Appendix A Biological Technical Report

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Biological Technical Report

San Dieguito River Park Osuna Segment of the Coast to Crest Trail Project

FEBRUARY 2024

Prepared for:

San Dieguito River Park

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Acronyms and Abbreviations

Acronym	Abbreviation
ASMD	area specific management directives
BMP	best management practices
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CWA	Clean Water Act
ESL	Environmentally Sensitive Lands
GIS	geographic information system
MBTA	Migratory Bird Treaty Act
MHPA	multiple habitat planning area
MM	mitigation measure
Mph	miles per hour
MSCP	Multiple Species Conservation Program
OMWD	Olivenhain Municipal Water District
RWQCB	Regional Water Quality Control Board
SES	Schaefer Ecological Solutions
USFWS	U.S Fish and Wildlife Service

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Executive Summary

The proposed project will provide a one-mile-long trail extension of the Coast to Crest Trail that will cross the San Dieguito River linking to other planned trail segments in the area. This project is referred to herein as the San Dieguito River Park Osuna Segment of the Coast to Crest Trail Project (project or proposed project). The project lies within the San Dieguito River valley, east of Interstate 5 and El Camino Real, and southeast of Via De La Valle. The study area for the proposed project consists of the proposed trail alignment, plus a 100-foot buffer, totaling 23.85 acres. The study area is located along the north border of the City of San Diego (City) and the County of San Diego (County). The study area is located between the Surf Cup Sports facility (Surf Cup) and the Fairbanks Ranch Golf Course, both of which are leased properties from the city of San Diego. The project boundary extends from the Surf Cup property on the West, borders the Morgan Run Golf Course property to the north, crosses through Fairbanks Ranch property to the east, and traverses through the Evergate Stables property via an existing success road connecting to San Dieguito Road. The project is within the City of San Diego's MSCP Subarea plan area but is located outside of the Multiple Habitat Planning Area (City of San Diego 1997).

The project will consist of the proposed trail extension with a 150-foot free-span bridge crossing the San Dieguito River connecting this portion of the trail with a previously planned section of trail being developed within the Surf Cup property. The overall trail system will provide a public access route through City of San Diego open space and easements granted by private land holders. The proposed trail route parallels the north boundary of the City of San Diego open space.

Multiple biological surveys, associated with other projects, have been conducted in the project area between 1998 to 2018. This current report utilizes those previous reports as reference. Dudek conducted a supplemental biological survey in July of 2021, focusing updates to vegetation mapping as needed and providing additional vegetation mapping to cover the entire study area. The purpose of this biological technical report is to provide the extents of existing vegetation communities and jurisdictional resources within the study area. The report will also identify those plant and wildlife species recognized as sensitive by local, state, or federal wildlife agencies and/or environmental organizations that a have a high potential to occur in the study area based on vegetation communities/habitats present. Jurisdictional resources (i.e., wetlands and waters) and sensitive species are summarized from previous survey efforts in the area.

Based on species composition and general physiognomy, 11 vegetation communities (or habitat types) were identified within the study area, including: coastal sage scrub, disturbed habitat, ornamental, freshwater marsh, coastal salt marsh, southern riparian woodland, mulefat scrub, southern willow scrub, Arundo-dominated riparian, non-native riparian, and tamarisk scrub. In addition, two land covers are located within the project site: developed land and open water.

The proposed trail alignment will path through primarily developed land and disturbed habitat associated with the Surf Cup and Fairbanks Ranch city lease-hold properties. . However, the trail alignment will also pass through portions of the adjacent coastal sage scrub and wetland vegetation. The wetland habitats present are associated with the San Dieguito River within the western portion of the project area, where the trail will cross over the river. There are additional wetland features on the eastern half of the project area composed of freshwater marsh and coastal salt marsh, associated with a secondary drainage that crosses through the Evergate Stables property. These areas will be avoided to the greatest extent feasible, with the majority of the trail alignment placed in the developed maintenance access road that borders the Evergate Stables property.

Based on Dudek's review of the study area and the previous surveys conducted, there are no other sensitive plant species with a high potential to occur within the study area. Furthermore, based on Dudek's review of the study area three plant species were determined to have a moderate potential to occur within the study area. These include southern tarplant (*Centromadia parryi* ssp. *australis*), Lewis' evening primrose (*Camissoniopsis lewisii*.) and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*).

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), is listed by California Native Plant Society (CNPS) to have a CRPR of 4.2; however, this species is not federally or state-listed and is not covered by the MCSP. This species was detected during biological surveys of the study area in 2021 and was determined to have a moderate potential to occur within the study area.

Based on Dudek's review of the study area and the previous surveys conducted, the following wildlife species have high potential to occur northern harrier (*Circus cyaneus*), least bittern (*Ixobrychus exilis*), Ridgway's rail (*Rallus obsoletus levipes*), least Bell's vireo (*Vireo bellii pusillus*), San Diego black-tailed jackrabbit, and wandering skipper (*Panoquina errans*).

The results of the previous jurisdictional delineation, associated with the Osuna Valley Trail Bridge Feasibility Study (Kleinfelder 2015) concluded that there are locations within the study area that meet the definition of waters of the United States and/or State, including wetlands, subject to review and regulation by the U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife (regulatory agencies), and the City of San Diego.

Trail construction will occur over approximate 1.8 acres within the 23.85-acre study area. The proposed project will result in direct impacts to wetland and upland habitats, however no direct or indirect impacts to sensitive plant or wildlife species are expected to occur. Implementation of the proposed project would result in direct impacts to 0.173 acres of wetlands and non-wetland waters, including open water. In addition, impacts to 0.47 acres of coastal sage scrub would require mitigation per the City's Biology Guidelines (City of San Diego 2018a) and per regulatory agency guidelines.

Mitigation for project impacts would be accomplished through on-site restoration (i.e., re-establishment) and on-site enhancement (i.e., rehabilitation) of both wetland and upland habitats within the project boundaries. To compensate for impacts to wetlands and non-wetland waters, a total of 0.34 acres of wetlands would be restored and enhanced through revegetation following trail construction. Of that total, approximately 0.17 ac. would be restored through the planting of appropriate native wetland species. In addition, approximately 0.17 acre of the total would be enhanced through the removal of non-native wetland vegetation. This would include Arundo-dominated riparian, non-native riparian, and tamarisk scrub, located within the wetland areas adjacent to the south side of the proposed bridge crossing. Following the removal of the non-native/exotic vegetation, the areas will be revegetated with appropriate native wetland species. To compensate for the direct impacts to uplands, a total of approximately 0.49 acres of the area, currently composed of disturbed habitat, tamarisk scrub and ornamental plantings would be restored to native upland coastal sage scrub habitat through the removal of the non-native/ exotic and ornamental species, with subsequent revegetation with coastal sage scrub species. This would also include revegetation of the upland margins of the trail slopes with CSS species.

1 Introduction

This technical report (report) provides a summary of previous biological resources evaluations completed for the proposed project on the border of the City of San Diego (City) and unincorporated San Diego County. This report includes an updated analysis of potential biological resource impacts associated with the proposed project.

In accordance with the current San Diego Land Development Code Biology Guidelines (City of San Diego 2018a), this report provides an introduction, a project description, a summary of the pertinent biological resource regulations, the project setting, survey methods, existing biological resources, sensitive biological resources, project impacts (direct and indirect), and proposed project mitigation. The project impacts, avoidance, and mitigation measures (MMs) are discussed in accordance with the California Environmental Quality Act (CEQA), Clean Water Act (CWA), California Fish and Game Code, the City of San Diego Final Multiple Species Conservation Program (MSCP) Subarea Plan (Subarea Plan), and the City of San Diego's Environmentally Sensitive Lands (ESLs) regulations.

1.1 Project Location

The proposed project area consists of an approximate one-mile-long section trail including a 150-foot bridge crossing the San Dieguito River. The trail would run along the border of the City of San Diego and unincorporated San Diego County, approximately 3.5 miles northeast of the City of Del Mar, California. The project area is located east of Interstate 5 Expressway, and approximately 1.30 miles east of El Camino Real and lies between Via DeLa Valle to the west, and San Dieguito Road to the east. The project area is within the San Dieguito River watershed and falls within the City of San Diego Surf Cup and Fairbanks Ranch Golf course leaseholds. The trail would also pass through a portion of the Evergate Stables property to the east. (Figure 1, Project Location). The project area is within Section 4 and 5 of Township 14 South, Range 3 West, of the Del Mar, California U.S. Geological Survey 7.5-minute topographic quadrangle. The project is outside of the coastal zone.

1.2 Project Description

The project proposes to extend the existing 3.5-mile segment of the Coast to Crest (CTC) trail that currently terminates at the east end of the Surf Cup Sports Park facility to continue across the San Dieguito River to the east, to terminate at San Dieguito Road. This approximate 1-mile extension of the Coast to Crest Trail is referred to as the Osuna trail segment and will function as a multi-use trail for hikers, bicyclists, and equestrians. The Osuna trail segment will include an approximate 150-foot span prefabricated bridge over the San Dieguito River. The trail alignment has been constrained due to the immediate proximity to the Morgan Run Golf Course property. Morgan Run has rejected the request from the JPA for the trail to pass through their property and joint use of their existing bridge over the San Dieguito River. The existing bridge serves the Morgan Golf Course, and it will remain in place and will be used exclusively by the golf course users and maintenance staff. Therefore, the project has been designed to site the bridge, abutments, and alignment to the south and west of the Morgan Run Golf Course property line. The location will be surrounded by existing wetland and upland vegetation. The. The trail alignment through the Evergate Stables property was modified to avoid and minimize impacts to freshwater marsh and coastal salt marsh vegetation by utilizing the existing service access road as the trail crossing, rather than creating an expanded trail footprint which would have impacted additional jurisdictional habitat. through that portion of the project.

Implementation of the project would require installation of a 150-foot span bridge over the San Dieguito River to establish the connection for the trail system. The bridge will be a prefabricated bridge set on concrete abutments (i.e., footings) which will be "poured-in-place" on site and will be placed at each end of the bridge outside of the river. The design of the bridge will follow all criteria identified in the Osuna Trail Bridge Feasibility Study and will not impact adjacent properties or the hydrology of the San Dieguito River.

Protection of the adjacent native habitat during construction will include the installation of construction fencing to define the trail grading limits, bridging the river channel with a free-span bridge, and avoiding/ minimizing impacts to wetlands and riparian vegetation to the greatest degree possible. The trail will not adversely impact adjacent properties, or the hydrology of the San Dieguito River.

The bridge will be installed across the San Dieguito River and through adjacent plant communities and land covers. The project has been designed to minimize impacts to native habitat including wetlands, riparian areas and upland plant communities, by routing the trail and bridge primarily through disturbed areas, and non-native exotic vegetation to the greatest degree possible. The slopes of the trail will be revegetated with native vegetation to provide replacement habitat after construction.

- The bridge abutments will be designed to minimize impacts to wetland resources and avoid direct impacts to the river (Kleinfelder 2015). The design of the bridge will follow the guidelines of the American Association of State Highway and Transportation Officials', Load and Resistance Factor Design (AASHTO LRFD) Bridge Design Specifications 8th Edition with California Amendments preface dated April 2019; and 2009 AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges with 2015 Interims.

The Trail and bridge construction will include the following elements:

- The trail will be 8 feet wide, with an additional 2-foot-wide shoulder on each side of the trail and fence on each side, for a total width of 12 feet. The trail will be surfaced with 6 inches to 12 inches of decomposed granite (D.G.).
- The bridge will be a 150-feet long by 12 feet wide prefabricated weathered steel bridge with timber planking similar to other trail bridges constructed elsewhere within the CTC Trail alignment. The bridge structure will be placed on poured -in-place concrete abutments. The bridge will be brought into a laydown area outside of the river habitat and will then be lifted into place by a crane.
- The bridge abutments will be constructed using small excavators to minimize impacts to the river and associated native vegetation.
- The abutments will be constructed through "poured-in-place" concrete and will include shallow spread footings.
- Stone rip-rap will be placed around the abutments. The rip/rap is included within the footprint of the abutments shown on the plans. The amount of rip/rap is estimated to include an approximate 20' x 20' area around each abutment, or 400 sq. ft. of rip-rap per abutment.
- Other improvements associated with the trail depending upon the area will include lodge-pole fencing, six-foot tall black vinyl top rail fencing, bollards, signs and minor culvert crossings.
- Earthwork will include grading for the trail, including fill slopes along the margins of the trail and excavation for the bridge abutments.
- The limits of the construction work will be to the limits of the grading.

- The depth of scour underneath the bridge will be 13.7 feet.
- The hydraulic design for the bridge is to pass a 2-year to 10-year storm event while resulting in a "no-rise" criterion during 100-year or overtopping event.

1.3 Regional Resource Planning Context

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursue, hunt, shoot, wound, kill trap, capture, or collect, or any attempt to carry out these activities (16 USC 703 et seq.). Additionally, Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 Federal Register [FR] 3853–3856). The Executive Order requires federal agencies to work with the U.S. Fish and Wildlife Service (USFWS) to develop a memorandum of understanding. USFWS reviews actions that might affect these species. Currently, birds are considered to be nesting under the MBTA only when there are eggs or chicks, which are dependent on the nest. This project would comply with all requirements of the MBTA.

San Diego Multiple Species Conservation Program

The City of San Diego (City) is a participant in the San Diego MSCP Plan, a comprehensive, regional, long-term habitat conservation program designed to provide permit issuance authority for take of covered species to the local regulatory agencies. The MSCP Plan addresses habitat and species conservation within approximately 900 square miles in the southwestern portion of San Diego County (County of San Diego 1998). It serves as an approved habitat conservation plan pursuant to an approved Natural Communities Conservation Plan in accordance with the state Natural Communities Conservation Planning Act (County of San Diego 1998).

The MSCP Plan establishes a preserve system designed to conserve large blocks of interconnected habitat having high biological value that are delineated into Multiple Habitat Planning Areas (MHPAs). The City's MHPA is a "hard line" preserve developed by the City in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997).

The MSCP Plan identifies 85 plants and animals to be "covered" under the plan ("Covered Species"). Many of these Covered Species are subject to one or more protective designations under state and/or federal law, and some are endemic to San Diego. The MSCP Plan seeks to provide adequate habitat in the preserve to maintain ecosystem functions and persistence of extant populations of the 85 Covered Species while also allowing participating landowners "take" of Covered Species on lands located outside of the preserve. The purpose of the MSCP Plan is to address species conservation on a regional level and thereby avoid project-by-project biological mitigation, which tends to fragment habitat.

A portion of the study area is located within the limits of the County of San Diego MSCP Subarea Plan, but the project area is entirely within the City of San Diego MSCP Subarea Plan (Figure 1).

City of San Diego MSCP Subarea Plan

The Subarea Plan (1997) encompasses 206,124 acres within the MSCP Plan area. The project area is located within the Northern Area of the MSCP Subarea Plan (City of San Diego 1997) (Figure 1). The Subarea Plan is characterized by urban land uses with approximately three-quarters either built out or retained as open space/park system. As mentioned previously, the City MHPA is a "hard line" preserve developed by the City in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997). The MHPA is considered an urban preserve that is constrained by existing or approved development and is comprised of habitat linkages connecting several large core areas of habitat. The criteria used to define core and linkage areas involves maintaining ecosystem function and processes, including large animal movement. Each core area is connected to other core areas or to habitat areas outside of the MSCP either through common boundaries or through linkages. Core areas have multiple connections to help ensure that the balance in the ecosystem will be maintained (City of San Diego 1997). Critical habitat linkages between core areas are conserved in a functional manner with a minimum of 75% of the habitat within identified linkages conserved (City of San Diego 1997). The proposed project area is located outside of these habitat linkages and core areas, with the nearest MHPA being approximately 0.25 miles from the project site.

City of San Diego Wetlands Definition

The extent of City wetland jurisdiction is determined based on the City definition of "wetland" provided in Land Development Code (LDC) Section 113.0103 that are regulated by the City under the ESL Regulations (Section 143.0141[b]), which state the following:

> "Wetlands" are defined as areas which are characterized by any of the following conditions:
>
> 1. All areas persistently or periodically containing naturally occurring wetland vegetation communities characteristically dominated by hydrophytic vegetation, including but not limited to salt marsh, brackish marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodlands, riparian scrub, and vernal pools;
> 2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities because human activities have removed the historic wetland vegetation or catastrophic or recurring natural events or processes have acted to preclude the establishment of wetland vegetation as in the case of salt pannes and mudflats;
> 3. Areas lacking wetland vegetation communities, hydric soils and wetland hydrology due to non-permitted filling of previously existing wetlands;
> 4. Areas mapped as wetlands on Map No. C-713 as shown in Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone).

It is intended for this definition to differentiate for the purposes of delineating wetlands, between naturally occurring wetlands and wetlands intentionally created by human actions, from areas with wetlands characteristics unintentionally resulting from human activities in historically non-wetland areas. With the exception of the wetlands created for the purpose of providing wetland habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating wetland characteristics, which are artificially created are not considered wetlands by this definition. Taking into account the regional precipitation cycles, all adopted

scientific, regulator, and technological information available from the State and Federal resource agencies shall be used for guidance on the identification of hydrophytic vegetation, hydric soils, and wetland hydrology.

Under the definition, an area is considered wetland based on the presence at least one of three physical criteria (vegetation, hydrology, soils) or based on "Map No. C-713 as shown in Chapter 13, Article 2, Division 6" (LDC Section 113.0103). The same code section defines wetland buffers as additional "areas or feature(s) that protects functions and values of the adjacent wetland" where the functions and values include, "absorption and slowing of flood waters for flood and erosion control, sediment filtration, water purification, [and] ground water recharge."

The City uses the criteria listed in Section 320.4(b)(2) of the USACE General Regulatory Policies (33 CFR 320-330) to apply an appropriate buffer around wetlands that serves to protect the function and value of the wetland. According to the City's Biology Guidelines, a wetland buffer is an area surrounding a wetland that helps protect the function and value of the adjacent wetland by reducing physical disturbance; provides a transition zone where one habitat phases into another; and acts to slow flood waters for flood and erosion control, sediment filtration, water purification, and groundwater recharge (City of San Diego 2018a). The width of the buffer is determined by factors such as type and size of development, sensitivity of the wetland resource to edge effects, topography, and the need for upland transition (City of San Diego 2018a). There are no set buffer widths required for wetlands delineated outside of the coastal zone.

City of San Diego Biology Guidelines

The City's Development Services Department developed the Biology Guidelines presented in the Land Development Manual "to aid in the implementation and interpretation of the Environmentally Sensitive Lands Regulations (ESL), San Diego LDC, Chapter 14, Article 3, Division 1, Section 143.0101 et seq., and the Open Space Residential (OP-1-1) Zone, Chapter 13, Article 1, Division 2, Section 131.0201 et seq." (City of San Diego 2018a). The guidelines also provide standards for the determination of impact and mitigation under CEQA and the California Coastal Act. Sensitive biological resources, as defined by the ESL Regulations, include lands within the MHPA as well as other lands outside of the MHPA that contain wetlands; vegetation communities classifiable as Tier I, II, IIIA, or IIIB; habitat for rare, endangered, or threatened species; or narrow endemic species. The most sensitive habitats are classified as Tier I with the least sensitive classified as Tier IV, and varying mitigation ratios and requirements that mitigation be in tier or in kind are based on the sensitivity of the habitat being affected.

In addition, the location of impact inside or outside of the City's MHPA also determines where and how much mitigation is required, with the highest ratios being required for mitigation outside of the MHPA when project impacts occur within the MHPA (City of San Diego 2018a). Habitat mitigation requirements, along with seasonal grading restrictions, provide protections for sensitive species, with additional species-specific mitigation required for significant impacts to narrow endemic species. Limitations on development in the MHPA also protect wildlife movement corridors (e.g., linear areas of the MHPA less than 1,000 feet wide) (City of San Diego 2018a).

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2 Survey Methods and Limitations

Data regarding biological resources present within the study area were obtained through a review of pertinent literature and field reconnaissance, both of which are described in detail as follows. Survey areas were determined based on suitable habitat for the resource for which the survey was conducted.

2.1 Literature Review

Multiple biological evaluations have been previously conducted within the project area. Information from the following reports will be used as a reference for this report:

- Biological Resources Assessment for the Olivenhain Municipal Water District (OMWD) 153A Recycled Water Pipeline Extension Project (ECORP Consulting, Inc. 2018) (Well studies and Mitigated Negative Declaration), which documents a biological assessment conducted between Via de la Valle and Dan Dieguito Road associated with the OMWD Recycled Water Pipeline Extension Project. No special-status or protected resources were detected in this area during surveys and desktop review.
- Osuna Valley Trail Bridge Feasibility Study (Kleinfelder 2015), which analyses the feasibility of bridge location and type of the Osuna Valley Trail Bridge over the San Dieguito River within the San Dieguito River Park, extension of the Coast to Crest Trail. Vegetation mapping, jurisdictional delineation, and desktop review of potential sensitive species in the area were conducted in association with the feasibility study.
- Natural Environmental Study Report for the El Camino Real Road/Bridge Widening Project (Tierra Environmental Services 2006), which documents the potential impacts associated with the El Camino Real Road/Bridge Widening Project. Focused surveys of sensitive species were conducted.
- Draft Initial Study and Mitigated Negative Declaration – 153A Recycled Water Pipeline Extension (Woodard & Curran 2018), which concluded potential significant impact on biological resources associated with the 153A Recycled Water Pipeline Extension.
- Biological Assessment Report for the Fairbanks Ranch Country Club Redevelopment Project (Blue Consulting Group 2015), which documents a biological assessment of the Fairbanks Ranch Country Club Redevelopment Project. Vegetation mapping was conducted in the area. No special status species were determined to have significant potential to occur due to the highly disturbed, developed and utilized area with small patches of native habitat.
- Biological Opinion for the Rancho Paseana Trust Restoration and Enhancement of El Apajo Creek and Del Rayo Drainage, Rancho Santa Fe, San Diego County, California (United States Fish and Wildlife Service [USFWS] 2021), which documents the USFWS biological opinion on the impact to Ridgway's rail as a result of the Ranch Paseana Trust Restoration and Enhancement of the El Apajo Creek and Del Rayo Drainage. The focused surveys conducted for this project, which overlap the trail alignment, resulted in the positive detection of Ridgway's rail.

Additional data sources were reviewed to assist with the biological resource analysis including:

- U.S. Department of Agriculture Web Soil Survey (USDA 2021)
- CDFW California Natural Diversity Database – Special Animals List (CDFW 2021a)
- CDFW California Natural Diversity Database – RareFind, Version 5 (CDFW 2021b)

- The Calflora Database (Calflora 2021)
- California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2021)
- MSCP Subarea Plan (City of San Diego 1997)
- San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2018a)
- USFWS Species Occurrence Data (USFWS 2021)
- San Diego Geographic Information Source (SanGIS) database (SanGIS 2021)
- San Diego Natural History Museum (SDNHM 2012)
- Aerial maps from the San Diego Association of Governments (SANDAG 2014) and Bing (Microsoft 2021)
- Topographic maps (Google Earth 2021)

2.2 Field Reconnaissance

No focused surveys for sensitive plant or wildlife species have been conducted specifically in support of this project. As described in Section 2.1, several recent focused surveys and habitat assessments for sensitive plant and wildlife species have been conducted for other nearby projects which either overlap the trail alignment or occur immediately adjacent to the alignment. Therefore, these previous surveys are relied upon to determine the potential for sensitive plant and wildlife species to occur within the trail alignment footprint.

Previous biological studies within the project area were conducted by Schaefer Ecological Solutions (SES). SES conducted a field reconnaissance survey, vegetation community classification, and formal jurisdiction wetlands delineation in the project area on January 22, 2015. The methods and results associated with those surveys are documented in the Osuna Valley Trail Bridge Feasibility Study. Additional biological studies were conducted between 1998 and 2005, within the vicinity of the project area in association with the El Camino Real Bridge Project, as documented in the Natural Environmental Study Report for the El Camino Real Road/Bridge Widening Project (Tierra Environmental Services 2006). Surveys included protocol-level surveys for arroyo toad and least Bell's vireo, as well as focused surveys for Belding's savannah sparrow, Ridgway's rail, formerly light-footed clapper rail, and present or absence of bat species (Tierra Environmental Services 2006). Focused surveys conducted for the El Camino Real Road/Bridge Widening Project did not result in the detection of any special-status plant species. Focused surveys conducted for the Rancho Paseana project resulted in the positive detection of Ridgway's rail. Dudek conducted sensitive species surveys, for Ridgway's Rail and raptors, for the OMWD Recycled Water Project Pipeline Extension and Groundwater Desalination Project. Surveys were conducted from March to July 2019.

This report largely relies on the previously conducted surveys to determine the potential for special-status species to occur; however, a supplemental biological field survey for the proposed project was conducted in July 2021, by Dudek biologist, Alexandra Kookootsedes. The field survey included vegetation and land cover mapping of the 100-foot buffer around the proposed trail alignment, referred to herein as the survey area, along with updating the previous mapped bridge area from the Osuna Valley Trail Bridge Feasibility Study (Kleinfelder 2015), as necessary. The project area refers to the impact area of the proposed trail. Table 1 lists the survey date, times, surveying biologist, and weather conditions during the survey. The biological survey was conducted in accordance with the City's Guidelines for Conducting Biological Surveys (Appendix II in City of San Diego 2018a).

Table 1. Survey Details

Date	Time	Personnel	Purpose	Conditions
7/15/2021	08:00am–12:00pm	Alexandra Kookootsedes	Vegetation Mapping	72°F–83°F; 0%–10% cloud cover; 0–3 mph wind

Note: mph = miles per hour

2.2.1 Resource Mapping

Vegetation communities and land uses on and within the survey area were mapped in the field directly onto a 100-foot-scale (1 inch = 100 feet), aerial photograph–based field map with overlay of the project survey area. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS, and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present within the study area was determined.

Pursuant to the Biology Guidelines (City of San Diego 2018a) the vegetation community and land cover mapping follows the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008), which is based on the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). These habitats were then assigned vegetation community names based on the City's Biology Guidelines (City of San Diego 2018a). Areas within the study area supporting less than 30% native plant species cover were mapped as disturbed land, and areas supporting at least 20% native plant species, but fewer than 50% native cover, were mapped as a disturbed native vegetation community (e.g., disturbed coastal sage scrub).

2.2.2 Flora and Fauna

A compiled list of plant species observed in the proposed study area is presented in Appendix A, Plant Compendium. Latin and common names follow the Checklist of the Vascular Plants of San Diego County, 5th Edition (Rebman and Simpson 2014). Where the scientific name listed in Rebman and Simpson (2014) differs from the name currently recognized by the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2018) or that listed in the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2021), the synonym is included in brackets following the name listed in Rebman and Simpson (2014). This list includes those species observed during the SES surveys as recorded on wetland determination data forms, previous monitoring conducted within the study area, as well as species observed during Dudek's updated surveys.

Latin and common names of any animals described in this report follow Crother (2012) for reptiles and amphibians, American Ornithologists' Union (AOU) (2017) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA) (2016) or SDNHM (2002) for butterflies. In addition to species actually detected during the surveys, expected wildlife use of the survey area was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. A list of wildlife species observed in the survey area is presented in Appendix B, Wildlife Compendium.

Since focused biological surveys for the proposed project have not been conducted, the list of plant and wildlife species presented in Appendix A and B is only based on one brief site visit, and species observed during SES surveys and OMWD monitoring. The project area and surrounding habitat would be expected support several native plant and wildlife species that may not be listed in those appendices.

2.2.3 Wetland Delineation

A wetland delineation was conducted in 2015 for a small portion of the study area in association with the Osuna Valley Trail Bridge Feasibility Study. During the updated field review conducted by Dudek in 2021, the limits of the jurisdictional resources identified within the proposed trail alignment (not the entire study area) were reviewed to ensure that site conditions remain the same as those identified in the 2015 delineation. Results from that delineation have been summarized in Section 3.2.2. The delineation defined areas under the jurisdiction of the CDFW pursuant to Sections 1600–1603 of the California Fish and Game Code; under the jurisdiction of the USACE pursuant to Section 404 of the federal CWA; under the jurisdiction of Regional Water Quality Control Board (RWQCB) pursuant to CWA Section 401 and the Porter–Cologne Act; and wetlands defined under the Biology Guidelines (City of San Diego 2018a). Collectively, areas under the jurisdiction of one or all of the resource agencies (USACE, RWQCB, and CDFW), and/or the City are termed jurisdictional resources.

Specifically, the methodology used for each jurisdiction or regulating agency, including the USACE, CDFW, RWQCB, and the City is described as follows. The USACE wetlands delineation was performed in accordance with the 1987 USACE Wetlands Delineation Manual (USACE 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008), the Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2010), and guidance provided by the USACE and U.S. Environmental Protection Agency on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA (USACE and EPA 2008).

Pursuant to Section 404 of the CWA, USACE regulates the discharge of dredged and/or fill material into "waters of the United States." The term "wetlands" (a subset of waters of the United States) is defined in 33 Code of Federal Regulations (CFR) 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high-water mark," which is defined in 33 CFR 328.3(e).

The USACE and RWQCB, pursuant to the federal CWA, regulate all areas supporting all three wetlands indicator criteria as "wetlands" described in the USACE manual: hydric soils, hydrology, and hydrophytic vegetation. Wetland statuses of plant species to assist in determining if hydrophytic vegetation is present is outlined in The National Wetland Plant List: 2016 wetland ratings (Lichvar et al. 2016). The RWQCB may also take jurisdiction over surface waters lacking USACE regulation pursuant to the state Porter–Cologne Water Quality Control Act. These areas generally include areas with at least one of the three wetlands indicators but that are isolated from a tributary of navigable water through lack of evidence of surface water hydrology.

A predominance of hydrophytic vegetation, usually associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).

The City's definition of wetlands is broader than the definition applied by the USACE. Under the City's definition, wetlands can include vegetation communities such as freshwater marsh, riparian forest, riparian scrub, or vernal pools. They may also include areas that have hydric soil or wetland hydrology, but human activities have resulted

in a lack of hydrophytic vegetation (e.g., channelized streambeds) or recurring natural events (City of San Diego 2018a). However, "seasonal drainage patterns that are sufficient enough to etch the landscape (i.e., ephemeral/ intermittent drainages) may not be sufficient enough to support wetland dependent vegetation. These types of drainages would not satisfy the City's wetland definition unless wetland dependent vegetation is either present in the drainage or lacking due to past human activities.

2.3 Survey Limitations

Only one site visit was conducted to update the previously mapped vegetation and to map a 100-foot buffer around the proposed trail alignment. The site visit was conducted during daylight hours. There were no incidental sightings of sensitive plant species within the project area during the biological surveys of the area in 2015 and 2018; however, southwestern spiny rush was observed in the survey area during vegetation mapping surveys conducted in 2021. Previous focused surveys have been conducted in the Project area in association with other projects. These surveys have included protocol-level surveys for arroyo toad and least Bell's vireo, as well as focused surveys for Belding's savannah sparrow, Ridgway's rail, formerly light-footed clapper rail, and present or absence of bat species (Tierra Environmental Services 2006). Complete inventories of biological resources present on a site often require numerous focused surveys at different times of day during different seasons. Some species such as annual plants are present in only spring or summer, and nocturnal animals are difficult to detect during the day. Other species may be present in such low numbers that they could be missed. Due to such timing and seasonal variations, survey results are not an absolute list of all species that the study area/project area may support. Sensitive species with potential to occur are largely based on previous focused survey efforts in the area, but also rely on a site visit conducted by Dudek in July 2021, and are described in Section 3.2.5, Sensitive Plants, and Section 3.2.6, Sensitive Wildlife, of this report.

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3 Results

3.1 Physical Characteristics

The proposed study area spans between the Surf Cup Sports Park facility, the Fairbanks Ranch Golf Course and San Dieguito Road, in the northern portion of the City of San Diego. Current land uses immediately surrounding the proposed project include golf courses, a sports park (Surf Cup facility), a country club (Fairbanks Ranch Golf course), horseback riding tracks (Evergate Stables property) and dirt access roads (access roads in Evergate Stables property linking to San Dieguito Road). The San Dieguito River flows through the westerly portion of the study area. El Apajo Creek and Del Rayo Drainage meet and flow towards San Dieguito River within the Evergate Stables portion of the project area (USFWS, 2021).

The elevations in the study area range from approximately 18 feet above mean sea level at the western edge of the study area along the Surf Cup Sports Park to approximately 35 feet above mean sea level along the eastern edge near San Dieguito Road.

According to the Natural Resources Conservation Service, Soil Survey, four soil types were mapped in the study area (Table 2) (USDA 2021):

Table 2. Soils within the Project site

Soil Category	Soil Description	Hydric Rating	Acreage
Grangeville fine sandy loam	Grangeville fine sandy loam, 0% to 2% slopes	Partially Hydric	16.29
Riverwash	gravelly course sand	All Hydric	1.81
Salinas clay	Salinas clay, 2% to 5% slopes	No	11.02
Tujunga sand	Tujunga sand, 0% to 5% slopes	Partially Hydric	5.28
		Total	**23.85**

Note: The hydric soils are derived from USDA 2021.

3.2 Biological Resources

The following discussion describes the existing biological conditions within the proposed project site, provided as biological resource descriptions.

3.2.1 Vegetation Communities and Land Cover Types

The vegetation communities and land covers were mapped according to Oberbauer et al. (2008). These habitats were then identified by their corresponding community as listed the City Biology Guidelines (City of San Diego 2018a). A total of 11 vegetation communities (6 native and 5 non-native) were identified within the project site: coastal sage scrub, freshwater marsh, coastal salt marsh, southern riparian woodland, mulefat scrub, southern willow scrub, disturbed habitat, ornamental, non-native riparian, Arundo-dominated riparian, and tamarisk scrub. In addition, 2 land covers are located within the project site: developed land and open water (Tables 3a and 3b).

The vegetation communities and land cover types recorded in the study area are presented in Table 3a and Table 3b and their spatial distributions are presented on Figures 3a-3e, Biological Resources Map. Table 3a

summarizes the acreages of upland and non-native vegetation communities as well as other land covers (13.89 acres) while Table 3b summarizes wetland vegetation acreages (9.95). Acreages shown in Tables 3a and 3b account for the entire survey area, which encompasses 23.84 acres. Also included in the tables are the sensitivity designations of each vegetation community according to the tiers described in the City's Biology Guidelines (City of San Diego 2018a).

Table 3a. Upland Vegetation Communities and Land Cover Types in the Survey Area and within the Project Boundary

Vegetation Community/ Land Cover Type	City of San Diego Biology Guidelines Vegetation Community	Subarea Plan Tier	Survey Area Acreage	Project Boundary Acreage
Native Vegetation Communities				
Coastal Sage Scrub	Coastal Sage Scrub	II	3.99	0.47
Coastal Sage Scrub (*Baccharis*-dominated)	Coastal Sage Scrub	II	0.20	--
Non-Native Vegetation Communities and Land Covers				
Developed Land	Disturbed Land	N/A	7.55	0.77
Disturbed Habitat	Disturbed Land	IV	1.84	0.04
Ornamental	Disturbed Land	IV	0.31	0.09
		Total	**13.89**	**1.37**

Table 3b. Wetland Vegetation Communities and Land Cover Types in the Survey Area and within the Project Boundary

Vegetation Community/ Land Cover Type	City of San Diego Biology Guidelines Vegetation Community	Subarea Plan Designation	Survey Area Acreage	Project Boundary Acreage
Native Vegetation Communities				
Freshwater Marsh	Freshwater Marsh	Wetland	2.75	0.024
Coastal Salt Marsh	Coastal Wetland	Wetland	4.83	0.011
Southern Riparian Woodland	Riparian Forest or Woodland	Wetland	0.41	--
Mulefat Scrub	Riparian Scrub	Wetland	0.02	0.005
Southern Willow Scrub	Riparian Scrub	Wetland	0.49	0.012
Open Water	Natural Flood Channel	Wetland	0.25	0.02
Non-Native Vegetation Communities and Land Covers				
Arundo-Dominated Riparian	Disturbed Wetlands	Wetland	0.18	0.023
Non-native Riparian	Disturbed Wetlands	Wetland	0.03	--
Tamarisk Scrub	Disturbed Wetlands	Wetland	0.52	--
Disturbed Wetland	Disturbed Wetlands	Wetland	0.07	--
		Total	**9.95**	**0.075**

Note:
[a] **Source:** City of San Diego 2018a.

3.2.1.1 Diegan Coastal Sage Scrub

Diegan coastal sage scrub is a native vegetation community that, according to Oberbauer et al. (2008), is composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species—such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.)—with scattered evergreen shrubs, including lemonade sumac (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*).

Diegan coastal sage scrub occupies a total of 3.99 acres of the study area. This vegetation community occurs primarily on the western half of the project, along the adjacent golf course and soccer field. The area directly adjacent to the soccer field is disturbed coastal sage scrub, with trails and tire tracks running through portions of it. The Diegan coastal sage scrub is comprised of California sagebrush, coast goldenbush (*Isocoma menziesii*), with high cover from field mustard (*Hirschfeldia incana*), and non-native grasses. Coastal sage scrub (including disturbed forms) is considered a Tier II habitat by the City's Biology Guidelines (City of San Diego 2018a).

3.2.1.2 Coastal Sage Scrub (*Baccharis*-dominated)

Coastal sage scrub (*Baccharis*-dominated) is a native vegetation community that, according to Oberbauer et al. (2008), typically occurs in nutrient-poor soils and is composed primarily of broom baccharis (*Baccharis sarothroides*) or coyote bush (*Baccharis pilularis*). Other drought-deciduous species may also be sparsely intermixed—such as California sagebrush, California buckwheat, and saw toothed goldenbush (*Hazardia squarrosa*).

This community occupies a total of 0.20 acres of the study area. This vegetation community occurs primarily on the western half of the project, intermixed with other coastal sage scrub habitat. The baccharis-dominated coastal sage scrub onsite is almost entirely one species, with low bare ground and non-native species covers, when compared to surrounding coastal sage scrub habitat. The City's Biology Guidelines (City of San Diego 2018a) do not distinguish between this variety and general coastal sage scrub vegetation community therefore it is considered a Tier II habitat.

3.2.1.3 Developed Land

According to Oberbauer et al. (2008), urban/developed land represents areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are not supported. This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated or supports a variety of ornamental plants and landscaping.

Areas mapped as developed land occupy 7.55 acres of the study area. These areas consist of all graded and maintained areas of the golf course, graded pathway along Evergate Stables, ornamental plantings and structures associated with Evergate Stables, and a small section of the Surf Cup Sports Park. Developed lands do not have a habitat tier per the City's Biology Guidelines (City of San Diego 2018a).

3.2.1.4 Disturbed Habitat

According to Oberbauer et al. (2008), disturbed land (disturbed habitat) refers to areas that are not developed yet lack vegetation, and generally are the result of severe or repeated mechanical perturbation.

Disturbed habitat within the study area includes 1.84 acres at the far west side by the Surf Cup Sports facility, where a combination of trails, vehicle disturbance, and materials stockpiles have left areas with a high level of disturbance and little sign of native habitat. Disturbed habitat is considered a Tier IV habitat per the City's Biology Guidelines (City of San Diego 2018a).

3.2.1.5 Ornamental

Ornamental is used to describe non-native plant species that are planted in association with developed areas, including ornamental species have naturalized into surrounding habitats. According to Oberbauer et al. (2008), ornamental is not separated from urban/developed, but for the purpose of maintaining consistency with previously mapped areas, ornamental was used in the case of non-native species that are associated with developed areas or have naturalized into nearby surroundings.

Areas mapped as developed land occupy 0.31 acres of the study area. Species observed in this habitat include Ngaio tree (*Myoporum laetum*) and tree tobacco (*Nicotiana glauca*). Ornamental is considered a Tier IV habitat per the City's Biology Guidelines (City of San Diego 2018a).

3.2.1.6 Freshwater Marsh

According to Oberbauer et al. (2008), freshwater marsh is a wetland habitat type that develops where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. Due to being permanently flooded by fresh water, there is an accumulation of deep, peaty soils. It typically is dominated by species such as cattail (*Typha* spp.), sedge (*Carex* spp.), and bulrush (*Scirpus* sp.).

The areas mapped as freshwater marsh occupy 2.75 acres within the study area and are mapped along San Dieguito River. The freshwater marsh mapped within the study area is primarily composed of cattails and bulrush. The City's Biology Guidelines (City of San Diego 2018a) classify it as a freshwater marsh if wetland criteria identified in the City's Biology Guidelines are met, including but not limited to presence of hydric soils, predominance of hydrophytic vegetation, and wetland hydrology.

3.2.1.7 Coastal Salt Marsh

According to Oberbauer et al. (2008), coastal salt marsh is a wetland habitat type that develops where saltwater meets land, along the margins of bays, lagoons, and estuaries. It typically is dominated by species such as alkali heath (*Frankenia salina*), seablite species (*Suaeda* sp.), and/or pickleweed species (*Salicornia* sp.).

The areas mapped as coastal salt marsh (including disturbed) occupy 4.83 acres within the study area and are mapped along the eastern portion of the survey area. The dominant species observed include alkali heath and pickleweed. Portions of the survey area mapped as coastal salt marsh are heavily disturbed from frequent mowing to maintain vehicular access to horseback riding facilities at Evergate Stables. The City's Biology Guidelines (City of San Diego 2018a) classify coastal salt marsh as coastal wetlands if wetland criteria identified in the City's Biology Guidelines are met, including but not limited to presence of hydric soils, predominance of hydrophytic vegetation, and wetland hydrology.

3.2.1.8 Non-Native Riparian

According to Oberbauer et al. (2008), non-native riparian is a dense riparian community dominated by non-native, invasive species, often located in wetland habitats where disturbance has occurred. It typically is dominated by a variety of non-native, invasive species including giant reed grass (*Arundo donax*), tamarisk (*Tamarix* spp.), and Eucalyptus (*Eucalyptus* sp.).

The area mapped as non-native riparian occupies 0.03 acres within the study area occurring along the margins of the San Dieguito River. The area is dominated by a mix of non-native riparian species including Eucalyptus and giant reed grass. The City's Biology Guidelines (City of San Diego 2018a) do not distinguish between types of disturbed wetland habitats, therefore disturbed wetlands, including non-native riparian, are classified as wetland habitats .

3.2.1.9 Arundo-Dominated Riparian

According to Oberbauer et al. (2008), Arundo-dominated riparian is a type of non-native riparian community that is almost exclusively dominated by giant reed grass (*Arundo donax*). The substrate is often characterized by loose, sandy alluvium that is deposited along stream channels during flood flows.

The area mapped as Arundo-dominated riparian occupies 0.18 acres within the study area occurring along banks of the San Dieguito River. These areas are a near monoculture of giant reed grass along the edges of the San Dieguito River. The City's Biology Guidelines (City of San Diego 2018a) classify Arundo-dominated riparian as disturbed wetland.

3.2.1.10 Southern Riparian Woodland

According to Oberbauer et al. (2008), Southern Riparian Woodland is a wetland habitat type that is characterized by a moderate density of small trees of shrubs with scattered taller trees, predominately occurring in major river systems where floods scour banks and along smaller major tributaries. It typically is dominated by species such as desert broom (*Baccharis sarothroides*), Western sycamore (*Platanus racemosa*), and cottonwoods (*Populus* sp.), willows (*Salix* spp.), and elderberry (*Sambucus* spp.).

The areas mapped as Southern riparian woodland occupy 0.41 acres of the study area, located on the southern west edge between the Morgan Run golf course and the Surf Cup soccer field. The area mapped as southern riparian woodland includes disturbed habitat which is a mix of native riparian trees including Fremont's cottonwood (*Populus fremontii*) and willows (*Salix* spp.) and non-native riparian species including tamarisk and giant reed grass. Southern riparian woodland is considered riparian woodland by the City's Biology Guidelines (City of San Diego 2018a).

3.2.1.11 Mulefat Scrub

According to Oberbauer et al. (2008), mulefat scrub is described as a uniform, tall, herbaceous riparian scrub community largely dominated by mulefat (*Baccharis salicifolia*). These areas typically receive frequently flooding preventing succession into more tree dominated riparian habitats. Other characteristic species include Narrowleaf willow (*Salix exigua*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and valley sedge (*Carex barbarae*).

The areas mapped as mulefat scrub occupy 0.02 acres within the study area and occur on the east side of the San Dieguito River. The City's Biology Guidelines (City of San Diego 2018a) do not distinguish between this variety and general riparian scrub therefore all categories of riparian scrub are classified as a wetland habitat if they meet the wetland criteria identified in the City's Biology Guidelines.

3.2.1.12 Southern Willow Scrub (Including Disturbed Variety)

According to Oberbauer et al. (2008), southern willow scrub has been described as a dense, broad-leafed, winter-deciduous riparian thicket dominated by several species of willow (*Salix spp.*), with scattered emergent Fremont cottonwood and western sycamore. Most stands are too dense to allow much understory development. This habitat is considered seral due to repeated disturbance/flooding and is therefore unable to develop into the taller southern cottonwood willow riparian forest.

The areas mapped as southern willow scrub, occupy 0.49 acres within the study area and occur along the San Dieguito River. The City's Biology Guidelines (City of San Diego 2018a) do not distinguish between this variety and general riparian scrub therefore all categories of riparian scrub are classified as a wetland habitat if they meet the wetland criteria identified in the City's Biology Guidelines.

3.2.1.13 Tamarisk Scrub

According to Oberbauer et al. (2008), tamarisk scrub is characterized as a weedy, nearly homogenous stand of multiple tamarisk species (*Tamarix* spp.), usually replacing native habitat following major disturbance events. is a wetland habitat type that develops where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. Due to being permanently flooded by fresh water, there is an accumulation of deep, peaty soils. Other characteristic species include big basin saltbrush (*Atriplex lentiformis*), narrowleaf willow, and arrowweed (*Pluchea sericea*).

The area mapped as tamarisk scrub occupies 0.52 acres within the study area and occurs along and within the San Dieguito River. Tamarisk scrub was also mapped in the survey area within the disturbed coastal salt marsh. The City's Biology Guidelines (City of San Diego 2018a) do not distinguish between types of disturbed wetland habitats, therefore disturbed wetlands, including non-native riparian and tamarisk scrub is classified as a wetland habitat.

3.2.1.14 Disturbed Wetland

Disturbed wetlands are areas permanently or periodically inundated by water that have been substantially modified by human activity. Disturbed wetland (Palm-dominated) refers to a vegetation community that often consists of monotypic stands of palm species (*Arecaceae*) such as Washington fan palm (*Washingtonia robusta*) or canary date palm (*Phoenix canariensis*). Some other characteristic non-native species may also be sparsely intermixed, including giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), pampas grass (*Cortaderia* spp.), and Bermuda grass (*Cynodon dactylon*).

The areas mapped as disturbed wetland occupy 0.07 acres within the study area and occur along the San Dieguito River, within the adjacent Morgan Run Golf Course, and within the Evergate Stables property fields. Per the City's Biology Guidelines (City of San Diego 2018a), disturbed wetland is classified as a wetland habitat.

3.2.2 Jurisdictional Resources

A wetlands delineation was completed by SES in 2015. During the updated field review conducted by Dudek in 2021, the limits of the jurisdictional resources identified within the proposed trail alignment where the bridge is located (not the entire study area) were reviewed to ensure that site conditions remain the same as those identified in the 2015 delineation. While updates to the vegetation were required, the results of the jurisdictional delineation were not revised. During the jurisdictional delineation surveys hydrology, vegetation, and soils were evaluated and results were recorded on wetland determination data forms to determine the presence or absence of wetland field indicators. The San Dieguito River runs through the western portion of the project area creating a riparian corridor and associated transitional uplands from the floodplain. The study area falls within the floodplain of the San Dieguito River. The San Dieguito River has a visible Ordinary High-Water Mark, which was used to map the extent to the feature for the Osuna Valley Trail Bridge Feasibility Study. Since the previous delineation only focused on the location of the bridge and the immediate surrounding area, any wetland vegetation located to the east of the bridge were assumed to be wetlands/riparian habitat regulated by all three agencies and the City. The jurisdictional resources identified in the 2015 delineation and those presumed to be jurisdictional are shown on Figures 3a–3e and summarized in Table 4. All vegetation community mapped on site, as wetland communities and classified through the City's Biological Guidelines as a wetland habitat, are regulated by the City of San Diego as is the open water. Tamarisk scrub is not included as a City wetland as this vegetation community grows on the edges of coastal sage scrub and wetland transition zones. Given that this species is not classified as a wetland by the USACE, stands of tamarisk scrub are not considered regulated by the City or the regulatory agencies.

Table 4. ACOE/RWQCB Jurisdictional Resources within the Study Area

Jurisdictional Aquatic Resource	Area (Acres)
Wetlands	
Arundo-Dominated Riparian	0.04
Coastal Salt Marsh	4.83
Freshwater Marsh	2.10
Mulefat Scrub	0.02
Non-native Riparian	0.03
Southern Willow Scrub	0.49
Southern Riparian Woodland (disturbed)	0.41
Total Wetlands	*7.94*
Non-Wetland Waters	
Open Water	0.25
Disturbed Wetlands	0.04
Total Non-Wetland Waters	*0.29*
Total Jurisdictional Area	**8.23**

Table 5. CDFW Wetlands and Streambed within the Study Area

Jurisdictional Aquatic Resource	Area (Acres)
Wetlands/ Riparian Area	
Arundo-Dominated Riparian	0.04
Coastal Salt Marsh	4.83
Freshwater Marsh	2.10
Mulefat Scrub	0.02
Non-native Riparian	0.03
Southern Willow Scrub	0.49
Southern Riparian Woodland (disturbed)	0.41
Total Wetlands	*7.94*
Non-Wetland Waters/ Streambed	
Open Water	0.25
Disturbed Wetlands	0.06
Arundo-Dominated Riparian	0.13
Southern Willow Scrub (disturbed)	0.40
Freshwater Marsh	0.01
Total Non-Wetland Waters	*0.85*
Total Jurisdictional Area	**8.79**

Table 6. City of San Diego Jurisdictional Wetlands within the Study Area

Jurisdictional Aquatic Resource	Area (Acres)
Wetlands/ Riparian Area	
Arundo-Dominated Riparian	0.04
Coastal Salt Marsh	4.83
Freshwater Marsh	2.10
Mulefat Scrub	0.02
Non-native Riparian	0.03
Southern Willow Scrub	0.49
Southern Riparian Woodland (disturbed)	0.41
Total Wetlands	*7.94*
Non-Wetland Waters/ Streambed	
Open Water	0.25
Disturbed Wetlands	0.06
Arundo-Dominated Riparian	0.13
Southern Willow Scrub (disturbed)	0.40
Freshwater Marsh	0.01
Total Non-Wetland Waters	*0.85*
Total Jurisdictional Area	**8.79**

3.2.3 Floral Diversity

A total of 22 species of native or naturalized plants, 14 native (64%) and 8 non-native (36%), were recorded during the biological reconnaissance survey for the project. Low species diversity is directly related to a lack of focused surveys. A cumulative list of all common and sensitive plant species observed in the study area is provided in Appendix A of this report.

3.2.4 Wildlife Diversity

The study area supports habitat for a variety of species, with a mix of upland and wetland habitat. Upland habitats, including Diegan coastal sage scrub and disturbed habitat, provide foraging and nesting habitat for migratory and resident bird species and other wildlife species. Suitable habitat for sensitive riparian species is present within riparian scrub (southern willow scrub, mulefat scrub, and tamarisk scrub), riparian woodland (southern riparian woodland) habitats. Wetland and freshwater marsh habitats (coastal marsh and freshwater marsh) are also present within the study area and may support sensitive wetland species. The range of vegetated communities within the study area also likely provides cover and foraging opportunities for wildlife species, including reptiles and mammals.

3.2.5 Sensitive Plants

Plant species are considered sensitive if they have been listed or proposed for listing by the federal or state government as rare, endangered, or threatened ("listed species"); have a California Rare Plant Rank (CRPR) of 1-4; are listed as a MSCP-covered species; and/or have been adopted by the City as narrow endemic. Dudek reviewed the findings from biological surveys conducted within portions of the study area associated with other projects in the area to determine the potential for sensitive plant species to occur within the study area. In addition, Dudek's knowledge of biological resources and regional distribution of each species, as well as elevation, habitat, and soils present within the study area were evaluated to determine the potential for various sensitive species to occur. Based on Dudek's review of the study area and the previous surveys conducted in the immediate area, there are no sensitive plant species which have a high potential to occur directly in the study area. There are three sensitive species with a moderate potential to occur within the study area are shown in Appendix C, and described below.

Southern tarplant (*Centromadia parryi* ssp. *australis*) was identified to have a moderate potential to occur in the study area. This information is based on the Osuna Valley Trail Bridge Feasibility Study and the Biological Resources Assessment for the OMWD 153A Recycled Water Pipeline Water Pipeline Extension Project findings.

Lewis' evening primrose (*Camissoniopsis lewisii*.) was determined to have a moderate potential to occur within the study area. Previous surveys were timed to detect this species, but more recent surveys were not conducted during this species blooming period. Therefore, in the absence of focused surveys, this species is assumed to be present.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), occurs within the study area and elsewhere along the river, predominantly within areas of coastal salt marsh. This species is also assumed to be present.

A further description of the species with a moderate potential to occur include the following:

Southern Tarplant

Southern tarplant (*Centromadia parryi* ssp. *australis*) is a CNPS 1B.1 species and is not covered by the MCSP. A record for this species exists within CNDDB, in an area overlapping the Proposed Project alignment but outside of proposed impact areas. Southern tarplant occurs in marshes and swamps, valley and foothill grasslands, and vernal pools. The blooming period of this species is between May and November,

This species was identified to have a moderate potential to occur in the project area, according to vegetation mapping and CNDDB records (Kleinfelder, 2015; ECORP Consulting, Inc., 2018). Southern tarplant was previously observed within the coastal sage scrub habitat associated with the upper floodplain (Kleinfelder 2015).

Southwestern Spiny Rush

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), is listed by the California Native Plant Society (CNPS) to have a CRPR of 4.2; however, this species is not federally or state-listed and is not covered by the MCSP. This species is typically found in a variety of wetland habitats including meadows, seeps, marshes, and swamps. It can also be found in coastal dune habitat.

Southwestern spiny rush is a perennial species that was observed in the coastal salt marsh within the study area during recent vegetation mapping surveys. One small patch was observed in the eastern half of the study area adjacent to the Evergate Stables fence line.

Lewis' Evening Primrose

Lewis' evening primrose is listed by California Native Plant Society (CNPS) to have a CRPR of 3; however, this species is not federally or state-listed and is not covered by the MCSP. This species is typically found in a variety of upland habitats including chaparral, cismontane coniferous forest, and grassland.

Lewis' evening primrose is an annual species that has one known occurrence within the San Dieguito lagoon just over 3 miles west of the study area. Lewis' evening primrose has a moderate potential to occur within the sandy and saline coastal scrub present within the study area.

3.2.6 Sensitive Wildlife

Sensitive wildlife species are those listed as federal/state endangered or threatened, proposed for listing, fully protected by CDFW, California Watch List, California species of special concern, or MSCP-covered species. Findings from previous biological surveys associated other projects within and surrounding the study area have been reviewed and are summarized in the text below. In addition, Dudek's knowledge of biological resources and regional distribution of each species, as well as elevation, habitat, and soils present within the survey area, were evaluated to determine the potential for various sensitive species to occur. (Appendix D)

Based on the Osuna Valley Trail Bridge Feasibility Study findings, the species that have potential to occur in the study area, based on vegetation types and CNDDB output include Ridgway's rail (*Rallus obsoletus levipes*) and least Bell's vireo (*Vireo bellii pusillus*) (Kleinfelder 2015). Ridgway's rail and least Bell's vireo were observed within the

survey area for the El Camino Real Bridge replacement project, but neither were observed during biological surveys for the Osuna Valley Trail Bridge Feasibility study, surveys for the OMWD 153A Recycled Water Pipeline Project, or for this project. Ridgeway's rail was observed within the study area during surveys for the Fairbanks Ranch Golf Course Leasehold in 2018, during biological monitoring for the OMWD pipeline in 2019 and during surveys for the Rancho Paseana Trust Restoration and Enhancement of El Apajo Creek and Del Rayo Drainage Project in 2020 (Dudek 2018; USFWS 2021).

The Biological Resource Assessment for the OMWD 153A Recycled Water Pipeline Extension Project identifies 4 additional species with high or moderate potential to occur within the study area (ECORP Consulting Inc., 2018). The San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) was determined to have a high potential to occur, whereas orange-throated whiptail (*Aspidoscelis hyperythra*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), and California black rail (*Laterallus jamaicensis coturniculus*) were determined to have a moderate potential to occur.

Based on Dudek's review of the study area and the previous surveys conducted, the following wildlife species have a high potential to occur: northern harrier (*Circus cyaneus*), least bittern (*Ixobrychus exilis*), Ridgway's rail (*Rallus obsoletus levipes*), least Bell's vireo (*Vireo bellii pusillus*), San Diego black-tailed jackrabbit, and wandering skipper (*Panoquina errans*) have a high potential to occur. Western spadefoot (*Spea hammondii*), orange-throated whiptail, Cooper's hawk (*Accipiter cooperii*), Canada goose (*Branta canadensis*), Swainson's hawk (*Buteo swainsoni*), white-tailed kit (*Elanus leucurus*), California horned lark (*Eremophila alpestris acita*), yellow warbler (*Setophaga petechia*), and monarch butterfly (*Danaus plexippus*) were all determined to have a moderate potential to occur within the study area.

A description of species with a moderate and high potential to occur, or known to occur, is provided as follows:

Northern Harrier

Northern harrier is considered a species of special concern by CDFW and is covered by the MSCP. The species has a wide range, breeding from northern Alaska to northern Baja California using a wild variety of open habitats including grasslands, marshes, deserts, coastal sand dunes, and floodplains. The species preys on small to medium sized species including birds, rodents, reptiles, and frogs (Macwhirter and Bildstein 1996). Northern harrier is primarily threatened by loss of habitat, including loss of freshwater and estuarine wetland breeding habitat. (Cripe 2000; Macwhirter and Bildstein 1996).

Northern harriers have been recorded nearby the survey area and have a high potential to nest within the survey area.

Least Bittern

Least Bittern is considered a species of special concern by CDFW and is not covered by the MSCP. The species nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic species occurring in San Diego County mostly during breeding season with some overwintering in the Salton Sea and lower Colorado River Valley (Gibbs et.al. 1992; Garrett and Dunn 1981; Rosenberg et al. 1991; Hamilton and Willick 1996; Patten et al. 2003). Least bittern is primarily threated by degradation and loss of freshwater marsh habitat within its range (Gibbs et.al. 1992).

Least bitterns have been recorded nesting at San Elijo Lagoon and have a high potential to occur within the survey area (SDNHM 2021).

Ridgway's Rail

Ridgway's rail is a federally and state-listed endangered species, covered by the MSCP. Ridgway's rail inhabits coastal wetlands from the San Francisco Bay to northern Baja California. Predators such as raptors and degradation of wetlands have led to the decline of the species. Ridgway's rail lay four to eight eggs (Zembal et al. 2007). The prey of this species typically consists of crustaceans (Eddleman and Conway 1998).

Ridgway's rail was first reported near the survey area in 2004. After multiple surveys of the area, inland from the San Dieguito Lagoon and El Camino Real in 2005 and 2006, 31 breeding pairs were identified. In 2006, this subpopulation was the third largest subpopulation of Ridgway's rail in California and the largest recorded in freshwater marsh habitat. The population has fluctuated between 15 and 45 pairs in annual census counts between 2006 and 2016 (Zembal et al. 2013; Zembal et al. 2016).

Ridgeway's rail has a high potential to occur within the survey area as Ridgeways' rail were directly observed and heard during biological monitoring surveys for the OMWD pipeline and during the Rancho Paseana surveys.

Least Bell's Vireo

Least Bell's vireo is federally listed endangered, state-listed endangered, and MSCP covered species. The breeding range of least Bell's vireo includes coastal and inland Southern California (including the western edge of Southern California's southern deserts), a small area within California's Central Valley, and extreme northern Baja California, Mexico. Least Bell's vireo overwinters primarily along southern Baja California (Kus 2002). Least Bell's vireo primarily occupies riverine riparian habitats along water, including dry portions of intermittent streams that typically provide dense cover within 1 to 2 meters (3.3 to 6.6 feet) off the ground, often adjacent to a complex, stratified canopy. Least Bell's vireo nesting habitats in cismontane and coastal areas include southern willow scrub; mulefat scrub; arroyo willow riparian forest edge; wild blackberry thickets; and more rarely, cottonwood forest, sycamore alluvial woodland, and southern coast live oak riparian forest.

Least Bell's vireo has high potential to occur within riparian habitat along the San Dieguito River. A least bell's vireo observation was recorded in the study area during 2019 surveys of the OMWD 153A Recycled Water Pipeline Extension Project.

San Diego Black-tailed Jackrabbit

San Diego black-tailed jackrabbit is considered a species of special concern by CDFW and is not covered by the MSCP. The subspecies San Diego black-tailed jackrabbit (*L. c. bennettii*), which is one of nine subspecies of black-tailed jackrabbit (Dunn et al. 1982), is confined to coastal Southern California, with marginal records being Mt. Piños in northeastern Ventura County, Arroyo Seco/Pasadena in Los Angeles County, and the San Felipe Valley and Jacumba in San Diego County (Hall 1981). The black-tailed jackrabbit occupies many diverse habitats, but primarily is found in arid regions supporting short-grass habitats.

The San Diego black-tailed jackrabbit is particularly sensitive to habitat fragmentation and isolation of populations. Because local populations fluctuate in relation to resources, it may disappear from a location when the size of the

habitat patch declines to some critical point no longer large enough to sustain a population or the patch becomes too isolated from other occupied habitat for successful dispersal to the site. Other documented threats to jackrabbits related to urban development are vehicle collisions and pet, stray, and feral dogs (Lechleitner 1958). Inadvertent poisoning from rodenticides used to control pest rodents (e.g., ground squirrels) in landscaped areas and golf courses is also a threat to the species.

San Diego black-tailed jackrabbit has a high potential to occur within the survey area.

Wandering Skipper

Wandering skipper is not federally or state-listed, however it is covered by the MSCP. The species is found in saltmarsh habitat from Baja California to Santa Barbara County (Orsak 1977). Suitable habitat occurs within the survey area. Wandering skipper are known to occur in salt marshes throughout the region. The species is threatened by development of the coastal marsh habitats throughout its range.

Wandering skipper has a high potential to occur within the survey area.

Western Spadefoot

Western spadefoot is considered a species of special concern by CDFW but it is not covered by the MSCP. The western spadefoot usually occurs in open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). The species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman 1998).

Loss of aquatic and adjacent upland habitats supporting the life cycle of the western spadefoot is a primary threat to this species. Davidson et al. (2002) found that declines in western spadefoot in Southern California were associated most strongly with habitat loss, due primarily to urbanization and, to a lesser extent, agriculture. Other factors related to urban development probably are also contributing to this species' decline. Over the long term, non-native predators, such as bullfrog, crayfish, and mosquito fish, are a threat to western spadefoot, especially during breeding and metamorphosis (Jennings and Hayes 1994; USFWS 2005).

One recent occurrence of Western spadefoot was documented 3 miles upstream of the study area in 2007, however vernal pools and ephemeral basins were not observed within the study area. Additionally, non-native American bullfrogs (*Rana catesbeiana*), have been recorded less than 1 mile from the survey area. Thus, Western spadefoot has a moderate potential to occur within the survey area.

Orange-Throated Whiptail

Orange-throated whiptail is considered a watch list species by CDFW and is covered by the MSCP. The species occurs in low-elevation coastal scrub, chapparal, and valley foothill hardwood habitats.

Several occurrences of orange-throated whiptail have been recorded within 3 miles of the study area, however the habitat within the study area is limited in quality. As such, orange-throated whiptails have a moderate potential to occur within the survey area.

Cooper's Hawk

Cooper's hawk is considered a watch list species by CDFW and is covered by the MSCP. The species nests and forages in dense stands of live oak, riparian woodlands, and other woodland habitats often near water.

Cooper's hawks has a moderate potential to nest and forage within the study area, with riparian trees suitable for raptor nesting. A cooper's hawk observation was recorded in the study area during 2019 surveys of the OMWD 153A Recycled Water Pipeline Extension Project.

Canada Goose

Canada goose is not considered a species of special concern by CDFW but it is covered by the MSCP. The species has a wide range, extending through temperate and arctic North America. The species has also been introduced into many other continents around the work. Canada goose habitat includes lakes, rivers, ponds, and other bodies of water, along with yards, park lawns, and agricultural fields.

Canada goose has a moderate potential to occur within portions of the survey area that area characterized by open, disturbed habitat or near ponds of the San Dieguito River.

Swainson's Hawk

Swainson's hawk is considered a threatened species by CDFW and is covered by the MSCP. The Swainson's hawk breeds widely across western North America from Coahuila, Chihuahua, and Sonora in northern Mexico north to Manitoba, Saskatchewan, and Alberta in southern Canada. Across their breeding range, Swainson's hawks forage in open habitats dominated by grasses, as well as some open shrublands and open, small woodlands. Generally, Swainson's hawk nest in scattered trees along stream courses, rivers, or in open woodlands within foraging habitat (Bechard et al. 2010).

Swainson's hawk has a moderate potential to nest and forage within the study area, with riparian trees suitable for raptor nesting.

White-tailed Kite

White-tailed kite is considered a fully protected species by CDFW but it is not covered by the MSCP. White-tailed kites often nest in woodland, riparian, and individual trees near open lands, foraging opportunistically in grassland, meadows, scrubs, agriculture, emergent wetlands, savanna, and disturbed lands.

White-tailed kite has been observed within 5 miles of the study area. They have a moderate potential to nest and forage within the study area, with riparian trees suitable for raptor nesting, and scrub habitat with some open non-native grassland patches and adjacent developed lands including a golf course. A white-tailed kite observation was recorded in the study area during 2019 surveys of the OMWD 153A Recycled Water Pipeline Extension Project.

California Horned Lark

California horned lark is considered a watch list species by CDFW but it is not covered by the MSCP. The species of horned lark occurs in the Southern and Central coastal slopes of California and in the San Joaquin Valley. Typically, California horned larks nest and forage in grasslands, disturbed lands, agriculture, and along beaches.

California horned lark has been recorded nearby the survey area and has a moderate potential to occur on disturbed, open portions of the study area.

Yellow Warbler

Yellow warbler is considered a species of special concern by CDFW but it is not covered by the MSCP. This species is a migrant throughout much of North America and winters from Southern California, Arizona, and the Gulf Coast southward to central South America (AOU 1998). The yellow warbler occurs near rivers, streams, lakes, or wet meadows that contain riparian vegetation nearby (Lowther et al. 1999; Heath 2008). They can also be associated with agricultural areas and, more specifically, are associated with willows (*Salix* ssp.) (Strusis-Timmer 2009).

Yellow warbler has been recorded within 2 miles of the survey area and have a moderate potential to nest in the riparian habitat present within the survey area. A yellow warbler observation was recorded in the study area during 2019 surveys of the OMWD 153A Recycled Water Pipeline Extension Project.

Monarch Butterfly

Monarch butterfly is considered a candidate for federal listing but is not covered by the MSCP. Monarch butterfly wintering sites are considered special status by CDFW. The species' distribution is controlled by the distribution of its larval host plant (i.e., various milkweeds, genus Asclepias). Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast.

Monarch butterflies have a moderate potential to occur within the study area but are not expected to overwinter since the site is outside of the species' known geographic range for overwintering.

3.2.7 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability by:

1. Assuring the continual exchange of genes between populations, which helps maintain genetic diversity
2. Providing access to adjacent habitat areas, representing additional territory for foraging and mating
3. Allowing for a greater carrying capacity
4. Providing routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires)

Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage does represent a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as stepping-stones for dispersal.

The main habitat linkages within the study area are associated with San Dieguito River, adjacent open space upland habitat, and wetlands on the eastern side of the study area. Outside of these areas is predominately developed

landscapes that likely provide limited refuge and cover for wildlife species and their movements. San Dieguito River provides wildlife habitat and may support wildlife species movement; however, the habitat is limited in size, thus any large species that use this habitat are likely passing through. Wildlife likely also use the open space on the southern half of the study area to move between habitats; however, this natural habitat is bounded on all sides by roads and development and therefore movement would be restricted.

The MHPA of the MSCP was designed to include key biological core and linkage areas within the City (City of San Diego 1997). The survey area is partially within the MSCP but is not within the designated MHPA and is determined not to be a biological core or linkage area. The MHPA boundary occurs approximately 1.3 miles south of the proposed project area and is not adjacent to the project area (Figure 1).

4 Proposed Wetland Buffers

The purpose of the project is to provide the continuation of and connection to the existing Coast to Crest trail. The new trail segment will begin at the east end of the Surf Cup Sports Park facility, will pass through the northwest corner of the Fairbanks Ranch Golf Course leasehold, and will continue to the east along the south edge of the Evergate Stables property, to connect to San Dieguito Road. The only option to establish the trail connection is to pass through portions of City regulated wetlands associated with the San Dieguito River and the surrounding transitional upland habitat. Therefore it is infeasible to create a wetlands protection buffer around City regulated resources. The new bridge location was sited to occur in degraded wetland habitat to the extent feasible, to avoid and minimize impacts to wetlands to the greatest degree possible.

Following project construction, graded areas associated with the construction of the trail and bridge will be returned to native habitat as described in Section 1.2. exotic/non-native plant species that have previously invaded the existing wetlands will be removed and those areas will be restored and enhanced to the appropriate native plant communities. This will help provide an improved wetland habitat area and additional nesting and foraging opportunities for native wildlife species. In addition, areas of wetlands that could be subject to physical disturbance, from noise and human associated activities will be protected by confining human use and access through the wetlands, to the new trail and bridge. Revegetation along the margins of the trail will help provide a vegetative buffer to the existing habitat. Providing a dedicated trail connection through the wetlands will ensure that the wetlands and other surrounding habitat are not inadvertently degraded by trail users seeking their own way through the area.

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5 Consistency with the Multiple Species Conservation Program

The proposed project impact footprint does not occur within or adjacent to the City of San Diego MHPA, and therefore is not required to document compliance with the MSCP Land Use Adjacency Guidelines (LUAG). Figure 1 shows the proximity of the City MHPA to the project site, with the nearest City MHPA area occurring approximately 1.3 miles from the proposed project site. The project does however lie immediately adjacent to the County of San Diego MSCP area however the trail only crosses into the County area where the trail links-up to the existing access road serving the Evergate Farm property. Agreements have been reached between Evergate and the JPA to jointly use their access road for the trail. Impacts to sensitive vegetation and wildlife species have been avoided in that area through adjustments to the trail to always be contiguous with (i.e., in the same footprint as) the access road.

The project will occur primarily within City-owned land and will need to be consistent with the City's Biology Guidelines (City of San Diego 2018a) and will be evaluated according to the City's Significance Determination Thresholds (City of San Diego 2016.)

Area specific management directives (ASMD) were developed for certain MSCP covered species as a condition of coverage under the MSCP. The conditions for coverage outlined in the City's MSCP Subarea Plan have been reviewed in conjunction with the species which have a potential to occur within the project area. All ASMDs for those species will be adhered to. Table 7 describes how the project will comply with the ASMD for species with a potential to occur within the project site.

Table 7. Area Specific Management Directives Compliance

MSCP Covered Species	Area Specific Management Directives (ASMD)	Project Compliance
Northern Harrier	ASMD must include 900 feet or maximum possible avoidance area around nests within the preserve, manage agricultural and disturbed land (which become part of the preserve), and the preserve management group shall coordinate efforts to manage for wintering norther harriers' foraging habitat within MSCP preserve.	To avoid any indirect impacts to northern harrier, construction shall not occur within 900 feet of nests or shall occur outside of the breeding season for these species (February 1 to September 15).
Ridgway's Rail	ASMD must include active management of wetlands to ensure healthy tidal saltmarsh environmental and address edge effects[1].	Edge effects would be limited to the portions of the trail which would be installed within native habitat. The amount of edge effects in this area is expected to be marginal in comparison to the existing land uses. Non-native vegetation within and immediately adjacent to the trail alignment will be restored and enhanced to native habitat suitable for Ridgeway's rail habitation, as part of the mitigation program for this project.

Table 7. Area Specific Management Directives Compliance

MSCP Covered Species	Area Specific Management Directives (ASMD)	Project Compliance
Least Bell's Vireo	ASMD must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 15 and March 15 (i.e., outside of the nesting period).	To avoid any indirect impacts least Bell's vireo construction within 300 feet of suitable habitat shall occur outside of the breeding season for these species (February 1 to September 15). Edge effects would be limited to the portions of the trail which would be installed within native habitat. The amount of edge effects in this area is expected to be marginal in comparison to the existing land uses.
Wandering Skipper	ASMD must include measures to control weeds and invertebrate predators (where appropriate) and to control access to saltmarsh habitat.	The trail will be fenced with signage to discourage off-trail use. The project does not include weed control but will remove non-native species.
Orange-Throated Whiptail	ASMD must address edge effects[1].	Edge effects would be limited to the portions of the trail which would be installed within native habitat. The amount of edge effects in this area is expected to be marginal in comparison to the existing land uses. Non-native vegetation within and immediately adjacent to the trail alignment will be restored and enhanced to native habitat suitable for orange-throated whiptal as part of the mitigation program for this project.
Cooper's Hawk	ASMD must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.	The proposed project would not result in impacts to oak woodlands or oak riparian forest. To avoid any indirect impacts Cooper's hawk, construction within 300-feet of suitable habitat shall occur outside of the breeding season for these species (February 1 to September 15).
Canada Goose	No ASMD designed for this species.	Not applicable.
Swainson's Hawk	No ASMD designed for this species.	Not applicable.

Note:

[1] Edge effects may include (but are not limited to) trampling, dumping, vehicular traffic, competition with invasive species, parasitism by cowbirds, predation by domestic animals, noise, collecting, recreational activities, and other human intrusion.

6 Impacts Analysis

The purpose of this section is to describe the direct, indirect, and cumulative impacts of the proposed project on sensitive biological resources. The significance determinations for proposed or potential impacts are described in this section and mitigation measures to reduce impacts are provided in Section 7.

6.1 Definition of Impacts

Based upon the project description (Section 1.2), direct impacts, indirect (short-term and long-term), and cumulative impacts are defined as follows.

Direct Impacts may include both the permanent loss of on-site habitat and the plant and wildlife species that it contains, as well as the temporary loss of on-site habitat. Direct impacts for this project were quantified by overlaying the proposed bridge and the trail alignment, including the trail and bridge abutment footprint and the associated graded slopes, onto the biological resources map and evaluating the impacts by vegetation community. Direct impacts would occur from the grading for the trail and installation of the abutments, as well as shading from the bridge. Direct impacts resulting from the grading for the slopes outside of the trail footprint, will result in the loss of native habitat, however these areas will be restored to native habitat as part of the proposed onsite mitigation program.

According to the Biology Guidelines, lands containing Tier I, II, IIIA, and IIIB habitats and all City wetlands are considered sensitive and declining and, as such, impacts to these resources may be considered significant. Lands designated as Tier IV are not considered to have significant habitat value and impacts would not be considered significant.

The City's Biology Guidelines also include additional information regarding significance as follows (City of San Diego 2018a):

A. Total upland impacts (Tiers I- IIIB) less than 0.1 acre are not considered significant and do not require mitigation.
B. Total wetland impacts less than 0.01 acre are not considered significant and do not require mitigation. This does not apply to vernal pools, road pools supporting listed fairy shrimp, or wetlands within the Coastal Zone.
C. Removal/control of non-native plants is not considered to constitute a significant habitat impact for which compensatory habitat acquisition, preservation, or creation for the area impacted is required. Mitigation for indirect impacts such as erosion control or off-site infestation by non-native species may be needed.

Indirect Impacts refer to off-site and on-site effects that are short-term impacts (i.e., temporary) due to the project construction or long-term (i.e., permanent) design of the project and the effects it may have to adjacent resources. For this project, it is assumed that the potential short-term indirect impacts resulting from construction activities may include noise, general human presence that may temporarily disrupt species, and habitat vitality and construction-related soil erosion and runoff. Shading of the bridge is also considered a permanent indirect impact to any vegetation communities that occur under the bridge. Since the proposed project is not located within or adjacent to the MHPA, construction of the bridge would not result in potential indirect impacts to the MHPA preserve.

In accordance with the Subarea Plan and pursuant to the San Diego RWQCB Municipal Permit and the City's Stormwater Standards Manual (City of San Diego 2018b), projects are required to implement site design, source control, and treatment control best management practices (BMPs). Development projects will be required to meet National Pollutant Discharge Elimination System regulations and incorporate BMPs during construction and permanent BMPs as defined by the City's Storm Water Standards Manual as part of project development.

Significant indirect impacts to breeding birds may occur if construction activities produce noise or other types of disturbance in proximity to active nests, potentially resulting in abandonment of nests or other breeding failure. The City's Biology Guidelines provide necessary widths for active nest buffers and breeding season dates for covered species, including raptors (City of San Diego 2018a).

Cumulative impacts refer to the combined environmental effects of the proposed project and other relevant projects. In some cases, the impact from a single project may not be significant, but when combined with other projects, the cumulative impact may be significant.

6.2 Direct Impacts

6.2.1 Vegetation Communities and Land Cover Types

Implementation of the project will result in direct impacts totaling 1.635 acres of various vegetation communities and land cover types (Table 8; Figures 4a–4e). Table 8 provides a list of the corresponding Biology Guidelines (City of San Diego 2018a) vegetation communities, and corresponding subarea plan tier or subarea plan designation for each vegetation community. The impacts summarized in Table 8 are divided into those that would result in:

1. Shading from the bridge. (Direct Impact)
2. Bridge abutments and trail footprint (Direct Impacts)
3. Trail slope grading (Direct Impacts) that would be restored in place with native habitat.

Shading from the bridge is considered a idirect impact… The bridge passes mainly over open water but also passes over non-native and native vegetation including non-native Arundo, non-native riparian, and minor patches of freshwater marsh and southern willow scrub plant communities. The bridge may limit some sunlight from reaching the vegetation growing beneath the bridge, but due to the narrow footprint of the bridge and since shading would be over primarily open water, the shading is unlikely to be detrimental to the persistence and/or re-establishment of native wetland and riparian species. Many wetland and understory riparian species are adapted to low light conditions, often growing under the canopies of taller riparian trees, so they should be able to handle shaded conditions.

Construction of the bridge abutments (i.e., bridge footings) and the trail grading and slopes would result in 1.635 acres of direct impacts to city regulated vegetation communities (Table 8).

Of the total 1.635 acres of direct impacts to city regulated vegetation communities, 0.470 acres are impacts to coastal sage scrub and 0.173 acres are impacts to wetlands and non-wetland waters (i.e., native and non-native wetlands/waters), while the remaining 0.992 acres of impact are to non-native vegetation and disturbed/developed areas (Table 8). Impacts to city regulated vegetation communities would be considered significant but will be mitigated for through onsite restoration (i.e., restoration) and enhancement (i.e., rehabilitation), therefore reducing the impacts to "less-than-significant".

Table 8. Direct Impacts to City of San Diego Regulated Vegetation Communities and Land Cover Types in the Project Site

Vegetation Community/ Land Cover Type	City of San Diego Biology Guidelines Vegetation Community [a]	Subarea Plan Tier	Impact Type			
			Bridge Shading (direct impact)	Abutment and Trail (direct impact)	Grading of Slopes (direct impact)[b]	Total
Upland Vegetation Communities						
Coastal Sage Scrub	Coastal Sage Scrub	II	—	0.309	0.161	0.470
Wetland Vegetation Communities						
Freshwater Marsh	Freshwater Marsh	Wetland	0.003	0.021	—	0.024
Coastal Salt Marsh	Salt Marsh	Wetland	—	0.011	—	0.011
Mulefat Scrub	Riparian Scrub	Wetland	—	0.005	0.008	0.013
Southern Willow Scrub	Riparian Scrub	Wetland	0.004	0.012	—	0.016
Open Water	Natural Flood Channel	Non-Wetland Waters	0.020	—	—	0.020
		Subtotal Wetlands	*0.027*	*0.049*	*0.008*	*0.084*
Non-Native Vegetation Communities and Land Covers						
Developed Land	Disturbed Land	N/A	—	0.843	—	0.843
Disturbed Habitat	Disturbed Land	IV	—	0.037	0.010	0.047
Ornamental	Disturbed Land	IV	—	0.068	0.034	0.102
Arundo-Dominated Riparian	Disturbed Wetlands	Wetland	0.011	0.023	0.001	0.035
Non-native Riparian	Disturbed Wetlands	Wetland	0.003	—	—	0.003
Tamarisk Scrub	Disturbed Wetlands	Wetland	—	0.023	0.028	0.051
		Subtotal Non-Native and Land Covers	*0.014*	*0.994*	*0.073*	*1.081*
		Grand Total	**0.041**	**1.352**	**0.242**	**1.635 b**

Note:

[a] **Source:** City of San Diego 2018a.

[b] Total impacts, when Developed, Disturbed and Ornamental communities (0.992 ac.,) are deducted from the total, results in 0.643 acre of impacts to native and non-native wetlands. Of that total, 0.173 acre of impacts are to wetlands and non-wetland waters.

6.2.2 Jurisdictional Resources

The proposed project will have direct impacts to jurisdictional resources resulting from the bridge abutments and shading and trail construction including grading of slopes (Tables 9 & 10). Installation of the bridge abutments (i.e., footings) would impact jurisdictional resources and is included in the impact quantities listed for Abutment and Trail Wetlands in Table 9. It should be pointed-out that the trail and bridge alignment have been designed to fall primarily over open water, non-native riparian, and arundo-dominated riparian plant communities. The bridge and abutments have been designed to minimize impacts to adjacent wetland resources and to avoid direct impacts to the river, as directed by the previous feasibility study (Kleinfelder 2015).

In total, the proposed project would result in direct impacts to 0.175 acres of City regulated wetlands (Table 11). Impacts to wetlands and other regulated resources would be considered significant, but would be mitigated for through the proposed mitigation/revegetation program, as described in Section 7.

Table 9. Direct Impacts to ACOE/RWQCB Jurisdictional Resources in the Project Area

Vegetation Community/ Land Cover Type	Impact Type			
	Bridge Shading (direct impact)	Abutment and Trail (direct impact)	Grading (direct impact)	Total
Wetlands				
Arundo-Dominated Riparian (under ACOE/ RWQCB and City jurisdiction)	0.001	0.010	0.001	0.012
Coastal Salt Marsh	—	0.011	—	0.011
Freshwater Marsh	0.003	0.021	—	0.024
Mulefat Scrub	—	0.005	0.008	0.013
Non-native Riparian	0.003	—	—	0.003
Southern Willow Scrub	0.004	0.012	—	0.016
Subtotal	*0.011*	*0.059*	*0.009*	*0.079*
		0.068		
Non-Wetland Waters				
Open Water	0.020	—	—	0.020
Subtotal	*0.020*	—	—	*0.020*
Total Jurisdictional Area	**0.031**	**0.059**	**0.009**	**0.099**

Table 10. Direct Impacts to CDFW Wetlands and Streambed in the Project Area

Vegetation Community/ Land Cover Type	Impact Type			
	Bridge Shading (direct impact)	Abutment and Trail (direct impact)	Grading (direct impact)	Total
Wetlands/ Riparian Habitat				
Arundo-Dominated Riparian (under combined agency & City jurisdiction)	0.001	0.010	0.001	0.012
Coastal Salt Marsh	—	0.011	—	0.011
Freshwater Marsh	0.003	0.021	—	0.024
Mulefat Scrub	—	0.005	0.008	0.013
Non-native Riparian	0.003	—	—	0.003
Southern Willow Scrub	0.004	0.012	—	0.016
Subtotal	*0.011*	*0.059*	*0.009*	*0.079*
		0.068		

Table 10. Direct Impacts to CDFW Wetlands and Streambed in the Project Area

Vegetation Community/ Land Cover Type	Impact Type			
	Bridge Shading (direct impact)	Abutment and Trail (direct impact)	Grading (direct impact)	Total
Non-Wetland Waters/ Streambed				
Open Water	0.020	–	–	0.020
Arundo-dominated Riparian (under CDFW & City jurisdiction only)	0.010	0.014	0.001	0.025
Subtotal	*0.030*	*0.014*	*0.001*	*0.045*
		0.015		
Total Area	**0.041**	**0.073**	**0.010**	**0.124**

Table 11. Direct Impacts to City of San Diego Wetlands and Non-Wetland Waters within the Project Area

Vegetation Community/ Land Cover Type	Impact Type			
	Bridge Shading (direct impact)	Abutment and Trail (direct impact)	Grading (direct impact)	Total
Wetlands/ Riparian Habitat				
Arundo-Dominated Riparian (under combined agency & City jurisdiction)	0.001	0.010	0.001	0.012
Coastal Salt Marsh	–	0.011	–	0.011
Freshwater Marsh	0.003	0.021	–	0.024
Mulefat Scrub	–	0.005	0.008	0.013
Non-native Riparian	0.003	–	–	0.003
Southern Willow Scrub	0.004	0.012	–	0.016
Tamarisk Scrub		0.023	0.028	0.051
Subtotal	*0.011*	*0.082*	*0.037*	*0.130*
		0.119		
Non-Wetland Waters/ Streambed				
Open Water	0.020	–	–	0.020
Arundo-dominated Riparian (under CDFW & City jurisdiction only)	0.010	0.014	0.001	0.025
Subtotal	*0.030*	*0.014*	*0.001*	*0.045*
		0.015		
Total Area	**0.041**	**0.096**	**0.038**	**0.175**

6.2.3 Sensitive Plants

No focused plant surveys were conducted as part of this study; however, no sensitive plant species were detected within the proposed project impact footprint during general reconnaissance surveys. In addition, previous plant surveys conducted for other projects in the immediate area have not detected any sensitive plant species. Based on a review of the study area and the results from previous surveys, only one species has a moderate potential to occur within the project area: Lewis' evening primrose. Since surveys may not have been timed to capture this species during its blooming period, this report assumes this species is present and analyzes impacts to suitable habitat for the species.

The City's significance thresholds apply for special-status plants ranked CRPR 1 or 2, as well as threatened and endangered species, but do not typically apply to species ranked CRPR 3 and 4, unless proposed project construction activities would significantly damage a population. The Project would result in impacts to 0.470 acres of coastal sage scrub which could have the potential to support Lewis' evening primrose. The loss of this habitat would be less than significant given the low rarity of the species and the marginal loss of habitat.

6.2.4 Sensitive Wildlife

The Project would have direct impacts to 0.602 acres of native upland and wetland/riparian habitat that could have the potential to support sensitive wildlife species and provide potential nesting/foraging habitat for those species identified in Section 3.2.6 (northern harrier, least bittern, Ridgway's rail, least Bell's vireo, San Diego black-tailed jackrabbit, wandering skipper, western spadefoot, orange-throated whiptail, Cooper's hawk, Canada goose, Swainson's hawk, white-tailed kit, California horned lark, yellow warbler, and monarch butterfly). Of those species, several are MSCP covered species (noted in bold).

Impacts to wetland and riparian habitat for sensitive wildlife species would be considered significant, since the impact to native habitat exceeds the City thresholds for upland and wetland vegetation communities, however the proposed revegetation and mitigation measures will help reduce these impacts to less than significant.

6.3 Indirect Impacts

The project will incorporate methods to control runoff, including site design, source control, and treatment control BMPs during construction. The project will be required to meet National Pollutant Discharge Elimination System regulations and incorporate BMPs during construction and permanent BMPs (i.e., erosion control protection and vegetation establishment, as defined by the City of San Diego's (City's) Storm Water Standards Manual. Prior to proposed construction mobilization, the project contractor will prepare a Stormwater Pollution Prevention Plan, in accordance with the state's General Construction Stormwater Permit – 99-08-DWQ and implement the plan during construction. All construction staging areas will be located outside of native habitat, with sufficient buffers provided to protect the native habitat. Implementation of the requisite BMPs would ensure that construction activities would not have any indirect impacts to sensitive vegetation, jurisdictional resources, or sensitive plant and wildlife species.

Indirect Impacts to Sensitive Wildlife

Wildlife may be indirectly affected in the short-term by construction-related noise, which can disrupt normal activities and subject wildlife to higher predation risks. Breeding birds can be significantly affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities.

Indirect impacts from construction-related noise may occur to Ridgway's rail, least Bell's vireo, northern harrier, least bittern, Cooper's hawk, Canada goose, Swainson's hawk, white-tailed kit, California horned lark and yellow warbler if construction occurs during the breeding season (i.e., February 1 through September 15). These impacts would be considered significant. Mitigation is discussed in Section 7.

6.4 Cumulative Impacts

The project area is located within the City of San Diego MSCP Subarea Plan area. The MSCP is a long-term regional conservation plan established to protect sensitive species and habitats in San Diego County. The MSCP is divided into subarea plans that are implemented separately from one another. Within the MSCP area there are focused MHPA areas, however this portion of the San Dieguito River, where the trail and bridge will be located, is not within the MHPA area. The MSCP planning effort is designed to address cumulative impacts through development of a regional plan that addresses impacts to covered species and habitats in a manner that assures their conservation despite cumulative project impacts over the long term. The ultimate goal of the MSCP plan is the establishment of biological reserve areas in conformance with the State of California Natural Communities Conservation Planning Act.

Cumulative impacts to sensitive vegetation communities or sensitive species from implementation of the project are not expected since all activities are located outside of the MHPA and the project would result in minimal impacts to sensitive resources. These impacts would be offset through the restoration/revegetation of on-site disturbed habitat to native vegetation and through enhancement of existing non-native vegetation communities through exotic species removals and revegetation with native species, thus resulting in no-net-loss of sensitive resources. Therefore, the proposed project would not result in cumulative impacts to either sensitive vegetation communities or species.

6.5 Deviations to Environmentally Sensitive Lands Regulations

Plans submitted in accordance with Chapter 14, Article 3, Division 1 of the City Municipal Code, ESL Regulations shall, to the maximum extent feasible, comply with the various ESL Regulations. If a proposed development does not comply with all applicable development ESL Regulations, the decision-maker may approve, conditionally approve, or deny the proposed Site Development Permit and grant the deviation based on specific findings that must be made in accordance with LDC Section 143.0150. Applicable findings would be required for any deviations that would conflict with any local policies or ordinances, such as ESL, and would need to be approved by the decision-making body.

Outside the coastal zone, deviations to the wetland regulations in Section 143.0141(b) can be granted if applicable findings are made and the project falls under one of the following three options: (1) Essential Public Project Option, (2) Economic Viability Option, or (3) Biologically Superior Option.

As a part of the San Dieguito River Park's Coast to Crest Trail (CTC Trail), the proposed project qualifies as an Essential Public Project. The CTC Trail is a regional multi-use public trail planned for 71 miles from the coast in Del Mar to the crest at Volcan Mountain, near Julian. Today, 49 miles of the trail are complete with the Osuna segment representing the 50th mile. The CTC Trail is adopted in the San Dieguito River Park Concept Plan (1994, updated 2002) and included in the County of San Diego's Master Trails Plan, and California State Trails Plan. The SDRP is included in the City's Parks Master Plan.

The Osuna segment of CTC Trail would connect existing segments of CTC Trail on both sides of the San Dieguito River including San Dieguito Road (existing bike lanes and future CTC Pathway). The Osuna trail segment closes an essential CTC Trail gap connecting 4.6 miles of coastal/lagoon trail segments to 24 miles of inland segments of the CTC Trail.

The project site is located on open space property owned by City Parks to be used for park and open space uses. The trail is currently the only publicly accessible use on the property as the other existing uses are long-term leases with private operators (Fairbanks Ranch Country Club and Surf Cup Soccer Club). As a linear public infrastructure, the 1-mile-long trail is the only feasible alignment that would not interfere with the other existing uses or further impact existing sensitive lands on the property including wetlands.

The CTC Trail would be sited on mostly disturbed habitat (filled berm) and on an existing dirt road. However, the trail bridge would impact 0.173 acre of wetlands and non-wetland waters, and 0.47 acre of uplands. Although the bridge would span the river, minimal impact would occur to the wetland and riparian habitat along the banks of the river from the bridge abutments and trail grading. The bridge abutments would be located primarily within non-native riparian, and Arundo-dominated riparian plant communities and would be designed to minimize impacts to adjacent wetland resources to the extent possible. The bridge crossing location was sited at the narrowest part of the river channel and adjacent to non-native vegetation and disturbed wetland habitat to avoid and minimize impacts to the greatest extent possible.

The trail is also aligned to cross the riparian and wetland habitats for the shortest distance (perpendicular to the river). All areas disturbed by construction activities and not part of the direct project footprint would be revegetated with appropriate native species. The slopes of the trail would be revegetated with native wetland and upland species. In addition, existing exotic/non-native plant species that have previously invaded the existing wetlands and uplands would be removed and those areas would be restored (i.e., reestablished) and enhanced (i.e., rehabilitated). This would help provide improved wetland and upland habitat functions and services suitable for nesting and foraging opportunities for native wildlife species.

No feasible alternative exists that would avoid the small area of wetland impacts. Design options explored included a longer bridge span, which would have encroached further into native vegetation and would have been economically infeasible due to the longer span bridge cost and accessibility problems. Additional complications would have resulted from inadequate vehicular access to the area for transport of the prefabricated bridge into the site and placement of the longer bridge.

Co-use of an existing nearby golf cart bridge and path at Morgan Run was also explored but the private property owner expressly denied permission to locate the project in that location, thus requiring the need for a new bridge crossing of the river.

6.5.1 Supplemental Findings – Environmental Sensitive Lands

1. The site is physically suitable for the design and siting of the proposed development and the development will result in minimum disturbance to environmentally sensitive lands;

The trail alignment has been constrained due to the immediate proximity to the Morgan Run Golf Course property. Morgan Run has rejected the request from the JPA for the trail to pass through their property and joint use of their existing bridge over the San Dieguito River. The existing bridge serves the Morgan Golf Course, and it will remain in

place and will be used exclusively by the golf course users and maintenance staff. Therefore, the project has been designed to site the new bridge, abutments, and alignment to the south and west of the Morgan Run Golf Course property line. The bridge will be a prefabricated bridge set on poured-in-place concrete abutments (i.e., footings) which will be placed at each end of the bridge outside of the active flow area.

The trail alignment through the Evergate Stables property will use the existing service access road but will be modified in one location to avoid and minimize impacts to freshwater marsh and coastal salt marsh vegetation, where the existing service access road currently passes through the marsh habitat. Rather than create an expanded trail footprint through that area, which would impact additional jurisdictional resources, the trail will reduce in size and will only utilize the existing access road in that location. Once past that area the trail will then widen to the intended width.

2 The proposed development will minimize the alteration of natural land forms and will not result in undue risk from geologic and erosional forces, flood hazards, or fire hazards;

This finding is primarily applicable to sites that contain steep hillsides. The proposed trail is not located in or near steep hillsides and therefore this finding is not applicable.

3 The proposed development will be sited and designed to prevent adverse impacts on any adjacent environmentally sensitive lands;

The bridge and trail will be installed over the San Dieguito River and through the adjacent plant communities and land covers. The project has been designed to minimize impacts to native habitats including wetlands, riparian areas and upland plant communities, by routing the trail and bridge primarily through disturbed areas, and non-native/ exotic vegetation to the greatest degree possible. The slopes of the trail will be revegetated with native vegetation to provide replacement habitat after construction.

Protection of the adjacent native habitat will include the installation of construction fencing to define the trail grading limits, bridging the river channel with a free-span bridge, and avoiding or minimizing impacts to wetlands and riparian vegetation to the greatest degree possible. The trail will not adversely impact adjacent properties, or the hydrology of the San Dieguito River.

The bridge abutments will be designed to minimize impacts to wetland resources and avoid direct impacts to the river (Kleinfelder 2015). The design of the bridge will follow the guidelines of the American Association of State Highway and Transportation Officials' Load and Resistance Factor Design (AASHTO LRFD) Bridge Design Specifications, Eighth Edition, with California Amendments preface dated April 2019; and 2009 AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges with 2015 Interims.

4 The proposed development will be consistent with the City of San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan;

The proposed project impact footprint does not occur within or adjacent to the City of San Diego MHPA, and therefore is not required to document compliance with the MSCP LUAG.

5 The proposed development will not contribute to the erosion of public beaches or adversely impact local shoreline sand supply; and

The proposed project will not in any way contribute to the erosion of public beaches nor would it impact local shoreline sand supply.

6 The nature and extent of mitigation required as a condition of the permit is reasonably related to, and calculated to alleviate, negative impacts created by the proposed development.

Impacts to sensitive vegetation is provided according to the City's Land Development Code. As stated in Item 1, the location of the bridge and trail were sited to avoid sensitive habitat to the extent feasible given project constraints. To compensate for the direct impacts to 0.132 acre of wetlands, the project will include restoration of the side slopes and margins of the trail. In areas adjacent to the trail where non-native vegetation occurs, the non-native vegetation would be removed and treated, and the areas would be enhanced and revegetated with appropriate wetland and riparian vegetation. In total, a minimum of 0.286 acre of wetland mitigation compensation, composed of wetland restoration and enhancement, would be required on site to compensate for these impacts. The project proposes to restore 0.17 acre of wetlands and enhance 0.22 acre of wetlands through exotic species removals and revegetation, for a total of 0.39 acre of wetland mitigation which exceeds the required mitigation acreage of 0.286 acre. To compensate for the permanent loss of 0.47 acre of Tier II coastal sage scrub habitat, the project will provide 0.49 acre of onsite restoration/revegetation of coastal sage scrub vegetation within the side slopes and margins of the trail, as well as within areas where non-native vegetation will be removed.

6.5.2 Supplemental Findings - Environmentally Sensitive Lands Deviations

1 There are no feasible measures that can further minimize the potential adverse effects on environmentally sensitive lands; and

One of the proposed alignments considered for the trail bridge was to utilize the existing golf cart bridge within the Morgan Run Golf Course to provide the trail connection, however the landowner was not amenable to that proposal. Therefore, construction of a new bridge outside of the Morgan Run Golf Course property is necessary to establish the trail connection. The new bridge has been designed to minimize disturbance to the river and to avoid sensitive resources to the greatest extent possible.

2 The proposed deviation is the minimum necessary to afford relief from special circumstances or conditions of the land, not of the applicant's making.

The trail has been designed to reduce impacts to wetlands to the greatest extent possible. Since the co-location of the trail and existing Morgan Run Golf Course bridge is not a viable option, construction of a new bridge outside of the Morgan Run Golf Course property is necessary to establish the trail connection. Given these conditions, the deviation impacts to wetland habitat were unavoidable and the minimum necessary to complete the project. All impacts to wetlands will be mitigated onsite and will result in no-net loss of native wetland habitat.

7 Mitigation

This section describes proposed mitigation and avoidance measures that would mitigate significant direct impacts to biological resources resulting from the proposed project activities.

The following mitigation measure(s) would reduce the potential for direct and indirect impacts to special-status plant and wildlife species, sensitive natural communities, and jurisdictional wetlands and waters by ensuring that special-status resources would be avoided to the extent possible and compensatory mitigation would be provided to address unavoidable direct impacts. Implementation of the following mitigation measures (MMs) would reduce impacts to a less-than-significant level.

7.1 Mitigation Measures for Direct Impacts

7.1.1 Direct Impacts to Vegetation Communities and Jurisdictional Resources

The proposed project would result in direct impacts to sensitive vegetation communities within the trail alignment, including the trail footprint, graded slopes, bridge footprint, bridge abutments and bridge shading (i.e., all areas within the project footprint). Mitigation for direct impacts would include restoration of disturbed areas and the trail slopes, and enhancement through non-native/ exotic species removals. Mitigation for bridge shading will consist of replacement plantings under the bridge consisting of freshwater marsh species and other wetland plant species where appropriate. . Additional restoration (i.e., reestablishment) of side slopes of the trail and enhancement (i.e., rehabilitation) of existing wetlands through non-native/ exotic species removals and revegetation with native species. The mitigation proposed herein will fully compensate for the direct impacts and will result in no net loss of wetland functions and services.

The project will include mitigation that is consistent with the City's Biology Guidelines (City of San Diego 2018a) and, according to the City's Significance Determination Thresholds (City of San Diego 2016), impacts of more than 0.1 acres to upland habitats (Tiers I–IIIB) and 0.01 acre of wetlands are considered significant and require mitigation. All mitigation ratios for direct impacts to sensitive vegetation communities were determined based on the location of the impacts relative to the MHPA. It was determined that all impacts are outside of the City's MHPA area. Table 8 outlines the mitigation requirements for direct impacts. Figures 5a and 5b show the proposed mitigation/revegetation treatment areas.

Table 12. Mitigation for Direct Impacts to Sensitive Vegetation Communities within the Project Footprint

Vegetation Community/ Land Cover Type	City of San Diego Biology Guidelines Vegetation Community [a]	Subarea Plan Tier	Direct Impacts and Mitigation Requirements		
			Bridge Abutment, Shading & Trail/Slope Impacts*	Mitigation Ratio Requirement	Total Mitigation Required
Upland Vegetation Communities					
Coastal Sage Scrub	Coastal Sage Scrub	II	0.47	1:1	0.47
		Subtotal Upland	*0.47*	—	*0.47*
Wetland and Non-Wetland Waters Vegetation Communities					
Freshwater Marsh	Freshwater Marsh	Wetland	0.021	2:1	0.042
Coastal Salt Marsh	Salt Marsh	Wetland	0.011	4:1	0.044
Mulefat Scrub	Riparian Scrub	Wetland	0.013	2:1	0.026
Southern Willow Scrub	Riparian Scrub	Wetland	0.012	2:1	0.024
Arundo-Dominated Riparian	Disturbed Wetlands	Wetland	0.025	2:1	0.050
Tamarisk Scrub	Disturbed Wetlands	Wetland	0.051	2:1	0.102
Open Water	Disturbed Waters	Wetland	0.020	1:1	0.020
		Subtotal Wetland	*0.153*	—	*0.308*
		Total Upland and Wetland	**0.623**	**—**	**0.778**

Footnotes:

[a] City of San Diego Biological Guidelines 2018a.

* Open water is included as a direct impact due to shading, however no vegetation is present within the open water areas, so mitigation is assumed to be at a 1:1 mitigation ratio.

Mitigation Measures

MM-BIO 1 Upland Mitigation To compensate for the direct impacts to 0.47 acres of Tier II coastal sage scrub habitat the project will provide onsite restoration/revegetation of coastal sage scrub vegetation, within the side slopes and margins of the trail, as well as within non-native habitat areas adjacent to the trail. Where disturbed habitat and non-native vegetation (i.e., tamarisk and ornamental vegetation) exist adjacent to the trail, the non-native species will be removed, and the areas will be revegetated and enhanced with native species. A minimum of 0.47 acres of CSS mitigation compensation will be required onsite to compensate for these impacts. The project proposes to restore and enhance 0.49 acres of upland CSS vegetation through removal of exotic species and revegetation, which includes to establishment of CSS within the trail slopes. The proposed upland mitigation meets and exceeds the required mitigation acreage, as shown on Figure 5A.

The project will implement the upland restoration and enhancement program shown on the revegetation planting and irrigation plans, included in Appendix E.

MM-BIO 2 Wetland Mitigation To compensate for the direct impacts to 0.173 acres of wetlands and non-wetland waters, including open water, the project will provide reestablishment (i.e., restoration) of the side slopes and margins of the trail, where the trail passes through existing wetlands, Non-native Riparian and Arundo-dominated Riparian vegetation communities. These areas will be restored with wetland and riparian vegetation. In addition, within areas outside of the trail footprint, where Non-native Riparian, Arundo-dominated Riparian and Tamarisk Scrub communities exist, the non-native vegetation will be removed and/or treated, and enhanced (i.e., rehabilitated) through revegetation with appropriate wetland and riparian vegetation. A minimum of 0.308 acres of wetland mitigation compensation is required, as shown in Table 12, composed of wetland restoration (i.e., reestablishment) and enhancement (i.e., rehabilitation). The project proposes to restore (i.e., reestablish 0.17) acres of wetlands and enhance (i.e., rehabilitate) 0.17 acres of wetlands through exotic species removals and revegetation, for a total of 0.34 acre of wetland mitigation which exceeds the required mitigation acreage of 0.308 by 0.032 acre.

The project will implement the wetland restoration and enhancement program shown on the revegetation planting and irrigation plans, included in Appendix E.

MM-BIO 3 Installation of Temporary Fencing Prior to the start of construction, to prevent inadvertent disturbance to areas outside the limits of grading, the contractor shall install temporary orange construction fencing along the limits of grading.

MM-BIO 4 Installation of Permanent Fencing. To prevent inadvertent disturbance to areas outside the limits of trail following construction, the contractor shall install permanent fencing as shown on the engineering grading plans, provided under separate cover.

MM-BIO 5 Construction Monitoring and Reporting At the start of construction, to prevent inadvertent disturbance to areas outside the limits of grading, all disturbance of native habitat shall be monitored by a biologist. The biological monitor(s) shall be contracted to perform biological monitoring during all clearing, grubbing and construction activities.

The project biologist(s) shall perform the following duties:

- Attend the pre-construction meeting with the contractor and other key construction personnel prior to clearing and grubbing to provide educational guidelines for work within the sensitive habitat areas. The biologist shall discuss measures to reduce conflict between the timing and location of construction activities with other mitigation requirements (e.g., seasonal surveys for nesting birds).
- During clearing and grubbing, the project biologist shall conduct meetings with the contractor and other key construction personnel each morning prior to construction activities to review the proposed activities for the day, and for the monitor(s) to describe the importance of restricting work to designated areas and to minimize and avoid harm to, or harassment of, wildlife prior to clearing and grubbing.
- Review and/or verify the limits of the construction area in the field with the contractor in accordance with the final grading plan prior to clearing and grubbing. Assure that temporary construction fencing demarcating the limits of grading are installed and properly maintained.

- Supervise and monitor vegetation clearing and grubbing weekly to ensure against direct and indirect impacts to biological resources that are intended to be protected and preserved and to document that protective fencing is in place and intact.
- Flush wildlife species (i.e., reptiles, mammals, avian, or other mobile species) from any occupied habitat areas immediately prior to brush-clearing activities. This does not include disturbance of nesting birds or "flushing" of state-listed species (i.e., Ridgeways Rail, or other listed species.)
- Periodically monitor the construction site to verify that the project is implementing the following stormwater pollution prevention plan best management practices: dust control, silt fencing, removal of construction debris and a clean work area, covered trash receptacles that are animal-proof and weather-proof, prohibition of pets on the construction site, and a speed limit of 15 miles per hour during the daylight and 10 miles per hour during hours of darkness.
- Periodically monitor the construction site after grading is completed and during the construction phase to see that any artificial security light fixtures that may be required are directed away from open space and are shielded, and to document that no unauthorized impacts have occurred.
- Prepare and retain monitoring notes for the duration of the proposed project for submittal in a final report to substantiate the biological supervision of the vegetation clearing and grading activities and the protection of the biological resources.
- Prepare a monitoring report after the construction activities are completed, which describes the biological monitoring activities, including a monitoring log; photos of the site before, during, and after the grading and clearing activities; and a list of special-status species observed.

MM-BIO 6 Long-Term Five-Year Biological Monitoring and Reporting Starting at the end of construction and following the 120-day plant establishment period, the long-term establishment of the mitigation revegetation areas shall be monitored by a qualified biologist/habitat restoration specialist. The biological monitor(s) shall be contracted to perform biological monitoring tasks throughout the five-year maintenance and monitoring period.

The project biologist(s) shall perform the following duties:

- Monitor the mitigation/ revegetation areas bi-monthly during years one and two, and quarterly during years three through five.
- Monitoring shall include qualitative monitoring based upon visual observations, as well as quantitative monitoring though the use of point intercept transect data collection to record percent cover of native and non-native species within the revegetation areas. Transects shall be taken in all representative mitigation/revegetation areas. The biological monitor shall determine the location, length and quantity of the transects to provide an adequate representation of the site conditions.
- Results of the monitoring effort shall be documented in annual monitoring reports to be prepared at the end of each yearly monitoring period. The reports shall describe the current site conditions, progress towards achievement of the project's performance standards, and any remedial measures that might be necessary to help meet the standards and assure project success.
- The annual success criteria and performance standards shall be as shown in Tables 13 through 15.

Table 13. Wetland Restoration Area Performance Standards

Year	Minimum Percent Container Plant Survival[1]	Maximum Percent Non-native Weed Cover	Percent Native Plant Cover[2]	Percent Non-Native Invasive/ Exotic Species
1	100	20	55	0
2	90	15	60	0
3	85	10	65	0
4	80	10	70	0
5	80	10	75	0

Notes:

1 Percent survival is based upon the quantity of container plants installed originally. Natural recruitment of native species, if present within the areas where container plants have died, may be counted to offset container plant mortality at the discretion of the Project Biologist if the species are deemed compatible with the original intended plant palette.

2 The remainder of the cover after the combination of the non-native cover and native cover amounts, is assumed to be bare ground/native leaf litter (i.e., at the end of Year 5, the percentage bare ground/leaf litter allowance is assumed to be 15%).

Table 14. Wetland Enhancement Area Performance Standards

Year	Minimum Percent Container Plant Survival[1]	Maximum Percent Non-native Weed Cover	Percent Native Plant Cover[2]	Percent Non-Native Invasive/ Exotic Species
1	100	20	60	0
2	90	15	65	0
3	85	10	70	0
4	80	10	75	0
5	80	10	80	0

Notes:

1 Percent survival is based upon the quantity of container plants installed originally. Natural recruitment of native species, if present within the areas where container plants have died, may be counted to offset container plant mortality at the discretion of the Project Biologist if the species are deemed compatible with the original intended plant palette.

2 The remainder of the cover after the combination of the non-native cover and native cover amounts, is assumed to be bare ground/native leaf litter (i.e., at the end of Year 5, the percentage bare ground/leaf litter allowance is assumed to be 10%).

Table 15. Upland CSS Restoration Area Performance Standards

Year	Minimum Percent Container Plant Survival[1]	Maximum Percent Non-native Plant/ Weed Cover	Percent Native Plant Cover[2]	Percent Non-Native Invasive/ Exotic Species
1	100	20	50	0
2	90	15	55	0
3	85	15	60	0
4	80	10	65	0
5	80	10	70	0

Notes:

1 Percent survival is based upon the quantity of container plants installed originally. Natural recruitment of native species, if present within the areas where container plants have died, may be counted to offset container plant mortality at the discretion of the Project Biologist if the species are deemed compatible with the original intended plant palette.

2 The remainder of the cover after the combination of the non-native cover and native cover amounts, is assumed to be bare ground/native leaf litter (i.e., at the end of Year 5, the percentage bare ground/leaf litter allowance is assumed to be 20%).

MM-BIO 7 Invasive Species Prohibition For all revegetation areas there shall be no non-native invasive/ exotic plant species present, as described/ listed on the most recent version of the California Invasive Plant Council California Invasive Plant Inventory for the project region, throughout the five-year maintenance and monitoring period.

7.1.2 Direct Impacts to Sensitive Wildlife

Direct impacts to habitat for special-status wildlife species identified as having moderate to high potential to occur in the study area (northern harrier, least bittern, Ridgway's rail, least Bell's vireo, San Diego black-tailed jackrabbit, wandering skipper, western spadefoot, orange-throated whiptail, Cooper's hawk, Canada goose, Swainson's hawk, white-tailed kit, California horned lark, yellow warbler, and monarch butterfly, would be reduced to a level less than significant through the implementation of the upland and wetlands mitigation measures. In addition, installation of both temporary and permanent fencing would ensure that inadvertent direct impacts to habitat for special-status species would be avoided. A biological monitor will be present to ensure that the appropriate mitigation measures are adhered to.

7.2 Mitigation Measures for Direct Impacts

MM-BIO 8 Best Management Practices (BMP's) To avoid indirect impacts, the project shall be required to meet National Pollutant Discharge Elimination System regulations, incorporate appropriate BMPs during project construction, install permanent BMPs per the City's Storm Water Standards Manual, and prepare and implement a Stormwater Pollution Prevention Plan. BMP's will include but are not limited to the placement of silt fencing and fiber rolls along the edges of all graded areas. The outer limits of the grading/disturbance areas shall be demarcated with orange construction fencing. Any grading that will occur immediately adjacent to or within standing/flowing water shall be stabilized and confined to prevent soil migration through protective measures specified in the engineering construction documents.

MM-BIO 9 Construction Flagging and Environmental Training The project would be required to adhere to all standard construction protection measures, which includes having a qualified biologist present provide environmental training, to supervise flagging of sensitive resources prior to construction, and monitor the project during construction to ensure no unauthorized impacts occur.

7.2.1 Indirect Impacts to Sensitive Wildlife

Proposed project implementation has the potential to indirectly impact sensitive birds nesting or foraging in adjacent habitat areas including least Bell's vireo, northern harrier, least bittern, Cooper's hawk, Canada goose, Swainson's hawk, white-tailed kit, California horned lark and yellow warbler and Ridgeway's rail (See MM-Bio 11)). Potentially significant indirect impacts from construction noise to sensitive wildlife considered special status would be significant absent mitigation. Mitigation measures to avoid impacts to sensitive wildlife are described in mitigation measures MM-BIO 10 and MM-BIO 11.

MM-BIO 10 Nesting Bird Surveys To avoid any indirect impacts to the above listed species, construction within 300-feet of suitable habitat, shall occur outside of the breeding season for these species (February 1 to September 15). If construction within 300-feet of suitable habitat must occur during

the breeding season, a qualified biologist shall conduct a pre-construction survey within suitable habitat to determine the presence or absence of nesting birds in the proposed area of disturbance. The pre-construction survey shall be conducted within 72 hours (i.e., three days) prior to the start of construction activities.

If nesting sensitive birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable state and federal law (i.e., appropriate follow up surveys, monitoring schedules, construction, and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that the disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City DSD for review and approval and implemented to the satisfaction of the City. The biologist, in concert with the City, shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

If nesting by the above listed sensitive birds is detected, then an appropriate impact avoidance area shall be included in the mitigation plan and this buffer shall be established around the active nest using orange construction fencing or other clear demarcation method to define the approved buffer. The radius of this avoidance buffer shall be determined through coordination with the project biologist and authorized by the City's project manager and DSD.. If none of these sensitive birds are observed nesting during the pre-construction survey then no further mitigation is required.

MM-BIO 11 Ridgway's Rail Protective Measures The following protective measures will be implemented to avoid impacts to Ridgway's rail, which are a year-round resident of this portion of the San Dieguito River. It is assumed that Ridgeway's rail are present in the area and that the river vegetation is occupied habitat, so protective measures are necessary for any work within the river habitat, up to the top of the riverbank.

No construction and/or vegetation removal within the river, up to the top of the riverbank, shall occur during the Ridgway's rail breeding season (Feb. 1 - Sept. 15).

All construction work and/or vegetation removal planned within the river habitat, up to the top of the riverbank, outside of the breeding season (i.e., Sept 15 -Feb 1), requires that **the following measures be implemented** to protect Ridgeway's rail.

1. Prior to the start of any construction work within the river and up to the top of the riverbank, a CDFW qualified Biologist shall conduct a contractor education tailgate meeting to educate the construction crew to the importance of protecting Ridgway's rails, and on how to identify the species. The biologist will instruct the construction crew to contact the biologist immediately if any bird resembling Ridgeway's rail are identified within or adjacent to the work area, to determine whether additional measures are necessary to protect the species.
2. A CDFW qualified Biologist shall survey all work areas within the river habitat prior to the start of work, to ensure that no Ridgway's rails are present within the work area. The surveys shall be conducted within the work area and within a 100-foot buffer zone surrounding the work area. The surveys shall begin at or just before sunrise, approximately one hour prior to the start of work. During the surveys the biologist shall evaluate Ridgway's rails presence within or

adjacent to the work area. If no Rideway's rails are detected by the biologist within the work area, then vegetation removal can proceed. If Ridgeway's rail are detected within the work area, the biologist shall direct construction personnel to stop work within the river and work elsewhere in an area away from Ridgway's rail, until the biologist can flush the birds out of the work area. Once the birds are flushed from the work area the construction work can resume. Once the vegetation removal and disturbance is complete the surveys will no longer be necessary. The biologist shall record the number and locations of any Ridgway's rails detected, either through direct observation or through calls, within the work area or within the 100-foot buffer zone during these surveys. The biologist shall prepare a site observation report documenting each site monitoring visit. A final report including a map showing the work area and any Ridgeway's Rail observations/ detection points, shall be prepared once all construction work within the river habitat is complete. The report shall document the monitoring efforts and completion of the work. The reports shall be provided to the appropriate resource agencies.

8 Acknowledgements

This report was prepared by Dudek biologists Patricia Schuyler and Alexandra Kookootsedes, with input from habitat restoration specialist John Minchin. GIS analysis and Graphics were provided by Lesley Terry.

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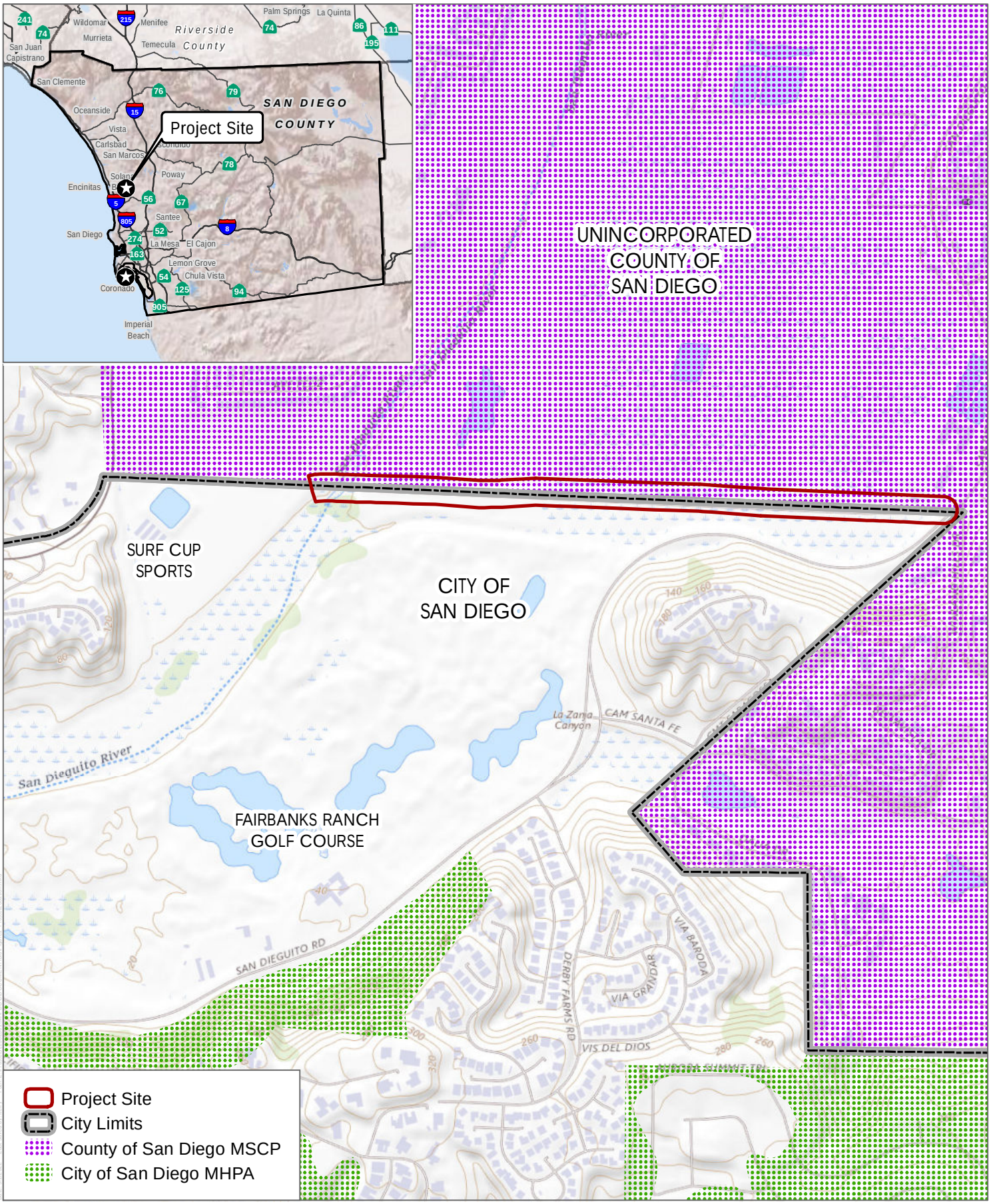

SOURCE: USGS 7.5-Minute Series, Del Mar Quadrangle

DUDEK

0 475 950 Feet
0 135 270 Meters
1:11,365

FIGURE 1

Project Location

Biological Resources Report for the Osuna Trail Project

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SOURCE: AERIAL-KIMLEY-HORN APRIL 2021

DUDEK

0 100 200 Feet

FIGURE 2A

Project Area

Biological Resources Report for the Osuna Trail Project

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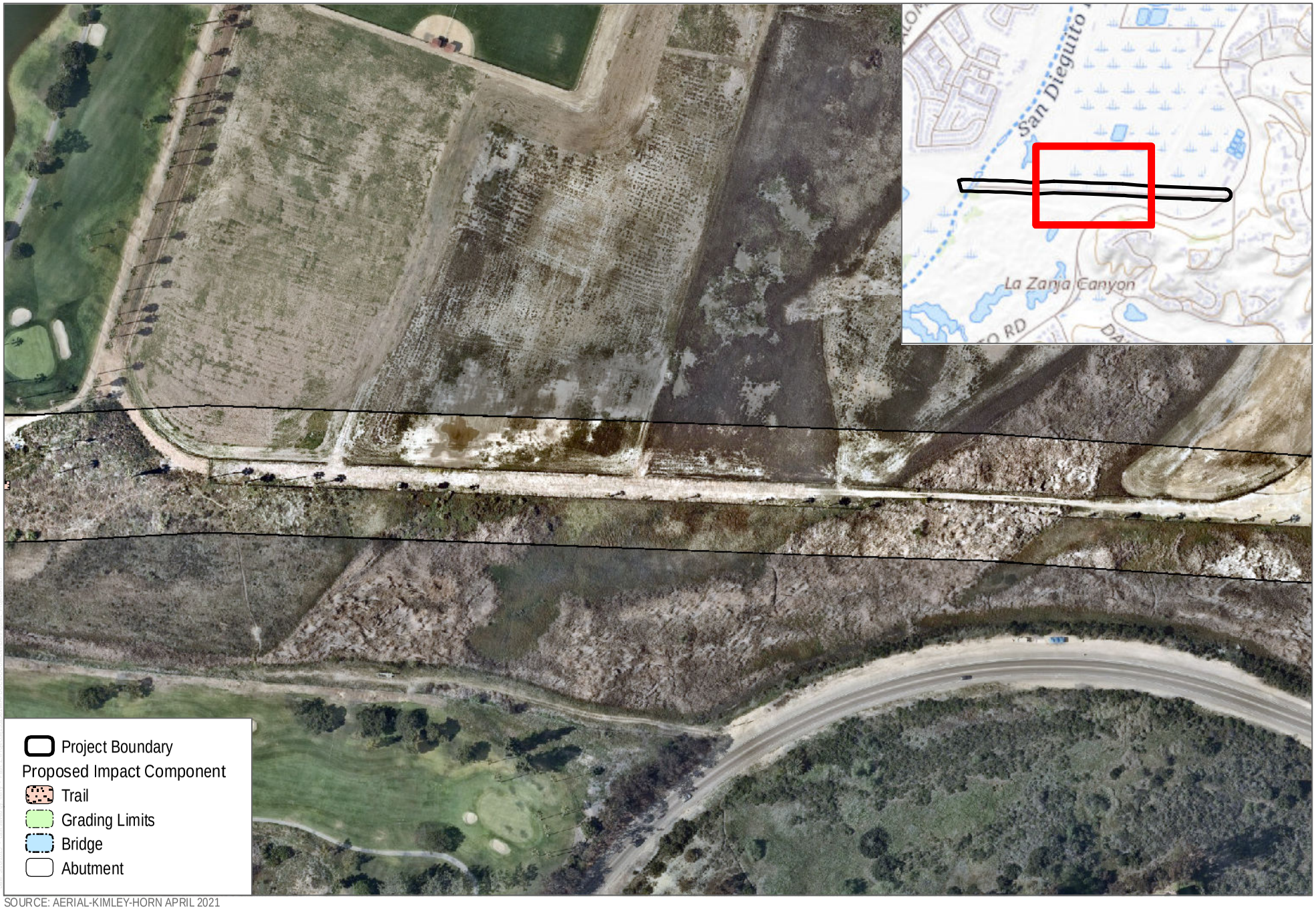

SOURCE: AERIAL-KIMLEY-HORN APRIL 2021

DUDEK

0 100 200 Feet

FIGURE 2B

Project Area

Biological Resources Report for the Osuna Trail Project

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SOURCE: AERIAL-KIMLEY-HORN APRIL 2021

DUDEK

0 100 200 Feet

FIGURE 2C

Project Area

Biological Resources Report for the Osuna Trail Project

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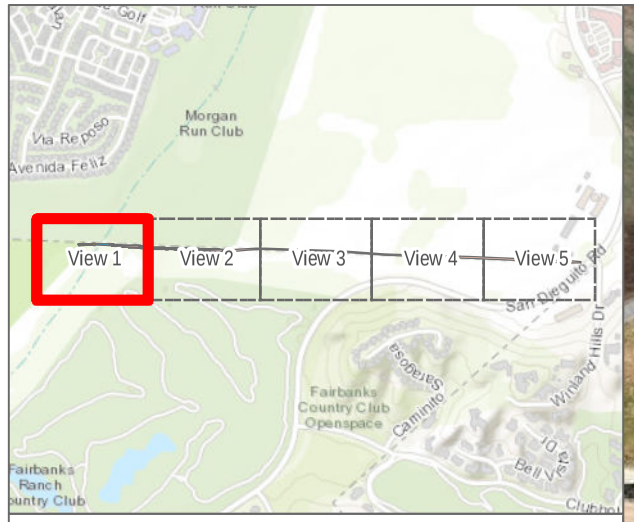


Study Area

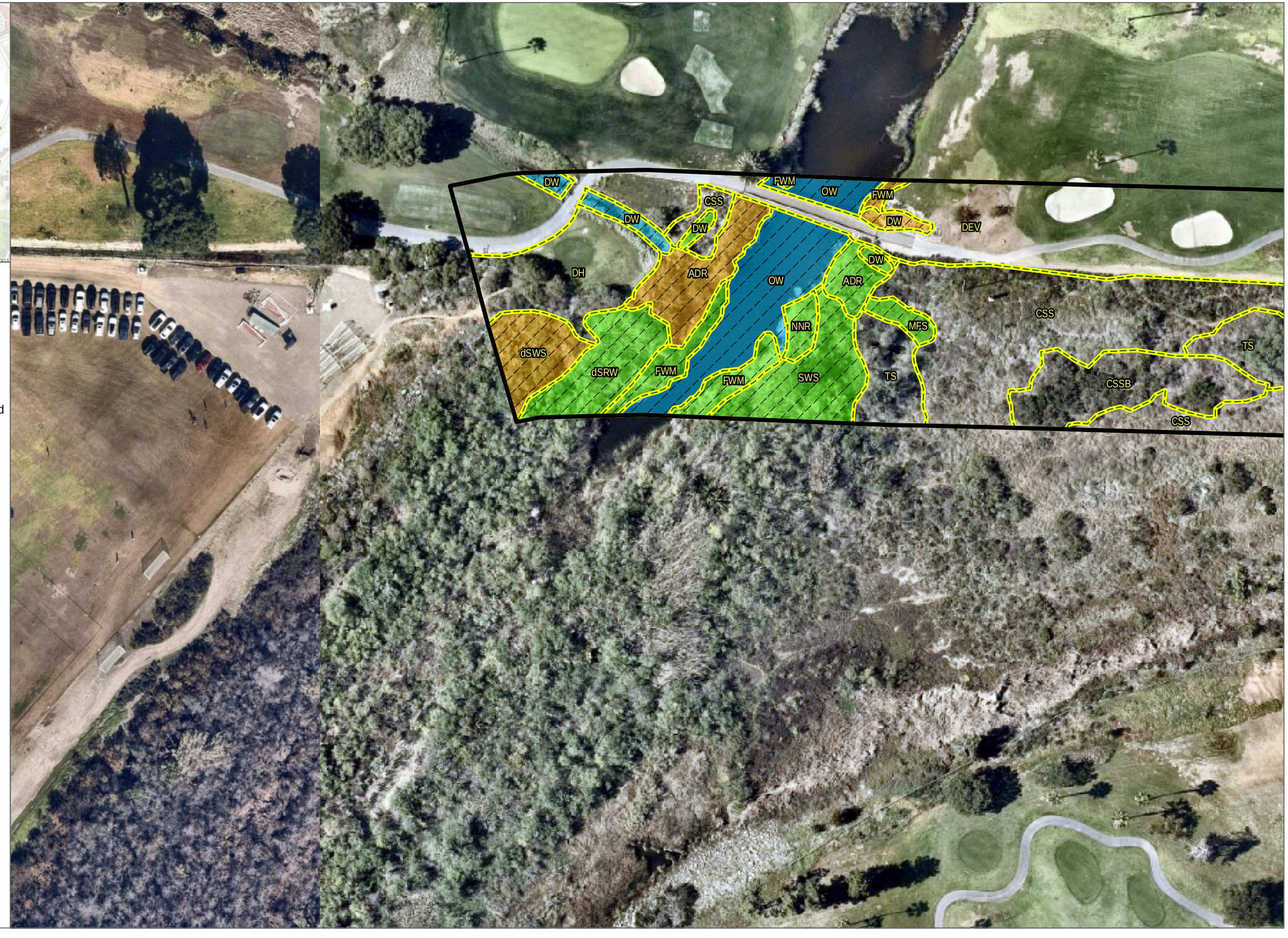
Vegetation Communities/Land Covers

Vegetation Communities/Land Covers

- ADR, Arundo Donax Riparian
- CSM, Coastal Salt Marsh
- CSS, Coastal Sage Scrub
- CSSB, Coastal Sage Scrub-Baccharis Dominated
- DEV, Developed
- DH, Disturbed Habitat
- DW, Disturbed Wetlands
- FWM, Freshwater Marsh
- MFS, Mulefat Scrub
- NNR, Non-Native Riparian
- ORN, Ornamental
- OW, Open Water
- SWS, Southern Willow Scrub
- TS, Tamarisk Scrub
- dSRW, disturbed Southern Riparian Woodland
- dSWS, disturbed Southern Willow Scrub

Jurisdictional Delineation

- USACE/RWQCB Non-Wetland Waters; CDFW Streambed
- USACE/RWQCB Wetlands; CDFW Riparian Habitat
- CDFW Riparian Habitat
- City of San Diego Wetlands



SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 3A

Biological Resources Map - View 1

Biological Resources Report for the Osuna Trail Project

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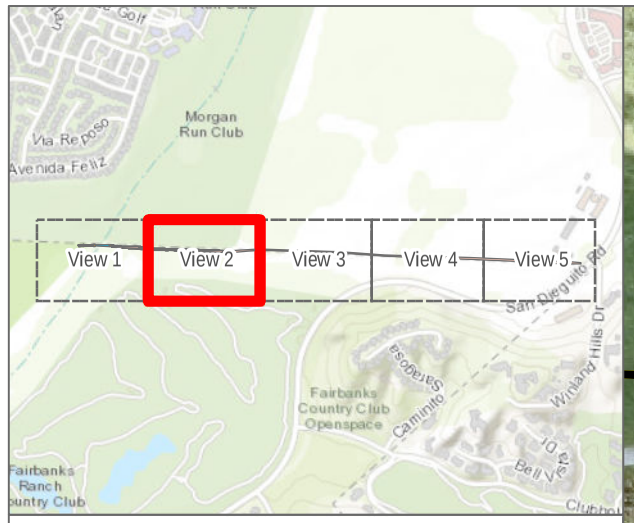

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Vegetation Communities/Land Covers

Vegetation Communities/Land Covers

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- CDFW Riparian Habitat
- City of San Diego Wetlands

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 3B

Biological Resources Map - View 2

Biological Resources Report for the Osuna Trail Project

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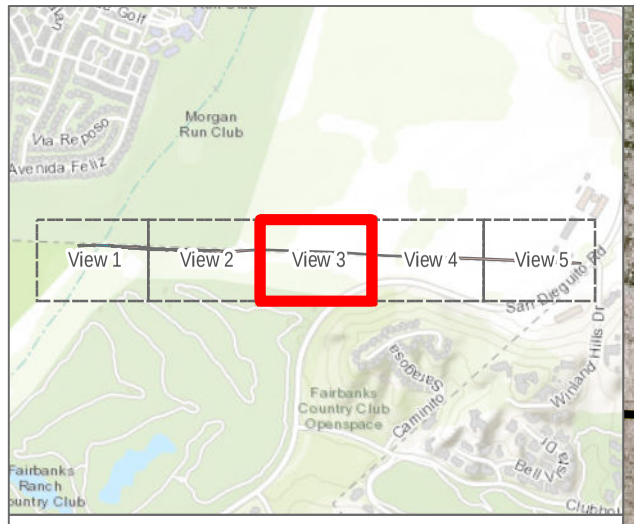

Study Area
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Vegetation Communities/Land Covers

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- CDFW Riparian Habitat
- City of San Diego Wetlands

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 3C

Biological Resources Map - View 3

Biological Resources Report for the Osuna Trail Project

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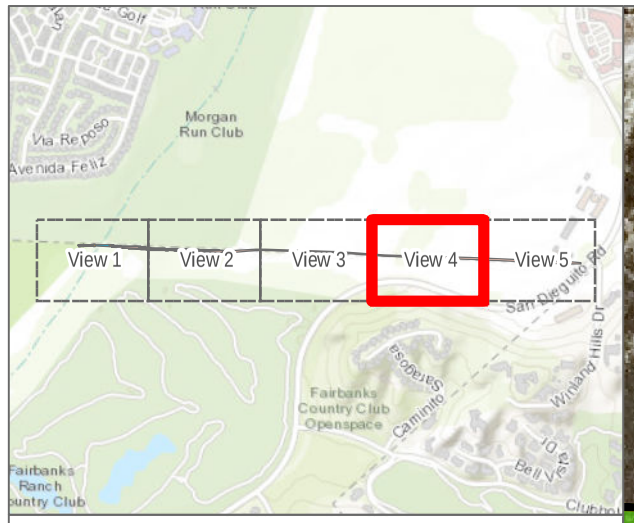

Study Area

Vegetation Communities/Land Covers

Vegetation Communities/Land Covers

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Jurisdictional Delineation

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- USACE/RWQCB Wetlands; CDFW Riparian Habitat
- CDFW Riparian Habitat
- City of San Diego Wetlands

CSM
FWM
CSM
DEV
FWM
CSM
FWM

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 3D

Biological Resources Map - View 4

Biological Resources Report for the Osuna Trail Project

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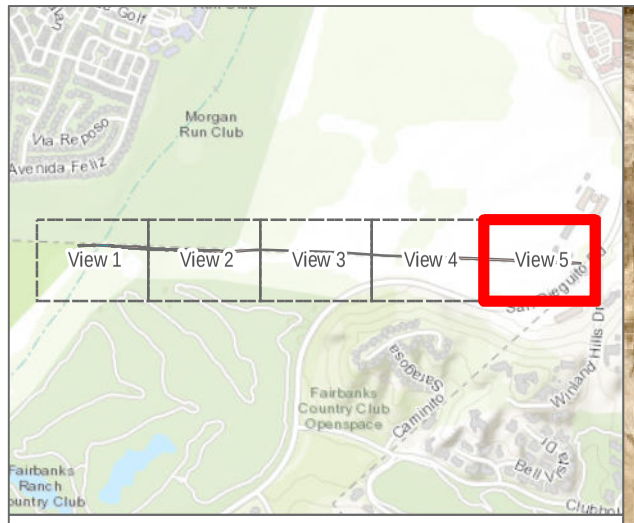

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- ORN, Ornamental
- OW, Open Water
- SWS, Southern Willow Scrub
- TS, Tamarisk Scrub
- dSRW, disturbed Southern Riparian Woodland
- dSWS, disturbed Southern Willow Scrub

Jurisdictional Delineation

- USACE/RWQCB Non-Wetland Waters; CDFW Streambed
- USACE/RWQCB Wetlands; CDFW Riparian Habitat
- CDFW Riparian Habitat
- City of San Diego Wetlands

DEV
CSM
FWM
FWM
CSM
SWS
FWM
CSM
FWM
CSS
DH
SAN DIEGUITO RD

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 3E

Biological Resources Map - View 5

Biological Resources Report for the Osuna Trail Project

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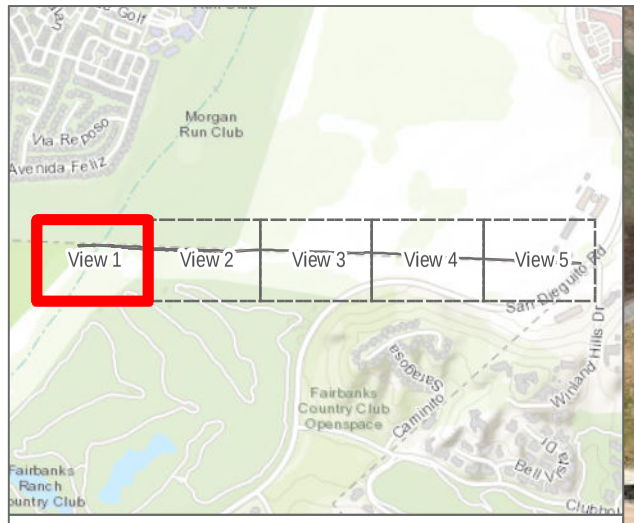

- Study Area
- Vegetation Communities/Land Covers
  - ADR, Arundo Donax Riparian
  - CSM, Coastal Salt Marsh
  - CSS, Coastal Sage Scrub
  - CSSB, Coastal Sage Scrub-Baccharis Dominated
  - DEV, Developed
  - DH, Disturbed Habitat
  - DW, Disturbed Wetlands
  - FWM, Freshwater Marsh
  - MFS, Mulefat Scrub
  - NNR, Non-Native Riparian
  - ORN, Ornamental
  - OW, Open Water
  - dSRW, disturbed Southern Riparian Woodland
  - SWS, Southern Willow Scrub
  - dSWS, disturbed Southern Willow Scrub
  - TS, Tamarisk Scrub
- Jurisdictional Delineation
  - USACE/RWQCB Non-Wetland Waters; CDFW Streambed
  - USACE/RWQCB Wetlands; CDFW Riparian Habitat
  - CDFW Riparian Habitat
  - City of San Diego Wetlands
- Proposed Impact Component
  - Trail
  - Grading Limits
  - Bridge
  - Abutment

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 4A

Impacts to Biological Resources Map - View 1

Biological Resources Report for the Osuna Trail Project

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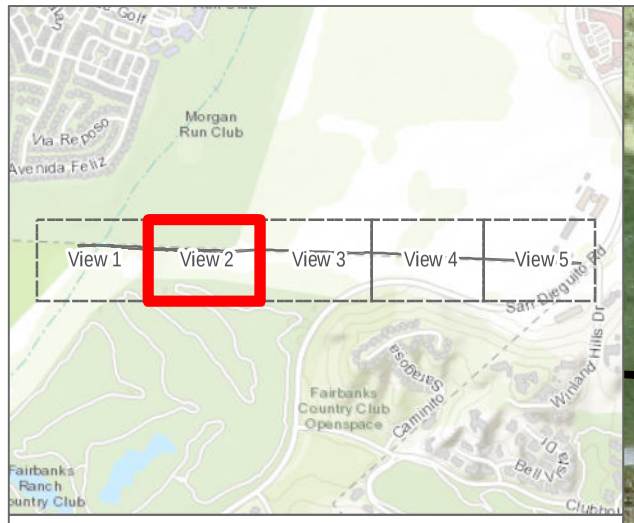

- Study Area
- Vegetation Communities/Land Covers
  - ADR, Arundo Donax Riparian
  - CSM, Coastal Salt Marsh
  - CSS, Coastal Sage Scrub
  - CSSB, Coastal Sage Scrub-Baccharis Dominated
  - DEV, Developed
  - DH, Disturbed Habitat
  - DW, Disturbed Wetlands
  - FWM, Freshwater Marsh
  - MFS, Mulefat Scrub
  - NNR, Non-Native Riparian
  - ORN, Ornamental
  - OW, Open Water
  - dSRW, disturbed Southern Riparian Woodland
  - SWS, Southern Willow Scrub
  - dSWS, disturbed Southern Willow Scrub
  - TS, Tamarisk Scrub
- Jurisdictional Delineation
  - USACE/RWQCB Non-Wetland Waters; CDFW Streambed
  - USACE/RWQCB Wetlands; CDFW Riparian Habitat
  - CDFW Riparian Habitat
  - City of San Diego Wetlands
- Proposed Impact Component
  - Trail
  - Grading Limits
  - Bridge
  - Abutment

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 4B

Impacts to Biological Resources Map - View 2

Biological Resources Report for the Osuna Trail Project

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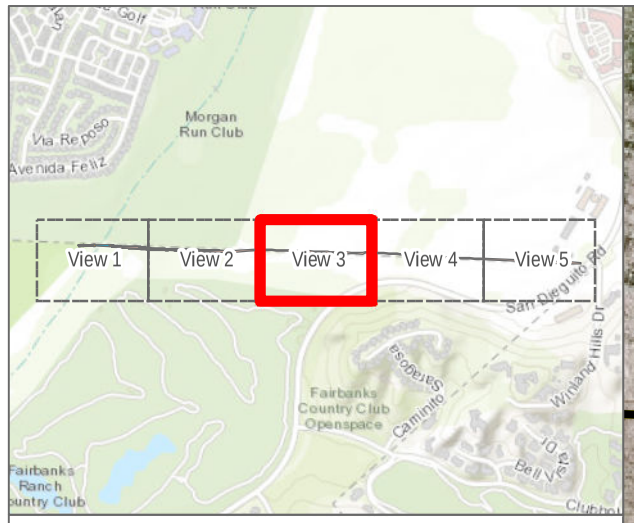

- Study Area
- Vegetation Communities/Land Covers
  - ADR, Arundo Donax Riparian
  - CSM, Coastal Salt Marsh
  - CSS, Coastal Sage Scrub
  - CSSB, Coastal Sage Scrub-Baccharis Dominated
  - DEV, Developed
  - DH, Disturbed Habitat
  - DW, Disturbed Wetlands
  - FWM, Freshwater Marsh
  - MFS, Mulefat Scrub
  - NNR, Non-Native Riparian
  - ORN, Ornamental
  - OW, Open Water
  - dSRW, disturbed Southern Riparian Woodland
  - SWS, Southern Willow Scrub
  - dSWS, disturbed Southern Willow Scrub
  - TS, Tamarisk Scrub
- Jurisdictional Delineation
  - USACE/RWQCB Non-Wetland Waters; CDFW Streambed
  - USACE/RWQCB Wetlands; CDFW Riparian Habitat
  - CDFW Riparian Habitat
  - City of San Diego Wetlands
- Proposed Impact Component
  - Trail
  - Grading Limits
  - Bridge
  - Abutment

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 4C

Impacts to Biological Resources Map - View 3

Biological Resources Report for the Osuna Trail Project

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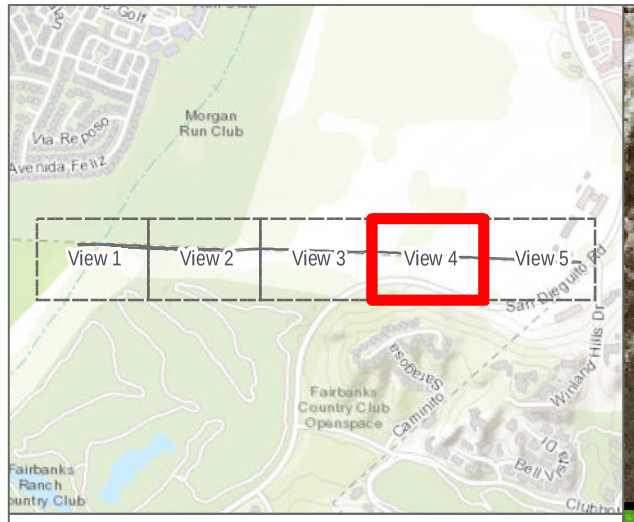

- Study Area
- Vegetation Communities/Land Covers
  - ADR, Arundo Donax Riparian
  - CSM, Coastal Salt Marsh
  - CSS, Coastal Sage Scrub
  - CSSB, Coastal Sage Scrub-Baccharis Dominated
  - DEV, Developed
  - DH, Disturbed Habitat
  - DW, Disturbed Wetlands
  - FWM, Freshwater Marsh
  - MFS, Mulefat Scrub
  - NNR, Non-Native Riparian
  - ORN, Ornamental
  - OW, Open Water
  - dSRW, disturbed Southern Riparian Woodland
  - SWS, Southern Willow Scrub
  - dSWS, disturbed Southern Willow Scrub
  - TS, Tamarisk Scrub
- Jurisdictional Delineation
  - USACE/RWQCB Non-Wetland Waters; CDFW Streambed
  - USACE/RWQCB Wetlands; CDFW Riparian Habitat
  - CDFW Riparian Habitat
  - City of San Diego Wetlands
- Proposed Impact Component
  - Trail
  - Grading Limits
  - Bridge
  - Abutment

CSM
FWM
CSM
DEV
FWM
CSM
FWM

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 4D

Impacts to Biological Resources Map - View 4

Biological Resources Report for the Osuna Trail Project

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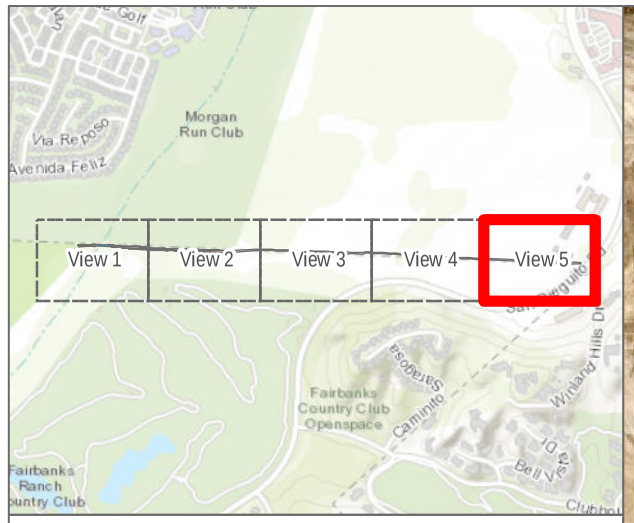

Study Area

Vegetation Communities/Land Covers

- ADR, Arundo Donax Riparian
- CSM, Coastal Salt Marsh
- CSS, Coastal Sage Scrub
- CSSB, Coastal Sage Scrub-Baccharis Dominated
- DEV, Developed
- DH, Disturbed Habitat
- DW, Disturbed Wetlands
- FWM, Freshwater Marsh
- MFS, Mulefat Scrub
- NNR, Non-Native Riparian
- ORN, Ornamental
- OW, Open Water
- dSRW, disturbed Southern Riparian Woodland
- SWS, Southern Willow Scrub
- dSWS, disturbed Southern Willow Scrub
- TS, Tamarisk Scrub

Jurisdictional Delineation

- USACE/RWQCB Non-Wetland Waters; CDFW Streambed
- USACE/RWQCB Wetlands; CDFW Riparian Habitat
- CDFW Riparian Habitat
- City of San Diego Wetlands

Proposed Impact Component

- Trail
- Grading Limits
- Bridge
- Abutment

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 4E

Impacts to Biological Resources Map - View 5

Biological Resources Report for the Osuna Trail Project

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SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 5A

Mitigation and Revegetation Areas - View 1

Biological Resources Report for the Osuna Trail Project

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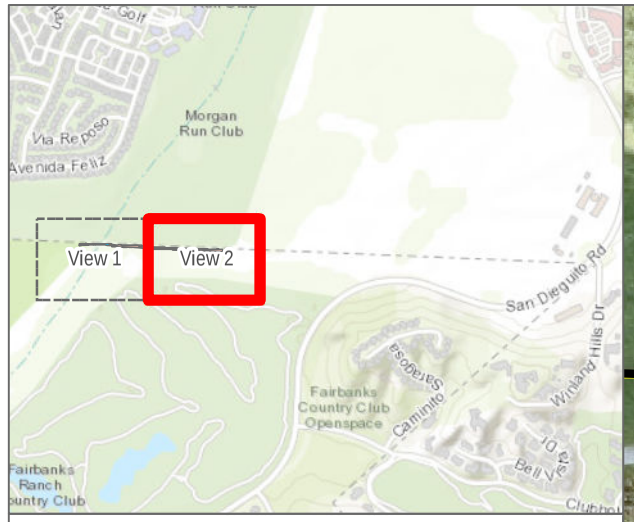

- Study Area
- Parcel Boundary
- OMWD Easement
- Vegetation Communities/Land Covers
  - ADR, Arundo Donax Riparian
  - CSM, Coastal Salt Marsh
  - CSS, Coastal Sage Scrub
  - CSSB, Coastal Sage Scrub-Baccharis Dominated
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  - NNR, Non-Native Riparian
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  - dSRW, disturbed Southern Riparian Woodland
  - SWS, Southern Willow Scrub
  - dSWS, disturbed Southern Willow Scrub
  - TS, Tamarisk Scrub
- Jurisdictional Delineation
  - USACE/RWQCB Non-Wetland Waters; CDFW Streambed
  - USACE/RWQCB Wetlands; CDFW Riparian Habitat
  - CDFW Riparian Habitat
  - City of San Diego Wetlands
- Proposed Trail Component
  - Trail
  - Bridge
  - Abutment
- Mitigation & Revegetation
  - Wetland Restoration (0.17 Ac.)
  - Wetland Enhancement (0.22 Ac.)
  - CSS Restoration (0.49 Ac.)

SOURCE: AERIAL- KIMLEY-HORN APRIL 2021

DUDEK

0 40 80 Feet

FIGURE 5B

Mitigation and Revegetation Areas - View 2

Biological Resources Report for the Osuna Trail Project

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Appendix A
Plant Compendium

Angiosperms: Eudicots

ADOXACEAE – ADOXA FAMILY

Sambucus nigra ssp. *caerulea* – blue elderberry

ASTERACEAE – SUNFLOWER FAMILY

Artemisia californica – coastal sagebrush

Baccharis salicifolia ssp. *salicifolia* – mule-fat, seep-willow

Baccharis pilularis – chaparral broom, coyote brush

Isocoma menziesii – coastal goldenbush

BRASSICACEAE – MUSTARD FAMILY

* *Hirschfeldia incana* – short-pod mustard

CHENOPODIACEAE – GOOSEFOOT FAMILY

* *Salsola tragus* – prickly russian-thistle, tumbleweed

FRANKENIACEAE – FRANKENIA FAMILY

Frankenia salina – alkali-heath

MYRTACEAE – MYRTLE FAMILY

* *Eucalyptus globulus* – blue gum

SALICACEAE – WILLOW FAMILY

Populus fremontii ssp. *fremontii* – western cottonwood

Salix gooddingii – Goodding's black willow

Salix laevigata – red willow

Salix lasiolepis – arroyo willow

SCROPHULARIACEAE – FIGWORT FAMILY

* *Myoporum laetum* – ngaio, mousehole tree

SOLANACEAE – NIGHTSHADE FAMILY

* *Nicotiana glauca* – tree tobacco

TAMARICACEAE – TAMARISK FAMILY

* *Tamarix ramosissima* – saltcedar

URTICACEAE – STINGING NETTLE FAMILY

Urtica dioica ssp. *holosericea* – hoary nettle

Angiosperms: Monocots

JUNCACEAE – RUSH FAMILY

Juncus acutus ssp. *leopoldii* – southwestern spiny rush

POACEAE – GRASS FAMILY

Distichlis spicata – salt grass

* *Arundo donax* – giant reed
* *Bromus rubens* – foxtail chess, red brome

TYPHACEAE – CATTAIL FAMILY

Typha latifolia – broad-leaf cattail

* signifies introduced (non-native) species

Appendix B
Wildlife Compendium

Birds

Blackbirds, Orioles and Allies

ICTERIDAE – BLACKBIRDS

Agelaius phoeniceus – red-winged blackbird
Euphagus cyanocephalus – Brewer's blackbird
Icterus cucullatus – hooded oriole
* *Molothrus ater* – brown-headed cowbird
Quiscalus mexicanus – great-tailed grackle
Sturnella neglecta – western meadowlark

Bushtits

AEGITHALIDAE – LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus – bushtit

Cardinals, Grosbeaks and Allies

CARDINALIDAE – CARDINALS AND ALLIES

Pheucticus melanocephalus – black-headed grosbeak

Cormorants

PHALACROCORACIDAE – CORMORANTS

Phalacrocorax auritus – double-crested cormorant

Falcons

FALCONIDAE – CARACARAS AND FALCONS

Falco peregrinus anatum – American peregrine falcon
Falco sparverius – American kestrel

Finches

FRINGILLIDAE – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus – house finch
Spinus lawrencei – Lawrence's goldfinch
Spinus psaltria – lesser goldfinch

Flycatchers

TYRANNIDAE – TYRANT FLYCATCHERS

Empidonax difficilis – Pacific-slope flycatcher
Sayornis nigricans – black phoebe
Sayornis saya – Say's phoebe
Tyrannus vociferans – Cassin's kingbird

Goatsuckers

CAPRIMULGIDAE – GOATSUCKERS

Phalaenoptilus nuttallii – common poorwill

Grebes

PODICIPEDIDAE – GREBES

Podilymbus podiceps – pied-billed grebe

Hawks

ACCIPITRIDAE – HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii – Cooper's hawk
Buteo jamaicensis – red-tailed hawk
Elanus leucurus – white-tailed kite
Pandion haliaetus – osprey

Herons and Bitterns

ARDEIDAE – HERONS, BITTERNS, AND ALLIES

Ardea alba – great egret
Ardea herodias – great blue heron
Butorides virescens – green heron
Egretta thula – snowy egret
Nycticorax nycticorax – black-crowned night-heron

Hummingbirds

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird
Selasphorus sasin – Allen's hummingbird
Selasphorus sp. – Allen's/rufous hummingbird

Ibises and Spoonbills

THRESKIORNITHIDAE – IBISES AND SPOONBILLS

Plegadis chihi – white-faced ibis

Jays, Magpies and Crows

CORVIDAE – CROWS AND JAYS

Corvus brachyrhynchos – American crow

Corvus corax – common raven

Kinglets

REGULIDAE – KINGLETS

Regulus calendula – ruby-crowned kinglet

Mockingbirds and Thrashers

MIMIDAE – MOCKINGBIRDS AND THRASHERS

Mimus polyglottos – northern mockingbird

New World Sparrows

PASSERELLIDAE – NEW WORLD SPARROWS

Melospiza lincolnii – Lincoln's sparrow

Melospiza melodia – song sparrow

Melozone crissalis – California towhee

Zonotrichia leucophrys – white-crowned sparrow

Old World Warblers and Gnatcatchers

SYLVIIDAE – SYLVIID WARBLERS

Polioptila caerulea – blue-gray gnatcatcher

Owls

TYTONIDAE – BARN OWLS

Tyto alba – barn owl

Pigeons and Doves

COLUMBIDAE – PIGEONS AND DOVES

* *Streptopelia decaocto* – Eurasian collared-dove

Zenaida macroura – mourning dove

Rails, Gallinules and Coots

RALLIDAE – RAILS, GALLINULES, AND COOTS

Fulica americana – American coot

Porzana carolina – sora

Rallus obsoletus levipes – Ridgway's rail

Roadrunners and Cuckoos

CUCULIDAE – CUCKOOS, ROADRUNNERS, AND ANIS

Geococcyx californianus – greater roadrunner

Shorebirds

CHARADRIIDAE – LAPWINGS AND PLOVERS

Charadrius vociferus – killdeer

Starlings and Allies

STURNIDAE – STARLINGS

* *Sturnus vulgaris* – European starling

Swallows

HIRUNDINIDAE – SWALLOWS

Petrochelidon pyrrhonota – cliff swallow

Stelgidopteryx serripennis – northern rough-winged swallow

Tachycineta bicolor – tree swallow

Tachycineta thalassina – violet-green swallow

Thrushes

TURDIDAE – THRUSHES

Sialia mexicana – western bluebird

Turdus migratorius – American robin

Vireos

VIREONIDAE – VIREOS

Vireo bellii pusillus – least Bell's vireo
Vireo cassinii – Cassin's vireo

Waterfowl

ANATIDAE – DUCKS, GEESE, AND SWANS

Anas platyrhynchos – mallard
Oxyura jamaicensis – ruddy duck

Waxbills

ESTRILDIDAE – WAXBILLS

* *Lonchura punctulata* – scaly-breasted munia

Wood Warblers and Allies

PARULIDAE – WOOD-WARBLERS

Cardellina pusilla – Wilson's warbler
Geothlypis trichas – common yellowthroat
Oreothlypis celata – orange-crowned warbler
Parkesia noveboracensis – northern waterthrush
Setophaga coronata – yellow-rumped warbler
Setophaga petechia – yellow warbler

Woodpeckers

PICIDAE – WOODPECKERS AND ALLIES

Dryobates nuttallii – Nuttall's woodpecker

Wrens

TROGLODYTIDAE – WRENS

Cistothorus palustris clarkae – Clark's marsh wren
Cistothorus palustris – marsh wren

Wrentits

TIMALIIDAE – BABBLERS

Chamaea fasciata – wrentit

Yellow-Breasted Chat

ICTERIIDAE – YELLOW-BREASTED CHAT

Icteria virens – yellow-breasted chat

* signifies introduced (non-native) species

Appendix C

Sensitive Plant Species Potentially Occurring within the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2/None	Coastal dunes/perennial herb/Feb–Nov/ 0–330	Not expected to occur. No suitable habitat present.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/1B.1/Narrow Endemic	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay, openings/ annual herb/Apr–June/33–3,145	Low potential to occur. Clay soils are not dominant in the study area and this species prefers heavy clay lenses. Recorded occurrences near the study area are over 3 miles away.
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1/Covered	Coastal dunes, Coastal scrub (sandy)/ annual herb/Mar–June(July)/0–35	Low potential to occur. This species prefers coastal dunes and beaches. The only recorded occurrences near the study area are several miles away at Torrey Pines State Beach and San Elijo Lagoon.
Adolphia californica	California adolphia	None/None/2B.1/None	Chaparral, Coastal scrub, Valley and foothill grassland; Clay/perennial deciduous shrub/Dec–May/33–2,425	Low potential to occur. Although California adolphia has been documented north of the site, the study area does not contain the clay soils required for this species.
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1/Narrow Endemic	Coastal bluff scrub, Coastal scrub; Maritime succulent scrub/perennial leaf succulent/ Sep–May/10–395	Not expected to occur. This species prefers coastal bluff scrub and would have been observed during vegetation mapping if present.
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2/None	Chaparral, Sonoran desert scrub; sandy/ perennial shrub/Aug–Nov/33–1,640	Not expected to occur. No suitable habitat present.
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1/Narrow Endemic	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/ Apr–Oct/66–1,360	Low potential to occur. Suitable disturbed marsh and alluvial scrub habitat occurs within the study area and could support this species but it was not observed during vegetation mapping. No known occurrences have been

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				recorded within 4 miles of the study area.
Aphanisma blitoides	aphanisma	None/None/1B.2/Narrow Endemic	Coastal bluff scrub, Coastal dunes, Coastal scrub; sandy or gravelly/annual herb/ Feb–June/3–1,000	Low potential to occur. No suitable coastal bluff or dune habitat is present and all known occurrences in the region occur immediately adjacent to the coast.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1/Covered	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1,195	Not expected to occur. No suitable habitat present.
Artemisia palmeri	San Diego sagewort	None/None/4.2/None	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; sandy, mesic/perennial deciduous shrub/ (Feb)May–Sep/49–3,000	Not expected to occur. Although suitable riparian habitat occurs within the study area and could support this species, this perennial shrub was not observed during vegetation mapping.
Asplenium vespertinum	western spleenwort	None/None/4.2/None	Chaparral, Cismontane woodland, Coastal scrub; rocky/perennial rhizomatous herb/Feb–June/591–3,280	Not expected to occur. The site is outside of the species' known elevation range.
Astragalus albens	Cushenbury milk-vetch	FE/None/1B.1/None	Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland; usually carbonate, rarely granitic/perennial herb/Mar–June/3,590–6,560	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Astragalus tener var. titi	coastal dunes milk-vetch	FE/SE/1B.1/Narrow Endemic	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/3–165	Not expected to occur. No suitable habitat present.
Atriplex coulteri	Coulter's saltbush	None/None/1B.2/None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/10–1,505	Not expected to occur. Although saline coastal scrub is present that could support this species, this, species would have been detected during surveys. In addition, soils on site are alkaline but not high in clay content. This species is known

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				to occur just over 3 miles to the north in San Elijo Lagoon.
Atriplex pacifica	South Coast saltscale	None/None/1B.2/None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0–460	Not expected to occur. Saline coastal scrub is present that could support this species however this species would have been detected during surveys. It is known to occur approximately 2 miles west of the study area on coastal bluffs above Via de la Valle and 2 miles east in Fairbanks Ranch.
Baccharis vanessae	Encinitas baccharis	FT/SE/1B.1/Covered	Chaparral (maritime), Cismontane woodland; sandstone/perennial deciduous shrub/Aug,Oct,Nov/197–2,360	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2/None	Closed-cone coniferous forest, Chaparral, Coastal scrub; sandy/perennial stem succulent/May–June/10–1,295	Not expected to occur. No suitable Torrey pine forest or maritime chaparral habitat present. The only recorded occurrences near the study area are at Torrey Pines State Reserve.
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1/Covered	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; clay/perennial bulbiferous herb/Apr–May/164–1,525	Not expected to occur. The site is outside of the species' known elevation range.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1/Covered	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; often clay/perennial bulbiferous herb/ Mar–June/82–3,670	Low potential to occur. Clay soils are not dominant in the study area and this species prefers heavy clay lenses. Recorded occurrences near the study area are over 4 miles away.
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1/Covered	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal	Not expected to occur. No suitable habitat present.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			pools; mesic, clay/perennial bulbiferous herb/ May–July/98–5,550	
Calandrinia breweri	Brewer's calandrinia	None/None/4.2/None	Chaparral, Coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/(Jan)Mar–June/33–4,000	Low potential to occur. No known occurrences have been recorded within 5 miles of the study area.
Calochortus plummerae	Plummer's mariposa lily	None/None/4.2/None	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; granitic, rocky/perennial bulbiferous herb/ May–July/328–5,575	Not expected to occur. The site is outside of the species' known elevation range.
Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3/None	Coastal bluff scrub, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland; sandy or clay/annual herb/Mar–May(June)/0–985	Moderate potential to occur. Sandy and saline coastal scrub is present that could support this species. There is an occurrence in the San Dieguito lagoon just over 3 miles to the west.
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2/Covered	Closed-cone coniferous forest, Chaparral/perennial evergreen shrub/ Apr–June/771–2,475	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2/None	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/ Jan–Apr/1,965–3,605	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2/Covered	Chaparral/perennial evergreen shrub/ Dec–May/3–1,245	Not expected to occur. No suitable habitat present.
Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1/None	Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools/annual herb/May–Nov/0–1,570	Not expected to occur. Although there is suitable marsh margin habitat within in the study area, if present, this species would have been observed during vegetation mapping. Several known occurrences have been recorded

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				over two miles to the west near San Dieguito Lagoon.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1/None	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; alkaline/annual herb/ Apr–Sep/0–2,095	Low potential to occur. Suitable alkali marsh habitat exists within the study area but no known occurrences of this species have been recorded within 5 miles of the study area. It was not observed during vegetation mapping.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1/None	Coastal bluff scrub (sandy), Coastal dunes/annual herb/Jan–Aug/0–330	Not expected to occur. No suitable habitat present.
Chamaebatia australis	southern mountain misery	None/None/4.2/None	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/984–3,345	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE/1B.2/Covered	Coastal dunes, Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Not expected to occur. This species is only known from a handful of saltmarsh habitats further south in San Diego County near Ocean Beach the San Diego Bay and Imperial Beach.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE/1B.1/None	Closed-cone coniferous forest, Chaparral (maritime), Coastal scrub; sandy openings/annual herb/Mar–May/10–410	Not expected to occur. This species is only known from sandstone coastal bluff and sandy maritime chaparral habitats.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2/None	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; often clay/annual herb/Apr–July/ 98–5,015	Low potential to occur. Clay soils are lacking in the study area. Some sandy areas of coastal scrub are present but this species prefers mesas. The nearest recorded occurrences are at Torrey Pines State Reserve or further.

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Cistanthe maritima	seaside cistanthe	None/None/4.2/None	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; sandy/annual herb/(Feb)Mar–June(Aug)/16–985	Low potential to occur. Some sandy areas of coastal scrub are present but this species prefers mesas and bluffs. The nearest recorded occurrences are at Torrey Pines State Reserve or further.
Clarkia delicata	delicate clarkia	None/None/1B.2/None	Chaparral, Cismontane woodland; often gabbroic/annual herb/Apr–June/ 771–3,280	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2/None	Chaparral, Cismontane woodland/perennial evergreen shrub/Apr–June/98–2,590	Not expected to occur. No suitable habitat present.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2/None	Chaparral (openings), Coastal scrub, Valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/98–2,425	Not expected to occur. Clay soils are not dominant in the study area and this species prefers heavy clay lenses, typically serpentine. Recorded occurrences near the study area are over 3 miles away.
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1/None	Coastal bluff scrub, Chaparral, Coastal scrub/perennial herb/June–Sep/10–375	Not expected to occur. This species is only known from sites further south in San Diego County, particularly Point Loma.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1/Covered	Coastal bluff scrub, Chaparral (maritime, openings), Coastal scrub; sandy/perennial herb/May,July,Aug,Sep/49–490	Low potential to occur. Some sandy areas of coastal scrub are present but this species prefers mesas and bluffs. The nearest recorded occurrences are over 2 miles from the study area in habitats like Crest Canyon and Torrey Pines State Reserve.

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Cryptantha wigginsii	Wiggins' cryptantha	None/None/1B.2/None	Coastal scrub; often clay/annual herb/ Feb–June/66–900	Low potential to occur. This species is only known from occurrences over 4 miles north of the study area.
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1/Narrow Endemic	Chaparral, Coastal scrub/perennial stem succulent/Apr–May/98–490	Low potential to occur. Cylindropuntia species were not observed during vegetation mapping. The nearest recorded occurrence is over 3 miles to the east
Dichondra occidentalis	western dichondra	None/None/4.2/None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ perennial rhizomatous herb/ (Jan)Mar–July/164–1,640	Not expected to occur. The site is outside of the species' known elevation range.
Diplacus aridus	low bush monkeyflower	None/None/4.3/None	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/ Apr–July/2,460–3,935	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1/None	Coastal bluff scrub, Chaparral, Coastal scrub, Valley and foothill grassland; rocky, often clay or serpentinite/perennial herb/ Apr–June/16–1,475	Not expected to occur. Clay soils are not dominant in the study area and this species prefers clay and serpentine. Nearest recorded occurrences are in La Jolla and Camp Pendleton.
Dudleya brevifolia	short-leaved dudleya	None/SE/1B.1/Narrow Endemic	Chaparral (maritime, openings), Coastal scrub; Torrey sandstone/perennial herb/ Apr–May/98–820	Not expected to occur. Torrey sandstone not present in the study area. Species only known from bluffs and mesas in the Torrey Pines area.
Dudleya variegata	variegated dudleya	None/None/1B.2/Narrow Endemic	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; clay/perennial herb/Apr–June/ 10–1,900	Not expected to occur. Clay soils and vernal pools not present in the study area.

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Dudleya viscida	sticky dudleya	None/None/1B.2/Covered	Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub; rocky/perennial herb/May–June/33–1,800	Not expected to occur. This species is known to prefer rocky cliffs and bluffs.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1/Covered	Chaparral, Coastal scrub; mesic/perennial evergreen shrub/(July)Sep–Nov/98–1,965	Low potential to occur. Coastal sage scrub is present but the nearest recorded occurrence is over 5 miles to the south.
Eriodictyon sessilifolium	sessile-leaved yerba stanta	None/None/2B.1/None	Coastal scrub; volcanic/perennial shrub/July/558–560	Not expected to occur. The site is outside of the species' known elevation range.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1/Covered	Coastal scrub, Valley and foothill grassland, Vernal pools; mesic/annual / perennial herb/Apr–June/66–2,030	Not expected to occur. Vernal pools not present in the study area.
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2/Covered	Chaparral (maritime), Coastal dunes, Coastal scrub; sandy, openings/perennial herb/Feb–June/0–195	Low potential to occur. This species prefers sandy bluffs and mesas. The nearest recorded occurrences are over 2 miles from the study area in habitats like Crest Canyon and Torrey Pines State Reserve.
Erythranthe diffusa	Palomar monkeyflower	None/None/4.3/None	Chaparral, Lower montane coniferous forest; sandy or gravelly/annual herb/ Apr–June/4,000–6,000	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Euphorbia misera	cliff spurge	None/None/2B.2/None	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug(Oct)/33–1,640	Low potential to occur. This species prefers coastal bluffs and rocky areas. The nearest recorded occurrences are over 3 miles away near San Elijo Lagoon and Torrey Pines. This perennial species was not observed during vegetation mapping.

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Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1/Covered	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/perennial stem succulent/May–June/10–1,475	Low potential to occur. This species prefers rocky or sandy hillslopes which are lacking from the study area. Several occurrences of this species have been recorded in hilly areas near Torrey Pines High School, 2 miles to the south but this perennial species was not observed during vegetation mapping.
Geothallus tuberosus	Campbell's liverwort	None/None/1B.1/None	Coastal scrub (mesic), Vernal pools; soil/ephemeral liverwort/N.A./33–1,965	Not expected to occur. Vernal pools not present in the study area.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1/None	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1,475–2,295	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Grindelia hallii	San Diego gumplant	None/None/1B.2/None	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland/perennial herb/May–Oct/ 607–5,725	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2/None	Chaparral, Coastal scrub, Valley and foothill grassland; Clay; open grassy areas within shrubland/annual herb/Mar–May/ 66–3,130	Not expected to occur. Occurrences have been recorded just over 2 miles to the south near Torrey Pines High School. However, the site does not contain the requisite clay soils to support this species.
Hazardia orcuttii	Orcutt's hazardia	None/ST/1B.1/None	Chaparral (maritime), Coastal scrub; often clay/perennial evergreen shrub/ Aug–Oct/262–280	Not expected to occur. The site is outside of the species' known elevation range.
Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	None/None/1B.1/None	Chaparral (coastal), Coastal dunes, Coastal scrub/perennial herb/Mar–Dec/0–4,015	Low potential to occur. This species prefers sandy bluffs and dunes. The nearest occurrences

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				are over 2 miles away in bluff habitats like Crest Canyon and Torrey Pines.
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2/None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/annual herb/May–Nov/197–3,605	Not expected to occur. The site is outside of the species' known elevation range.
Hordeum intercedens	vernal barley	None/None/3.2/None	Coastal dunes, Coastal scrub, Valley and foothill grassland (saline flats and depressions), Vernal pools/annual herb/ Mar–June/16–3,280	Not expected to occur. Vernal pools not present in the study area.
Horkelia truncata	Ramona horkelia	None/None/1B.3/None	Chaparral, Cismontane woodland; clay, gabbroic/perennial herb/May–June/ 1,310–4,265	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Hulsea californica	San Diego sunflower	None/None/1B.3/None	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; openings and burned areas/perennial herb/ Apr–June/3,000–9,560	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2/None	Chaparral, Coastal scrub (sandy, often in disturbed areas)/perennial shrub/ Apr–Nov/33–445	Low potential to occur. This species prefers sandy bluffs, hillsides, and openings; coastal scrub on the site was lacking openings. The nearest occurrence is over 2 miles away on bluffs near Torrey Pines High School.
Iva hayesiana	San Diego marsh-elder	None/None/2B.2/None	Marshes and swamps, Playas/perennial herb/Apr–Oct/33–1,640	Low potential to occur. Suitable marsh habitat exists on site but no documented occurrences have been recorded within 3 miles and this obvious perennial was not observed during vegetation mapping.

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Juglans californica	Southern California black walnut	None/None/4.2/None	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; alluvial/perennial deciduous tree/Mar–Aug/164–2,950	Not expected to occur. The site is outside of the species' known elevation range.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2/None	Coastal dunes (mesic), Meadows and seeps (alkaline seeps), Marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar)May–June/10–2,950	Occurs in the study area. Suitable coastal salt marsh habitat exists on site and it was observed in this habitat during vegetation mapping.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1/None	Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/Feb–June/ 3–4,000	Not expected to occur. Although there is some suitable saline marsh habitat is present within the study area, the area is very small and unlikely to support the species. A known occurrence exists on the margins on San Dieguito Lagoon 3 miles to the west.
Lathyrus splendens	pride-of-California	None/None/4.3/None	Chaparral/perennial herb/Mar–June/ 656–5,000	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2/Covered	Closed-cone coniferous forest, Chaparral, Cismontane woodland/perennial shrub/ Apr–July/1,705–4,490	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3/None	Chaparral, Coastal scrub/annual herb/ Jan–July/3–2,900	Low potential to occur. Suitable coastal scrub present but the nearest occurrence is over 2 miles away on bluffs near Torrey Pines High School.
Leptosyne maritima	sea dahlia	None/None/2B.2/None	Coastal bluff scrub, Coastal scrub/perennial herb/Mar–May/16–490	Low potential to occur. This species prefers bluffs and mesas. The nearest recorded occurrence is over 2 miles to the southwest near Crest Canyon.

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Lycium californicum	California box-thorn	None/None/4.2/None	Coastal bluff scrub, Coastal scrub/perennial shrub/(Dec)Mar,June,July,Aug/16–490	Low potential to occur. This species prefers bluffs and mesas. The nearest recorded occurrence is over 3 miles to the northwest near San Elijo Lagoon.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2/None	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; clay/annual herb/Mar–May/49–3,510	Low potential to occur. Grassland habitat ideal for this species is not present onsite. Clay soils are lacking.
Mobergia calculiformis	light gray lichen	None/None/3/None	Coastal scrub (?); On rocks/crustose lichen (saxicolous)/N.A./33–35	Not expected to occur. This species is only known from further south in San Diego County near Point Loma.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2/Covered	Chaparral, Cismontane woodland/perennial rhizomatous herb/June–Aug/984–5,165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Monardella viminea	willowy monardella	FE/SE/1B.1/Covered	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; alluvial ephemeral washes/perennial herb/ June–Aug/164–740	Not expected to occur. The site is outside of the species' known elevation range.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1/None	Valley and foothill grassland, Vernal pools (alkaline)/annual herb/Mar–June/ 66–2,095	Not expected to occur. No suitable habitat present. No vernal pools area present.
Navarretia fossalis	spreading navarretia	FT/None/1B.1/ Narrow Endemic	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools/annual herb/Apr–June/ 98–2,145	Not expected to occur. Vernal pools not present in the study area. Nearest recorded occurrences over 4 miles from the study area.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.2/None	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools; Mesic/annual herb/Apr–July/ 10–3,965	Not expected to occur. Vernal pools not present in the study area. Nearest recorded

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				occurrences are in Kearny Mesa area.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2/None	Coastal dunes/annual herb/Apr–Sep/ 0–330	Not expected to occur. No suitable habitat present.
Ophioglossum californicum	California adder's-tongue	None/None/4.2/None	Chaparral, Valley and foothill grassland, Vernal pools (margins); mesic/perennial rhizomatous herb/(Dec)Jan–June/ 197–1,720	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Orcuttia californica	California Orcutt grass	FE/SE/1B.1/Narrow Endemic	Vernal pools/annual herb/Apr–Aug/ 49–2,165	Not expected to occur. No suitable habitat present.
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2/None	Coastal bluff scrub, Coastal dunes, Coastal scrub; sandy/perennial herb (parasitic)/ Apr–Oct/10–1,000	Low potential to occur. Sandy openings in coastal scrub are lacking in the study area and the nearest known occurrences are at Torrey Pines.
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2/None	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/annual herb/Mar–July/ 262–6,065	Not expected to occur. The site is outside of the species' known elevation range.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2/None	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/ Mar–Aug/16–985	Low potential to occur. Some suitable habitat is present but this species is known to occur closer to the ocean in saltmarsh marsh systems. The nearest recorded occurrence is over 3 miles west near Crest Canyon in the San Dieguito Lagoon.
Phacelia stellaris	Brand's star phacelia	None/None/1B.1/None	Coastal dunes, Coastal scrub/annual herb/ Mar–June/3–1,310	Low potential to occur. This species prefers dunes and is known only from Torrey Pines and locations further south near San Diego Bay.

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Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2/Covered	Closed-cone coniferous forest, Chaparral; Sandstone/perennial evergreen tree/ N.A./98–525	Not expected to occur. No suitable habitat present.
Piperia cooperi	chaparral rein orchid	None/None/4.2/None	Chaparral, Cismontane woodland, Valley and foothill grassland/perennial herb/ Mar–June/49–5,200	Not expected to occur. No suitable habitat present.
Pogogyne abramsii	San Diego mesa mint	FE/SE/1B.1/Narrow Endemic	Vernal pools/annual herb/Mar–July/ 295–655	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Pogogyne nudiuscula	Otay Mesa mint	FE/SE/1B.1/Narrow Endemic	Vernal pools/annual herb/May–July/ 295–820	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1/None	Closed-cone coniferous forest, Chaparral, Coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr(May–Aug)/ 49–1,310	Low potential to occur. This species prefers upland hills, bluffs and mesas in coastal sage scrub and maritime chaparral. It is an obvious perennial and was not observed during vegetation mapping. The nearest occurrence is over 2 miles away on bluffs near Torrey Pines High School.
Quercus engelmannii	Engelmann oak	None/None/4.2/None	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/ perennial deciduous tree/Mar–June/ 164–4,265	Not expected to occur. The site is outside of the species' known elevation range.
Rupertia rigida	Parish's rupertia	None/None/4.3/None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Pebble (Pavement) plain, Valley and foothill grassland/perennial herb/ June–Aug/2,295–8,200	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.

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Salvia munzii	Munz's sage	None/None/2B.2/None	Chaparral, Coastal scrub/perennial evergreen shrub/Feb–Apr/377–3,490	Not expected to occur. The site is outside of the species' known elevation range.
Selaginella cinerascens	ashy spike-moss	None/None/4.1/None	Chaparral, Coastal scrub/perennial rhizomatous herb/N.A./66–2,095	Not expected to occur. This species only occurs on upland mesas and terraces of coastal sage scrub. The nearest occurrence is over 2 miles away on bluffs near Torrey Pines High School.
Senecio aphanactis	chaparral ragwort	None/None/2B.2/None	Chaparral, Cismontane woodland, Coastal scrub; sometimes alkaline/annual herb/ Jan–Apr(May)/49–2,620	Low potential to occur. Some alkaline flats are present in the study area but the nearest known occurrence is in the Del Mar Mesa Preserve, over 3 miles southeast.
Sidalcea neomexicana	salt spring checkerbloom	None/None/2B.2/None	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; alkaline, mesic/perennial herb/ Mar–June/49–5,015	Low potential to occur. Some alkaline flats are present in the study area but no recent known occurrences have been recorded within 10 miles.
Sphaerocarpos drewiae	bottle liverwort	None/None/1B.1/None	Chaparral, Coastal scrub; openings, soil/ephemeral liverwort/N.A./295–1,965	Not expected to occur. The site is outside of the species' known elevation range.
Stemodia durantifolia	purple stemodia	None/None/2B.1/None	Sonoran desert scrub (often mesic, sandy)/perennial herb/(Jan)Apr, June, Aug, Sep, Oct, Dec/591–985	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Stipa diegoensis	San Diego County needle grass	None/None/4.2/None	Chaparral, Coastal scrub; rocky, often mesic/perennial herb/Feb–June/33–2,620	Low potential to occur. Rocky soils are lacking from the study area. No recorded occurrences within 5 miles.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Stylocline citroleum	oil neststraw	None/None/1B.1/None	Chenopod scrub, Coastal scrub, Valley and foothill grassland; clay/annual herb/ Mar–Apr/164–1,310	Not expected to occur. The site is outside of the species' known elevation range.
Suaeda esteroa	estuary seablite	None/None/1B.2/None	Marshes and swamps (coastal salt)/ perennial herb/(May)July–Oct(Jan)/0–15	Not expected to occur. Suitable coastal salt marsh present, however this species would have been observed during surveys. A recent occurrence (2004) was recorded 1 mile west of the site in similar habitat (SDNHM 2021).
Suaeda taxifolia	woolly seablite	None/None/4.2/None	Coastal bluff scrub, Coastal dunes, Marshes and swamps (margins of coastal salt)/perennial evergreen shrub/ Jan–Dec/0–165	Not expected to occur. Although suitable coastal salt marsh is present, this perennial evergreen shrub would have been detected during suryves. A recent occurrence (2010) was recorded 1 mile west of the site in similar habitat (SDNHM 2021).
Texosporium sancti-jacobi	woven-spored lichen	None/None/3/None	Chaparral (openings); On soil, small mammal pellets, dead twigs, and on Selaginella spp/crustose lichen (terricolous)/N.A./197–2,165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present.
Viguiera laciniata	San Diego County viguiera	None/None/4.3/None	Chaparral, Coastal scrub/perennial shrub/Feb–June(Aug)/197–2,460	Not expected to occur. The site is outside of the species' known elevation range.
Xanthisma junceum	rush-like bristleweed	None/None/4.3/None	Chaparral, Coastal scrub/perennial herb/May–Jan/787–3,280	Not expected to occur. The site is outside of the species' known elevation range.

Status Legend

Federal

FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal candidate for listing as threatened or endangered

State

SE: State listed as endangered

ST: State listed as threatened
SR: State listed as rare

CRPR (California Rare Plant Rank)

CRPR 1A: Plants presumed extinct in California and either rare or extinct elsewhere
CRPR List 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR List 2A: Plants rare, threatened, or endangered in California but common elsewhere
CRPR List 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

City of San Diego MSCP

Covered: Covered under the MSCP
Narrow Endemic: Species with a very limited native range; Species adopted by the City Council as narrow endemic species are considered sensitive biological resources

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Appendix D

Sensitive Wildlife Species Potentially Occurring within the Project Site

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Amphibians				
Spea hammondii	western spadefoot	None/SSC/None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Moderate potential to occur. This species requires vernal pools and freshwater ephemeral basins. One recent occurrence was documented 3 miles upstream in 2007. A dated 1967 CNDDB occurrence of this species was recorded within one mile of the study area. American Bullfrogs (Lithobates catesbeianus) observed within San Dieguito River less than 1 mile upstream of the project site. American bullfrogs are presumed present as management of the species within the San Dieguito River has not continue downstream past Lake Hodges (San Dieguito River Park, 2003).
Reptiles				
Actinemys marmorata	northwestern pond turtle	None/SSC/Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Low potential to occur. Some open water associated with the San Dieguito River is present but no known occurrences of this species have been recorded within five miles of the study area. The only known occurrence within the watershed is within Lake Hodges over 6 miles upstream.

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Aspidoscelis hyperythra	orange-throated whiptail	None/WL/Covered	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Moderate potential to occur. Coastal sage scrub is present but limited in quality. Several occurrences of this species have been recorded within three miles of the study area in more upland scrub.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC/None	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Low potential to occur. This species does not occur along the coast where this project is located (CaliforniaHerps.com 2021). Woodland and riparian habitats are densely vegetated. Several occurrences of this species have been recorded within ten miles of the study area.
Crotalus ruber	red diamondback rattlesnake	None/SSC/None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Low potential to occur. Coastal sage scrub is present but limited in quality. This species prefers more upland stands of coastal sage scrub. Several occurrences of this species have been recorded within ten miles of the study area in more upland scrub.
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC/Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Low potential to occur. This species is typically found in more upland habitats. Several occurrences of this species have been recorded within ten miles of the study area.
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL/None	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	Low potential to occur. Woodland habitat present but not rocky or surrounded by grassland or

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
				chaparral. Three occurrences of this species have been recorded within ten miles of the study area
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC/None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Low potential to occur. Coastal scrub is shrubby but small mammal burrows were not obvious during the vegetation mapping. No observations within 5 miles of the study area. The closest observations are nearby Lake Hodges and at Black Mountain Open Space Park, both over 5 miles away.
Thamnophis hammondii	two-striped gartersnake	None/SSC/None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Low potential to occur. San Dieguito River flows through the study area but this species prefers more rocky creeks away from brackish lagoons. No known occurrences of this species have been recorded within five miles of the study area but this species is known throughout the county.
Birds				
Accipiter cooperii (nesting, foraging)	Cooper's hawk	None/WL/Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Moderate potential to nest. Riparian woodland habitats provide large trees suitable for raptor nesting within the study area. Moderate potential to forage. Scrubs habitat is low in quality with some open non-native grass patches. Adjacent developed land includes maintained golf

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
				course that may also provide habitat for foraging.
Artemisiospiza belli belli	Bell's sage sparrow	None/WL/None	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Low potential to nest. Coastal sage scrub in the study area is limited in size and quality and is not contiguous with other large undisturbed patches. One occurrence of this species has been recorded within one mile of the study area.
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC/Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. Disturbed lands within the study area previously supported agriculture but no suitable burrows were observed during surveys and no recent occurrences are recorded within 5 miles of the study area.
Branta canadensis	Canada goose	None/None/Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	Moderate potential to occur on the disturbed, open portions of the study area or near the ponds of San Dieguito River. The San Dieguito River and open disturbed and developed areas within the study area could support this species.
Buteo swainsoni (nesting, foraging)	Swainson's hawk	None/ST/Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Moderate potential to nest. Riparian woodland habitats provide large trees suitable for raptor nesting within the study area. Moderate potential to forage. Scrubs habitat is low in quality with some open non-native grass patches. Adjacent developed

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
				land includes maintained golf course that may also provide habitat for foraging.
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only)	coastal cactus wren	None/SSC/Covered	Southern cactus scrub patches	Not expected to occur. Scrub within the study area does not harbor stands of cactus.
Charadrius alexandrinus nivosus (nesting)	western snowy plover	FT, BCC/SSC/Covered	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. Sandy, open flats are beaches are not present within the study area.
Circus cyaneus	Northern Harrier	None/SSC/Covered	Forages over coastal sage scrub and other open scrub communities. Nests in areas associated with marshes, pastures, grasslands, prairies, croplands, desert shrub-steppe, and riparian woodland.	High potential to nest and moderate potential to forage. Marshes within the study area provide potential for nesting. Scrubs habitat is low in quality with some open non-native grass patches. Adjacent developed land includes maintained golf course that may also provide habitat for foraging. Several observations of this species have been recorded within 3 miles of the study area.
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT/SE/None	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. This species is extremely rare in San Diego County and only utilizes extensive stands of high quality, mature riparian woodland and forest; the study area does not support such contiguous, high quality habitat.

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Egretta rufescens	reddish egret	None/None/Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Low potential to occur and not expected to nest. Marsh habitat is available to support this species but it is only a rare and brief visitor during migration. Occurrences have been recorded in the San Dieguito Lagoon (SDNHM 2021) but are very rare.
Elanus leucurus (nesting, foraging)	white-tailed kite	None/FP/None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Moderate potential to nest and forage. Riparian woodland habitats provide large trees suitable for raptor nesting within the study area. Scrubs habitat is low in quality with some open non-native grass patches. Adjacent developed land includes maintained golf course that may also provide habitat for foraging. One occurrence of this species has been observed within five miles of the study area.
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE/Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to nest. Riparian habitat is dense and scrubby; it could support migrant willow flycatchers but is unlikely to support residents/nesting since it is not a contiguous, high quality riparian corridor. No known occurrences of this species have been recorded within ten miles of the study area.
Eremophila alpestris actia	California horned lark	None/WL/None	This subspecies of horned lark occurs on the state's southern and central coastal slope and in the San	Moderate potential to occur on the disturbed, open portions of

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
			Joaquin Valley. Nests and forages in grasslands, disturbed lands, agriculture, and beaches.	the study area. One occurrence of this species has been recorded within five miles of the study area.
Falco mexicanus (nesting, foraging)	prairie falcon	None/WL/None	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not expected to nest or forage. Study area is lacking large, expansive open habitats for foraging and no cliffs or bluffs for nesting are present.
Icteria virens (nesting)	yellow-breasted chat	None/SSC/None	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to nest. Riparian habitat is dense and scrubby but is not a contiguous, high quality riparian corridor. No known occurrences of this species have been recorded within five miles of the study area.
Ixobrychus exilis (nesting)	least bittern	None/SSC/None	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	High potential to nest in marsh habitat containing cattails within the study area. This species has been recorded as nesting at San Elijo Lagoon (SDNHM 2021).
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST/None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. This species has been documented as being extirpated from San Diego County.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	BCC/SE/Covered	Nests and forages in coastal saltmarsh dominated by pickleweed (*Salicornia* spp.)	Low potential to occur. Although marsh habitat is present, patches of pickleweed were small and isolated. This species requires thick stands of pickleweed.
Plegadis chihi (nesting colony)	white-faced ibis	None/WL/Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of	Not expected to nest. This species is only known as a rare migrant from the San Dieguito River lagoon

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
			wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	(SDNHM 2021). No nesting colonies are known from the area.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC/Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Moderate potential to occur. Coastal sage scrub in the study area is limited in quality and is not contiguous with other large undisturbed patches but several occurrences of this species have been recorded within one mile of the study area in more upland areas of sage scrub. Dispersing birds could visit sage scrub in the study area.
Rallus obsoletus levipes	Ridgway's rail	FE/FP, SE/Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	High potential to occur and nest. Coastal salt marsh and freshwater marsh and present and suitable for this species. Two occurrences of this species have been recorded within one mile of the study area, in and around the San Dieguito River.
Setophaga petechia (nesting)	yellow warbler	None/SSC/None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Moderate potential to nest. Riparian habitat present and known occurrences of this species have been recorded within two miles of the study area.
Sialia mexicana	western bluebird	None/None/Covered	Nests in old-growth red fir, mixed-conifer, and lodegpole pine habitats near wet meadows used for foraging	Not expected to occur. No suitable habitat present.
Sternula antillarum browni (nesting colony)	California least tern	FE/FP, SE/Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Not expected to nest. Sandy, open flats are beaches are not present within the study area

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE/Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	High potential to nest. Riparian habitat within the study area is limited in size and quality but could support this species. A known occurrence of this species has been recorded approximately 2 miles west of the study area.
Mammals				
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC/None	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Low potential to occur in coastal sage scrub and disturbed habitat within the study area. No known occurrences of this species have been recorded within 5 miles of the study area.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC/None	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	Low potential to occur. Coastal sage scrub within the study area ais limited in size and quality. Two known occurrences of this species have been recorded within 10 miles of the study area.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC/None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. No suitable habitat for foraging, and no caves/mines for roosting present.
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC/None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Low potential to forage on site. Not expected to roost on site. Riparian habitat within the study area is limited in size and quality. No known occurrences of this species have been recorded within ten miles of the study area

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Dasypterus xanthinus	western yellow bat	None/SSC/None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Not expected to occur. No suitable habitat present.
Euderma maculatum	spotted bat	None/SSC/None	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not expected to occur. No suitable habitat present.
Eumops perotis californicus	western mastiff bat	None/SSC/None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Low potential to forage on site. Not expected to roost on site. Coastal sage scrub within the study area is limited in size and quality. Several known occurrences of this species have been recorded within five mile of the study area.
Lasiurus blossevillii	western red bat	None/SSC/None	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Low potential to roost or forage. Riparian habitat within the study area is limited in size and quality. One known occurrence of this species has been recorded within 10 miles of the study area.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC/None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	High potential to occur. Coastal scrub onsite is of low quality with grassland patches throughout. Additionally, disturbed areas and maintained grass for golf courses surrounds the project area.
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC/None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Low potential to occur. Coastal sage scrub in the study area is limited in size and quality. Several occurrences of this species have been recorded within five miles of the study area.

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC/None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not expected to occur. No suitable habitat present. No rocky canyons/cliffs present for roosting present. One known occurrence of this species has been recorded within two miles of the study area.
Nyctinomops macrotis	big free-tailed bat	None/SSC/None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Not expected to roost. Large trees with holes for roosting are lacking from the site. Moderate potential to forage over open water within the study area. One known occurrence of this species has been recorded within five miles of the study area.
Odocoileus hemionus	mule deer	None/None/Covered	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	Low potential to occur. Woodland areas with cover suitable for this species are lacking from the study area. Browsing and foraging is limited due to the developed nature of the surrounding area.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC/None	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Low potential to occur. Open sandy coastal strand and dunes are lacking from the site but one occurrence 3 miles to the west in the San Dieguito Lagoon has been recorded.
Puma concolor	puma	None/None/Covered	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	Low potential to occur. This species is known to utilize the San Dieguito River corridor but the urbanized nature of the surroundings near the study are limit potential to occur.

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Taxidea taxus	American badger	None/SSC/Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. Open, disturbed habitats are limited in size and adjacent to highly developed areas. One known occurrence of this species within 10 miles of the study area.
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/SCE/None	Open grassland and scrub communities supporting suitable floral resources.	Low potential to occur. Coastal scrub within the study area is limited in size and quality and lacking high native floral diversity. The closest known occurrence was documented in 2 miles south of the study area.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None/Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vernal pools or non-vegetated ephemeral pools present within the study area.
Danaus plexippus pop. 1	monarch	FC/None/None	Wind-protected tree groves with nectar sources and nearby water sources	Moderate potential to occur but not expected to overwinter. The site is outside of the species' known geographic range for overwintering.
Euphydryas editha quino	quino checkerspot butterfly	FE/None/None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, Antirrhinum coulterianum, and Plantago patagonica (Silverado Occurrence Complex)	Not expected to occur. The site is outside of the species' known geographic range.
Lycaena hermes	Hermes copper	FPT/None/None	Mixed woodlands, chaparral, and coastal scrub	Not expected to occur. The site is outside of the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/ City of San Diego MSCP)	Habitat	Potential to Occur
Panoquina errans	wandering skipper	None/None/Covered	Saltmarsh	High potential to occur. Suitable saltmarsh habitat is present and this species is known to occur in saltmarshes throughout the region.
Streptocephalus woottoni	Riverside fairy shrimp	FE/None/Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vernal pools or non-vegetated ephemeral pools present within the study area.

Status Legend
Federal
BCC: Bird of Conservation Concern
FC: Candidate for federal listing as threatened or endangered
FDL: Federally delisted; monitored for 5 years
FE: Federally listed endangered
FT: Federally listed as threatened
State
PSE: Proposed state listing as endangered
SDL: State delisted
SSC: Species of Special Concern
FP: California Department of Fish and Wildlife Protected and Fully Protected Species
SE: State listed as endangered
ST: State listed as threatened

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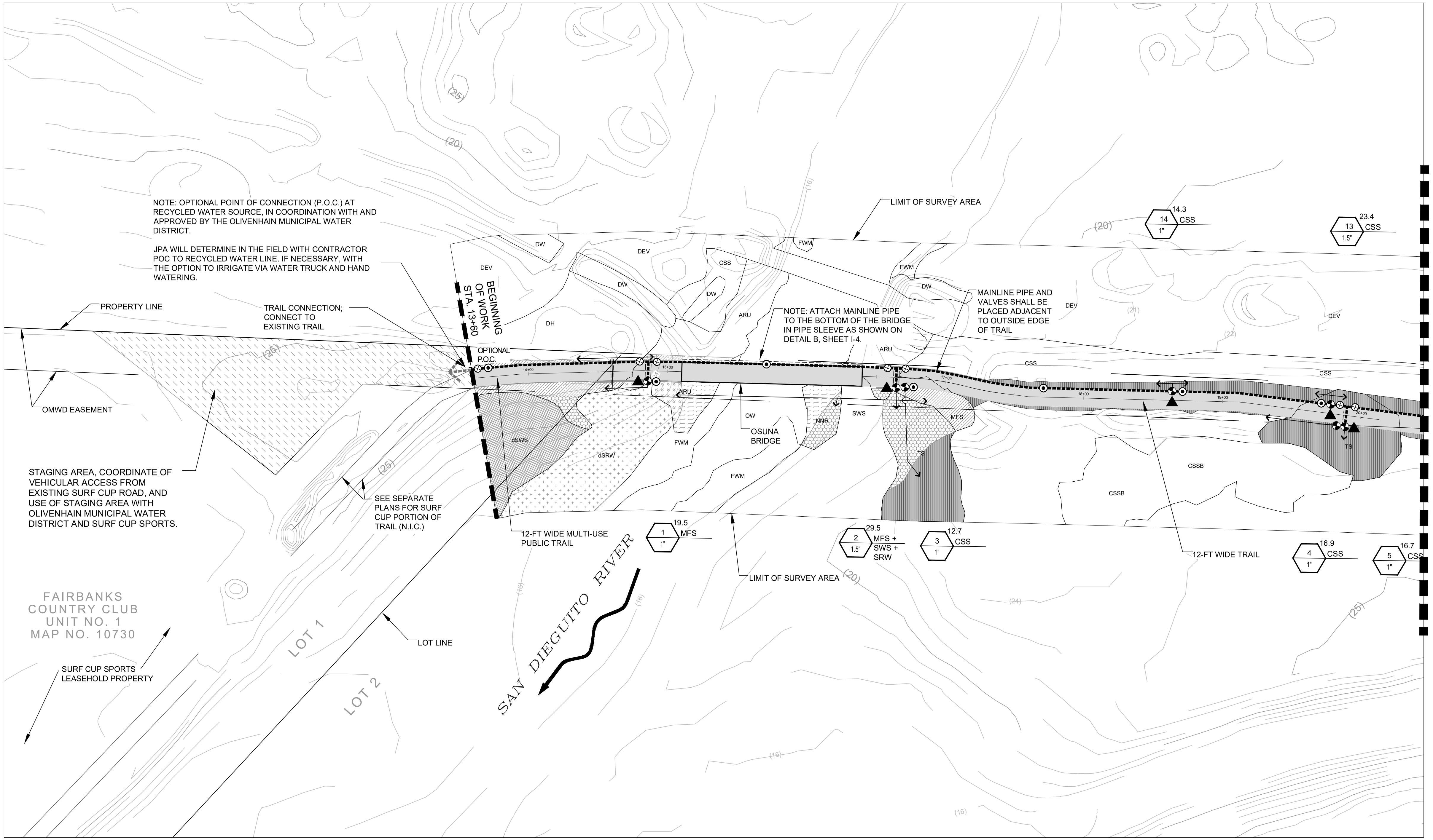
Appendix E
Revegetation/Restoration Plans



PLANTING LEGEND

REVEGETATION AREAS

- FRESHWATER MARSH WETLAND (FWM) CONTAINER PLANTS + SEEDING
- MULEFAT SCRUB (MFS) CONTAINER PLANTS + SEEDING
- SOUTHERN WILLOW SCRUB (SWS) ENHANCEMENT SEEDING ONLY
- SOUTHERN RIPARIAN WOODLAND (SRW) ENHANCEMENT SEEDING ONLY
- SOUTHERN WILLOW SCRUB (SWS) REVEGETATION/RESTORATION CONTAINER PLANTS + SEEDING
- SOUTHERN RIPARIAN WOODLAND (SRW) REVEGETATION/RESTORATION CONTAINER PLANTS + SEEDING
- COASTAL SAGE SCRUB (CSS) CONTAINER PLANTS + SEEDING

SEE SHEETS P-1 & P-2 FOR PLANTING PLANS.
SEE SHEETS P-3 & P-4 FOR PLANT LISTS AND PLANTING NOTES & DETAILS.

SCALE IN FEET 1" = 30'-0" (0 15 30 60)

PRELIMINARY NOT FOR CONSTRUCTION REVISED 2/14/2024

DUDEK
605 Third Street
Encinitas, CA 92024
T- (760) 942-5147

I-1

OSUNA SEGMENT OF THE COAST TO CREST TRAIL

PREPARED FOR SAN DIEGUITO RIVER PARK JPA

CITY OF SAN DIEGO, CA

REVEGETATION/RESTORATION IRRIGATION PLAN

KHA PROJECT 095226008
DATE FEBRUARY 14, 2024
SCALE AS SHOWN
DESIGNED BY TK
DRAWN BY TK
CHECKED BY MK

LICENSED PROFESSIONAL
LIC PROF 1
STATE LICENSE NUMBER LIC PROF 1 #
DATE

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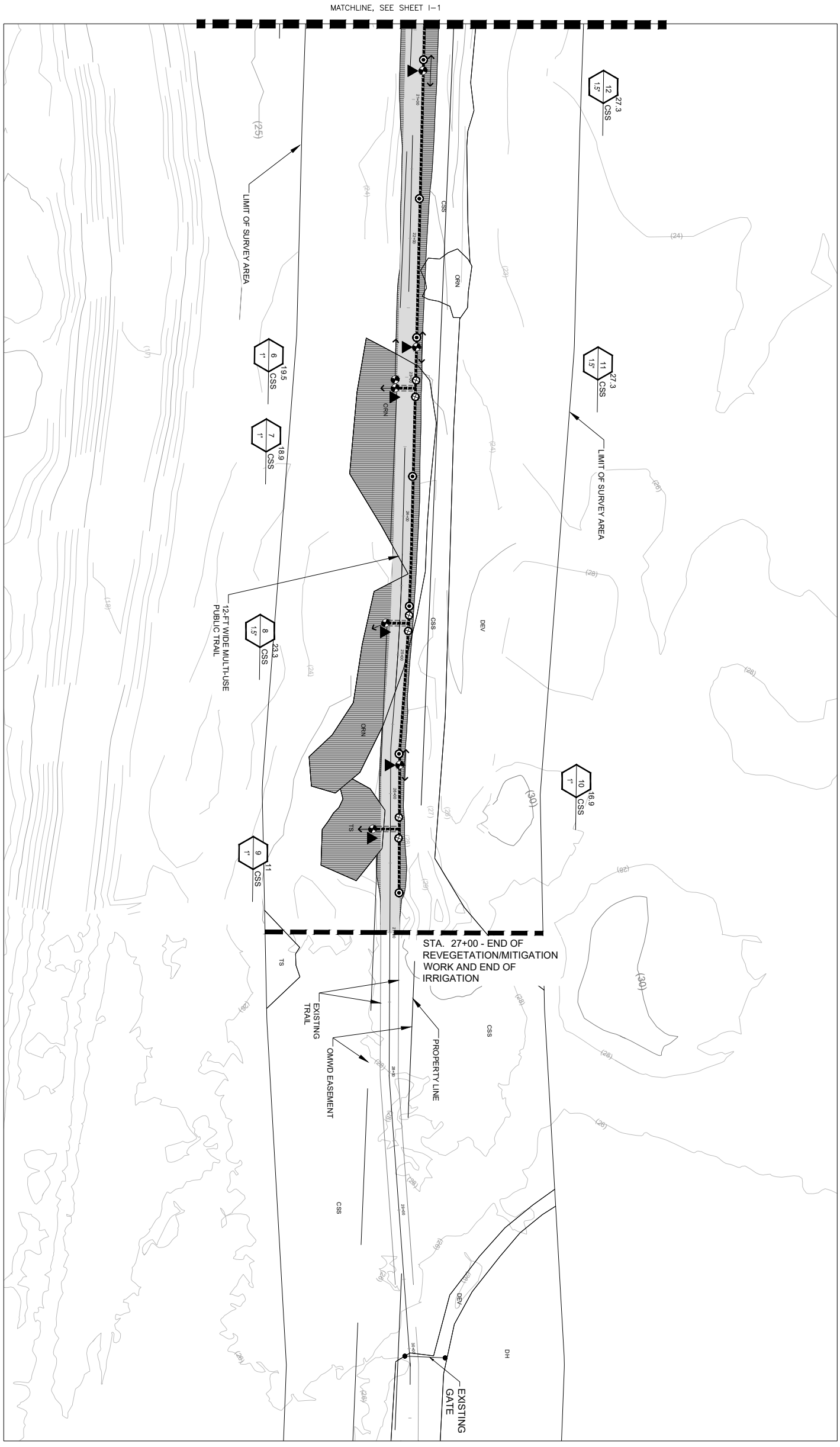
No.	REVISIONS	DATE	BY



PLANTING LEGEND

REVEGETATION AREAS

- FRESHWATER MARSH WETLAND (FWM) CONTAINER PLANTS + SEEDING
- MULEFAT SCRUB (MFS) CONTAINER PLANTS + SEEDING
- SOUTHERN WILLOW SCRUB (SWS) ENHANCEMENT SEEDING ONLY
- SOUTHERN RIPARIAN WOODLAND (SRW) ENHANCEMENT SEEDING ONLY
- SOUTHERN WILLOW SCRUB (SWS) REVEGETATION/RESTORATION CONTAINER PLANTS + SEEDING
- SOUTHERN RIPARIAN WOODLAND (SRW) REVEGETATION/RESTORATION CONTAINER PLANTS + SEEDING
- COASTAL SAGE SCRUB (CSS) CONTAINER PLANTS + SEEDING

SEE SHEETS P-1 & P-2 FOR PLANTING PLANS.
SEE SHEETS P-3 & P-4 FOR PLANT LISTS AND PLANTING NOTES & DETAILS.

SCALE IN FEET
1" = 30'-0"
30 15 0 30 60

PRELIMINARY
NOT FOR CONSTRUCTION
REVISED 2/14/2024

DUDEK
605 Third Street
Encinitas, CA 92024
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I-2

SHEET NUMBER 10 OF 18

OSUNA SEGMENT OF THE COAST TO CREST TRAIL
PREPARED FOR
SAN DIEGUITO RIVER PARK JPA
CITY OF SAN DIEGO CA

REVEGETATION/RESTORATION IRRIGATION PLAN

KHA PROJECT 095226008
DATE FEBRUARY 14, 2024
SCALE AS SHOWN
DESIGNED BY TK
DRAWN BY TK
CHECKED BY MK

LICENSED PROFESSIONAL
LIC PROF 1
STATE LICENSE NUMBER
LIC PROF 1 #
DATE: ____

Kimley»Horn

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No.	REVISIONS	DATE	BY

SPRINKLER HEAD LEGEND (Proposed Irrigation Sprinkler Heads*)

SYMBOL	MANUF.	MODEL NO.	DESCRIPTION	DETAIL	ARC	RADIUS	PSI	GPM	NOTES
NOT SHOWN	HUNTER	PGJ–00–R–1.5	ROTOR (SHRUB HEAD), RECLAIMED ID	C/I–4	90	30'	40	1.3	PROVIDE IN–LINE DRAIN CHECK VALVE ON RISER
NOT SHOWN	HUNTER	PGJ–00–R–3.0	ROTOR (SHRUB HEAD), RECLAIMED ID	C/I–4	180	30'	40	2.5	PROVIDE IN–LINE DRAIN CHECK VALVE ON RISER
NOT SHOWN	HUNTER	PGJ–00–R–5.0	ROTOR (SHRUB HEAD), RECLAIMED ID	C/I–4	360	30'	40	5.0	PROVIDE IN–LINE DRAIN CHECK VALVE ON RISER

NOTE: ACTUAL ARCS MAY VARY SLIGHTLY BASED ON SITE CONFIGURATION. ADJUST RADII TO OBTAIN HEAD TO HEAD COVERAGE.

* SPRINKLER HEADS SHALL BE OPERATED USING RECYCLED WATER. HEADS SHALL BE ADJUSTED SO THAT THEY DO NOT SPRAY OVER OPEN WATER.

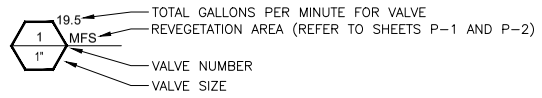
IRRIGATION EQUIPMENT LEGEND

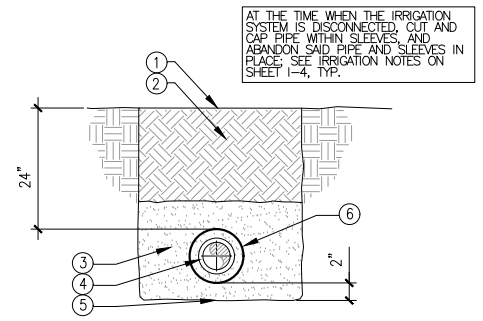
SYMBOL	MANUF.	MODEL NO	DESCRIPTION	DETAIL	REMARKS
P.O.C. ↓	N/A	N/A	POINT OF CONNECTION (P.O.C.)	N/A	CONNECT TO RECYCLED WATER SOURCE AT LOCATION SPECIFIED BY OMWD.
⊗	KBI	BLOCKED TRUE UNION BALL VALVE	PVC SCH 80 BALL VALVE – LINE SIZE	A/I–4	FOR ISOLATION OF PIPES; INSTALL BELOW GRADE
◒	HUNTER	IBV–151G REMOTE CONTROL VALVE	CONTROL VALVE WITH DC–LATCHING SOLENOID	E/I–4	CONTROL VALVE FOR OPERATION OF SPRINKLER SYSTEMS; INSTALL BELOW GRADE; SIZE AS NOTED
⦿	RAINBIRD	44–RC WITH 44DK VALVE KEY	QUICK COUPLING WITH RUBBER CAP AND VALVE KEY	B/I–4	INSTALL BELOW GRADE
NOT SHOWN	KBI	KC SERIES	IN–LINE SPRING CHECK VALVE		INSTALL DRAIN CHECK VALVE ON IRRIGATION HEAD RISER
▪▪▪▪▪▪▪▪▪	PRESSURE MAINLINE	CLASS 315 PVC–UV (BELOW GRADE)	PVC IRRIGATION MAINLINE – 3" DIAMETER, UNLESS OTHERWISE NOTED	D/I–4	INSTALL 18" MINIMUM BELOW GRADE; PLACE IN PVC SLEEVE 24" BELOW GRADE AT ALL TRAIL CROSSINGS; SIZE PER LATERAL PIPE SIZING TABLE; INSTALL MAINLINE ON THE DOWNSTREAM SIDE OF THE BRIDGE AT THE RIVER CROSSING
———	LATERAL LINE	SCH 40 PVC–UV (ON GRADE)	UV RESISTANT PVC LATERAL LINE	D/I–4	STAKE ON GRADE AT 10' O.C. AND AT ALL CORNERS; STAKES SHALL EXTEND 24" (MIN.) INTO SUBGRADE; PLACE IN PVC SLEEVE 24" BELOW GRADE AT ALL TRAIL CROSSINGS
– – – – – –	SLEEVING	SCH 40 PVC	SLEEVING AT ROAD AND TRAIL CROSSINGS. LINE TO BE 2X PIPE SIZE IT WILL CARRY	A/I–3	STAKE SLEEVES TO BOTTOM OF TRENCHES. WITH BENT REBAR STAKES. STAKES SHALL BE 48" O/C & EXTEND 18" INTO SOIL. SLEEVING SHALL BE 24" BELOW GRADE
▲	HUNTER	NODE–200 OR –400 BATTERY–OPERATED CONTROLLER	2 OR 4 STATION CONTROLLER, AS NOTED FOR A GIVEN LOCATION	F/I–4	CONTROLLER FOR OPERATION OF SPRINKLER SYSTEMS, SIZE AS NOTED; INSTALL ON–GRADE IN LOCKING VALVE BOX – LOCK BOX TOP SHUT; SEE DETAIL FOR MORE INFORMATION

NOTE: ALL IRRIGATION COMPONENTS SHALL BE RECYLCED WATER COMPLIANT MATERIALS.

REFER TO DETAILS ON SHEETS I–7 AND I–8 FOR ADDITIONAL REQUIREMENTS.

TYPICAL VALVE CALL–OUT REFERENCE:





ITEM	DESCRIPTION
1	FINISH GRADE, TOP OF TRAIL
2	EXISTING MAINTENANCE ROAD AND NATIVE SOIL BACKFILL FREE OF ROCKS AND DEBRIS, SATURATE AND COMPACT BACKFILL TO 95% RELATIVE DENSITY
3	CLEAN BACKFILL OVER AND AROUND PIPE, NO ROCKS OR DEBRIS
4	PVC IRRIGATION PIPE INSIDE SLEEVE
5	LEVEL AND COMPACT TRENCH BED BEFORE PIPE PLACEMENT
6	PVC SLEEVE PIPE

A IRRIGATION PIPE SLEEVING AT ROAD OR TRAIL CROSSINGS

NO SCALE

TEMPORARY IRRIGATION SYSTEM NOTES:

1. THE IRRIGATION SYSTEM SHALL BE SERVED FROM A RECYCLED WATER SOURCE PROVIDED BY THE OLIVENHAIN MUNICIPAL WATER DISTRICT (OMWD) AND THE JPA, WITH ALL COMPONENTS SHALL BE INSTALLED PER THE OMWD RECYCLED WATER USE REQUIREMENTS.
2. THE IRRIGATION SYSTEM DESIGN IS PARTIALLY DIAGRAMMATIC AND DOES NOT SHOW ALL OFFSETS, APPURTENANCES, AND EQUIPMENT NEEDED FOR A COMPLETE SYSTEM. CONTRACTOR SHALL SUPPLY ALL MATERIALS FOR A FUNCTIONAL SYSTEM.
3. THE IRRIGATION SYSTEM IS BASED ON AN ANTICIPATED OPERATING PRESSURE OF 80 P.S.I. AND A MAXIMUM FLOW DEMAND OF 60 GALLONS PER MINUTE PER VALVE, AND AT ANY ONE TIME. THE CONTRACTOR SHALL VERIFY WATER PRESSURE BEFORE THE START OF CONSTRUCTION AND SHALL REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE SHOWN ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE POINT OF CONNECTION TO THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
4. THE CONTRACTOR SHALL TEMPORARILY IRRIGATE ALL REVEGETATION AREAS ON A REGULAR BASIS, AND AS DIRECTED BY THE PROJECT BIOLOGIST, TO SUPPLEMENT NATURAL PRECIPITATION AND TO HELP ASSURE SEED GERMINATION AND CONTAINER PLANT SURVIVAL THROUGHOUT THE PLANT ESTABLISHMENT PERIOD (PEP) AND THROUGHOUT THE ENTIRE 5 YEAR MAINTENANCE AND MONITORING PERIOD, OR AS DETERMINED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
5. THE REVEGETATION INTENT IS TO PROVIDE PERSISTENT VEGETATION THAT CAN SUSTAIN ITSELF IN PERPETUITY. TEMPORARY IRRIGATION AND WATERING APPLICATIONS SHALL BE CONDUCTED TO ESTABLISH HEALTHY AND VIGOROUS PLANTS THAT ARE NOT IRRIGATION–DEPENDENT AT THE END OF THE PLANT ESTABLISHMENT PERIOD. THE INSTALLED IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL THROUGH THE PLANT ESTABLISHMENT PERIOD. WATER SHALL BE APPLIED IN A WAY TO ALLOW FOR THE 'WEANING OFF' OF PLANTS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL WATERING BY HAND TO WATER–IN THE PLANTS AT THE TIME OF PLANTING AND TO SUPPLEMENT THE IRRIGATION SYSTEM TO ASSURE PLANT SURVIVAL AND SEED GERMINATION.
7. THE OPTIMAL TIME FOR PLANTING AND SEEDING IS BETWEEN OCTOBER 1 AND FEBRUARY 15, DURING THE RAINY SEASON. IF NEEDED, THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST SHALL RECOMMEND ALL ADDITIONAL TEMPORARY IRRIGATION MEASURES. THE TEMPORARY IRRIGATION METHOD APPROVED BY THE JPA AND PROJECT BIOLOGIST, SHALL BE PROVIDED BY THE CONTRACTOR FOR A PERIOD SUFFICIENT TO ESTABLISH PLANT MATERIAL AND TO PROVIDE VEGETATIVE COVER TO PREVENT SOIL EROSION. THE AMOUNT OF IRRIGATION MUST BE ADJUSTED WHEN WARRANTED BY SITE CONDITIONS AND NATURAL PRECIPITATION. THE PROJECT BIOLOGIST AND CONTRACTOR SHALL MONITOR SITE CONDITIONS TO DETERMINE SUCCESS AND ADDED REQUIREMENTS FOR TEMPORARY IRRIGATION, AND SHALL COORDINATE WITH THE JPA DESIGNATED REPRESENTATIVE.
8. IRRIGATION SHALL BE PERFORMED IN A MANNER THAT AVOIDS RUNOFF, SEEPAGE, AND OVERSPRAY ONTO ADJACENT PROPERTIES, OPEN WATER NON–IRRIGATED AREAS, AND TRAIL SURFACES.
9. THE WATER DELIVERY RATE SHALL BE MATCHED TO THE SLOPE GRADIENT AND THE PERCOLATION RATE OF THE SOIL. THE IRRIGATION SYSTEM SHALL DELIVER WATER SUFFICIENTLY AND UNIFORMLY AND SHALL BE APPROPRIATE TO THE NEEDS OF THE PLANT MATERIALS.
10. OVERWATERING AS EVIDENCED BY SOGGY SOILS, CONTINUALLY WET SURFACES, STANDING WATER, RUNOFF ON TO TRAILS OR NATURAL DRAINAGES AND OTHER SIMILAR CONDITIONS SHALL BE MANAGED AND PREVENTED.
11. TEMPORARY IRRIGATION MATERIALS CROSSING THE TRAIL SHALL BE PLACED BELOW–GROUND IN A SLEEVE SO THAT THEY CAN BE DRIVEN OR WALKED OVER, AND DO NOT IMPEDE ACCESS.
12. THESE IRRIGATION PLANS ARE DESIGNED AS A TEMPORARY SYSTEM TO BE DISCONNECTED FROM THE WATER SOURCE AND REMOVED FROM THE PROPERTY AFTER SUITABLE ESTABLISHMENT OF NATIVE VEGETATION HAS BEEN ACHIEVED, AS DETERMINED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
13. ALL ABOVE–GROUND COMPONENTS (INCLUDING ALL CONTROLLERS, VALVES, QUICK COUPLERS, PIPE, SPRINKLER HEADS, ETC.) SHALL BE COMPLETELY REMOVED FROM THE PROPERTY BEFORE THE END OF THE 5 YEAR MAINTENANCE PERIOD, BUT ONLY FOLLOWING APPROVAL FROM THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST; BEFORE REMOVAL OF THE ABOVE–GROUND COMPONENTS, THE IRRIGATION POINT–OF–CONNECTION SHALL BE DISCONNECTED FROM THE WATER SOURCE SO THAT THE SYSTEM IS INOPERABLE. ALL BELOW–GRADE PIPE SHALL BE ABANDONED IN PLACE; AT THE TIME WHEN THE IRRIGATION SYSTEM IS DISCONNECTED, CUT AND CAP PIPE WITHIN SLEEVES, AND ABANDON SAID PIPE AND SLEEVES IN PLACE, AND LEFT UNDERGROUND.
14. THE INITIAL IRRIGATION SCHEDULE AND MAXIMUM RUN TIME SHALL BE DETERMINED BY MEASURING THE TIME OF OPERATION THAT RESULTS IN RUNOFF FROM VARIOUS AREAS OF THE IRRIGATED AREA. A RUNOFF TEST SHALL BE CONDUCTED FOR EACH VALVE ON THE SYSTEM. THE VALVE SHALL BE TURNED ON AND ALLOWED TO OPERATE UNTIL RUNOFF IS OBSERVED OR 30 MINUTES HAS ELAPSED, WHICHEVER IS THE SHORTER TIME. THE TIME RECORDED SHALL BE THE MAXIMUM RUN TIME FOR EACH VALVE. THIS WILL RESULT IN NO MORE THAN 0.1 INCH OF WATER BEING APPLIED TO THE MITIGATION SITE PER IRRIGATION CYCLE. THE IRRIGATION SCHEDULE AND MAXIMUM RUN TIME SHALL BE REVIEWED AT AN INTERVAL ESTABLISHED BY AND ADJUSTED AS APPROPRIATE PER THE RECOMMENDATION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL WATERING BY WAY OF A WATER TRUCK OR OTHER APPROVED METHOD TO WATER THE PLANTS AT THE TIME OF PLANTING AND/OR TO SUPPLEMENT THE IRRIGATION SYSTEM TO ASSURE PLANT SURVIVAL AND SEED GERMINATION.
16. THE TEMPORARY SYSTEM SHALL BE DEACTIVATED AFTER SUITABLE ESTABLISHMENT OF NATIVE VEGETATION HAS BEEN ACHIEVED, AS DETERMINED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST. AT THAT TIME, ALL ABOVE GROUND COMPONENTS SHALL BE REMOVED FROM THE SITE AT THE END OF THE LONG–TERM MAINTENANCE PERIOD UPON APPROVAL FROM THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.

WATERING:

1. CONTAINER PLANTS AND SEEDING SHALL BE WATERED BY THE CONTRACTOR BY WAY OF A TEMPORARY IRRIGATION SYSTEM; REFER TO IRRIGATION PLAN.
2. WATERING SHALL BE PROVIDED BY THE CONTRACTOR FOR A PERIOD SUFFICIENT TO ESTABLISH PLANT MATERIAL AND PROVIDE VEGETATIVE COVER, AS REQUIRED OF THE SUCCESS CRITERIA.
3. WATER DELIVERY SHALL PROVIDE EVEN AND ADEQUATELY DISPERSED SPRAY COVERAGE THROUGHOUT SEEDED AND CONTAINER PLANTED AREAS. DIRECT CONTRACTOR MANAGEMENT SHALL ENSURE THE FOLLOWING:
   - 3.1. WATER DELIVERY SHALL EVENLY AND THOROUGHLY SOAK SEEDED SLOPES AND PLANTING BASINS FOR THE TOP 2" OF THE SURFACE SOIL BUT AVOID EXCESSIVE RUNOFF. MULTIPLE PASSES MAY BE REQUIRED TO ADEQUATELY SOAK SOIL.
   - 3.2. CONTAINER PLANT STRESS FROM INADEQUATE DEEP ROOT WATERING, IF IDENTIFIED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST MAY REQUIRE PERIODIC DIRECT HOSE HAND WATERING OF CONTAINER PLANTING BASINS (SEE NOTES, BELOW).
   - 3.3. WATER DELIVERY SHALL BE APPLIED IN A MANNER TO AVOID FORCE THAT MAY DAMAGE CONTAINER PLANTS AND NATIVE SEEDLINGS OR DISPLACE/ERODE SEED COVER AND TOPSOIL.
   - 3.4. WATER DELIVERY SHALL AVOID OVERSPRAY OUTSIDE OF PLANTED AREAS (ADJACENT ROADS OR NATIVE VEGETATED AREAS).
   - 3.5. THE CONTRACTOR'S WATERING SHALL REQUIRE DIRECT MONITORING AND APPROVAL DURING THE FIRST APPLICATION BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.

4. HAND WATERING VIA HOSE SHALL BE REQUIRED FOR CONTAINER PLANTS FOR THE FOLLOWING:
   - 4.1. WITHIN TWO–HOURS BEFORE CONTAINER PLANT INSTALLATION, ALL EXCAVATED PLANTING HOLES SHALL BE FILLED COMPLETELY WITH WATER AND ALLOWED TO PERCOLATE IN BEFORE PLANTING.
   - 4.2. WITHIN ONE–HOUR FOLLOWING CONTAINER PLANT INSTALLATION AND CONTINUING AT AN EVERY THREE DAY INTERVAL UNTIL HYDROSEED IS APPLIED. EACH CONTAINER PLANT SHALL BE THOROUGHLY HAND WATERED WITH 1.5 GALLONS ALLOWING WATER TO PERCOLATE INTO THE SOIL AND NOT OVERTOP BASIN.
   - 4.3. FOLLOWING SEEDING, REMEDIAL HAND WATERING MAY BE REQUIRED IF THE IRRIGATION SYSTEM INADEQUATELY SUPPORTS CONTAINER PLANT SURVIVAL. SEE NOTES ABOVE.
   - 4.4. CARE WILL BE TAKEN NOT TO DRAG HOSES OVER CONTAINER PLANTS OR PLANTING BASINS.
5. FOLLOWING SEEDING, WATERING SHALL BE CONDUCTED DAILY FOR THE FIRST TWO WEEKS FOLLOWING APPLICATION, THEN THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST WILL INSPECT AND PROVIDE RECOMMENDATIONS FOR INCREASE OR DECREASE IN WATERING FREQUENCY OR METHOD. THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST WILL PROVIDE FOLLOW UP RECOMMENDATIONS DURING EACH MONITORING VISIT BASED ON EVALUATION OF PLANT HEALTH AND VEGETATION DEVELOPMENT TOWARDS ESTABLISHMENT, SEASONAL CONDITIONS, PROLONGED DROUGHT OR EXTENDED PERIODS OF HEAT. CONTRACTOR SHALL PROVIDE WATERING AVAILABILITY FOR THE DURATION OF THE MAINTENANCE PERIOD, AS NEEDED.
6. WATERING SHALL NOT BE REQUIRED FOR 72–HOURS FOLLOWING A RAIN EVENT GREATER THAN 0.2 INCHES, UNLESS REQUIRED BY THE RE IN CONSULTATION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.

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LIC PROF 1
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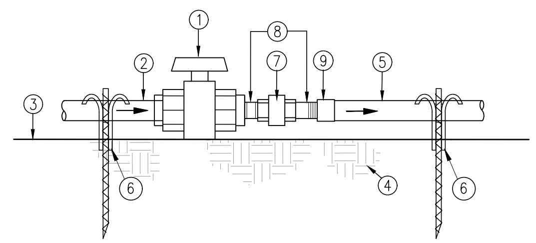
LIC PROF 1 #
DATE: ___

KHA PROJECT
095226008
DATE
FEBRUARY 14, 2024
SCALE AS SHOWN
DESIGNED BY TK
DRAWN BY TK
CHECKED BY MK

REVEGETATION/RESTORATION
IRRIGATION LEGEND AND DETAILS

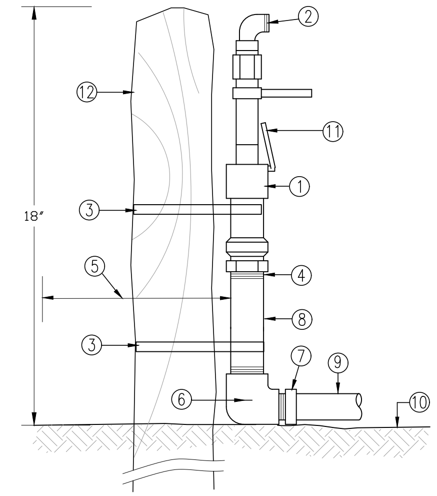
OSUNA SEGMENT OF THE
COAST TO CREST TRAIL
PREPARED FOR
SAN DIEGUITO RIVER PARK JPA
CITY OF SAN DIEGO
CA

SHEET NUMBER
11 OF 18



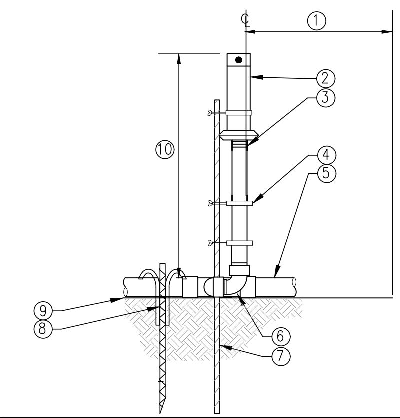
ITEM	DESCRIPTION
1	PVC SCH 80 BALL VALVE W/INTEGRAL UNION, SEE LEGEND (RECYCLED WATER)
2	PVC MAINLINE PIPE FROM P.O.C.
3	FINISH GRADE
4	SUBGRADE
5	PVC MAIN LINE OR PVC LATERAL PIPE TO SPRAY SPRINKLER HEADS/BUBBLERS
6	PIPE ANCHOR (SEE DETAIL D, SHEET I-9
7	UNION - THREADED (PVC)
8	SHORT NIPPLES PVC, SCH 80 (typ)
9	PVC SCH 80 FEMALE ADAPTER (typ)

A SHUT OFF VALVE (ISOLATION VALVE)
NO SCALE



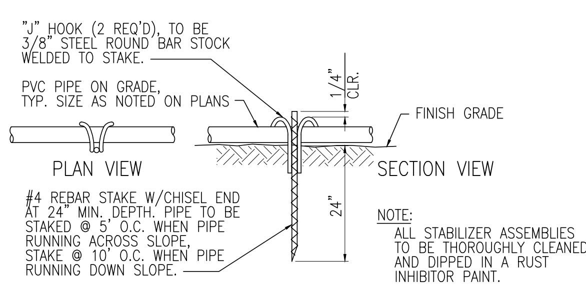
ITEM	NO.	DESCRIPTION
1	1	QUICK COUPLER VALVE
2	1	QUICK COUPLER KEY W/SWIVEL HOSE ELL
3*	2	GALV. STEEL STRAP, CIRCLE & NAIL TO POST.
4	–	TEFLON TAPE ALL THREADS
5	–	4' (MIN.) FROM EDGE OF CURBS, TRAILS, PATHS, ETC.
6	1	UVPVC SCH 40 THREADED ELL
7	1	PVC SCH 40 MALE ADAPTER
8	1	3" SCH 80 NIPPLE
9	–	UVPVC SCH 40 LATERAL PIPE
10	1	FINISH GRADE OF PLANTING AREA
11	–	RUBBER COVER
12*		36" LONG X 6" DIA. (MIN.) PEELER POST AT ALL QUICK COUPLING VALVES NEXT TO TRAILS, PATHS AND ROADS.

B QUICK COUPLING VALVE
NO SCALE



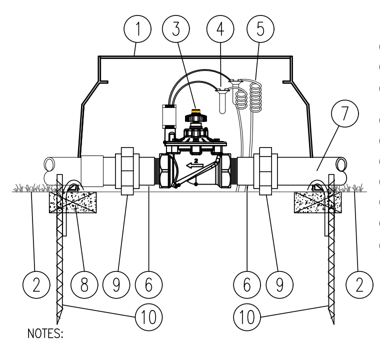
ITEM	DESCRIPTION
1	18" (MIN.) FROM EDGE OF ROAD (where applicable)
2	ROTOR HEAD SPRINKLER (RECYCLED WATER)
3	24" SCH. 80 PVC RISER
4	RUBBER TWIST TIE TO SECURE HEAD AND RISER TO STAKE -MIN. 3
5	PVC LATERAL LINE ON GRADE
6	SWING JOINT ASSEMBLY ATTACHED TO PVC PIPE FITTING (marlex street ells)
7	42" #3 REBAR STAKE (min 18" into grade)
8	PIPE ANCHOR (SEE DETAIL D, SHEET I-9)
9	EXISTING GRADE
10	30" MIN ABOVE FINISH GRADE

C SPRINKLER HEAD
NO SCALE



NOTE:
ALL STABILIZER ASSEMBLIES TO BE THOROUGHLY CLEANED AND DIPPED IN A RUST INHIBITOR PAINT.

D ON-GRADE PIPE ANCHORING
NO SCALE

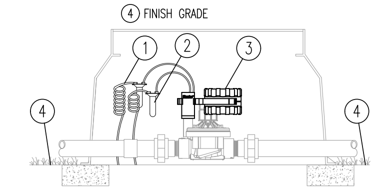


1. VALVE BOX, SET ON-GRADE
2. FINISH GRADE
3. REMOTE CONTROL VALVE (RECYCLED WATER)
4. WATERPROOF CONNECTORS (2)
5. 18-24" COILED WIRE
6. SCH 80 T.O.E. NIPPLE
7. MAIN LINE PIPE
8. BRICK SUPPORTS (4)
9. PVC SLIP UNIONS
10. "J" HOOK PER DETAIL D, SHEET I-9

NOTES:
1. INSTALL AS DETAILED AND ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. VALVE BOX SHALL BE A RECTANGULAR LARGE BOX TO ACCOMMODATE THE TOTAL NUMBER OF GROUPED VALVES FOR EACH BATTERY OPERATED CONTROLLER.
3. ANCHOR VALVE BOX WITH 4 "J" HOOKS, ONE AT EACH CORNER OF THE BOX; INSERT ANCHOR INTO A PRE-DRILLED HOLE; OFFSET FROM BRICK SUPPORTS.

E REMOTE CONTROL VALVE
NO SCALE

1. 18-24" COILED WIRE
2. WATERPROOF CONNECTORS (2)
3. NODE-X00
4. FINISH GRADE



NOTE:
1. INSTALL AS DETAILED AND ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

F BATTERY OPERATED CONTROLLER
NO SCALE

NOTE:
ALL IRRIGATION COMPONENTS SHALL BE RECYCLED WATER COMPLIANT.

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LICENSED PROFESSIONAL
LIC PROF 1
STATE LICENSE NUMBER LIC PROF 1 #
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KHA PROJECT 095226008
DATE FEBRUARY 14, 2024
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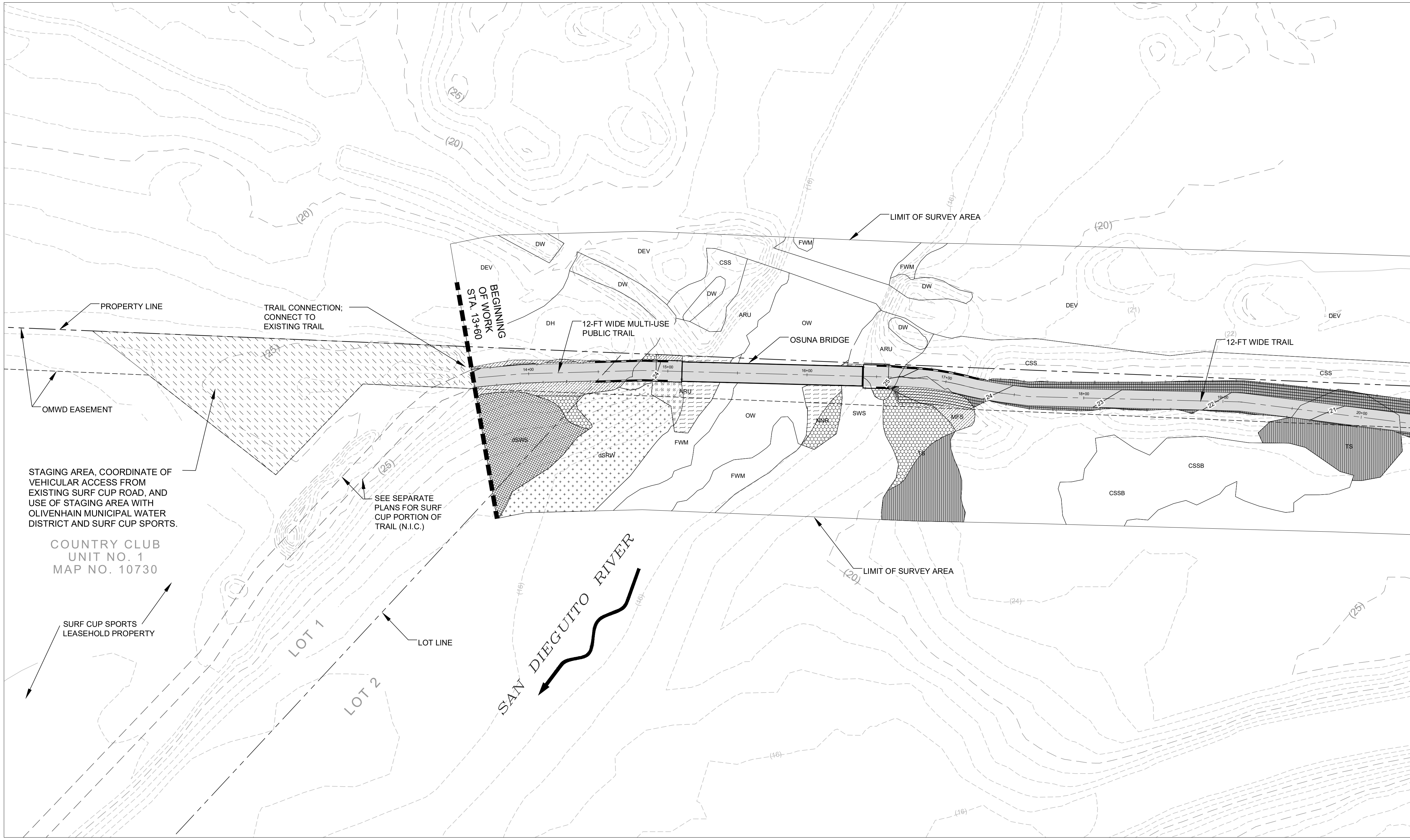
REVEGETATION/RESTORATION IRRIGATION DETAILS

OSUNA SEGMENT OF THE COAST TO CREST TRAIL
PREPARED FOR
SAN DIEGUITO RIVER PARK JPA
CITY OF SAN DIEGO CA

SHEET NUMBER 12 OF 18



PLANTING LEGEND

REVEGETATION AREAS

- FRESHWATER MARSH WETLAND (FWM) (0.05 AC.) CONTAINER PLANTS + SEEDING
- MULEFAT SCRUB (MFS) (0.05 AC.) CONTAINER PLANTS + SEEDING
- SOUTHERN WILLOW SCRUB (SWS) ENHANCEMENT (0.09 AC.) SEEDING ONLY
- SOUTHERN RIPARIAN WOODLAND (SRW) ENHANCEMENT (0.13 AC.) SEEDING ONLY
- SOUTHERN WILLOW SCRUB (SWS) REVEGETATION/RESTORATION (0.06 AC.) CONTAINER PLANTS + SEEDING
- SOUTHERN RIPARIAN WOODLAND (SRW) REVEGETATION/RESTORATION (0.01 ac.) CONTAINER PLANTS + SEEDING
- COASTAL SAGE SCRUB (CSS) (0.49 AC.) CONTAINER PLANTS + SEEDING

SEE SHEETS P-3 & P-4 FOR PLANT LISTS AND PLANTING NOTES & DETAILS.

SCALE IN FEET 1" = 30'-0" (30 15 0 30 60)

PRELIMINARY NOT FOR CONSTRUCTION REVISED 2/14/2024

DUDEK
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P-1

No.	REVISIONS	DATE	BY

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LICENSED PROFESSIONAL
LIC PROF 1
STATE LICENSE NUMBER LIC PROF 1 #
DATE:

KHA PROJECT 095226008
DATE FEBRUARY 14, 2024
SCALE AS SHOWN
DESIGNED BY TK
DRAWN BY TK
CHECKED BY MK

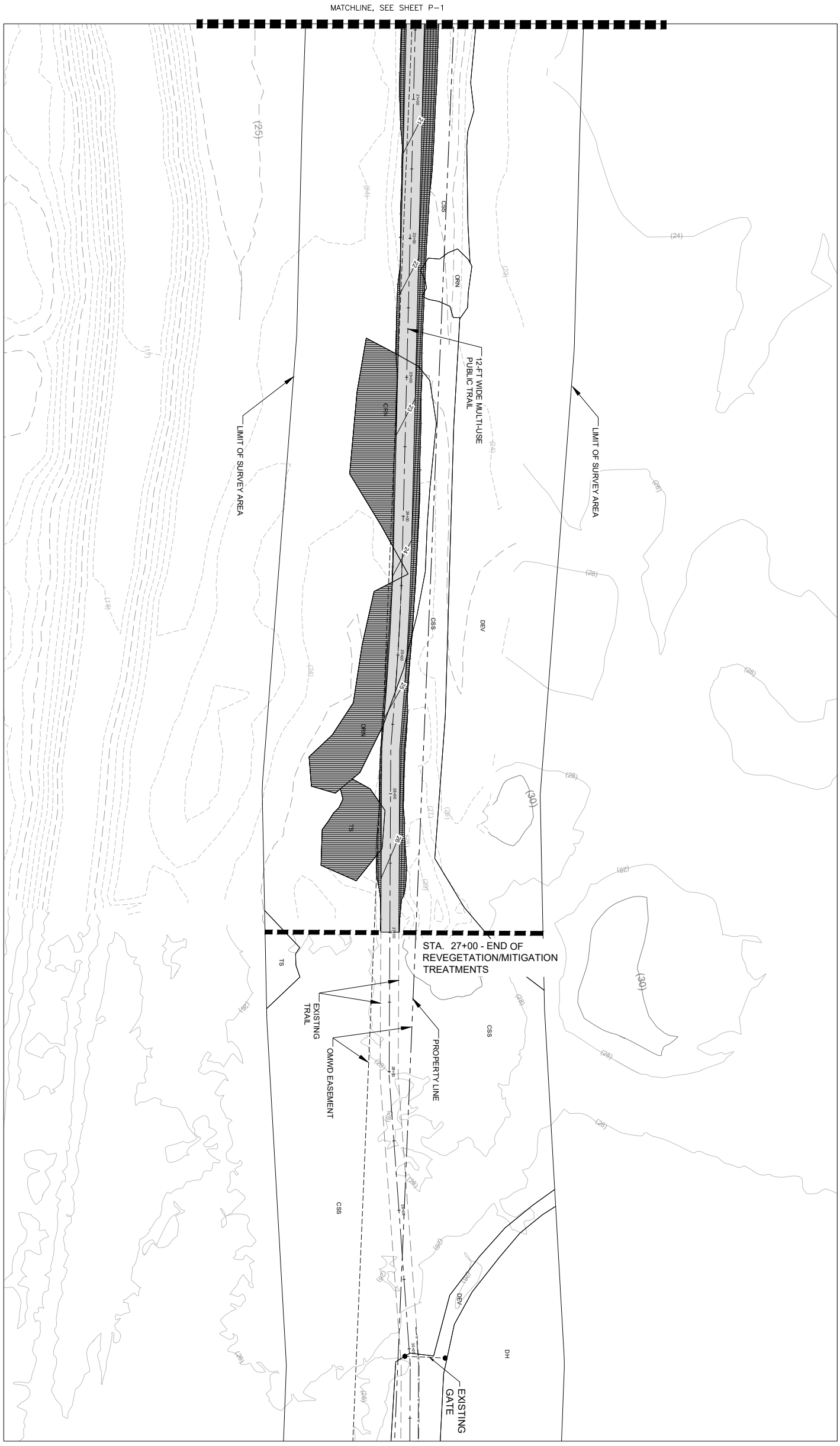
REVEGETATION/RESTORATION PLANTING PLAN

OSUNA SEGMENT OF THE COAST TO CREST TRAIL

PREPARED FOR
SAN DIEGUITO RIVER PARK JPA

CITY OF SAN DIEGO CA

SHEET NUMBER
13 OF 18



PLANTING LEGEND

REVEGETATION AREAS

- FRESHWATER MARSH WETLAND (FWM) (0.05 AC.) CONTAINER PLANTS + SEEDING
- MULEFAT SCRUB (MFS) (0.05 AC.) CONTAINER PLANTS + SEEDING
- SOUTHERN WILLOW SCRUB (SWS) ENHANCEMENT (0.09 AC.) SEEDING ONLY
- SOUTHERN RIPARIAN WOODLAND (SRW) ENHANCEMENT (0.13 AC.) SEEDING ONLY
- SOUTHERN WILLOW SCRUB (SWS) REVEGETATION/RESTORATION (0.06 AC.) CONTAINER PLANTS + SEEDING
- SOUTHERN RIPARIAN WOODLAND (SRW) REVEGETATION/RESTORATION (0.01 ac.) CONTAINER PLANTS + SEEDING
- COASTAL SAGE SCRUB (CSS) (0.49 AC.) CONTAINER PLANTS + SEEDING

SEE SHEETS P-3 & P-4 FOR PLANT LISTS AND PLANTING NOTES & DETAILS.

SCALE IN FEET
1" = 30'-0"
30 15 0 30 60

P-2

PRELIMINARY
NOT FOR CONSTRUCTION
REVISED 2/14/2024

DUDEK
605 Third Street
Encinitas, CA 92024
T- (760) 942-5147

SHEET NUMBER 14 OF 18

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No.	REVISIONS	DATE	BY

CONTAINER PLANT PALETTE
FRESHWATER MARSH WETLAND (FWM)
RESTORATION / REVEGETATION AREA: 2,145 SF (0.05 Ac)

SYMBOL	BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	SPACING (ON CENTER)	PERCENT COMPOSITION	QUANTITY	DETAILS
	ANEMOPSIS CALIFORNICA	YERBA MANSA	ROSE POTS	3' O.C. (GROUPS OF 10)	30%	70	A/P-4
	JUNCUS ACUTUS SSP. LEOPOLDII	SPINY RUSH	1 GAL	3' O.C. (GROUPS OF 5)	30%	70	B/P-4
	SCHOENOPLECTUS CALIFORNICUS	CALIFORNIA BULRUSH	1 GAL	3' O.C. (GROUPS OF 10)	40%	100	
					100% TOTAL	240 TOTAL	

NOTES:
1. COMPOSITION ASSUMES 70% COVER BY CONTAINER PLANTS AND 30% COVER BY SEEDED SPECIES.
2. ALL PLANTS SHALL BE INSTALLED ACCORDING TO THE DIRECTION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
3. ALL PLANT MATERIAL SOURCES SHALL BE FROM COASTAL SAN DIEGO COUNTY.

CONTAINER PLANT PALETTE
SOUTHERN WILLOW SCRUB (SWS)
WETLAND RESTORATION/REVEGETATION AREA: 2,683 SF (0.06 Ac)

SYMBOLS	BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	SPACING (ON CENTER)	PERCENT COMPOSITION	QUANTITY	DETAILS
	TREES (OVERSTORY) PLANTS						
	BACCHARIS SALICIFOLIA	MULE FAT	1 GAL	6' O.C.	15%	11	A/P-4
	JUNCUS ACUTUS SSP. LEOPOLDII	SPINY RUSH	1 GAL	3' O.C. (GROUPS OF 5)	10%	30	
	SALIX EXIGUA	NARROW-LEAVE WILLOW	DEEP 1 GAL	8' O.C.	20%	8	
	SALIX GOODINGII	BLACK WILLOW	DEEP 1 GAL	15' O.C.	20%	2	
	SALIX LASIOLEPIS	ARROYO WILLOW	DEEP 1 GAL	10' O.C.	20%	5	
	UNDERSTORY PLANTS						
	ARTEMISIA DOUGLASIANA	DOUGLAS MUGWORT	1 GAL	4' O.C. (GROUPS OF 5)	15%	25	B/P-4
					100% TOTAL	82 TOTAL	

NOTES:
1. ALL PLANTS SHALL BE INSTALLED ACCORDING TO THE DIRECTION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
2. ALL PLANT MATERIAL SOURCES SHALL BE FROM COASTAL SAN DIEGO COUNTY.

CONTAINER PLANT PALETTE
SOUTHERN RIPARIAN WOODLAND (SRW)
WETLAND RESTORATION/REVEGETATION AREA: 407 SF (0.01 Ac)

SYMBOLS	BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	SPACING (ON CENTER)	PERCENT COMPOSITION	QUANTITY	DETAILS
	TREES (OVERSTORY) PLANTS						
	BACCHARIS SALICIFOLIA	MULE FAT	1 GAL	6' O.C.	10%	1	A/P-4
	JUNCUS ACUTUS SSP. LEOPOLDII	SPINY RUSH	1 GAL	3' O.C. (GROUP OF 3)	6%	3	
	SALIX EXIGUA	NARROW-LEAVE WILLOW	DEEP 1 GAL	8' O.C.	20%	1	
	SALIX GOODINGII	BLACK WILLOW	DEEP 1 GAL	15' O.C.	30%	1	
	SALIX LASIOLEPIS	ARROYO WILLOW	DEEP 1 GAL	10' O.C.	24%	1	
	UNDERSTORY PLANTS						
	ARTEMISIA DOUGLASIANA	DOUGLAS MUGWORT	1 GAL	4' O.C. (GROUP OF 3)	10%	3	B/P-4
					100% TOTAL	9 TOTAL	

NOTES:
1. ALL PLANTS SHALL BE INSTALLED ACCORDING TO THE DIRECTION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
2. ALL PLANT MATERIAL SOURCES SHALL BE FROM COASTAL SAN DIEGO COUNTY.

CONTAINER PLANT PALETTE
MULEFAT SCRUB (MFS)
RESTORATION/REVEGETATION AREA: 1,975 SF (0.05 Ac)

SYMBOLS	BOTANICAL NAME		CONTAINER SIZE	SPACING (ON CENTER)	PERCENT COMPOSITION	QUANTITY	DETAILS
	BACCHARIS SALICIFOLIA	MULE FAT	1 GAL	6' O.C.	35%	19	A/P-4
	SALIX EXIGUA	NARROW-LEAVE WILLOW	DEEP 1 GAL	8' O.C.	20%	6	
	ARTEMISIA DOUGLASIANA	DOUGLAS MUGWORT	1 GAL	4' O.C. (GROUPS OF 5)	20%	25	
	ROSA CALIFORNICA	CALIFORNIA ROSE	1 GAL	4' O.C.	25%	31	
					100% TOTAL	81 TOTAL	

NOTES:
1. ALL PLANTS SHALL BE INSTALLED ACCORDING TO THE DIRECTION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
2. ALL PLANT MATERIAL SOURCES SHALL BE FROM COASTAL SAN DIEGO COUNTY.

CONTAINER PLANT PALETTE
COASTAL SAGE SCRUB
RESTORATION/REVEGETATION AREA: 21,142 SF (0.49 Ac)

SYMBOL	BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	SPACING (ON CENTER)	PERCENT COMPOSITION	QUANTITY	DETAILS
	ARTEMISIA CALIFORNICA	COASTAL SAGEBRUSH	1 GAL	6' O.C.	40%	235	A/P-4
	ENCELIA CALIFORNICA	CALIFORNIA BUSH SUNFLOWER	1 GAL	4' O.C.	15%	198	B/P-4
	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	1 GAL	8' O.C.	15%	50	
	ISOMERIS ARBOREA	BLADDERPOD	1 GAL	6' O.C.	15%	88	
	SALVIA MELLIFERA	BLACK SAGE	1 GAL	8' O.C.	15%	50	
					100% TOTAL	620 TOTAL	

NOTES:
1. COMPOSITION ASSUMES 70% COVER BY CONTAINER PLANTS AND 30% COVER BY SEEDED SPECIES.
2. ALL PLANTS SHALL BE INSTALLED ACCORDING TO THE DIRECTION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
3. ALL PLANT MATERIAL SOURCES SHALL BE FROM COASTAL SAN DIEGO COUNTY.

SEED MIX TYPE 1 (UPLAND CSS RESTORATION)
COASTAL SAGE SCRUB
RESTORATION/REVEGETATION AREA: 21,1424 SF (0.49 Ac)

SYMBOL	BOTANICAL NAME	COMMON NAME	PLS	LBS/ACRE
	ACMISPON GLABOR (LOTUS SCORPARIUS)	DEERWEED	85	0.5
	ARTEMISIA CALIFORNICA	COASTAL SAGEBRUSH	10	2.0
	ATRIPLEX LENTIFORMIS	BIG SALTBUSH	50	2.0
	BACCHARIS PILULARIS SSP. CONSANGUINEA	COYOTE BRUSH	2	4.0
	CNEORIDIUM DUMOSUM	BUSH RUE	40	1.0
	ENCELIA CALIFORNICA	BUSH SUNFLOWER	25	5.0
	ERIODICTYON CRASSIFOLIUM	YERBA SANTA	20	2.0
	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	10	1.5
	ERIOPHYLLUM CONFERTIFOLIUM	GOLDEN YARROW	25	0.5
	ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	85	2.5
	ISOCOMA MENZIESII	COAST GOLDENBUSH	2	1.5
	LUPINUS SUCCULENTUS	ARROYO LUPINE	90	1.5
	MIMULUS AURANTIACUS	STICKY MONKEYFLOWER	75	2.0
	SALVIA APIANA	WHITE SAGE	25	0.5
	SALVIA MELLIFERA	BLACK SAGE	40	0.5
	STIPA (NASELLA) PULCHRA (DE-AWNED)	PURPLE NEEDLEGRASS	75	3.0
			TOTALS:	30.0

SEED MIX TYPE 2 (WETLAND RESTORATION AND ENHANCEMENT AREAS)
SWS, SRW, AND MFS
REVEGETATION AREA: 14,646 SF (0.34 Ac)

SYMBOLS	BOTANICAL NAME	COMMON NAME	PLS	LBS/ACRE
	ANEMOPSIS CALIFORNICA	YERBA MANSA	50	1.5
	AMBROSIA PSILOSTACHYA	WESTERN RAGWEED	6	3.0
	ARTEMISIA DOUGLASIANA	DOUGLAS MUGWORT	10	2.0
	ARTEMISIA PALMERI	PALMER'S SAGEWORT	10	2.0
	ELYMUS CONDENSATUS	GIANT WILD RYE	70	2.5
	HELIOTROPIUM CURASSAVICUM	SALT HELIOTROPE	12	1.0
	OENOTHER ELATA SSP. HOOKERI	EVENING PRIMROSE	80	1.0
	PLUCHEA ODORATA	MARSH FLEABANE	15	2.0
			TOTALS:	15.0

SEED MIX NOTES

** SEED TAGS SHALL BE SUBMITTED TO THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST BEFORE APPLICATION OF SEED.

** THE SEED MIX IS COMPRISED OF NATIVE AND NON-NATIVE PLANT SPECIES. ANY POTENTIAL SUBSTITUTIONS MUST BE APPROVED BY THE PROJECT BIOLOGIST BEFORE APPLICATION OF SEED.

** SOIL SHALL BE PRESOAKED WITHIN 3 DAYS OF SEEDING TO A DEPTH OF 6 INCHES, OR AS RECOMMENDED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.

** REFER TO NOTES ON THIS SHEET FOR HYDROSEED MATERIALS, PROCEDURES AND REQUIREMENTS.

*** %PLS IS THE MINIMUM PERCENT PURE LIVE SEED PER POUND OF SEED. THE PERCENTAGE IS CALCULATED BY MULTIPLYING THE PERCENT SEED PURITY BY PERCENT SEED GERMINATION, WHICH SHALL BE THE METHOD USED BY THE PROJECT BIOLOGIST TO DETERMINE SEED QUALITY, UNLESS THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST SPECIFICALLY REQUESTS THE %PLS METHOD TO BE USED. IF THE MINIMUM PERCENT PURE LIVE SEED IS NOT AVAILABLE, THEN THE SEED SUPPLIER SHALL INCREASE THE POUNDAGE OF SEED TO MEET THE DIFFERENCE. IF SOME SPECIES ARE NOT AVAILABLE AT THE TIME OF SEEDING, THEN SUBSTITUTIONS MAY BE CONSIDERED IN CONSULTATION WITH THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.

NATIVE CONTAINER PLANT AND SEED SOURCES:

1. CONTRACTOR SHALL SUPPLY SEED AND CONTAINER PLANTS IDENTIFIED ON THIS SHEET, AND PER THE RECOMMENDATION AND UNDER THE DIRECTION OF THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST. THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST SHALL CONSIDER THE 120 DAY PEP AND 5 YEAR MAINTENANCE AND MONITORING PERIOD, SUCCESS CRITERIA, IN THE EVENT THAT ADDITIONAL CONTAINER PLANTS OR SEEDING IS NEEDED TO SUPPLEMENT THE QUANTITY SHOWN.
2. CONTAINER PLANTS SHALL BE PROCURED FROM A NATIVE PLANT NURSERY QUALIFIED TO PROPAGATE AND CARE FOR NATIVE PLANT SPECIES. SEED SHALL BE PROCURED FROM A NATIVE SEED SUPPLIER QUALIFIED TO COLLECT, STORE AND PROPAGATE NATIVE PLANT SPECIES.
3. SOURCE OF ALL PROPAGULES FOR ALL NATIVE CONTAINER PLANT MATERIALS AND SEED SHALL HAVE ORIGINATED FROM WITHIN THE SAN DIEGO COUNTY COASTAL AREAS TO THE EXTENT PRACTICAL (MAXIMUM OF WITHIN A 25 MILE RADIUS), OR CONTRACTOR SHALL PROVIDE EVIDENCE THAT THE SEED AND/OR CONTAINER PLANTS ARE NOT AVAILABLE. THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST WILL PROVIDE SUBSTITUTION OR ALTERNATIVE COMPLIANCE.
3. CONTAINER PLANT MATERIAL MUST BE DELIVERED TO THE PROJECT SITE AT THE APPROPRIATE TIME, IN A HEALTHY AND VIGOROUS CONDITION AND SHALL HAVE AT LEAST ONE SAMPLE OF EACH PLANT SPECIES LABELED CLEARLY WITH BOTANICAL NAME AND COMMON NAME. THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST SHALL BE CONTACTED TO INSPECT ALL CONTAINER PLANTS FOLLOWING DELIVERY AND PRIOR TO FIELD PLACEMENT. SPECIMENS SHOWING EVIDENCE OF DISEASE, MISHANDLING, DEFECTS OR DAMAGE, POOR HEALTH, OVER OR UNDER-WATERING, IMPROPER SIZE FOR CONTAINER, OR OTHER DEFICIENCY AT THE TIME OF DELIVERY WILL BE REJECTED. PLANTS SHALL NOT BE STORED ON SITE FOR MORE THAN ONE DAY.
4. CONTRACTOR SHALL SUBMIT ALL SEED TAGS FOR SEED PRODUCTS TO BE USED WITHIN THE PROJECT TO THE RE AND PROJECT BIOLOGIST FOR APPROVAL PRIOR TO APPLICATION. ALL SEED TAGS FROM MATERIALS ACTUALLY APPLIED SHALL BE RETAINED BY THE CONTRACTOR AND SHALL BE TURNED OVER TO THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST IN ORDER TO VERIFY COMPLIANCE WITH THE SPECIFIED MATERIALS.
6. ALL SEEDS SHALL MEET THE MINIMUM % PURE LIVE SEED (PLS) AS NOTED IN TABLES. IF THE MINIMUM % PLS COUNT CANNOT BE MET CONTRACTOR SHALL COORDINATE AND OBTAIN WRITTEN APPROVAL FROM THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST FOR ALTERNATIVE COMPLIANCE.

HYDROSEEDING NOTES

1. SEEDING SHALL OCCUR ONLY AFTER THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST HAVE OBSERVED AND APPROVED THAT THE SITE HAS BEEN PROPERLY PREPARED AND FOLLOWING INSTALLATION OF THE CONTAINER PLANTS.
2. ONLY AS DIRECTED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST: TYPE 9 MULCH (WOOD FIBER) OR BONDED FIBER MATRIX (BFM) SHALL BE APPLIED AT THE MINIMUM RATE OF 1,500 POUNDS PER ACRE; HYDROPOST PREMIUM COMPOST, OR EQUAL, SHALL BE APPLIED AT THE MINIMUM RATE OF 1,000 POUNDS PER ACRE; BIOSOL MIX 7-2-3 ORGANIC FERTILIZER, OR EQUAL, SHALL BE APPLIED AT THE MINIMUM RATE OF 800 POUNDS PER ACRE; AM 120 MYCORRHIZAL INOCULUM, OR EQUAL, SHALL BE APPLIED AT THE MINIMUM RATE OF 60 POUNDS PER ACRE.
3. TYPE 9 MULCH (WOOD FIBER) OR BFM AND HYDROPOST COMPOST SHALL BE UNIFORMLY SPREAD AND "TACKED" WITH TYPE 10 MULCH (STABILIZING EMULSION, ECOLOGY CONTROLS M-BINDER OR APPROVED EQUAL) BINDER AT A MINIMUM RATE OF 160 LBS PER ACRE. THE BINDER SHALL BE AN ORGANIC DERIVATIVE OR PROCESSED ORGANIC ADHESIVE, OR AS DIRECTED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST TO BE APPLIED BETWEEN DECEMBER - FEBRUARY.
4. A WETTING AGENT CONSISTING OF ONE TON PER ACRE AGRICULTURAL GYPSUM (95% ALKYL POLYETHYLENE GLYCOL ETHER OR AS APPROVED BY THE BIOLOGIST) SHALL BE APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, OR AS RECOMMENDED BY THE JPA DESIGNATED REPRESENTATIVE AND PROJECT BIOLOGIST.
5. EQUIPMENT USED FOR THE APPLICATION OF THE HYDROSEED SLURRY MIX SHALL HAVE A BUILT-IN AGITATION SYSTEM TO SUSPEND AND HOMOGENEOUSLY MIX THE SLURRY, THE SLURRY MIX SHALL BE DYED GREEN. THE EQUIPMENT MUST HAVE A PUMP CAPABLE OF APPLYING SLURRY UNIFORMLY AT THE RATES INDICATED.

NOTE:
SEE SHEET P-4 FOR PLANTING NOTES AND DETAILS.

PRELIMINARY NOT FOR CONSTRUCTION REVISED 2/14/2024

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P-3

No.	REVISIONS	DATE	BY

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REVEGETATION/RESTORATION
PLANTING LEGEND AND SEED MIXES

OSUNA SEGMENT OF THE COAST TO CREST TRAIL
PREPARED FOR
SAN DIEGUITO RIVER PARK JPA
CITY OF SAN DIEGO CA

GENERAL REVEGETATION NOTES

1. REVEGETATION OF THE PROJECT AREA SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF SAN DIEGO LANDSCAPE STANDARDS AND CITY SPECIFICATIONS UNDER THE DIRECTION OF THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
2. REVEGETATION SHALL BE ACCOMPLISHED IN A MANNER SO AS TO PROVIDE VISUAL AND HORTICULTURAL COMPATIBILITY WITH ADJACENT NATIVE VEGETATION.
3. CONTRACTOR SHALL STAKE THE LIMITS OF THE REVEGETATION AREAS WITH LATH STAKES AND YELLOW FLAGGING TAPE. STAKING SHALL OCCUR AT EVERY 10' O/C AND ALL CHANGES OF DIRECTION. STAKING SHALL BE MAINTAINED IN PLACE THROUGH PROJECT COMPLETION.
4. THESE PLANS ARE A GUIDE; FINAL PLANT LAYOUT SHALL BE DETERMINED IN THE FIELD & APPROVED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
5. ANY PLANTING AREA REVISIONS OR SPECIES SUBSTITUTIONS SHALL REQUIRE REVIEW AND APPROVAL OF THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
6. INVASIVE PLANT SPECIES INCLUDING BUT NOT LIMITED TO THOSE LISTED IN THE CITY'S LANDSCAPE STANDARDS ARE PROHIBITED AND SHALL BE ERADICATED AND REMOVED BY CONTRACTOR. ONLY NATIVE PLANT SPECIES SHALL BE USED FOR THIS PROJECT.
7. ALL EROSION CONTROL BMPS SHALL BE INSTALLED THROUGHOUT THE PROJECT AREA ACCORDING TO THE ENGINEERING PLANS AND CITY GUIDELINES. ALL BMPS, SHALL REMAIN IN PLACE, AND/OR SHALL BE RE-INSTALLED AFTER SOIL PREPARATION TO THE SATISFACTION OF THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST. BMPS SHALL INCLUDE, BUT NOT LIMITED TO SILT FENCING, FIBER ROLLS, AND SOIL TACKIFIER AND FIBER MULCH (APPLIED WITH HYDROSEEDING). ALL PRODUCTS SHALL BE UN-DECAYING, CLEAN AND FREE OF WEEDS, SEEDS, AND DEBRIS.
8. EROSION CONTROL BMPS OR OTHER SLOPE PROTECTION METHODS EXISTING PRIOR TO WORK, OR PROVIDED BY CONTRACTOR, AS RECOMMENDED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST SHALL BE REPLACED IN THE EVENT OF SLOPE OR RESTORATION FAILURE.
9. THE PROJECT BIOLOGIST SHALL FIELD MARK ALL LOCATIONS FOR ALL CONTAINER PLANTS IN COORDINATION WITH THE CITY REPRESENTATIVE AND CONTRACTOR.
10. PLANTING AND SEEDING SHALL BE CONDUCTED BETWEEN SEPTEMBER 15 AND FEBRUARY 1, DURING THE RAINY SEASON AND OUTSIDE OF THE NESTING BIRD SEASON; UNLESS OTHERWISE DIRECTED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.

PRE-PLANTING/SOIL PREPARATION NOTES

1. ALL NON NATIVE VEGETATION SHALL BE COMPLETELY REMOVED FROM THE SITE AND ANY REMNANT ROOT BALLS WILL BE TREATED WITH HERBICIDE AS APPROVED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST BEFORE ANY SOIL PREPARATION.
2. BEFORE PLANTING OR SEEDING, THE UPPER 8-INCHES OF SOIL WITHIN GRADED AREAS TO BE REVEGETATED SHALL BE DECOMPACTED AND THE PRESCRIBED SOIL AMENDMENTS SHALL BE UNIFORMLY INCORPORATED INTO THE SOIL. FOLLOWING INCORPORATION, AMENDED SOILS SHALL BE TRACK WALKED TO A UNIFORM SURFACE AND A MAXIMUM COMPACTION OF 85%. ALL WORK SHALL BE TO THE SATISFACTION OF THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
3. THE FOLLOWING SOIL AMENDMENTS SHALL BE INCORPORATED INTO EXISTING SOILS WHERE CONTAINER PLANTS WILL BE INSTALLED:
   - POTASSIUM SULPHATE (0-0-50): 0.25 POUNDS PER CUBIC YARD
   - TRIPLE SUPER PHOSPHATE (0-45-0): 0.25 POUNDS PER CUBIC YARD
   - AGRICULTURAL GYPSUM: 2 POUNDS PER CUBIC YARD
   - ORGANIC SOIL AMENDMENT: 3 CUBIC YARDS PER CUBIC YARD
4. EXISTING NATIVE SLASH (DEAD VEGETATION) PRESENT WITHIN THE PROJECT LIMITS SHALL BE CRUSHED (MULCHED) WITH AMENDED SOILS DURING TRACK WALKING. NATIVE SLASH SHALL BE CLEAN, FREE FROM NON-NATIVE VEGETATION AND INORGANIC DEBRIS BEFORE INCORPORATION. NON-NATIVE DEBRIS SHALL BE REMOVED FROM THE REVEGETATION AREA.

CONTAINER PLANTING AND SEEDING NOTES

1. ALL SEEDS AND CONTAINER PLANTS SHALL HAVE ORIGINATED FROM WITHIN SAN DIEGO COUNTY COASTAL AREAS TO THE EXTENT PRACTICAL, OR AS APPROVED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST, OR CONTRACTOR SHALL PROVIDE EVIDENCE THAT THE SEED AND/OR CONTAINER PLANTS ARE NOT AVAILABLE AND SHALL NOTIFY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST FOR ALTERNATIVE COMPLIANCE.
2. CONTAINER PLANTS SHALL BE PROCURED FROM A NATIVE PLANT NURSERY QUALIFIED TO PROPAGATE AND CARE FOR NATIVE PLANT SPECIES.
3. ALL SEEDS SHALL MEET THE MINIMUM % PURE LIVE SEED (PLS) AS NOTED IN THE SEED MIXES. IF THE MINIMUM % PLS COUNT CANNOT BE MET CONTRACTOR SHALL COORDINATE AND OBTAIN WRITTEN APPROVAL FROM THE PROJECT BIOLOGIST FOR ALTERNATIVE COMPLIANCE (I.E., SUBSTITUTION, INCREASED QUANTITY). ANY POTENTIAL SUBSTITUTIONS MUST BE APPROVED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST BEFORE SEED APPLICATION.
4. CONTRACTOR SHALL SUBMIT ALL SEED TAGS FOR SEED PRODUCTS TO BE USED WITHIN THE PROJECT TO THE RE AND PROJECT BIOLOGIST FOR APPROVAL BEFORE APPLICATION. ALL SEED TAGS FROM MATERIALS ACTUALLY APPLIED SHALL BE RETAINED BY THE CONTRACTOR AND SHALL BE TURNED OVER TO THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST IN ORDER TO VERIFY COMPLIANCE WITH THE SPECIFIED MATERIALS.
5. CONTAINER PLANT MATERIAL MUST BE DELIVERED TO THE PROJECT SITE AT THE APPROPRIATE TIME, IN A HEALTHY AND VIGOROUS CONDITION AND SHALL HAVE AT LEAST ONE SAMPLE OF EACH PLANT SPECIES BE LABELED CLEARLY WITH BOTANICAL NAME AND COMMON NAME. THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST WILL REJECT ANY PLANT MATERIALS DELIVERED TO THE PROJECT SITE BEFORE THE AGREED UPON PLANTING DATE. PLANTS SHALL NOT BE STORED ON SITE FOR MORE THAN ONE DAY. SPECIMENS SHOWING EVIDENCE OF DISEASE, MISHANDLING, DEFECTS OR DAMAGE, OVER OR UNDER-WATERING, OR OTHER DEFICIENCY AT THE TIME OF DELIVERY WILL BE REJECTED.
6. THE SEED MIX AND CONTAINER PLANTS IDENTIFIED ON THE PLANTING PALETTES SHALL BE APPLIED/INSTALLED IN ALL GRADED AND DISTURBED AREAS, AS SHOWN ON THE PLANTING AND SEEDING PLANS AND AS DIRECTED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
7. CONTAINER PLANTS WILL BE PLACED BY THE CONTRACTOR, PER THE LOCATIONS SHOWN ON THE PLANTING PLANS, AS SPECIFIED BY THE PLANTING NOTES OR DIRECTED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST, FOR REVIEW AND APPROVAL BEFORE ACTUAL PLANTING. THE SUGGESTED PLANT INSTALLATION PROCEDURE SHALL BE AS SHOWN ON THE PLANTING PLANS, DETAILS AND/OR AS DIRECTED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
8. SHRUBS SHALL BE LOCATED SO THEY WILL NOT OVERGROW ONTO THE TRAIL UPON MATURITY.
9. EQUIPMENT USED FOR THE APPLICATION OF THE HYDROSEED SLURRY MIX SHALL HAVE A BUILT-IN AGITATION SYSTEM TO SUSPEND AND HOMOGENOUSLY MIX THE SLURRY. THE EQUIPMENT MUST HAVE A PUMP CAPABLE OF APPLYING SLURRY UNIFORMLY AT THE RATES INDICATED.
10. THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST SHALL CONSIDER THE 120 DAY PEP, AND 5 YEAR MAINTENANCE AND MONITORING PERIOD, SUCCESS CRITERIA, IN THE EVENT THAT ADDITIONAL CONTAINER PLANTS OR SEED ARE NEEDED TO SUPPLEMENT THE QUANTITY SHOWN ON THE PLANTING PLANS.

MAINTENANCE REQUIREMENTS

1. THE 120 DAY PLANT ESTABLISHMENT PERIOD (PEP) FOLLOWS SUCCESSFUL COMPLETION OF THE HYDROSEED APPLICATION AND PLANT INSTALLATION. THE PEP AND START OF 5 YEAR MAINTENANCE PERIOD, AS WELL AS ACCEPTANCE FOLLOWING THE MAINTENANCE PERIOD, SHALL BE DETERMINED BY THE CITY REPRESENTATIVE IN CONSULTATION WITH PROJECT BIOLOGIST. SLOPE AND DISTURBED AREAS FROM THE TRAIL CONSTRUCTION SHALLBE SUBJECT TO A 25 MONTH MAINTENANCE AND MONITORING PERIOD. ALL OTHER REVEGETATION AND MITIGATION AREAS ARE SUBJECT TO THE FIVE YEAR MAINTENANCE AND MONITORING PERIOD.
2. 5 YEAR MAINTENANCE PERIOD SHALL BE CONDUCTED FOR A PERIOD OF NOT LESS THAN 5 YEARS (TABLE 1) OR AS DETERMINED BY THE PROJECT BIOLOGIST. ALL REVEGETATION AREAS SHALL REQUIRE FINAL APPROVAL BY THE CITY AT THE END OF THE 5 YEAR PERIOD, OR EXTENDED MAINTENANCE PERIOD IF PROJECT DOES NOT MEET THE PERFORMANCE STANDARDS. THE MAINTENANCE PERIOD BEGINS ON THE FIRST DAY FOLLOWING INSTALLATION ACCEPTANCE (AT THE END OF 120 DAY PEP) AND MAY BE EXTENDED AT THE DETERMINATION OF THE CITY REPRESENTATIVE AND THE PROJECT BIOLOGIST.
3. BEFORE FINAL APPROVAL, THE CITY REPRESENTATIVE MAY REQUIRE CORRECTIVE ACTION BE TAKEN, INCLUDING BUT NOT LIMITED TO, WEED ERADICATION AND REMOVAL, REPLANTING, THE MODIFICATION TO THE IRRIGATION SYSTEMS, AND THE REPAIR OF ANY SOIL EROSION OR SLOPE SLIPPAGE, IN CONSULTATION WITH THE CITY REPRESENTATIVE AND THE PROJECT BIOLOGIST.
4. WEEDING, HERBICIDE, AND/OR PESTICIDE APPLICATION SHALL BE DONE REGULARLY BY THE CONTRACTOR. WEEDING SHALL BE DONE AT A MINIMUM OF BI-WEEKLY UNTIL THE END OF THE 120 DAY PEP, AND THEREAFTER PERIODICALLY THROUGHOUT THE 5 YEAR MAINTENANCE PERIOD. WEEDS SHALL BE REMOVED AND PROPERLY DISPOSED OF OFFSITE. CONTRACTOR SHALL OBTAIN APPROVAL FROM CITY REPRESENTATIVE AND PROJECT BIOLOGIST BEFORE HERBICIDE/PESTICIDE APPLICATIONS, AND SHALL APPLY HERBICIDE/PESTICIDE PER MANUFACTURER'S RECOMMENDATIONS AND PER ANY STATE OF CALIFORNIA GUIDELINES. CONTRACTOR MUST POSSESS A VALID STATE PESTICIDE AND/OR HERBICIDE LICENSE AT ALL TIMES.
5. CONTRACTOR SHALL CONTROL ALL WEEDS AS IDENTIFIED BY THE PROJECT BIOLOGIST, NO WEED COVER SHALL EXCEED 10% OF THE PROJECT SITE BEFORE THEY EXCEED 12-INCHES IN HEIGHT, AND BEFORE THEY SET SEED. AREAS WHERE WEEDING CREATES IN EXCESS OF 50 SQUARE FEET OF BARE SOIL DISTURBANCE SHALL BE REPLANTED/RESEEDED AND MAINTAINED BY CONTRACTOR PER THE DIRECTION OF THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST.
6. EXOTIC/NON-NATIVE INVASIVE PLANT SPECIES SHALL BE REMOVED AND/OR TREATED AND SHALL INCLUDE THOSE LISTED IN THE CITY OF SAN DIEGO LANDSCAPE STANDARDS AS INVASIVE PLANT SPECIES AND 2) BY THE CALIFORNIA INVASIVE PLANT COUNCIL (CAL-IPC) AS HIGHLY INVASIVE.
7. VEGETATION COVER, PLANT SURVIVAL AND MAX. INVASIVE SPECIES COVER SHALL BE REQUIRED TO MEET ESTABLISHED SUCCESS CRITERIA (TABLE 2), FOR THE FOLLOWING MILESTONE PERIODS: 120-DAYS FOLLOWING INSTALLATION, AT THE END OF YEAR 1 AND AT THE END OF THE 5 YEARS. FOLLOWING COMPLETION OF THE 120 DAY PLANT ESTABLISHMENT PERIOD (PEP), THE PROJECT BIOLOGIST AND CITY REPRESENTATIVE MAY APPROVE LESSER % COVER AS ACCEPTABLE BASED ON SITE CONDITIONS.
8. IRRIGATION SHALL BE PROVIDED FOR A PERIOD SUFFICIENT TO ESTABLISH PLANT MATERIAL AND TO PROVIDE VEGETATIVE COVER THAT PREVENTS SOIL EROSION. THE AMOUNT OF IRRIGATION MUST BE ADJUSTED WHEN WARRANTED BY SITE CONDITIONS. THE PROJECT BIOLOGIST AND CONTRACTOR SHALL MONITOR TO DETERMINE SUCCESS AND ADDED REQUIREMENT FOR TEMPORARY IRRIGATION. IRRIGATION MAY NOT BE REQUIRED IF SEASONAL RAINFALL PROVIDES SUITABLE CONDITIONS FOR THE GERMINATION AND ESTABLISHMENT OF NATIVE CONTAINER PLANT AND HYDROSEEDED SPECIES.
9. IRRIGATION SHALL DELIVER WATER SUFFICIENTLY AND UNIFORMLY AND SHALL BE APPROPRIATE TO THE NEEDS OF THE PLANT MATERIALS. RECOMMENDED REFERENCE MATERIALS FOR IRRIGATION SYSTEMS DESIGN ARE LISTED IN THE APPENDIX "A" OF THE CITY'S LANDSCAPE STANDARDS.
10. THE IRRIGATION SYSTEM IS CONSIDERED TEMPORARY AND WILL BE USED UNTIL THE PLANTINGS ARE ESTABLISHED; THE ENTIRE SYSTEM SHALL BE DISCONNECTED AND ALL ABOVEGROUND COMPONENTS SHALL BE REMOVED BEFORE THE END OF THE 5 YEAR MAINTENANCE PERIOD; REFER TO IRRIGATION NOTES FOR ADDITIONAL REQUIREMENTS. (SEE TABLE 3 FOR THE RECOMMENDED SCHEDULE FOR TAPERING-OFF THE IRRIGATION SYSTEM OPERATION)
11. CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE IRRIGATION SYSTEM OPERATIONAL THROUGH THE DURATION OF THE CONTRACT PERIOD. ANY CONTAINER PLANT MORTALITY DUE TO IMPROPER WATERING OR NEGLECTED EQUIPMENT SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
12. CONTRACTOR SHALL CORRECT ALL SOIL EROSION, AND SHALL REPAIR AND/OR REPLACE ALL ABOVE GROUND EROSION CONTROL BMPS DAMAGED DURING THE PEP AND THROUGHOUT THE 5 YEAR MAINTENANCE AND MONITORING PERIOD. ANY ABOVE GROUND EROSION CONTROL MEASURES SUCH AS BUT NOT LIMITED TO SILT FENCING, GRAVEL BAGS, AND FIBER ROLLS SHALL BE REMOVED BY THE CONTRACTOR FOLLOWING ACCEPTANCE OF THE 5 YEAR MAINTENANCE AND MONITORING PERIOD BY THE PROJECT BIOLOGIST.
13. 1:1 REPLACEMENT OF CONTAINER PLANTS (IN KIND) SHALL BE MONITORED AND MAINTAINED FOR A PERIOD OF NO LESS THAN 120 DAYS FOLLOWING INITIAL, OR REMEDIAL PLANTING TO ENSURE SUCCESSFUL ESTABLISHMENT OF PLANTINGS PER CONTRACT SPECIFICATIONS.
14. ORANGE CONSTRUCTION FENCE OR OTHER PERIMETER BARRIER (I.E., YELLOW ROPE BARRIER), IF APPROVED BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST, SHALL BE INSTALLED AND MAINTAINED BY CONTRACTOR FROM THE INSTALLATION OF ALL REVEGETATION PLANT MATERIALS THROUGH THE PEP, AND UNTIL THE END OF THE 5 YEAR MAINTENANCE PERIOD. FOLLOWING ACCEPTANCE OF THE 5 YEAR MAINTENANCE AND MONITORING PERIOD BY THE CITY REPRESENTATIVE AND PROJECT BIOLOGIST, THE CONTRACTOR SHALL REMOVE ALL PERIMETER BARRIERS AT THE END OF THE 5 YEAR PERIOD.
15. THE CONTRACTOR SHALL REMOVE ALL TRASH AND/OR DEBRIS FROM THE REVEGETATION SITE BEFORE AND FOLLOWING THE REVEGETATION INSTALLATION, AND UNTIL THE END OF THE 5 YEAR MAINTENANCE AND MONITORING PERIOD. CONTRACTOR SHALL DISCONNECT AND REMOVE THE TEMPORARY IRRIGATION SYSTEM FOLLOWING ACCEPTANCE OF REVEGETATION BY THE CITY REPRESENTATIVE AND THE PROJECT BIOLOGIST; REFER TO IRRIGATION NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TABLE 1. MMRP SUCCESS CRITERIA/STANDARDS

PARAMETER	% NATIVE SPECIES VEGETATION COVER HYDROSEED AREAS[5]	PLANT SURVIVAL CONTAINER PLANTS[1]	TOTAL PLANT COVERAGE[2,3]		NON-NATIVE COVER
			WETLAND	UPLAND	
120 DAYS	20%	100%	70%	60%	<10% WEEDS AT ANY TIME 0% INVASIVE EXOTICS
YEAR 1	50%	100%	75%	65%	<10% WEEDS AT ANY TIME 0% INVASIVE EXOTICS
YEAR 2	65%	90%	80%	70%	<10% WEEDS AT ANY TIME 0% INVASIVE EXOTICS
YEAR 3[4]	75%	80%	80%	70%	<10% WEEDS AT ANY TIME 0% INVASIVE EXOTICS
YEAR 4[4]	85%	80%	85%	75%	<10% WEEDS AT ANY TIME 0% INVASIVE EXOTICS
YEAR 5[4]	90%	80%	85%	75%	<10% WEEDS AT ANY TIME 0% INVASIVE EXOTICS

[1] Container plants not meeting plant survival success criteria, as verified and recommended by the Project Biologist, shall be replaced in like kind and size and maintained at contractor's expense until the success criteria has been met. Percent survival is based upon the quantity of container plants initially installed>

[2] Wetland and upland coverage shall be as indicated on Table 1 above. Bare areas greater than 25-feet X 25-feet shall be reseeded according to the City's Whitebook. Soil coverage includes, but is not limited to, plant cover, hydromulch or other biodegradable organic materials. At the discretion of the project biologist, organic composted mulch and /or recruited non-native grass species not listed as highly invasive on the CAL-IPC invasive plant list can be used to meet the % vegetation coverage for erosion control (e.g.: wild Oat (Avena sp.), brome grasses (Bromus madritensis), (Bromus diandrus), ryegrass (Lolium sp.), Filaree (Erodium sp.) are acceptable for erosion control.

[3] Recruited non-native grass species can count towards the vegetation cover.

[4] The project irrigation shall be tapered_off during year 3, shall be turned-off in year 4, and by year 5 plant materials shall have survived two dry seasons without irrigation.

[5] Percent native cover shall be based upon visual analysis in years 1 & 2 visual and transect monitoring in years 3 -5.

TABLE 2. PLANTING MAINTENANCE MONITORING AND REPORTING SCHEDULE

PERIOD	ACTIVITY FOR PROJECT BIOLOGIST/CONTRACTOR	BIOLOGIST SITE VISIT FREQUENCY	SUBMITTALS/ CHECKLIST	REPORTING FREQUENCY
REVEGETATION INSTALLATION	PROJECT BIOLOGIST WILL BE RESPONSIBLE FOR MONITORING/LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE	AS NEEDED OR AT LEAST ONCE EVERY TWO WEEKS (BI-WEEKLY)	REPORTS PREPARED BY THE BIOLOGIST (BASED ON THE REVEGETATION PLAN CRITERIA)	AT EACH BIOLOGICAL MONITORING SITE VISIT AND UPON SUCCESSFUL INSTALLATION COMPLETION (AS DETERMINED BY THE PROJECT BIOLOGIST)
120 DAY PEP	PROJECT BIOLOGIST WILL BE RESPONSIBLE FOR MONITORING/LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE ON AN AS-NEEDED BASIS	MONTHS 1 & 2 - EVERY TWO WEEKS (BIWEEKLY) MONTHS 3 & 4 - AT LEAST ONCE A MONTH	REPORTS PREPARED BY THE BIOLOGIST (BASED ON THE REVEGETATION PLAN CRITERIA)	AT EACH BIOLOGICAL MONITORING SITE VISIT AND AT THE END OF THE PEP***
5 YEAR LONG-TERM MAINTENANCE & MONITORING	PROJECT BIOLOGIST WILL BE RESPONSIBLE FOR MONITORING/LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE ON AN AS-NEEDED BASIS; SEE TABLE 3 FOR MAINTENANCE TASKS	EVERY 2 MONTHS (BI-MONTHLY) DURING YEARS 1 & 2 AND THEN EVERY 3 MONTHS (QUARTERLY DURING YEARS 3-5)	ANNUAL MONITORING REPORTS PREPARED BY THE BIOLOGIST (BASED ON THE REVEGETATION PLAN CRITERIA) AT THE END OF EACH YEAR	SITE OBSERVATION REPORTS AFTER EACH VISIT YEAR 1*** ANNUAL REPORTS YEARS 1-5 YEAR 5***

NOTE: IF 5 YEAR SUCCESS CRITERIA ARE NOT MET, THE MAINTENANCE, MONITORING AND REPORTING PROGRAM (MMRP) WILL BE EXTENDED AS REQUIRED. QUARTERLY MAINTENANCE AND MONITORING WITH YEARLY REPORTING SHALL CONTINUE AS NEEDED.

***PEP, ANNUAL AND 5 YEAR FINAL REPORT(S) REQUIRED TO INCLUDE SUCCESS CRITERIA ACHIEVEMENT INFORMATION.

INSPECTION REPORTS SHALL BE SENT TO CITY PARKS & RECREATION DEPARTMENT, SENIOR PLANNER.

TABLE 3. MAINTENANCE TASK SCHEDULE

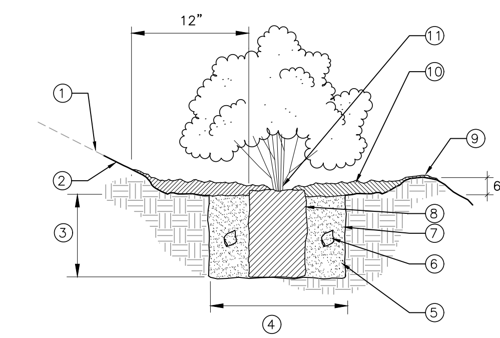
TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
WEED CONTROL	MONTHLY AS NEEDED	QUARTERLY	QUARTERLY	QUARTERLY	QUARTERLY
TRASH REMOVAL	MONTHLY AS NEEDED	QUARTERLY	QUARTERLY	QUARTERLY	QUARTERLY
IRRGATION	MONTHLY AS NEEDED	QUARTERLY	TAPER-OFF	OFF	OFF

MONITORING REQUIREMENTS

1. THE PROJECT BIOLOGIST SHALL MONITOR THE PROJECT DURING TRAIL CONSTRUCTION AND RESTORATION/REVEGETATION ACTIVITIES AND SHALL OBSERVE THE SITE DURING THE 5-YEAR RESTORATION/MONITORING PERIOD, AS REQUIRED TO ENSURE THAT THE TRAIL CONSTRUCTION AND POST-CONSTRUCTION ACTIVITIES DO NOT ENCROACH INTO BIOLOGICALLY SENSITIVE AREAS (WETLANDS). (NOTE: THE EXCEPTION TO THIS ARE THE WETLAND ENHANCEMENT AREAS, WHERE NON-NATIVE/EXOTIC SPECIES WILL BE REMOVED TO ENHANCE EXISTING WETLAND VEGETATION.)
2. FINAL INSPECTION IS REQUIRED BY THE CITY OF SAN DIEGO WITH ATTENDANCE AND APPROVAL BY THE PARKS AND RECREATION DEPARTMENT PRIOR TO ACCEPTANCE OF THE REVEGETATION/MITIGATION PROGRAM AS COMPLETE.

REFER TO SHEETS 9 THROUGH 12 (SHEETS I-1 THROUGH I-4) FOR IRRIGATION PLANS; THE IRRIGATION SYSTEMS ARE INTEGRAL TO THE PLANTING TO WORK TO FACILITATE PLANT ESTABLISHMENT.

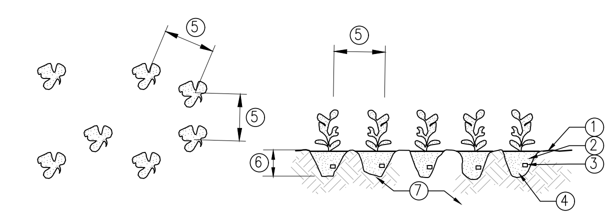
LONG TERM MAINTENANCE OF THE TRAIL WILL BE THE RESPONSIBILITY OF THE SAN DIEGUITO RIVER PARK JPA OR THEIR DESIGNATED REPRESENTATIVE.



ITEM	DESCRIPTION
1	GRADE AT SLOPE
2	FINISH GRADE
3	DEPTH OF ROOT BALL
4	TWO TIMES WIDTH OF ROOT BALL
5	WATER AND TAMP BACKFILL MIX WELL.
6	2 CONTROLLED RELEASE FERTILIZER PACKETS TO BE INCLUDED IN BACKFILL MIX (PER SPECS.).
7	SCARIFY SIDES OF PLANTING PIT
8	ROOT BALL
9	WATERING BASIN 6" ABOVE FINISH GRADE
10	3" THICK SHREDDED BARK MULCH LAYER 18" RADIUS, HOLD BACK 3" FROM ROOT CROWN
11	ROOT CROWN OF SHRUB 1" ABOVE FINISH GRADE

THIS DETAIL APPLIES TO ROSE POT, 1 GALLON, OR DEEP 1 GALLON CONTAINER PLANTS.

A — NATIVE CONTAINER PLANTING
NO SCALE



PLAN VIEW — SECTION

ITEM	DESCRIPTION
1	FINISH GRADE
2	ROOT BALL
3	1 CONTROLLED RELEASE FERTILIZER PACKETS TO BE INCLUDED IN BACKFILL MIX (PER SPECS.)
4	WATER AND TAMP BACKFILL MIX WELL.
5	SEE PLANTING LEGEND FOR AVERAGE SPACING (SET PLANTS RANDOMLY IN FIELD).
6	DEPTH OF ROOT BALL
7	AMENDED SOIL (PER SOIL PREPARATION NOTES)

B — NATIVE CONTAINER PLANT LAYOUT
NO SCALE

PRELIMINARY NOT FOR CONSTRUCTION REVISED 2/14/2024

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P-4

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KHA PROJECT 095226008 | DATE FEBRUARY 14, 2024 | SCALE AS SHOWN | DESIGNED BY TK | DRAWN BY TK | CHECKED BY MK

LICENSED PROFESSIONAL — LIC PROF 1 — STATE LICENSE NUMBER LIC PROF 1 #

REVEGETATION/RESTORATION PLANTING NOTES AND DETAILS

OSUNA SEGMENT OF THE COAST TO CREST TRAIL
PREPARED FOR
SAN DIEGUITO RIVER PARK JPA
CITY OF SAN DIEGO, CA