Plant communities are considered "sensitive" by the California Native Plant Society (CNPS) and CDFW if they meet any of the following criteria listed below.

- The habitat is recognized and considered sensitive by CDFW, United States Fish and Wildlife Service (USFWS), and/or special interest groups such as CNPS.
- The habitat is under the jurisdiction of the USACE pursuant to Section 404 of the CWA.
- The habitat is under the jurisdiction of the CDFW pursuant to Sections 1600 through 1612 of the FGC.
- The habitat is known or believed to be of high priority for inventory in the California Natural Diversity Database (CNDDB).
- The habitat is considered regionally rare.
- The habitat has undergone a large-scale reduction due to increased encroachment and development.
- The habitat supports special status plant and/or wildlife species (defined below).
- The habitat functions as an important corridor for wildlife movement.

The most current version of CDFW's List of California Sensitive Natural Communities indicates which natural communities are sensitive given the current state of the California classification (CDFW, 2020b).

4.1.2 Special Status Plants

Species of plants are afforded "special status" by federal agencies, state agencies, and/or non-governmental organizations (e.g., USFWS, CDFW, CNPS, and United States Forest Service [USFS]) because of their recognized rarity, potential vulnerability to extinction, and local importance. These species typically have a limited geographic range and/or limited habitat and are referred to collectively as "special status" species. Plant species were considered "special status" species if they meet any of the following criteria:

- Taxa with official status under ESA, California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA).
- Taxa proposed for listing under ESA and/or CESA.
- Taxa identified as sensitive, unique or rare, by the USFWS, CDFW, USFS, and/or the Bureau of Land Management (BLM).
- Plants that meet the definition of rare or endangered under the CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
  - Species considered by CNPS and CDFW to be "rare, threatened or endangered in California" (California Rare Plant Rank [CRPR] 1A, 1B and 2; CNPS 2020). A majority of the CRPR 3 and CRPR 4 plant species generally do not qualify for protection under CESA and NPPA.
  - Species that may warrant consideration on the basis of local significance or recent biological information.
  - Some species included on the CNDDB Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2020c).
- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances. Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Available literature and databases were reviewed regarding sensitive habitats and special status plant species. Special status plant species that have the potential to occur within the immediate region of the Project site were identified. Several agencies, including the USFWS, CDFW, and CNPS publish lists of particular taxa (species and subspecies) and the associated level of protection or concern associated with each. Reviewed and consulted literature and databases focused on the Project site and included the following sources listed below:

- The CNDDB, a CDFW species account database that inventories status and locations of rare plants and wildlife in California, was used to identify any sensitive plant communities and special status plants that may exist within a two-mile radius of the Project site (CDFW 2020a).
- Online CNPS Inventory of Rare and Endangered Plants of California (CNPS 2020). A search for the United States Geological Survey (USGS) 7.5-Minute Topographic Map San Luis Rey Quadrangle within a range of 0 - 20 meters elevation provided information regarding the distribution and habitats of special status vascular plants in the vicinity of the Project.

- A map of USFWS critical habitat to determine species with critical habitat mapped in the general vicinity of the Project (USFWS, 2020a).
- Pertinent maps, scientific literature, websites, and regional flora and fauna field guides.

As noted previously, species occurrence and distribution information are often based on documented occurrences where opportunistic surveys have taken place; therefore, a lack of records does not necessarily indicate that a given species is absent from the Project site.

4.2 Field Methodology

The initial general biological assessment was conducted within the Survey Area on July 10, 2018 by VCS biologists Erin Hayes and Molly Burdick-Whipp. An updated general biological assessment was performed within the Survey Area on June 3, 2020 by Molly Burdick-Whipp. During the surveys, biologists walked the entirety of the Survey Area, paying special attention to those areas that could host sensitive vegetation communities or had the potential to provide suitable habitat for special status plant species. Plant species were identified using plant field and taxonomical guides, such as The Jepson Manual: Vascular Plants of California, second edition (Baldwin et al. 2012). All plant species encountered during the field survey were identified and recorded in field notes.

The vegetation communities and habitat conditions were inspected to confirm presence and habitat quality of the vegetation found onsite. Vegetation communities and land cover types were mapped using the modified Holland system as defined within Appendix B of the Multiple Habitat Conservation Program Biological Monitoring and Management Plan (CDFW et al., 2003). Vegetation was also mapped to alliance using the Manual of California Vegetation (Sawyer et al., 2009); any deviations from standard vegetation classifications were made on best professional judgment when areas did not fit into a specific habitat description provided by the Manual. Vegetation communities were mapped using field observations and aerial imagery.

4.3 Results

4.3.1 Vegetation Communities

Vegetation/land cover mapping and acreages for each vegetation community and land type within the Survey Area can be found in Table 1 and Figures 3 and 4. Figure 3 depicts vegetation communities within the Survey Area that were mapped using the Manual of California Vegetation (Sawyer et al., 2009). Figure 4 depicts vegetation communities within the Survey Area that were mapped using the modified Holland system (CDFW et al., 2003). Representative photographs of the Survey Area are included as Appendix A.

Table 1. Vegetation Communities/Land Cover Observed within the Survey Area

Vegetation Community/Land Cover Type		Acreage Subtotals	Acreage Totals
Modified Holland System	**Vegetation Alliance (Sawyer et al., 2008)**		
32500 Diegan Coastal Sage Scrub	*Rhus integrifolia* Shrubland Alliance (Lemonade Berry scrub)	0.96	3.85
	Encelia californica Shrubland Alliance (California brittle bush scrub)	2.89	
32400 Maritime Succulent Scrub	*Opuntia littoralis* Shrubland Alliance (Coast prickly pear scrub)	0.69	0.69
45310 Alkali Meadow	*Distichlis spicata* Herbaceous Alliance (Salt grass flats)	0.04	0.04
63320 Disturbed Southern Willow Scrub	*Salix exigua* Shrubland Alliance (Sandbar willow thickets)	0.04	0.04
52410 Disturbed Coastal and Valley Fresh Marsh	*Typha latifolia* Herbaceous Alliance (Cattail marsh)	0.07	0.07
11000 Non-Native Vegetation	*Cakile maritima* Provisional Herbaceous Semi-Natural Alliance (Sea rocket stands)	0.03	0.22
	Myoporum laetum Woodland Semi-Natural Alliance (Myoporum groves)	0.02	
	Limonium perezii stand (Perez's sea lavender stand)	0.17	
13400 Beach	Sand	8.01	8.01
13000 Unvegetated Habitat	Disturbed/Bare	0.11	0.11
12000 Urban/Developed	Disturbed/Developed	10.12	10.12
		TOTAL	**23.15**

4.3.1.1 Diegan Coastal Sage Scrub (32500)

A total of 3.85 acres of Diegan Coastal Sage scrub was mapped within the Survey Area. This drought-deciduous community occurs on dry south-facing slopes and is comprised of aromatic shrubs and annual and perennial herbs and grasses. Characteristic species of this group that are present within the Survey Area include coastal sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and black sage (*Salvia mellifera*). Based on Sawyer et al. (2009), this community can sub-divided into two alliances:

Rhus integrifolia Shrubland Alliance (Lemonade Berry scrub)

A total of 0.96 acres of *Rhus integrifolia* Shrubland Alliance was mapped within Diegan Coastal Sage Scrub. These areas occur along the bluff and are dominated or co-dominated by lemonade berry (*Rhus integrifolia*), with California brittle bush (*Encelia californica*), at times, as a co-dominant species. Other species observed within these areas include California buckwheat and laurel sumac (*Malosma laurina*).

Encelia californica Shrubland Alliance (California brittle bush scrub)

A total of 2.89 acres of *Encelia californica* Shrubland Alliance was mapped within Diegan Coastal Sage Scrub along the bluff. These areas are typically dominated by California brittle bush. At times, California brittle bush is co-dominant in the shrub canopy with coyote brush (*Baccharis pilularis*), San Diego goldenbush (*Isocoma menziesii menziesii*), spreading goldenbush (*Isocoma menziesii sedoides*), and/or black sage. Additional native species observed in these areas include coastal sagebrush, coast prickly pear (*Opuntia littoralis*), four-wing saltbush (*Atriplex canescens*), bladderpod (*Peritoma arborea* var. *arborea*), lady-fingers (*Dudleya edulis*), deer weed (*Acmispon glaber* var. *glaber*), California fuchsia (*Epilobium canum* ssp. *canum*), California buckwheat, and coast desert-thorn (*Lycium californicum*). Nonnative species observed within these areas include hottentot fig (*Carpobrotus edulis*), crystalline iceplant (*Mesembryanthemum crystallinum*), spotted spurge (*Euphorbia maculata*), and great bougainvillea (*Bougainvillea spectabilis*).

4.3.1.2 Maritime Succulent Scrub (32400)

A total of 0.69 acres of Maritime Succulent Scrub was mapped within the Survey Area. These areas occur on the bluff and are typically dominated by coast cholla (*Cylindropuntia prolifera)*; a portion of these areas is co-dominated by coast prickly pear and California brittle bush. Other species observed in this community type include San Diego goldenbush and spreading goldenbush. This community can also be classified as *Opuntia littoralis* Shrubland Alliance (Coast prickly pear scrub; Sawyer et al., 2009).

4.3.1.3 Alkali Meadow (45310)

A total of 0.04 acres of was mapped as Alkali Meadow within the Survey Area. These areas are comprised of salt grass patches along the west side of the sea wall in the sand. This vegetation community type was at times co-dominated by sea rocket (*Cakile maritima*). This community can also be classified as *Distichlis spicata* Herbaceous Alliance (Salt grass flats; Sawyer et al., 2009).

4.3.1.4 Disturbed Southern Willow Scrub (63320)

A total of 0.04 acres of Disturbed Southern Willow Scrub was mapped within the Survey Area. This area is comprised almost entirely of sandbar willow (*Salix exigua*) with a single stand of giant reed (*Arundo donax*) and the occasional salt heliotrope and sea rocket interspersed within. This community occurs in the sandy beach west of and adjacent to the sea wall near the stairway at the end of Cherry Avenue. Based on Sawyer et al. (2009), this area can be also be classified as *Salix exigua* Shrubland Alliance (Sandbar willow thickets).

4.3.1.5 Disturbed Coastal and Valley Fresh Marsh (52410)

A total of 0.07 acres of the Survey Area was mapped as Disturbed Coastal and Valley Fresh Marsh. This community type is located in two areas of the sandy beach west of and immediately adjacent to the sea wall south of the stairway at the end of Cherry Avenue, as well as in one small area at the northern end of the Survey Area. These areas occur in depressions, exhibit standing water, and are dominated by broad-leaf cattail (*Typha latifolia*). Additional native species present within these areas include bulrush (*Schoenoplectus* sp.) and salt grass. Nonnative plants present in these areas include sea rocket and umbrella plant (*Cyperus involucratus*). This community can also be classified as *Typha latifolia* Herbaceous Alliance (Cattail marsh; Sawyer et al., 2009).

4.3.1.6 Non-Native Vegetation (11000)

A total of 0.22 acres of the Survey Area was mapped as Non-Native Vegetation, primarily comprised of sea rocket, myoporum (*Myoporum laetum*) trees, and Perez's sea lavender. Based on Sawyer et al. (2009), this vegetation community can be divided into three alliances:

Cakile maritima Provisional Herbaceous Semi-Natural Alliance (Sea rocket stands)

A total of 0.03 acres of *Cakile maritima* Provisional Herbaceous Semi-Natural Alliance was mapped within the Survey Area. These areas occur along the west side of the sea wall in the sand and are dominated by sea rocket (*Cakile maritima*); salt heliotrope (*Heliotropium curassavicum* var. *oculatum*) was also observed in these areas.

Myoporum laetum Woodland Semi-Natural Alliance (Myoporum groves)

A total of 0.02 acres of *Myoporum laetum* Woodland Semi-Natural Alliance was mapped at one location within the Survey Area at the top of the bluff, just north of the stairway at the end of Hemlock Avenue. This area is dominated myoporum trees with little to no native vegetation present.

Limonium perezii stand

A total of 0.17 acres of *Limonium perezii* stands was mapped within the Survey Area. These areas along the bluff are dominated by non-native Perez's sea lavender with little to no native vegetation present.

4.3.1.7 Beach

A total of 8.01 acres of the land within the Survey Area is classified as Beach. This area is comprised of unvegetated, publicly-recreated sandy beach.

4.3.1.8 Disturbed/Bare

A total of 0.11 acres of the Survey Area is considered disturbed/bare. These areas occur adjacent to developed areas. Portions of the slopes (especially the upper slopes) show a lack of vegetative cover. Much of these areas occur above the uppermost irrigation lines, where vegetation was likely not planted when habitat installation occurred along the slopes. These areas may also be subject to disturbance from ongoing vegetation maintenance. Some areas under and adjacent to the four stairways that bisect the slopes show a large amount of erosion and are deeply incised. These areas often lack vegetation and are included in the disturbed/bare category.

4.3.1.9 Disturbed/Developed

A total of 10.12 acres of the Survey Area is considered disturbed/developed. Disturbed/developed land cover includes paved, pedestrian paths, stairways, and a portion of Carlsbad Boulevard. Ornamental vegetation occurs within this area along the upper sidewalks and Carlsbad Boulevard, including Mexican fan palm (*Washingtonia robusta*), crimson bottlebrush (*Callistemon citrinus)*, fountain grass (*Pennisetum setaceum)*, and bird of paradise (*Strelitzia reginae).*

4.3.1.10 Special Status Vegetation Communities

The habitats described above as Diegan Coastal Sage Scrub (Lemonade berry scrub and California brittle brush scrub) and Maritime Succulent Scrub (Coast prickly pear scrub) are considered sensitive vegetation communities by CDFW. The habitat described as Disturbed Coastal and Valley Fresh Marsh (cattail marsh) may also be considered a sensitive resource by CDFW, as further discussed in Section 6.0.

The habitats described as Diegan Coastal Sage Scrub, Maritime Succulent Scrub, Disturbed Coastal and Valley Fresh Marsh, and Beach are identified as sensitive habitats requiring mitigation under the City's HMP.

Southern Coastal Salt Marsh community was reported in the CNDDB within two miles of the Project site; however, this plant community was not observed in the Survey Area.

4.3.2 Plants

A total of 57 plant species were observed within the Survey Area during the July 2018 and June 2020 surveys and are listed in Appendix B.

4.3.2.1 Sensitive Plant Species Occurring Onsite

Two observations of sensitive plant species occurred during the July 2018 survey. VCS biologists identified two cliff spurge (*Euphorbia miseria*) individuals within areas of Diegan Coastal Sage

Scrub and several individuals of coast desert-thorn (*Lycium californicum*). Cliff spurge is a perennial shrub with a CRPR of 2B.2 and is a covered species under the City's HMP. Coast desert-thorn is a perennial shrub with a CRPR of 4.2 and is not a covered species under the HMP. The locations of cliff spurge individuals are included in the Vegetation/Land Cover Maps (Figures 3 and 4).

No other sensitive plant species were observed within the Survey Area during the 2018 and 2020 general biological surveys.

4.3.2.2 Sensitive Plant Species with Potential to Occur

Sensitive plant species include federally or state listed threatened or endangered species and those species listed on CNPS's rare and endangered plant inventory. Species with the potential to occur onsite were analyzed based on distribution, habitat requirements, and existing site conditions, and are listed in Appendix C.

One special status plant species exhibits a high potential to occur onsite: sea dahlia (*Leptosyne maritima*), a perennial herb with a CRPR of 2B.2. Sea dahlia is not a covered species under the City's HMP. There were two recorded CNDDB observations of this species within the Survey Area in 2015.

The following special status plant species have a moderate potential to occur within the Survey Area: South Coast saltscale (*Atriplex pacifica*), Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*), Del Mar Mesa sand aster (*Corethrogyne filaginifolia* var*. linifolia*), San Diego barrel cactus (*Ferocactus viridescens*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), and San Diego County viguiera (*Viguiera laciniata* [= *Bahiopsis laciniata*]).

4.4 Project Impacts

4.4.1 Potential Impacts to Vegetation Communities

Proposed impacts to vegetation/land cover types due to Project implementation can be found in Table 2 and Figures 5 and 6. Figure 5 depicts proposed impacts to vegetation communities within the Project site that were mapped using the modified Holland system (CDFW et al., 2003). Figure 6 depicts proposed impacts to vegetation communities within the Project site that were mapped using the Manual of California Vegetation (Sawyer et al., 2009).

Table 2. Vegetation Community Impacts

Vegetation Community/Land Cover Type		Permanent Impacts (acres)	Temporary Impacts (acres)
Modified Holland System	**Vegetation Alliance (Sawyer et al., 2008)**		
32500 Diegan Coastal Sage Scrub	*Rhus integrifolia* Shrubland Alliance (Lemonade Berry scrub)	0.03	0.10
	Encelia californica Shrubland Alliance (California brittle bush scrub)		
32400 Maritime Succulent Scrub	*Opuntia littoralis* Shrubland Alliance (Coast prickly pear scrub)	0.02	0.02
45310 Alkali Meadow	*Distichlis spicata* Herbaceous Alliance (Salt grass flats)	0	0
63320 Disturbed Southern Willow Scrub	*Salix exigua* Shrubland Alliance (Sandbar willow thickets)	0	0
52410 Disturbed Coastal and Valley Fresh Marsh	*Typha latifolia* Herbaceous Alliance (Cattail marsh)	0	0
11000 Non-Native Vegetation	*Cakile maritima* Provisional Herbaceous Semi-Natural Alliance (Sea rocket stands)	0.003	0.03
	Myoporum laetum Woodland Semi-Natural Alliance (Myoporum groves)		
	Limonium perezii stand (Perez's sea lavender stand)		
13400 Beach	Sand	0	0
13000 Unvegetated Habitat	Disturbed/Bare	0.01	0.03
12000 Urban/Developed	Disturbed/Developed	0	0
	TOTAL	**0.06**	**0.18**

The Project proposes to permanently impact 0.03 acres of Diegan coastal sage scrub and 0.02 acres of maritime succulent scrub within the Project site, primarily along the upper boundary of the slope, where the sidewalk will be cantilevered an additional 1.5 feet over the bluff side to widen the walkway. No additional footings will be placed underneath the widened sidewalk. While no structures will be physically placed into the soil, the extension of the walkway will likely create a shading impact, limiting the growth and survival of existing vegetation, as well as inhibiting recruitment of vegetation into this area.

The Project proposes to temporarily impact 0.10 acres of Diegan coastal sage scrub and 0.02 acres of maritime succulent scrub, primarily in the areas adjacent to the four stairways that transect the slope in order to replace the stairway structures and to accommodate equipment access. Temporary impacts to these communities are also anticipated for access along the upper slope where the sidewalk will be widened as well as along the base of the bluff for minor repairs to the lower retaining wall/curb.

The Diegan coastal sage scrub and maritime succulent scrub communities are considered sensitive by CDFW and require mitigation under the City's HMP. Sensitive vegetation communities not directly impacted by Project activities but located near the Project limits of disturbance may be indirectly impacted by construction activities. Indirect impacts could include increases in dust, debris, and trash. With the inclusion of the mitigation, avoidance, and minimization measures described in Section 7.0, direct and indirect impacts to sensitive vegetation communities are considered to be less than significant.

The Project proposes to permanently impact 0.003 acres and temporarily impact 0.03 acres of non-native vegetation. The Project also proposes to permanently impact 0.01 acres and temporarily impact 0.03 acres of disturbed/bare land. While not considered sensitive habitats by CDFW, these land cover types may require mitigation under the City's HMP, as identified in Section 7.4. Based on the preponderance of non-native vegetation or a lack of vegetative cover due to disturbance within these land cover types, impacts to non-native vegetation and disturbed/bare land are considered less than significant.

4.4.2 Potential Impacts to Special Status Plants

The Project will potentially impact one individual cliff spurge, located near one of the stairways to be replaced. This species is adequately covered under the City's HMP, where 94% of the preferred habitat of the species is conserved within the City (City of Carlsbad, 1999). The other cliff spurge identified, as well as the coast desert-thorn individuals are not located within the limits of disturbance and will not be subject to direct impacts by Project activities. While not observed during the general biological surveys in 2018 and 2020, sea dahlia has been previously recorded within the Survey Area and could potentially be impacted as a result of Project activities.

Sensitive plant species not directly impacted by Project activities but located near the Project limits of disturbance may be indirectly impacted by construction activities. Indirect impacts could include increases in dust, debris, and trash.

With the inclusion of the avoidance and minimization measures described in Section 7.0, including a pre-construction rare plant survey, direct and indirect impacts to special status plants are considered to be less than significant.

4.4.3 Potential Impacts to Critical Habitat

The Project site does not fall within or adjacent to critical habitat. The nearest critical habitat is coastal California gnatcatcher and thread-leaved brodiaea (*Brodiaea filifolia*) critical habitats located over two miles from the Survey Area. Thus, there will be no impacts to critical habitat.

5.0 WILDLIFE

5.1 Literature Review

Species of wildlife are afforded "special status" by federal agencies, state agencies, and/or non-governmental organizations because of their recognized rarity, potential vulnerability to extinction, and local importance. These species typically have a limited geographic range and/or limited habitat and are referred to collectively as "special status" species. Wildlife species were considered "special status" species if they meet any of the following criteria:

- Taxa with official status under ESA or California Endangered Species Act (CESA).
- Taxa proposed for listing under ESA and/or CESA.
- Taxa designated a species of special concern by CDFW.
- Taxa designated a state fully protected species by CDFW.
- Taxa identified as sensitive, unique or rare, by the United States Fish and Wildlife Service (USFWS), CDFW, USFS, and/or BLM.
- Taxa that meet the definition of rare or endangered under the CEQA §15380(b) and (d).
- Species considered locally significant; that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances. Examples include a species at the outer limits of its known range.

Special status wildlife species that have the potential to occur within the immediate region of the Survey Area were identified. Several agencies, including the USFWS and CDFW publish lists of particular taxa (species and subspecies) and the associated level of protection or concern associated with each. Reviewed and consulted literature and databases focused on the Survey Area and included the following sources listed below:

- The CNDDB was used to identify any special status wildlife that may exist within a two-mile radius of the Project site (Figure 7; CDFW, 2020a). CNDDB records are generally used as a starting point when determining what special status species, if any, may occur in a particular area. However, these records may be old, lack data not yet entered, and do not represent all the special status species that could be in that particular area.
- A map of USFWS critical habitat to determine species with critical habitat mapped in the general vicinity of the Project (USFWS, 2020a).
- Pertinent maps, scientific literature, websites, and regional flora and fauna field guides.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the Survey Area, as well as the surrounding area. Although the inventory list of special status wildlife species was not exhaustive of all species that might be of concern for the property, it provided a wide range of species that are representative of the wildland habitats in the area. Species occurrence and distribution information is often based on documented occurrences where opportunistic surveys have taken place; therefore, a lack of records does not necessarily indicate that a given species is absent from the Survey Area.

5.2 Field Methodology

The location of the Project is within the general distributional range of several special status wildlife species. The purpose of the general biological assessments was to note those species observed, ascertain general site conditions, and identify habitat areas that could be suitable for special status wildlife species.

All wildlife species encountered visually or audibly during the July 2018 and June 2020 field surveys were identified and recorded in field notes. Signs of wildlife species including wildlife tracks, burrows, nests, scat and remains, were also recorded. Binoculars were used to aid in the identification of observed wildlife and in areas not accessible on foot. Wildlife field guides and photographs were used to assist with identification of wildlife species during the field survey, as necessary. A one-day survey cannot be used to conclusively determine presence or absence of a species; therefore, assessments of presence/absence and potential for occurrence were made based on presence of suitable habitat to support the species, diagnostic signs (burrows, scat, tracks, vocalizations, and nests), known records or occurrence within the area, known distribution and elevation range, and habitat utilization from the relevant literature.

5.3 Results

Representative photographs of the Survey Area are included as Appendix A. The wildlife species or signs thereof observed within the Survey Area during the field survey are listed in Appendix B.

5.3.1 Sensitive Wildlife Species with Potential to Occur

Sensitive wildlife species include the following classifications: federally or state listed threatened or endangered species, California species of special concern, and fully protected and protected species (as designated by CDFW). Species with the potential to occur onsite were analyzed based on distribution, habitat requirements, and existing site conditions.

No special status animal species were observed within the Survey Area during the July 2018 and June 2020 general biological surveys. The following special status animal species have a moderate potential to occur within the Survey Area: coastal California gnatcatcher, coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*).

The coastal California gnatcatcher is a federally threatened species and a CDFW Species of Special Concern. This subspecies is a year-round resident of coastal southern California and northwestern Baja California and is closely aligned with coastal scrub vegetation, including Diegan coastal sage scrub. They may also occur in other nearby vegetation communities but rely on coastal scrub for reproduction. The Diegan coastal sage scrub community identified within the Survey Area may offer some transitory foraging and/or resting habitat for coastal California gnatcatcher, as the Survey Area is situated between Buena Vista Lagoon (to the north) and Agua Hedionda Lagoon (to the south) which both contain suitable gnatcatcher habitat. The coastal sage scrub habitat onsite is comprised of a narrow strip of bluff situated between upper and lower sidewalks and punctuated by large stairways used for public beach access. It is located within a highly utilized recreation area for biking, walking/running, and beach activities. Based on these factors, the Diegan coastal sage scrub habitat within the Survey Area is not likely to function as nesting habitat for coastal California gnatcatcher.

The coastal cactus wren is a CDFW Species of Special Concern and a USFWS Bird of Conservation Concern. This subspecies is a year-round resident of southern California and is an obligate inhabitant of coastal sage scrub. They nest almost exclusively in coast prickly pear and coast cholla vegetation. Similar to the coastal California gnatcatcher, the coastal cactus wren may utilize the Diegan coastal sage scrub and maritime succulent scrub within the Survey Area as transitory foraging and resting habitat. Based on the small and narrow nature of the native scrub habitats onsite and the high degree of recreational use of immediately adjacent areas, the maritime succulent scrub within the Survey Area is not likely to function as nesting habitat for coastal cactus wren.

The western yellow bat is a CDFW Species of Special Concern and a Western Bat Working Group 'High' priority species. This species is a year-round resident of southern California that roosts in trees and often in palm trees. The palm trees along the upper sidewalk and within the median along Carlsbad Boulevard may provide some roosting habitat for this species.

The pocketed free-tailed bat is a CDFW Species of Special Concern and a Western Bat Working Group 'Moderate' priority species. This species is a year-round resident of southern California that roosts in rock crevices, caverns, or buildings. Potentially suitable crevices under the existing stairways may offer roosting habitat for this species.

All other special status species of wildlife analyzed exhibit a low potential to occur within the Survey Area (Appendix C).

5.3.2 Critical Habitat

The Project site does not fall within or adjacent to critical habitat. The nearest critical habitat is coastal California gnatcatcher and thread-leaved brodiaea critical habitats located over two miles from the Survey Area (Figure 8).

5.3.3 Wildlife Movement

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Corridors effectively act as links between different populations of a species. An increase in a population's genetic variability is generally associated with an increase in a population's health.

Wildlife movement activities usually fall into one of three movement categories:

- Dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions);
- Seasonal migration; and
- Movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover).

The Survey Area is comprised of several different land use types: bare sandy beach, paved road and walking paths with ornamental landscaping, and a mostly continuous stretch of native coastal scrub habitat punctuated by five concrete stairways. The coastal scrub within the Survey Area may provide some connectivity between Buena Vista Lagoon (to the north) and Agua Hedionda Lagoon (to the south) for highly mobile wildlife like birds. However, this area does not provide continuous habitat between the lagoons. Furthermore, the coastal scrub area is immediately surrounded by development and highly-utilized recreational areas and is not large enough to provide many of the benefits of a typical wildlife corridor.

5.3.4 Avian Nesting and Bat Roosts

The Survey Area has the potential to support nesting birds within vegetation, on the ground, or within structures such as the stairways. The general biological surveys occurred within the nesting season; biologists did not observe signs of nesting activity within the Survey Area. The Survey Area also has the potential to support roosting bats within the palm trees along the upper sidewalks and within the stairways. While a focused survey for bat roosting was not conducted at the time of the general biological surveys, no active bat roosts were incidentally observed during the 2018 and 2020 surveys.

5.4 Project Impacts

5.4.1 Potential Impacts to Special Status Wildlife

Based on the literature and database review, there are four special status wildlife species with moderate potential to occur in the Survey Area: coastal California gnatcatcher, coastal cactus wren, western yellow bat, and pocketed free-tailed bat. Coastal California gnatcatcher and

coastal cactus wren have the potential to occur within the coastal sage scrub and succulent scrub habitats within the slopes, within and adjacent to the Project site. The western yellow bat has the potential to roost within the palm trees along Carlsbad Boulevard; however, these palms are not anticipated to be removed. There is potential for the pocketed free-tailed bat to use crevices under the existing stairways as roosting habitat; these stairways will be replaced as part of Project activities.

With the implementation of avoidance and minimization measures, including pre-construction surveys, as outlined in Section 8.0, impacts to coastal California gnatcatcher, coastal cactus wren, western yellow bat, and pocketed free-tailed bat are expected to be less than significant.

5.4.2 Potential Impacts to Critical Habitat

The Project site does not fall within any critical habitat. Thus, there will be no impacts to critical habitat.

5.4.3 Potential Impacts to Wildlife Movement/Nesting/Bat Roosts

Native habitats such as coastal sage and succulent scrub within the Survey Area may play a limited role in local wildlife movement between the two large lagoon habitats located north and south of the Survey Area. However, Project activities will avoid a majority of the native coastal scrub onsite; thus, the native coastal scrub habitat within the Survey Area will retain any wildlife movement functions it provides currently. No significant impacts to wildlife movement are anticipated due to Project implementation.

The Survey Area has the potential to support nesting birds and/or roosting bats. Due to the potential for onsite bird nesting and/or bat roosting, Project construction could result in impacts to nesting birds that would be in violation of the MBTA and FGC and/or result in impacts to protected bat maternity roosts if construction activities are to take place during nesting or maternity roosting season. With implementation of avoidance and minimization measures as outlined in Section 7.2, impacts to nesting birds and roosting bats are expected to be less than significant.

6.0 JURISDICTIONAL WATERS

6.1 Literature Review

The following sources were reviewed to determine the potential presence or absence of jurisdictional streams/drainages and wetlands and their location within the watersheds associated with the Survey Area, and other features that might contribute to federal or state jurisdictional authority located within watersheds associated with the Survey Area:

- National Wetlands Inventory (NWI) maps (USFWS, 2020b). The NWI database indicates potential wetland areas based on changes in vegetation patterns as observed from satellite imagery. This database is used as a preliminary indicator of wetland habitats because the satellite data are not precise;
- USGS National Hydrography Dataset. Provides the locations of "blue-line" streams as mapped on 7.5-Minute Topographic Map coverage;
- Aerial Imagery;
- USGS 7.5-Minute Topographic Maps; and
- Natural Resource Conservation Service (NRCS) Soil Survey.

6.2 Field Methodology

During the field survey, the Survey Area was assessed for jurisdictional wetland WOUS, using the methodology published in the USACE 1987 Wetland Delineation Manual (USACE, 1987) and the Arid West Supplement (USACE, 2008). The Survey Area was also assessed for jurisdictional non-wetland WOUS, as determined through the observation of an Ordinary High Water Mark (OHWM) which is defined as the "line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed 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."

The following guidance documents were utilized in making this determination:

- Field Guide to OHWM Determinations in the Arid West (August 2008);
- Updated OHWM Datasheet for the Field Guide to OHWM Determinations in the Arid West (July 2010); and
- Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region (2011).

The Survey Area was assessed for jurisdictional WOS during the field survey using guidance from Section 1600 of the FGC and Brady and Vyverberg (2013), which 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".

6.3 Results

6.3.1 Soils

The United States Department of Agriculture NRCS (NRCS, 2020) identifies three (3) soil types present within the Survey Area:

- Coastal Beaches – 1 to 5% slopes;
- Marina Coarse Loamy Sand – 2 to 9% slopes; and
- Terrace Escarpments.

Coastal Beaches soil is comprised of fine to coarse sand and describes the sandy beach portion of the Survey Area. Marina Coarse Loamy Soil is described as Eolian sands derived from mixed sources with the following textures: sand, coarse sand, loamy sand, and loamy coarse sand. The exposed natural soils within the Coastal Bluff Scrub are defined as Marina Coarse Loamy Soil. The Terrace Escarpments land type consists of steep faces that separate the terraces from the lower lying land; the faces are composed of soft coastal sandstone, hard shale, or hard, weather-resistant, fine-grained sandstone.

6.3.2 Jurisdictional Waters

The Survey Area contains three potentially jurisdictional features along the west side of the sea wall, within areas identified as sandbar willow thickets and cattail marsh as shown in Figure 3 (Frame 3).

Two discrete emergent wetland areas identified as cattail marsh occur along the west side of the sea wall, between the two stairways located at the end of Cherry Avenue and Hemlock Avenue. These areas occur in depressions and contain standing water. Native vegetation in these areas include broad-leaf cattail, bulrush, and salt grass. Nonnative vegetation in these areas include sea rocket and umbrella plant.

A third potentially jurisdictional feature occurs just north of the two emergent wetland areas along the west side of the sea wall in the area identified as sandbar willow thickets. This feature occurs in the sandy beach soil and is dominated by sandbar willow with a single patch of Arundo. During the 2018 and 2020 general biological surveys, biologists did not observe standing water at this feature, nor did they observe evidence of soil saturation or a high water table.

6.3.3 Potential Impacts to Jurisdictional Waters

The Survey Area contains features that are potentially jurisdictional as WOS and/or WOUS. These features will be avoided as part of Project activities. Therefore, no direct impacts to jurisdictional waters are anticipated. Minor improvements along the sea wall are anticipated adjacent to these features, however, this work will occur along the eastern side of the sea wall to avoid direct impacts to these features. General BMPs, as described in Section 7.1, will be incorporated into the Project to minimize indirect impacts to these features.

7.0 BMPS, MITIGATION, AND AVOIDANCE MEASURE RECOMMENDATIONS

7.1 General BMPs Incorporated into the Project

Implementation of general BMPs are recommended to the extent practical. Key aspects of the BMPs are to clearly delineate the limits of disturbance, use properly maintained equipment, properly implement and monitor water quality BMPs, avoid use of chemicals near sensitive areas, develop procedures for minimizing the likelihood of spills and to control sediment, ensure worker safety, and minimize impacts to wildlife.

7.2 Wildlife

The following measures are recommended to avoid impacts to roosting bats and nesting birds:

BIO-1: Bat Protection. Prior to the start of construction, including demolition and grading activities, all suitable areas within the Project site and an appropriate survey buffer shall be surveyed for the presence of bat roosts by a qualified bat biologist. Surveys are recommended as follows:

(1) Initial surveys are recommended to be conducted at least six months prior to the initiation of vegetation removal and ground disturbing activities, ideally during the maternity season (typically March 1 to August 31), to allow time to prepare mitigation and/or exclusion plans if needed, and

(2) Pre-construction surveys shall be conducted by a qualified bat biologist no more than two weeks prior to the initiation of vegetation removal and ground disturbing activities. Surveys may entail direct inspection of the trees, stairways, and/or other suitable habitat or nighttime surveys.

BIO-1(a): If active bat roosts are present, a qualified bat biologist shall determine the species of bats present and the type of roost (i.e., day roost, night roost, maternity roost). If the biologist determines that the roosting bats are not a special-status species and the roost is not being used as a maternity roost, then the bats may be evicted from the roost by a qualified bat biologist experienced in developing and implementing bat mitigation and exclusion plans.

BIO-1(a)(i): If special-status bat species or a maternity roost of any bat species is present, but no direct removal of active roosts will occur, a qualified bat biologist shall determine appropriate avoidance measures, which may include implementation of a construction-free buffer around the active roost.

BIO-1(a)(ii): If special-status bat species or a maternity roost of any bat species is present and direct removal of habitat (roost location) will occur, then a qualified bat biologist experienced in developing bat mitigation and exclusion plans shall develop a mitigation plan to compensate for the lost roost site. Removal of the roost shall only occur when the mitigation plan has been approved by the City and only when bats are not present in the roost. The mitigation plan shall detail the methods of excluding bats from the roost and the plans for a replacement roost in the vicinity of the Project site. The mitigation plan shall be submitted to the City for approval prior to implementation. The plan shall include: (1) a description of the species targeted for mitigation; (2) a description of the existing roost or roost sites; (3) methods to be used to exclude the bats if necessary; (4) methods to be used to secure the existing roost site to prevent its reuse prior to removal; (5) the location for a replacement roost structure; (6) design details for the construction of the replacement roost; (7) monitoring protocols for assessing replacement roost use; (8) a schedule for excluding bats, demolishing of the existing roost, and construction of the replacement roost; and (9) contingency measures to be implemented if the replacement roosts do not function as designed.

BIO-1(b): If the pre-construction survey determines that no active roosts are present, then trees/stairways/suitable habitat shall be removed within two weeks following the pre-construction survey.

BIO-1(c): All potential roost trees shall be removed in a manner approved by a qualified bat biologist, which may include presence of a biological monitor.

BIO-1(d): All construction activity in the vicinity of an active roost shall be limited to daylight hours.

BIO-2: Construction activities, including vegetation removal, demolition, and grading activities, shall occur outside of the gnatcatcher breeding season (February 15 – August 31). If breeding season avoidance is not practicable, then BIO-3 shall be implemented.

BIO-3: If construction activities, including vegetation removal, demolition, and grading activities, will occur within gnatcatcher breeding season (February 15 – August 31), the following will be implemented:

a. A permitted biologist shall conduct pre-construction surveys within the Project site and adjacent suitable habitat prior to the start of work. The surveys will consist of three visits, one week apart; the last of these will be conducted no more than three days prior to construction.

b. If an active gnatcatcher nest (nest containing eggs or an empty or partial nest with gnatcatchers actively exhibiting breeding behaviors) occurs within the Project site or

adjacent habitat, the biologist shall establish a 500-foot no work buffer around the active gnatcatcher nest and consultation with USFWS shall occur.

c. If no active gnatcatcher nests are observed during the pre-construction surveys, no further action is required.

BIO-4: A nesting bird survey shall be conducted within three days prior to start of construction, including demolition, grading, and vegetation removal, if construction and/or vegetation removal occur during the nesting bird season identified in the HMP (February 15 – September 15). If vegetation removal occurs outside of nesting season or if no nesting birds are found, no further action is required. If active nests are identified, the biologist will establish appropriate buffers around the area (typically 500 feet for raptors and sensitive species, 200 feet for non-raptors/non-sensitive species). All work within these buffers will be halted until the nesting effort is finished (i.e., the juveniles are surviving independent from the nest). The onsite biologist will review and verify compliance with these nesting boundaries and will verify the nesting effort has finished. Work can resume within the buffer area when no other active nests are found. Alternatively, a qualified biologist may determine that certain work can be permitted within the buffer areas and would develop a monitoring plan to prevent any impacts while the nest continues to be active (eggs, chicks, etc.). If vegetation clearing is not initiated within 72 hours of a negative survey during nesting season, the nesting survey must be repeated to confirm the absence of nesting birds.

7.3 Sensitive Plants

The following measure is recommended to avoid impacts to sensitive plants:

BIO-5: Prior to the start of construction activities, including vegetation removal, demolition, and grading activities, a qualified biologist shall conduct a survey for sensitive plants within the Project footprint and immediately adjacent habitat. To the extent practicable, the plant survey shall occur within the blooming period for those sensitive species previously observed onsite and/or those species with a high potential to occur onsite. To the extent practicable, sensitive plant species shall be avoided by Project activities. If sensitive plant avoidance is not practicable, then it is recommended that the impacted species be either (a) transplanted outside of the Project impact footprint prior to Project implementation or (b) replanted onsite (1:1 ratio) following Project implementation, if feasible.

7.4 Vegetation Communities

The Project proposes to temporarily or permanently impact native vegetation communities present within the Project site. Table 3, below, includes the mitigation ratios described in the

City's HMP for areas within the coastal zone. Anticipated mitigation totals for impacts to vegetation communities are also reported.

Table 3. HMP Mitigation for Impacts to Vegetation Communities

Vegetation Community	HMP Mitigation Ratio	Additional HMP Requirements within the Coastal Zone	Temporary Impacts (acres)	Permanent Impacts (acres)	Anticipated Mitigation Requirement for Permanent Impacts (acres)
Coastal Sage Scrub	2:1	Minimum 1:1 creation or substantial restoration within Carlsbad coastal zone	0.10	0.03	0.06
Maritime Succulent Scrub	3:1	Minimum 1:1 creation or substantial restoration within Carlsbad coastal zone	0.02	0.02	0.06
Bare/ Non-native	Per-acre in-lieu mitigation fee	--	0.06	0.01	TBD[1]

Note:
[1] Per-acre in-lieu mitigation fee amounts to be determined by City Council.

Mitigation for permanent impacts to coastal sage scrub and maritime succulent scrub communities can be achieved through one of the following methods, or a combination thereof:

- Establishment of habitat onsite where non-native vegetation currently exists or where there is a lack of vegetative cover;
- Payment of in-lieu mitigation fee; or
- Purchase of offsite mitigation credits from an approved bank.

Areas temporarily impacted by Project activities within coastal sage scrub and maritime succulent scrub communities shall be revegetated with appropriate native vegetation following Project implementation.

Habitat establishment onsite should follow the recommendations outlined in the *Guidelines for Habitat Creation and Restoration* (TAIC, 2009) prepared for the City of Carlsbad.

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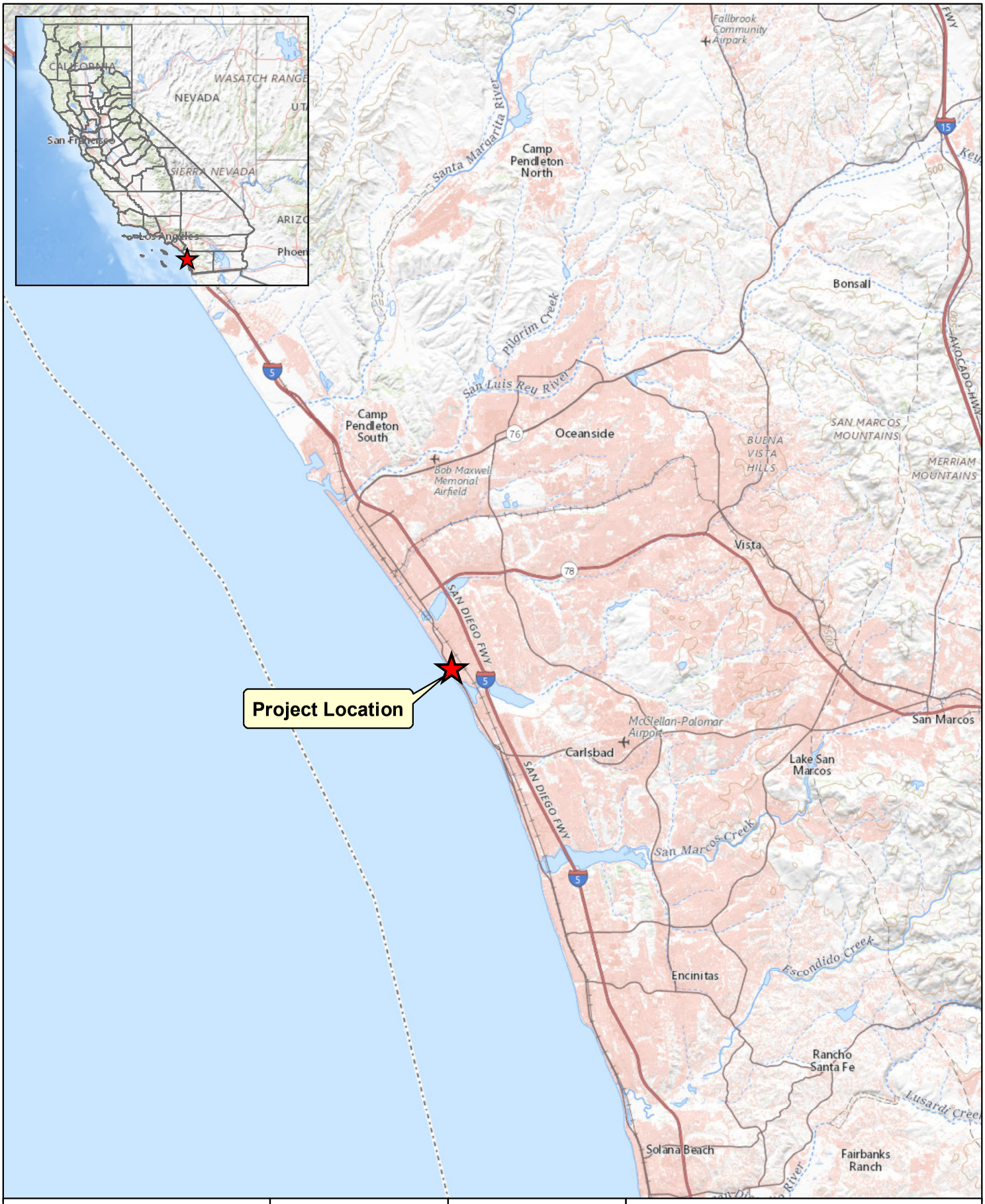


Prepared By:

VCS Environmental

Map Created: March 2018

0 7,500 15,000 Feet

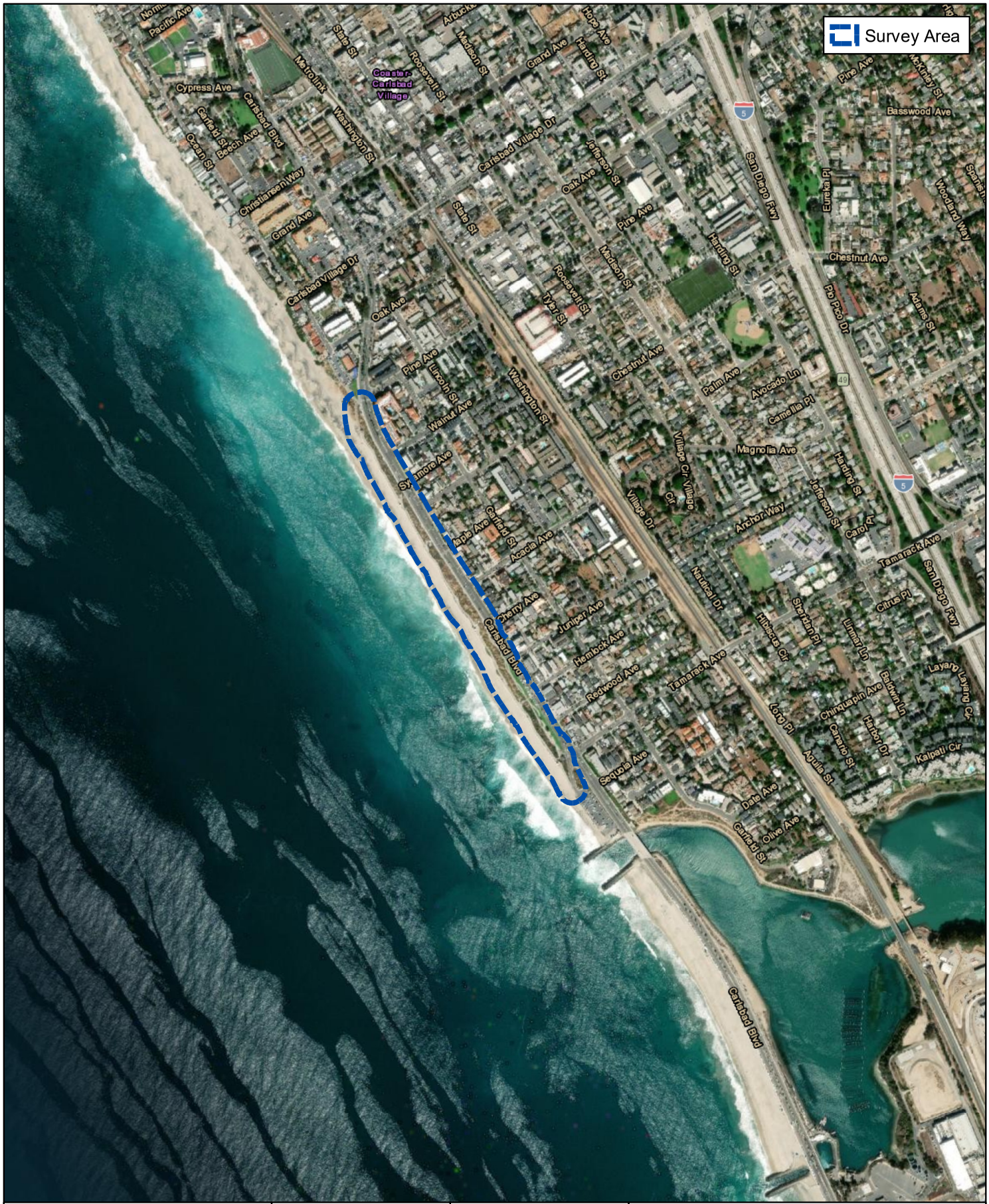
0 1 2 Miles

1 in = 15,000 ft

Data Source: USGS, ESRI

Beach Access Repair Project

Figure 1 Regional Location Map



Prepared By:

VCS Environmental

Map Created: Dec 2020

0 450 900 Feet

1 in = 1,000 ft

Aerial Imagery Source: ESRI

Beach Access Repair Project

Figure 2

Vicinity Map

0 250 500 Feet

Legend

- Limit of Project
- Survey Area

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Manual of CA Vegetation

Figure 3 - Index Map

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

0 60 120 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project
Survey Area

Vegetation / Land Cover

Disturbed / Bare
Sea rocket stands
Disturbed / Developed
Salt grass flats
California brittle bush scrub
Perez's sea lavender stand
Coast prickly pear scrub
Ornamental
Lemonade berry scrub
Sandbar willow thickets
Myoporum groves
Cattail marsh
Sand
Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Manual of CA Vegetation

Figure 3 - Frame 1

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

N

0 60 120 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project
Survey Area

Vegetation / Land Cover

Disturbed / Bare
Sea rocket stands
Disturbed / Developed
Salt grass flats
California brittle bush scrub
Perez's sea lavender stand
Coast prickly pear scrub
Ornamental
Lemonade berry scrub
Sandbar willow thickets
Myoporum groves
Cattail marsh
Sand
Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Manual of CA Vegetation

Figure 3 - Frame 2

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

Acacia Ave
Cherry Ave
Juniper Ave
Carlsbad Blvd

0 60 120 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project
Survey Area

Vegetation / Land Cover

Disturbed / Bare
Sea rocket stands
Disturbed / Developed
Salt grass flats
California brittle bush scrub
Perez's sea lavender stand
Coast prickly pear scrub
Ornamental
Lemonade berry scrub
Sandbar willow thickets
Myoporum groves
Cattail marsh
Sand
Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Manual of CA Vegetation

Figure 3 - Frame 3

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

N

0 60 120 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project
Survey Area

Vegetation / Land Cover

Disturbed / Bare
Sea rocket stands
Disturbed / Developed
Salt grass flats
California brittle bush scrub
Perez's sea lavender stand
Coast prickly pear scrub
Ornamental
Lemonade berry scrub
Sandbar willow thickets
Myoporum groves
Cattail marsh
Sand
Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Manual of CA Vegetation

Figure 3 - Frame 4

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

0 250 500 Feet

Legend

- Limit of Project
- Survey Area

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Modified Holland

Figure 4 - Index Map

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

N

0 60 120 Feet

Limit of Project
Survey Area

Vegetation / Land Cover

- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
- Non-Native Vegetation
- Beach
- Maritime Succulent Scrub
- Disturbed Coastal and Valley Fresh Marsh
- Disturbed Southern Willow Scrub
- Alkali Meadow
- Euphorbia miseria

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Beach Access Repair Project

Vegetation / Land Cover Survey Area
Modified Holland

Figure 4 - Frame 1

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

N

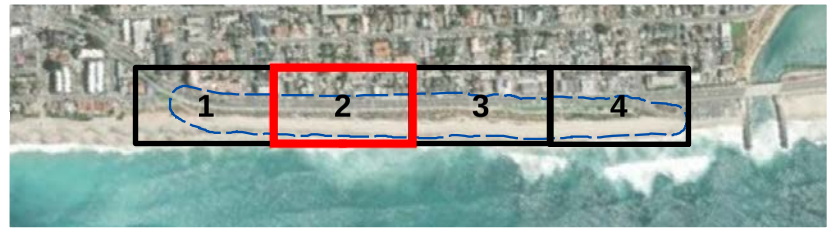
0 60 120 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project
Survey Area

Vegetation / Land Cover

- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
- Non-Native Vegetation
- Beach
- Maritime Succulent Scrub
- Disturbed Coastal and Valley Fresh Marsh
- Disturbed Southern Willow Scrub
- Alkali Meadow
- Euphorbia miseria



Beach Access Repair Project

Vegetation / Land Cover Survey Area
Modified Holland

Figure 4 - Frame 2

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

Acacia Ave

Cherry Ave

Juniper Ave

Carlsbad Blvd

0 60 120 Feet

Limit of Project

Survey Area

Vegetation / Land Cover

- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
- Non-Native Vegetation
- Beach
- Maritime Succulent Scrub
- Disturbed Coastal and Valley Fresh Marsh
- Disturbed Southern Willow Scrub
- Alkali Meadow
- Euphorbia miseria

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Beach Access Repair Project

Vegetation / Land Cover Survey Area Modified Holland

Figure 4 - Frame 3

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

N

0 60 120 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project
Survey Area

Vegetation / Land Cover

- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
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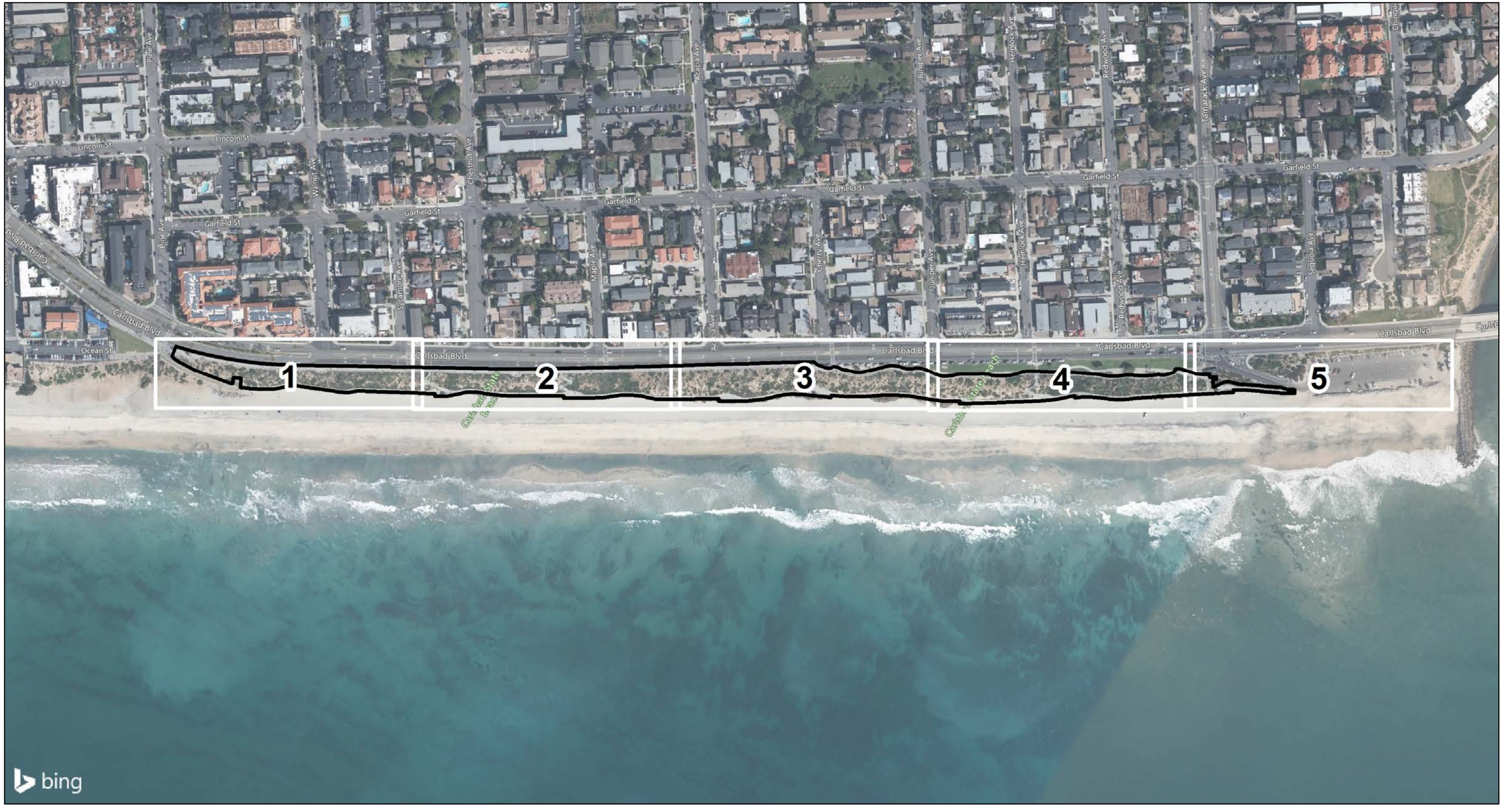
Beach Access Repair Project

Vegetation / Land Cover Survey Area
Modified Holland

Figure 4 - Frame 4

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US



0 300 600 Feet

Legend

Limit of Project

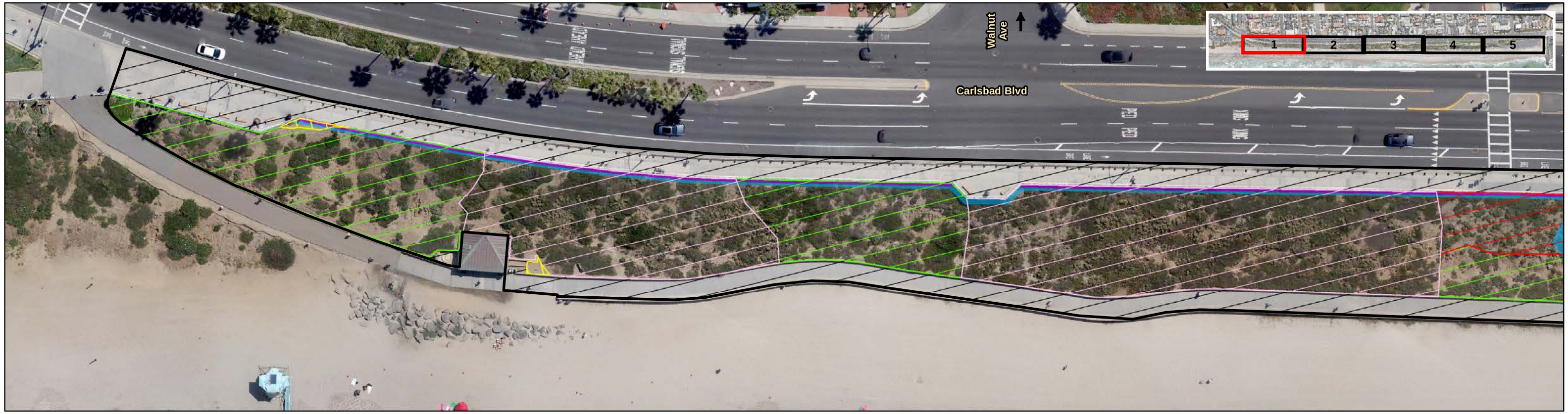
VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Beach Access Repair Project

Vegetation / Land Cover Impacts - Manual of CA Vegetation

Figure 5 - Index Map

Map created: Dec 2020 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US



0 50 100 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project

Project Impacts
- Permanent
- Temporary

Vegetation / Land Cover
- Disturbed / Bare
- Disturbed / Developed
- California brittle bush scrub
- Perez's sea lavender stand
- Coast prickly pear scrub
- Lemonade berry scrub
- Myoporum groves
- Sea rocket stands
- Sand
- Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Impacts - Manual of CA Vegetation

Figure 5 - Frames 1 & 2

Map created: Dec 2020
Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

0 50 100 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project

Project Impacts
- Permanent
- Temporary

Vegetation / Land Cover
- Disturbed / Bare
- Disturbed / Developed
- California brittle bush scrub
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- Coast prickly pear scrub
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- Sea rocket stands
- Sand
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Beach Access Repair Project

Vegetation / Land Cover Impacts - Manual of CA Vegetation

Figure 5 - Frames 3 & 4

Map created: Dec 2020
Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

0 50 100 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project

Project Impacts
- Permanent
- Temporary

Vegetation / Land Cover
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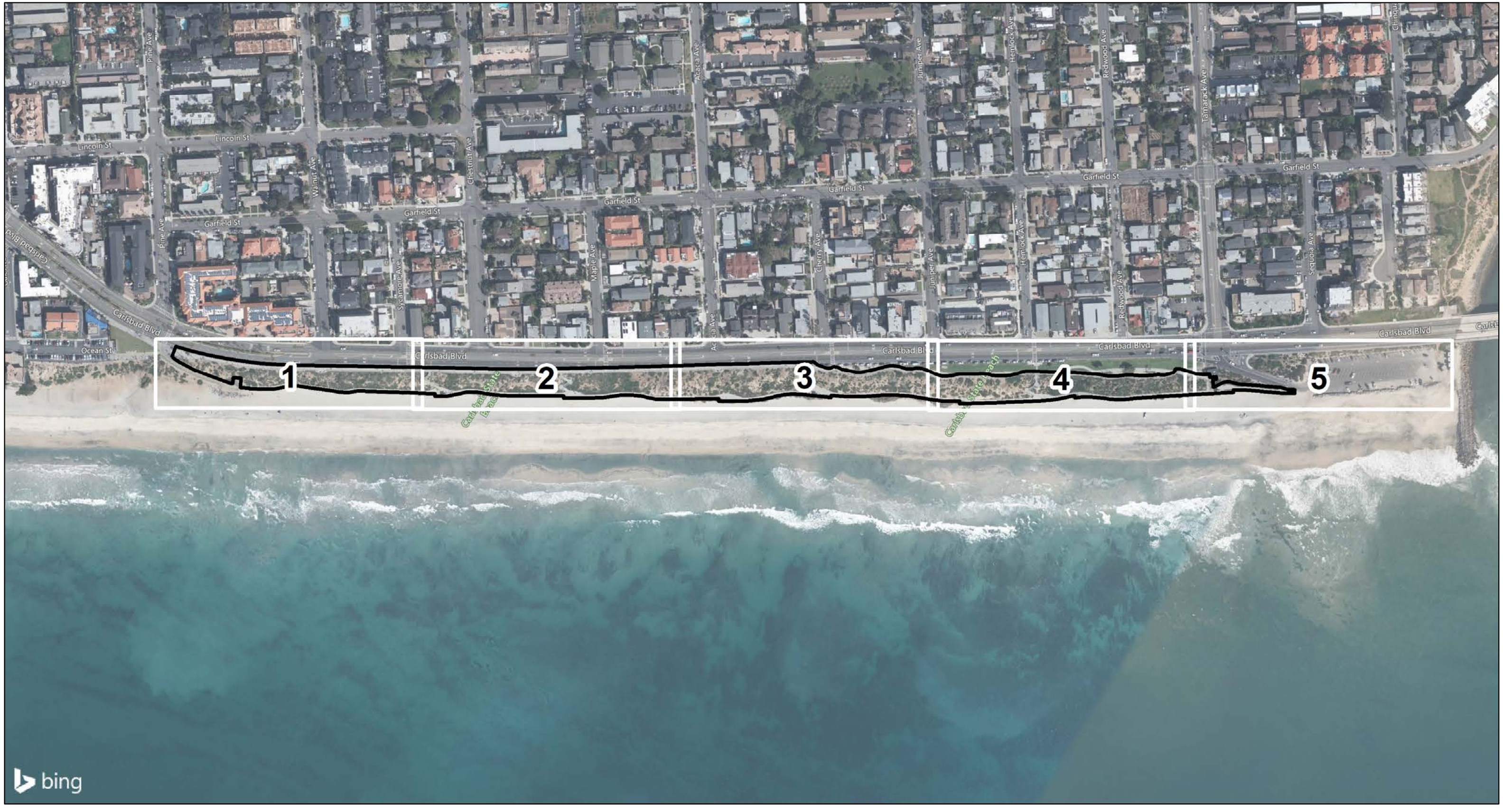
- Sand
- Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Impacts - Manual of CA Vegetation

Figure 5 - Frame 5

Map created: Dec 2020
Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US



0 300 600 Feet

Legend

Limit of Project

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Beach Access Repair Project

Vegetation / Land Cover Impacts - Modified Holland

Figure 6 - Index Map

Map created: Aug 2021 Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

0 50 100 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project

Project Impacts
- Permanent
- Temporary

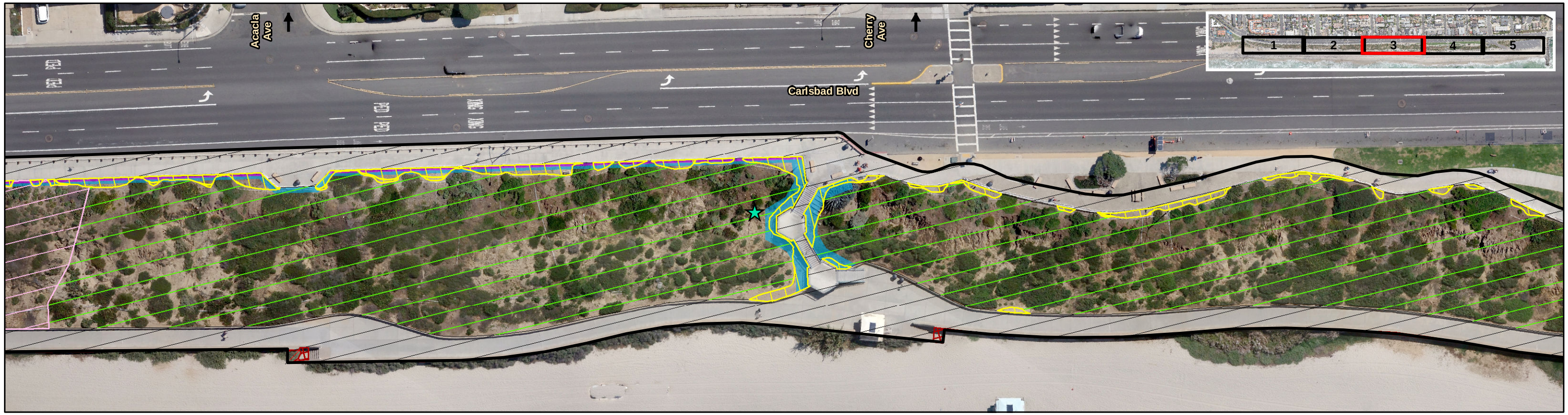
Vegetation / Land Cover
- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
- Non-Native Vegetation
- Maritime Succulent Scrub
- Beach
- Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Impacts - Modified Holland

Figure 6 - Frames 1 & 2

Map created: Aug 2021
Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US



0 50 100 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project

Project Impacts
- Permanent
- Temporary

Vegetation / Land Cover
- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
- Non-Native Vegetation
- Maritime Succulent Scrub
- Beach
- Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Impacts - Modified Holland

Figure 6 - Frames 3 & 4

Map created: Aug 2021
Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US

0 50 100 Feet

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

Limit of Project

Project Impacts
- Permanent
- Temporary

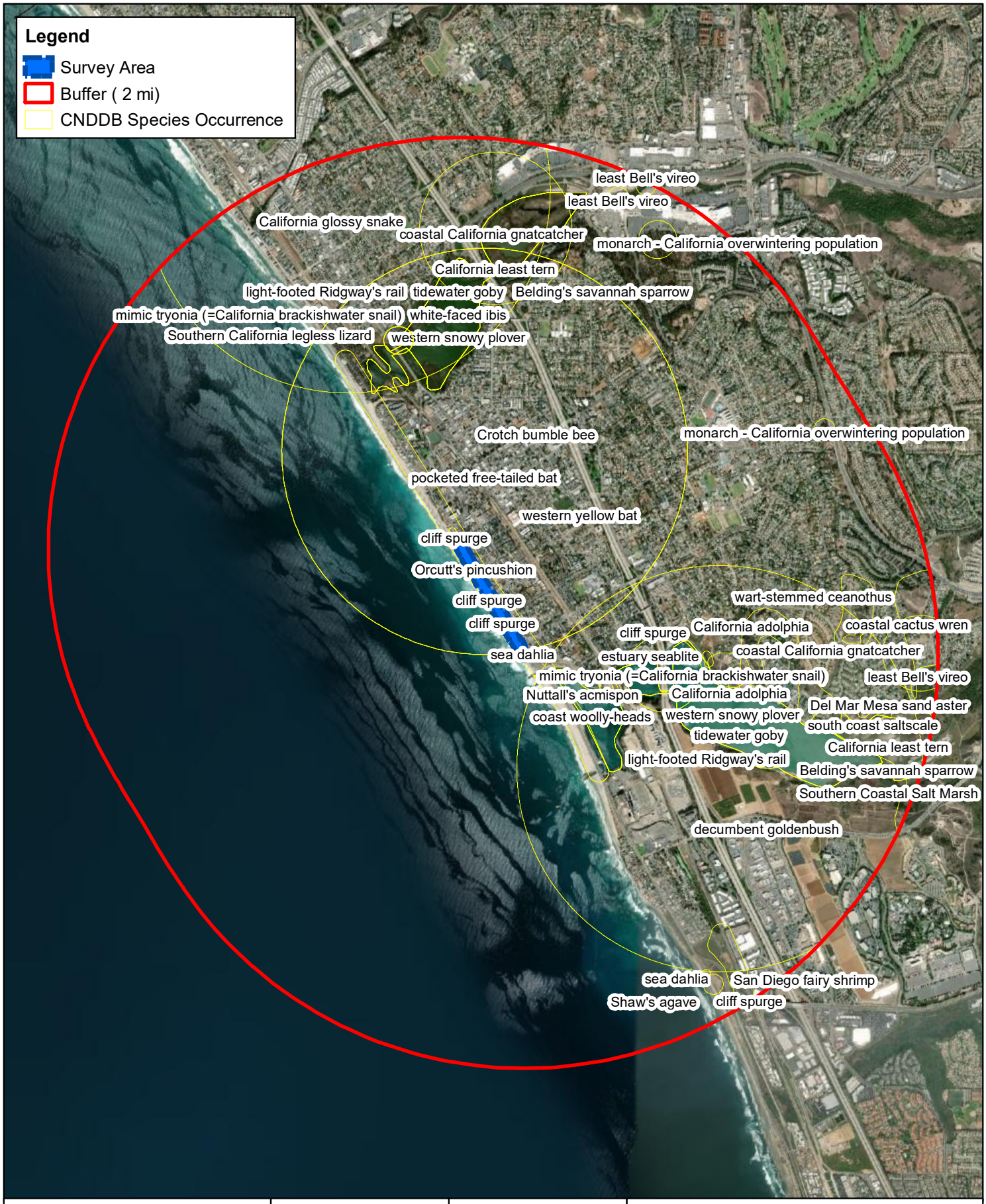
Vegetation / Land Cover
- Unvegetated Habitat
- Urban/Developed
- Diegan Coastal Sage Scrub
- Non-Native Vegetation
- Maritime Succulent Scrub
- Beach
- Euphorbia miseria

Beach Access Repair Project

Vegetation / Land Cover Impacts - Modified Holland

Figure 6 - Frame 5

Map created: Aug 2021
Data Source: GHD, VCS
Coordinate System: NAD 1983 2011 StatePlane California VI FIPS 0406 Ft US



Prepared By:
VCS Environmental

Map Created: June 2018

0 1,500 3,000 Feet

Data Source: CNDDB, ESRI

Beach Access Repair Project

Figure 7

CNDDB

Prepared By:
VCS Environmental

Map Created: Dec 2020

0 1,500 3,000 Feet

Data Source: ESRI, USFWS

Beach Access Repair Project

Figure 8 Critical Habitat

APPENDIX A

Site Photographs

Photo 1. Landscaping and paved paths at the top of the bluff along Carlsbad Boulevard (right). Date: July 10, 2018.

Photo 2. Typical view of vegetation on the bluff; photo depicts native species in the background and nonnative Perez's sea lavender (*Limonium perezii*) in the foreground. Date: July 10, 2018.

Photo 3. Stairway leading from Carlsbad Boulevard above to Carlsbad State Beach below. Date: July 10, 2018.

Photo 4. Erosion and erosion control materials (left) underneath one of the stairways.

Date: July 10, 2018.

Photo 5. Underside of one of the stairways. Date: July 10, 2018.

Photo 6. Typical view of footpath leading to beach, with retaining wall and sea wall to the left and right, respectively, of the path and native vegetation along the bluff. Date: July 10, 2018.

Photo 7. View of western side of sea wall and native and nonnative vegetation growing in sandy soils. A portion of sandbar willows and Arundo can be seen in the background. Date: June 3, 2020.

Photo 8. View of cattail marsh vegetation situated along the west-facing side of the sea wall. Date: July 10, 2018.

Photo 9. View of western side of seawall with salt grass (*Distichlis spicata*) growing along its base. Date: July 10, 2018.

Photo 10. View of maritime succulent scrub (coastal cholla) along bluffs. Date: June 3, 2020.

APPENDIX B

Plant and Wildlife Species Observed within the Survey Area

Plant Species Observed within the Survey Area

Scientific Name	Common Name
Agavaceae	**Agave Family**
Agave deserti deserti	desert agave
Agave shawii shawii	Shaw agave
Yucca schidigera	Mojave yucca
Aizoaceae	**Fig-Marigold Family**
*Carpobrotus chilensis**	sea fig
*Carpobrotus edulis**	hottentot fig
*Mesembryanthemum crystallinum**	crystalline iceplant
*Tetragonia tetragonioides**	New Zealand spinach
Anacardiaceae	**Sumac or Cashew Family**
Malosma laurina	laurel sumac
Rhus integrifolia	lemonade berry
Arecaceae	**Palm Family**
*Washingtonia robusta**	Mexican fan palm
Asteraceae (Compositae)	**Sunflower Family**
Ambrosia psilostachya	ragweed
Artemisia californica	coastal sagebrush
Baccharis pilularis	coyote brush
Baccharis salicifolia	mulefat
Encelia californica	California brittle bush
Erigeron canadensis	horseweed
Isocoma menziesii menziesii	San Diego goldenbush
Isocoma menziesii sedoides	spreading goldenbush
Pseudognaphalium californicum	California everlasting
Boraginaceae	**Borage Family**
Heliotropium curassavicum v. oculatum	salt heliotrope
Brassicaceae	**Mustard Family**
*Cakile maritima**	sea rocket
*Matthiola incana**	hoary stock

Scientific Name	Common Name
Cactaceae	**Cactus Family**
Cylindropuntia prolifera	coast cholla
Opuntia littoralis	coast prickly pear
Chenopodiaceae	**Goosefoot Family**
Atriplex canescens	four-wing saltbush
Cleomaceae	**Cleome Family**
Peritoma arborea var. arborea	bladderpod
Crassulaceae	**Stonecrop Family**
Dudleya edulis	lady-fingers
Cyperaceae	**Sedge Family**
*Cyperus involucratus**	umbrella plant
Schoenoplectus sp.	bulrush
Euphorbiaceae	**Spurge Family**
Chamaesyce sp.	prostrate spurge
*Chamaesyce maculata**	spotted spurge
Euphorbia miseria	cliff spurge
*Ricinus communis**	castor bean
Fabaceae	**Legume Family**
Acmispon glaber var. glaber	deer weed
*Melilotus indicus**	Indian sweetclover
Lamiaceae	**Mint Family**
Salvia mellifera	black sage
Myrsinaceae	**Myrsine Family**
Anagallis arvensis	scarlet pimpernel
Myrtaceae	**Myrtle Family**
*Callistemon citrinus**	crimson bottlebrush
Nyctaginaceae	**Four O'Clock Family**
Abronia maritima	red sand verbena
*Bougainvillea spectabilis**	great bougainvillea

Scientific Name	Common Name
Mirabilis laevis var. crassifolia	wishbone bush
Onagraceae	**Evening-Primrose Family**
Epilobium canum ssp. canum	California fuchsia
Plumbaginaceae	**Leadwort Family**
*Limonium perezii**	Perez's sea lavender
Poaceae (Gramineae)	**Grass Family**
*Arundo donax**	giant reed
*Cynodon dactylon**	Bermuda grass
Distichlis spicata	salt grass
*Pennisetum setaceum**	fountain grass
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
Eriogonum parvifolium	bluff buckwheat
Salicaceae	**Willow Family**
Salix exigua	sandbar willow
Salix lasiolepis	arroyo willow
Scrophulariaceae	**Figwort Family**
*Myoporum laetum**	myoporum
Solanaceae	**Nightshade Family**
*Nicotiana glauca**	tree tobacco
Lycium californicum	coast desert-thorn
Datura wrightii	Jimson weed
Strelitziaceae	
*Strelitzia reginae**	bird of paradise
Typhaceae	**Cattail Family**
Typha latifolia	broad-leaf cattail

* non-native species.

Wildlife Species Observed/Detected within the Survey Area

Scientific Name	**Common Name**
Reptiles	
Uta stansburiana elegans	Western side-blotched lizard
Birds	
Columba livia	rock dove
Corvus brachyrhynchos	American crow
Haemorhous mexicanus	house finch
Larus occidentalis	western gull
Pandion haliaetus	osprey
Passer domesticus	house sparrow
Pelecanus occidentalis	brown pelican
Phalacrocorax auratus	double crested cormorant
Mammals	
Spermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Audubon's cottontail

APPENDIX C

Special Status Species
Potential Occurrence Determination

Special Status Species Potential Occurrence Determination

This table summarizes conclusions from analysis and field surveys regarding the potential occurrence of special status species within the Survey Area. During the field surveys, the potential for special status species to occur within the Survey Area was assessed based on the following criteria:

- Present: observed on the site during the field surveys, or recorded on-site by other qualified biologists.

- High potential to occur: observed in similar habitat in the region by a qualified biologist, or habitat on the site is a type often utilized by the species and the site is within the known distribution and elevation range of the species.

- Moderate potential to occur: reported sightings in surrounding region, or the site is within the known distribution and elevation range of the species and habitat on the site is a type occasionally used by or typical of the species.

- Low potential to occur: the site is within the known distribution and elevation range of the species but habitat on the site is rarely used by the species or no suitable habitat is present, or there are no known recorded occurrences of the species within or adjacent to the site.

- Absent: a focused study failed to detect the species.

- Unknown: the species' distributional/elevation range and habitat are poorly known.

Even with field surveys, biologists assess the *probability* of occurrence rather than make a definitive conclusion about species' presence or absence. Failure to detect the presence of the species is not definitive and may be due to variable effects associated with fire, rainfall patterns, and/or season.

Special Status Species: Potential to Occur within the Survey Area

Scientific Name	*Common Name*	*Status*	*General Habitat Description*	*Potential for Occurrence within the Survey Area*	*MHCP Designation*
PLANTS					
Acanthomintha ilicifolia	San Diego thorn-mint	CRPR 1B.1, FT, SE	Native to Baja California and San Diego County, California. Often found on clay soils in openings of chaparral, coastal scrub, valley and foothill grassland and vernal pools. Elevation: 10-960 meters Blooming Period: Apr-Jun	Low; Survey Area lacks suitable soil type.	List 2, NE
Acmispon prostratus	Nuttall's acmispon	CRPR 1B.1	Annual herb occurring in coastal dunes and coastal scrub (sandy) habitat. Elevation: 0-10 meters Blooming Period: Mar-Jun(Jul)	Low; the most likely area for this species to occur within the Survey Area is the sandy beach habitat, however, consistent disturbance/trampling by public beach use substantially reduces the likelihood of occurrence within the Survey Area.	
Adolphia californica	California adolphia	CRPR 2B.1	Perennial deciduous shrub occurring in clay habitats including chaparral, coastal scrub, and valley and foothill grassland. Elevation: 10-740 meters Blooming Period: Dec-May	Low; Survey Area site lacks suitable soil type.	
Ambrosia pumila	San Diego ambrosia	CRPR 1B.1, FE	Range extends from Riverside County through San Diego County into Baja California. Found along drainages and areas adjacent to riparian areas. Nearest location is San Luis Rey. Elevation: 20-415 meters Blooming Period: Apr-Oct	Low; Survey Area lacks suitable habitat.	List 2, NE
Arctostaphylos glandulosa ssp. crassifolia	Del Mar manzanita	CRPR 1B.1, FE	Perennial evergreen shrub occurring on sandstone terraces and bluffs and is associated with southern maritime chaparral. Restricted to San Diego County and northwestern Baja California. Elevation: 0-365 meters Blooming Period: Dec-Jun	Low; Survey Area lacks southern maritime chaparral vegetation community.	List 3, NE

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
Artemisia palmeri	San Diego sagewort	CRPR 4.2	Perennial deciduous shrub occurring in sandy coastal ravines and river drainages. Found within San Diego County and northern Baja California. Elevation: 15-915 meters Blooming Period: (Feb)May-Sep	Low; Survey Area lacks suitable habitat.	
Atriplex coulteri	Coulter's saltbush	CRPR 1B.2	Perennial herb native to coastal southern California and northern Baja California. Associated with alkaline and clay soils, and found coastal dune, chaparral, and coastal scrub habitats, including ocean bluffs. Elevation: 3-460 meters Blooming Period: Mar-Oct	Low; Survey Area lacks suitable substrate type.	
Atriplex pacifica	South Coast saltscale	CRPR 1B.2	Annual herb native to the coastline of southern California, including the Channel Islands, and Baja California, where it grows in saline habitat on the immediate coastline, such as beach bluffs. Elevation: 0-140 meters Blooming Period: Mar-Oct	Moderate; Survey Area contains bluff/scrub habitat that may be suitable for this species. This species was not observed during the general biological surveys.	
Bloomeria clevelandii	San Diego goldenstar	CRPR 1B.1	Perennial bulbiferous herb occurring in clay habitats including chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation: 50-465 meters Blooming Period: Apr-May	Low; Survey Area lacks suitable substrate type.	
Brodiaea filifolia	thread-leaved brodiaea	CRPR 1B.1, FT, SE	Perennial bulbiferous herb found in chaparral (openings), cismontane woodland, and coastal scrub, playas, valley and foothill grassland, and vernal pools. Requires very heavy clay soils. Elevation: 25-1120 meters Blooming period: Mar-Jun	Low; Survey Area lacks suitable soil type.	Covered by HMP, NE
Camissoniopsis lewisii	Lewis' evening-primrose	CRPR 3	Annual herb occurring in sandy or clay habitat including coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland. Elevation: 0-300 meters Blooming Period: Mar-May(Jun)	Low; the most likely area for this species to occur within the Survey Area is the sandy beach habitat, however, consistent disturbance/trampling by public beach use substantially reduces	

Scientific Name	*Common Name*	*Status*	*General Habitat Description*	*Potential for Occurrence within the Survey Area*	*MHCP Designation*
				the likelihood of occurrence within the Survey Area.	
Ceanothus verrucosus	wart-stemmed ceanothus	CRPR 2B.2	Perennial evergreen shrub associated with southern maritime chaparral and southern mixed chaparral. Limited to western San Diego County and Baja California. Elevation: 1-380 meters Blooming Period: Dec-May	Low; Survey Area lacks southern maritime chaparral and southern mixed chaparral vegetation communities.	List 2
Centromadia pungens ssp. laevis	smooth tarplant	CRPR 1B.1	Annual herb endemic to California. Suitable habitat includes alkali scrub, alkali playas, and grasslands with alkaline affinities. Elevation: 0-640 meters Blooming Period: Apr-Sep	Low; Survey Area lacks suitable habitat.	
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	CRPR 1B.1	Annual herb occurring in coastal bluff scrub (sandy) and coastal dunes. Elevation: 0-100 meters Blooming Period: Jan-Aug	Moderate; Survey Area contains bluff/scrub habitat that may be suitable for this species; recorded observation in 2015 near Agua Hedionda Lagoon inlet, south of the Survey Area. This species was not observed during the general biological surveys.	
Comarostaphylis diversifolia ssp. diversifolia	summer holly	CRPR 1B.2	Perennial evergreen shrub occurring in chaparral and cismontane woodland habitats. Elevation: 30-790 meters Blooming Period: Apr-Jun	Low; Survey Area lacks suitable habitat.	List 3
Convolvulus simulans	small-flowered morning-glory	CRPR 4.2	Annual herb occurring in clay habitat and serpentine seeps. Habitats include chaparral (openings), coastal scrub, and valley and foothill grassland. Elevation: 30-740 meters Blooming Period: Mar-Jul	Low; Survey Area lacks suitable substrate type.	
Corethrogyne filaginifolia var. linifolia	Del Mar Mesa sand aster	CRPR 1B.1	Perennial herb endemic to California. Occurs along bluffs or brushy slopes near the coast. Within the San Diego County MHCP, the species	Moderate; Survey Area contains bluff/scrub habitat that may be suitable for this species. This	List 3, NE

Scientific Name	*Common Name*	*Status*	*General Habitat Description*	*Potential for Occurrence within the Survey Area*	*MHCP Designation*
			occurs in several locations in Carlsbad and Encinitas. This species occurs on sandstone substrates where it is generally associated with coastal sage scrub or chaparral, including southern maritime chaparral. Elevation: 15-150 meters Blooming Period: May, Jul, Aug, Sept	species was not observed during the general biological surveys.	
Cryptantha wigginsii	Wiggins' cryptantha	CRPR 1B.2	Annual herb occurring in clay habitats such as coastal scrub. Elevation: 20-275 meters Blooming Period: Feb-Jun	Low; Survey Area lacks suitable substrate type.	
Deinandra paniculata	paniculate tarplant	CRPR 4.2	Annual herb usually occurring in vernally mesic and sometimes sandy habitat. Occurs as a dominant or co-dominant plant in the herbaceous layer of grasslands, forblands, openings of coastal sage scrub and oak woodland. Elevation: 25-940 meters Blooming Period: (Mar)Apr-Nov	Low; Survey Area lacks vernally mesic habitat. Furthermore, this is an easily identifiable species that was not observed during the two general biological surveys.	
Dichondra occidentalis	western dichondra	CRPR 4.2	Perennial rhizomatous herb found in understory of chaparral, other shaded areas below 1,800 feet and rock outcroppings, often after fire. Elevation: 50-500 meters Blooming Period: (Jan)Mar-Jul	Low; Survey Area lacks suitable habitat.	
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	CRPR 1B.1	Perennial herb occurring in rocky, often clay or serpentine habitat including coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland. Elevation: 5-450 meters Blooming Period: Apr-Jun	Low; Survey Area lacks suitable substrate type.	NE
Dudleya variegata	variegated dudleya	CRPR 1B.2	Perennial herb occurring in clay habitat including chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Elevation: 3-580 meters Blooming Period: Apr-Jun	Low; Survey Area lacks suitable substrate type.	

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
Dudleya viscida	sticky dudleya	CRPR 1B.2	Perennial herb endemic to California. Occurs on dry, rocky slopes or cliffs and is typically associated with coastal sage scrub or chaparral. Elevation: 10-550 meters Blooming Period: May-Jun	Low; Survey Area lacks rocky habitat type.	List 2
Eryngium aristulatum var. parishii	San Diego button-celery	CRPR 1B.1, FE, SE	Herb species of southwestern California and northwestern Baja California that is restricted to vernal pools with clay soils. Elevation: 20-620 meters Blooming period: Apr-Jun	Low; Survey Area lacks vernal pool habitat.	List 3, NE
Erysimum ammophilum	sand-loving wallflower	CRPR 1B.2	Perennial herb endemic to California. Occurs in coastal dune habitat. Elevation: 0-60 meters Blooming Period: Feb-Jun	Low; the most likely area for this species to occur within the Survey Area is the sandy beach habitat, however, consistent disturbance/trampling by public beach use substantially reduces the likelihood of occurrence within the Survey Area.	
Euphorbia miseria	cliff spurge	CRPR 2B.2	Perennial shrub occupying rocky habitat including coastal bluff scrub, coastal scrub, and Mojavean desert scrub. Elevation: 10-500 meters Blooming Period: Dec-Aug(Oct)	Present. Two individuals were observed during the general biological surveys.	Covered by HMP
Ferocactus viridescens	San Diego barrel cactus	CRPR 2B.1	Perennial stem succulent occurring in chaparral, coastal scrub, valley and foothill grassland, and vernal pool habitats. Elevation: 3-450 meters Blooming period: May-Jun	Moderate; Survey Area contains bluff/scrub habitat that may be suitable for this species. This species was not observed during the general biological surveys.	List 2
Harpagonella palmeri	Palmer's grapplinghook	CRPR 4.2	Annual herb occurring in open grassy areas within shrubland. Habitats include chaparral, coastal scrub, and valley and foothill grassland. Elevation: 20-955 meters Blooming Period: Mar-May	Low; Survey Area lacks suitable habitat.	
Hazardia orcutii	Orcutt's hazardia	CRPR 1B.1, ST	Perennial evergreen shrub that occurs in southern maritime chaparral.	Low; Survey Area lacks southern maritime chaparral.	Covered by HMP, NE

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
			Elevation 80-85 meters Blooming Period: Aug-Oct		
Hordeum intercedens	vernal barley	CRPR: 3.2	Native to southern California and northern Baja California. Occurs in saline and alkaline soils near seasonal waterflows and vernal pool habitat. Today, most occurrences are located on the Channel Islands. Elevation: 5-1000 meters Blooming Period: Mar-June	Low; Survey Area lacks suitable habitat.	
Isocoma menziesii var. decumbens	decumbent goldenbush	CRPR 1B.2	Perennial shrub. Occurs sandy soil, chaparral, coastal scrub, landward side of dunes, hillsides, arroyos. Elevation: 10-135 meters Blooming Period: Apr-Nov	Low; Survey Area exhibits some suitable habitat, however, there are no recorded occurrences of this species within coastal North County past 1937. This species was not observed during the general biological surveys.	
Iva hayesiana	San Diego marsh-elder	CRPR 2B.2	Perennial herb occurring in marshes and playas. Elevation: 10-500 meters Blooming period: Apr-Oct	Low; Survey Area lacks suitable habitat.	List 3
Juncus acutus ssp. leopoldii	southwestern spiny rush	CRPR 4.2	Perennial rhizomatous herb occurring in mesic coastal dunes, meadows and alkaline seeps, and coastal salt marshes. Elevation: 3-900 meters Blooming Period: (Mar)May-Jun	Low; Survey Area lacks suitable habitat.	
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	CRPR 4.3	Annual herb. Chaparral, coastal scrub; dry soils, shrubland. Elevation: 1-885 meters Blooming Period: Jan-Jul	Moderate; Survey Area contains scrub habitat that may be suitable for this species. This species was not observed during the general biological surveys.	
Leptosyne maritima	sea dahlia	CRPR 2B.2	Perennial herb occurring in coastal bluff scrub and coastal scrub habitat. Elevation: 5-150 meters Blooming Period: Mar-May	High; Survey Area exhibits suitable habitat and CNDDB observations within Survey Area recorded in 2015.	

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
Lycium californicum	coast desert-thorn	CRPR 4.2	Perennial shrub occurring in coastal bluff scrub and coastal scrub habitats. Elevation: 5-150 meters Blooming Period: (Dec)Mar,Jun-Aug	Present. This species was observed within the Survey Area during the general biological surveys.	
Microseris douglasii ssp. platycarpha	small-flowered microseris	CRPR 4.2	Occurs in clay soils in association with native grasslands or vernal pools. Elevation: 15-1070 meters Blooming Period: Mar-May	Low; Survey Area lacks suitable soil type.	
Myosurus minimus ssp. apus	little mousetail	CRPR 3.1	Annual herb occurring in association with vernal pools and within the alkali vernal pools and alkali annual grassland components of alkali vernal plains. Elevation: 20-640 meters Blooming Period: Mar-Jun	Low; Survey Area lacks suitable habitat.	List 3, NE
Nama stenocarpum	mud nama	CRPR 2B.2	Herb occurring in marsh and swamp habitat of lake margins and riverbanks. Elevation: 5-500 meters Blooming Period: Jan-Jul	Low; Survey Area lacks suitable habitat.	
Navarretia fossalis	spreading navarretia	CRPR 1B.1, FT	Annual herb occurring in chenopod scrub, assorted shallow freshwater marshes, playas, and vernal pools. Elevation 30-655 meters Blooming Period: Apr-Jun	Low; Survey Area lacks suitable habitat.	List 3, NE
Nemacaulis denudata var. denudata	coast woolly-heads	CRPR 1B.2	Annual herb occupying coastal dune habitat. Elevation: 0-100 meters Blooming Period: Apr-Sep	Low; the most likely area for this species to occur within the Survey Area is the sandy beach habitat, however, consistent disturbance/trampling by public beach use substantially reduces the likelihood of occurrence within the Survey Area.	
Pentachaeta aurea ssp. aurea	golden-rayed pentachaeta	CRPR 4.2	Annual herb occurring in valley grassland, southern oak woodland, and conifer forest. Elevation: 80-1850 meters Blooming Period: Mar-Jul	Low; Survey Area lacks suitable habitat.	

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	CRPR 3.2	Perennial herb occurring in sandy, sometimes rocky, habitat including chaparral, coastal dunes, coastal scrub, and coastal salt marshes. Elevation: 5-300 meters Blooming Period: Mar-Aug	Low; Survey Area exhibits suitable habitat, however, last recorded occurrence in County north of Del Mar was Batiquitos Lagoon in 1988.	
Quercus dumosa	Nuttall's scrub oak	CRPR 1B.1	Perennial evergreen shrub. Typically occurs in closed-cone coniferous forest, chaparral, and coastal scrub. Occurs generally on sandy soils near the coast, sometimes on clay loam. Elevation: 15-400 meters Blooming Period: Feb-Apr(May-Aug)	Low; Survey Area may exhibit some suitable habitat, however, this is an easily identifiable large shrub. No species of *Quercus* were observed during the general biological surveys.	Covered by HMP
Selaginella cinerascens	ashy spike-moss	CRPR 4.1	Native to Baja California as well as some locations just north of the border in San Diego County. It grows in dry habitat, often on clay soil, both in open areas and in the shade of larger plants. Elevation: 20-640 meters Blooming Period: No data	Low; Survey Area lacks suitable soil type.	
Suaeda esteroa	estuary seablite	CRPR 1B.2	Perennial herb occupying coastal salt marshes. Elevation: 0-5 meters Blooming Period: (May)Jul-Oct(Jan)	Low; Survey Area lacks suitable habitat.	
Viguiera laciniata (= Bahiopsis laciniata)	San Diego County viguiera	CRPR 4.3	Perennial shrub occurring in chaparral and coastal scrub habitats. Elevation: 60-750 meters Blooming Period: Feb-Jun(Aug)	Moderate; Survey Area contains scrub habitat that may be suitable for this species. This species was not observed during the general biological surveys.	
ANIMALS					
Molluscs					
Tryonia imitator	mimic tryonia (= California brackishwater snail)	Not listed.	Permanently submerged areas of coastal lagoons, estuaries and salt marshes, from Sonoma County to San Diego County.	Low; Survey Area lacks suitable habitat.	
Crustaceans					
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	Generally restricted to vernal pools in coastal southern California and northwestern Baja	Low; Survey Area lacks suitable habitat.	List 3, NE

Scientific Name	*Common Name*	*Status*	*General Habitat Description*	*Potential for Occurrence within the Survey Area*	*MHCP Designation*
			California. Usually observed from January to March when seasonal rainfall fills vernal pools and initiates cyst (egg) hatching.		
Insects					
Bombus crotchii	Crotch bumble bee	SCE	Uncommon species of coastal California east towards the Sierras; select food plan genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, Eriogonum.*	Low; food plan genera are generally lacking within Survey Area; recorded observations in vicinity are lacking: one observation in 1958 near Carlsbad, one observation in 1994 near Ramona, and one observation near Del Mar in 1983.	
Danaus plexippus pop.1	monarch – CA overwintering population	FSS	Winter migrant along CA coast. Known to roost in eucalyptus trees. Usually encountered in lowland areas.	Low; Survey Area lacks suitable habitat.	
Fish					
Eucyclogobius newberryi	tidewater goby	FE, SSC, AFS-E	Endemic to California. Found primarily in waters of coastal lagoons, estuaries, and marshes.	Low; Survey Area lacks suitable habitat.	
Reptiles					
Arizona elegans occidentalis	California glossy snake	SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Appears to prefer microhabitats of open areas with soil loose enough for easy burrowing.	Low; Survey Area lacks suitable habitat.	
Birds					
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	SSC, BCC, FSS	Year-round resident of southern California, found in arid parts of westward-draining slopes. Obligate inhabitants of coastal sage scrub, generally below 3000 ft. Nest almost exclusively in prickly pear and coastal cholla.	Moderate; Survey Area exhibits suitable habitat, however, it is a narrow, linear site surrounded by development or disturbance on all sides. If utilized by species, it is most likely as transitory foraging and resting habitat; not suitable as nesting habitat due to high degree of public use.	

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
Charadrius alexandrinus nivosus	western snowy plover	FT, SSC, BCC	Year-round resident. Found in coastal beaches and open sandy coastal areas, sparsely vegetated dunes, and salt pans at lagoons and estuaries. Nests require sandy, gravelly, or friable soil substrate.	Low; Survey Area lacks suitable foraging habitat and the sandy beach lacks suitable nesting habitat as it is subjected to regular public disturbance for recreation.	Covered by HMP
Passerculus sandwichensis beldingi	Belding's savannah sparrow	SE	Year-round resident of southern California coastal salt marshes. Nests in a hollow on ground concealed by overhanging vegetation.	Low; Survey Area lacks suitable habitat.	Covered by HMP
Plegadis chihi	white-faced ibis	WL	Local migrant. Year-round resident in a few areas of southern CA including a small section of northwest San Diego county. Prefers fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows. Nests in dense, fresh emergent wetland.	Low; Survey Area lacks suitable habitat.	Covered by HMP
Polioptila californica californica	coastal California gnatcatcher	FT, SSC	Year-round resident. Generally prefers open sage scrub with *Artemesia californica* as a dominant or co-dominant species. Uses gullies and drainages as nest sites when available.	Moderate; Survey Area exhibits suitable habitat, however, it is a narrow, linear site surrounded by development or disturbance on all sides. If utilized by species, it is most likely as transitory foraging and resting habitat; not suitable as nesting habitat due to high degree of public use.	Covered by HMP
Rallus obsoletus levipes	light-footed Ridgway's rail	FE, SE, FP	Year-round resident of southern CA coastal salt marshes and lagoons. Nests in the lower littoral zone of salt marshes, usually in cordgrass.	Low; Survey Area lacks suitable habitat.	Covered by HMP, FP
Sternula antillarum browni	California least tern	FE, SE, FP	Summer resident of southern CA. Feeds primarily in shallow estuaries or lagoons. Nests on barren to sparsely vegetated sites near water, usually on sandy or gravelly substrate.	Low; Survey Area lacks suitable foraging habitat and the sandy beach lacks suitable nesting habitat as it is subjected to regular public disturbance for recreation.	Covered by HMP, FP

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Survey Area***	***MHCP Designation***
Vireo bellii pusillus	least Bell's vireo	FE, SE	Summer resident of Southern California in low riparian, in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, or mesquite.	Low; willow habitat along seawall within Survey Area is small and narrow, lacking suitable cover/structure and riparian understory.	Covered by HMP
Mammals					
Lasiurus xanthinus	western yellow bat	SSC, WBWG (H)	Year-round resident of southern CA, found below 2000 ft in or near riparian habitats. Roosts in trees, including palm trees, in and near palm oases and riparian habitats.	Moderate; palm trees situated along Carlsbad Blvd may offer suitable roosting habitat.	
Nyctinomops femorosaccus	pocketed free-tailed bat	SSC, WBWG (M)	Year-round resident of southern CA. Habitats used include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Roosts in rock crevices, caverns, or buildings.	Moderate; potentially suitable crevices present in Survey Area under stairways.	

Legend

Federal Endangered Species Act (ESA) Listing Codes: federal listing is pursuant to the Federal Endangered Species Act of 1973, as amended (ESA).
FE = federally listed as endangered: any species, subspecies, or variety of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
FT = federally listed as threatened: any species, subspecies, or variety of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.

California Endangered Species Act (CESA) Listing Codes: state listing is pursuant to § 1904 (Native Plant Protection Act of 1977) and §2074.2 and §2075.5 (California Endangered Species Act of 1984) of the Fish and Game Code, relating to listing of Endangered, Threatened and Rare species of plants and animals.
SE = state listed as endangered: any species, subspecies, or variety of plant or animal that are in serious danger of becoming extinct throughout all, or a significant portion, of their range.
ST = state listed as threatened: any species, subspecies, or variety of plant or animal that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future.
SCE = state listed as candidate endangered.

California Department of Fish and Wildlife (CDFW):
SSC = species of special concern: status applies to animals which 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist. The CDFW has designated certain vertebrate species as "species of special concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
FP = fully protected: animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.
WL = watch list: these birds have been designated as "Taxa to Watch" in the *California Bird Species of Special Concern report* (Shuford and Gardali 2008). The report defines "Taxa to Watch" as those that are not on the current special concern list that (1) formerly were on the 1978 (Remsen 1978) or 1992 (CDFG 1992) special concern lists and are not currently listed as state threatened and endangered; (2) have been removed (delisted) from either the state or federal threatened and endangered lists (and remain on neither), or (3) are currently designated as "fully protected" in California.

United States Forest Service (USFS):
FSS = Forest Service sensitive: those plant and animal species identified by a Regional Forester that are not listed or proposed for listing under the ESA and for which population viability is a concern, as evidenced by: (a) significant current or predicted downward trends in

population numbers or density or (b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution."

United States Bureau of Land Management (BLM):
BLMS = BLM sensitive: those plant and animal species on BLM administered lands and that are (1) under status review by the USFWS/NMFS; or (2) whose numbers are declining so rapidly that federal listing may become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats. BLM policy is to provide the same level of protection as USFWS candidate species.

Western Bat Working Group (WBWG):
WBWG ("Priority"): Species are ranked as High, Medium, or Low Priority in each of 10 regions in western North America. Because California includes multiple regions where a species may have different WBWG Priority ranks, the CNNDB includes categories for Medium-High, and Low-Medium Priority. The CNDDB tracks bat species that are at least Low-Medium Priority in California. "Priority" ranks are abbreviated as follows: High = H, Medium = M, Low = L, Medium-High = MH, Low-Medium = LM.

American Fisheries Society: Listing of imperiled freshwater and diadromous fishes of North America prepared by the American Fisheries Society's Endangered Species Committee.
AFS-E= Endangered
AFS-TH= Threatened
AFS-V= Vulnerable

California Rare Plant Ranks (Formerly known as CNPS Lists): the CNPS is a statewide, non-profit organization that maintains, with CDFG, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFG officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFG jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

CRPR 1A - California Rare Plant Rank 1A (formerly List 1A): Plants presumed extirpated in California and either rare or extinct elsewhere. All of the plants constituting California Rare Plant Rank 1A meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR: 1B - California Rare Plant Rank 1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere. All of the plants constituting California Rare Plant Rank 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and

2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR: 2 - California Rare Plant Rank 2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere. All of the plants constituting California Rare Plant Rank 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR: 4 - California Rare Plant Rank 4 (formerly List 4): Plants of Limited Distribution - A Watch List. Very few of the plants constituting California Rare Plant Rank 4 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and CNPS and CDFG strongly recommend that California Rare Plant Rank 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

California Native Plant Society (CNPS) Threat Ranks: The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) and designates the level of endangerment by a 1 to 3 ranking with 1 being the most endangered and 3 being the least endangered. A Threat Rank is present for all California Rare Plant Rank 1B's, 2's, 4's, and the majority of California Rare Plant Rank 3's. California Rare Plant Rank 4 plants are seldom assigned a Threat Rank of 0.1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a California Rare Plant Rank. In addition, all California Rare Plant Rank 1A (presumed extinct in California), and some California Rare Plant Rank 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

0.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = fairly endangered in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

Sources:

- CNPS Inventory of Rare and Endangered Plants (CNPS 2020)
- The Jepson Manual: *Vascular Plants of California,* second edition (Baldwin *et al.* 2012).
- RareFind, CDFW, California Natural Diversity Database (CNDDB) (CDFW 2020).
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW, January 2020).
- State and Federally Listed Endangered and Threatened Animals of California (CDFW, August 2019).
- Special Animals List (CDFW, August 2019).
- Life History Accounts (CDFW).