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Biological Resources Technical Report

Otay Pipeline 2 Segment A6 Replacement Project

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Acronyms and Abbreviations

°F	degrees Fahrenheit
amsl	above mean sea level
BCC	bird of conservation concern
BGEPA	Bald and Golden Eagle Protection Act
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
County	County of San Diego
CRPR	California Rare Plant Rank
CV MSCP	City of Chula Vista MSCP Subarea Plan-covered species
CWA	Clean Water Act
ECORP	ECORP Consulting, Inc.
FC	federal candidate
FE	federally endangered
FESA	federal Endangered Species Act
FT	federally threatened
FSC	federal species of concern
GPS	Global Positioning System
HLIT	Habitat Loss and Incidental Take
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MM	mitigation measure
MSCP	Multiple Species Conservation Program
NCCP	Natural Community Conservation Planning
NE	narrow endemic
NPDES	National Pollutant Discharge Elimination System
OHWM	ordinary high water mark
Porter-Cologne	Porter-Cologne Water Quality Control Act
project	Otay Pipeline 2 Segment A6 Replacement Project
RMP	Resource Management Plan
RWQCB	Regional Water Quality Control Board
SCE	state candidate for listing as endangered
SD MSCP	City of San Diego MSCP Subarea Plan-covered species
SE	state endangered
SR	state rare
SSC	state species of special concern
ST	state threatened
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WBWG	Western Bat Working Group
WL	state watch list species

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Executive Summary

At the request of the City of San Diego (Applicant), Harris & Associates (Harris) has prepared this Biological Resources Technical Report in support of the Mitigated Negative Declaration for the proposed Otay Pipeline 2 Segment A6 Replacement Project (project) in the City of Chula Vista, California. The proposed project includes replacement in place of approximately 4,000 linear feet of the Otay Pipeline 2 segment A6 40-inch steel pipe with a 54-inch steel pipe.

This Biological Resources Technical Report provides an environmental baseline of biological resources found on the project site and presents an analysis of impacts to sensitive biological resources from construction and operation of the project. The analysis was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 and the CEQA Guidelines (as amended).

Literature reviews, general biological reconnaissance surveys, vegetation mapping, an aquatic resources delineation, and rare plant surveys were conducted in 2018 and 2020 in support of this Biological Resources Technical Report. Six vegetation communities and land cover types, including two sensitive riparian communities, coastal and valley freshwater marsh and non-vegetated channel, two sensitive upland communities, Diegan coastal sage scrub (including disturbed) and non-native grassland, and two non-sensitive disturbed habitat and urban/developed, were mapped on the project site. Aquatic resources delineated on the project site include approximately 0.054 acre of freshwater marsh/emergent wetland and 0.009 acre of non-vegetated channel. Six sensitive plant species were observed on the project site during the 2018 and 2020 surveys and include Palmer's grapplinghook (*Harpagonella palmeri*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego County viguiera (*Bahiopsis laciniata*), San Diego marsh elder (*Iva hayesiana*), south coast saltscale (*Atriplex pacifica*), and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). Ten sensitive wildlife species were observed on the project site during the 2018 and 2020 surveys and include monarch butterfly (*Danaus plexippus*), Quino checkerspot butterfly (*Euphydryas editha quino*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), yellow-breasted chat (*Icteria virens*), western bluebird (*Sialia mexicana*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and southern mule deer (*Odocoileus hemionus fuliginata*).

Implementation of the project has the potential to result in permanent and temporary direct and indirect impacts to biological resources.

Implementation of the project could result in permanent and temporary direct and indirect impacts to four sensitive plant species observed or with a high potential to occur on the project site, inlcuding San Diego barrel cactus, San Diego marsh elder, south coast saltscale, and Otay tarplant

(*Deinandra (=Hemizonia) conjugens*) during construction activities. Direct and indirect impacts to these sensitive plant species are considered significant.

The project would have the potential to result in temporary direct and indirect impacts to sensitive wildlife species observed or with a high potential to occur on the project site, including Bell's sparrow (*Artemisiospiza belli belli*), coastal cactus wren, coastal California gnatcatcher, Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus hudsonius*), Southern California rufous-crowned sparrow, western bluebird, monarch butterfly, Quino checkerspot butterfly, San Diego black-tailed jackrabbit, southern mule deer, orange-throated whiptail (*Aspidoscelis hyperythra*), red diamond rattlesnake (*Crotalus ruber*), and Blainville's horned lizard (*Phrynosoma blainvillei*), that occur or could occur in the Diegan coastal sage scrub and non-native grassland habitats on the project site during construction activities. The project would result in temporary direct and indirect impacts to habitats that support the sensitive wildlife species observed or with a high potential to occur on the project site. The project has the potential to result in temporary direct and indirect impacts to nesting birds. Direct and indirect impacts to these sensitive wildlife species are considered significant.

The project would result in permanent impacts to sensitive upland vegetation communities, including 0.75 acre of Diegan coastal sage scrub (including disturbed) and 0.06 acre of non-native grassland. Temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland could also result from implementation of the project. Direct and indirect impacts to these sensitive vegetation communities are considered significant. The freshwater marsh and non-vegetated channels on the project site would be avoided, and no permanent or temporary impacts would occur.

The project has been designed to avoid impacting on-site jurisdictional aquatic resources, including Salt Creek and the four non-vegetated channels. Direct impacts to the jurisdictional aquatic resources on the project site are considered less than significant. Indirect impacts to jurisdictional aquatic resources could occur during project construction and are considered significant.

The open space surrounding the project site has been designated as important habitat connectivity areas within the Otay River Valley and Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan Area. Temporary direct and indirect impacts to sensitive wildlife species and the vegetation communities that these species may use during migration or dispersal are considered significant.

Implementation of the project would not result in conflicts with any local policies or ordinances protecting biological resources or regional Conservation Plans, including the Chula Vista General Plan, Chula Vista MSCP Subarea Plan and City of San Diego MSCP Subarea Plan, and impacts are considered to be less than significant.

Implementation of Mitigation Measures (MMs) BIO-1 through BIO-9 would minimize and mitigate temporary and permanent direct and indirect impacts to sensitive plant and wildlife species, sensitive vegetation communities, and wildlife corridors.

Implementation of the project would not result in cumulative impacts to biological resources because all impacts would be reduced to below a level of significance with implementation of MMs BIO-1 through BIO-9.

Implementation of the MMs proposed herein would fully mitigate potentially significant direct, indirect, and cumulative impacts to biological resources resulting from implementation of the project to less than significant.

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Section 1 Introduction

Harris & Associates (Harris) was contracted by the City of San Diego (Applicant) to conduct reconnaissance-level biological surveys, rare plant surveys, and desktop literature reviews in support of the Mitigated Negative Declaration for the proposed Otay Pipeline 2 Segment A6 Replacement Project (project) in the City of Chula Vista, California.

1.1 Purpose of the Report

The purpose of this Biological Resources Technical Report is to document the biological resources present in the project corridor; identify potential impacts to special-status biological resources; document potential jurisdictional wetlands and waters in the corridor; and recommend avoidance, minimization, and/or mitigation measures (MMs) consistent with federal, state, and local rules and regulations.

The term "biological resources" refers to plant species, wildlife species, and vegetation communities on and adjacent to the project site. For the purposes of this Biological Resources Technical Report, sensitive biological resources are those defined as follows: (1) species designated as endangered, threatened, rare, protected, sensitive, or species of special concern according to the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), California Native Plant Society (CNPS), or applicable regional plans, policies, or regulations needs due to limited distribution, limited numbers, or significant population declines associated with natural or human-made causes; (2) species and habitat types recognized by local and regional resource agencies as special status; (3) habitats or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status but are regulated under local, state, and/or federal laws.

1.2 Project Location

The project is located in the City of Chula Vista, California (Appendix A, Figures; Figure 1, Regional Location). The project lies within a 100-foot corridor owned in fee by the City of San Diego (herein referred to as the project site) encompassing approximately 10 acres (Assessor's Parcel Number 644-080-24), as depicted on the Otay Mesa 7.5-minute U.S. Geological Survey topographic quadrangle. The project site is within the Otay Ranch Preserve in the Chula Vista MSCP Subarea Plan (Figure 2, Project Site). The project site begins at the Otay Water Treatment Plant on the southwestern side of Lower Otay Lake, extends 4,000 feet west through Salt Creek to the Salt Creek and Village 10 parcel boundary, and ends where it connects to an existing pipeline that has already been replaced (Figure 2).

1.3 Project Description

The project includes the replacement in place of approximately 4,000 linear feet of the Otay Pipeline 2 segment A6 40-inch steel pipe with an increased diameter 54-inch steel pipe in the same underground location except under Salt Creek, where the pipe will be replaced directly adjacent to the existing pipe. The pipe replacement method under Salt Creek is described in detail later in this section. The A6 segment is currently not in use but is proposed for replacement because it is in poor condition, with several portions of the current pipe exposed and corroded/oxidized. The project would replace the current pipe with a larger pipe to provide a redundant water supply line to handle current and anticipated future water flows from the Otay Water Treatment Plant to users in the City of San Diego.

The existing pipeline infrastructure on the project site is composed of two separate pipelines. Otay Pipeline 3 is an existing adjacent pipeline within the same 100-foot fee ownership corridor that is currently in service. Otay Pipeline 2 provides redundancy for and Otay Pipeline 3. The pipeline is operated and maintained by the City of San Diego.

1.3.1 Construction

Construction of the project is anticipated to last for approximately one year. The existing A6 pipeline segment, which is not currently in service, would be removed and disposed of at an appropriate waste facility. Pipeline segment replacement activities, including staging areas, would be conducted within the 100-foot fee ownership corridor owned by the City of San Diego. Designated staging areas would be restricted to developed land or disturbed habitat. Existing access roads, some of which are currently used by the City of Chula Vista and San Diego Gas & Electric for regular maintenance activities in the area, were identified and field-verified as suitable for construction access and City of San Diego maintenance vehicles access to the pipeline alignment. During construction and operation, the project would use the existing access roads, and no improvements to the access roads outside of the 100-foot fee ownership corridor are proposed as part of the project.

The existing pipeline runs under Salt Creek in the western portion of the project site. To avoid impacts to Salt Creek, the jack-and-bore method of horizontal drilling would be used during pipeline replacement. This method would horizontally drill underneath Salt Creek, creating a boring hole through which the replacement pipe would be placed directly adjacent to the existing pipeline, avoiding disturbance to the flow, bed, bank, and immediate upland areas of Salt Creek. Upon installation of the replacement pipeline, the existing pipeline under Salt Creek would be filled with an approved concrete slurry mixture, capped, and remain in place to avoid disturbance of Salt Creek. The jack-and-bore method has been chosen for its ability to replace the stretch of pipeline running under Salt Creek without disturbing the surface.

Four non-vegetated channels occur in the eastern and central portions of the project site and are described in detail in Sections 5.1.4, Non-Vegetated Channel (64200), and 5.2, Jurisdictional Aquatic Resources. The existing pipeline spans over the four channels and would be replaced by the new pipe in the same locations, avoiding impacts to the four non-vegetated channels. .

Outside the limits of Salt Creek and the four non-vegetated channels, the pipeline would be replaced underground in the existing pipeline trench using open-trench construction methods. Materials removed during existing pipeline removal would be replaced with 3,700 cubic yards of fill for bedding under the pipeline and backfill from the trench surrounding the pipeline. The replacement pipeline would measure 54 inches in diameter and would be made of steel with field-welded joints, tape wrapped, mortar coated, and cement lined for increased durability. There would be a minimum one-foot clearance using sand cushions at all locations where the pipeline and existing maintenance access roads cross. After the pipeline within each trench section is replaced, the trench would be backfilled with the same soils removed from the trench before the next section trench is opened. The construction disturbance during the in-place pipeline replacement would be considered a temporary impact. Temporary impacts mitigation is discussed in detail in Section 6, Impacts and Mitigation.

Installation of the replacement pipeline would include the replacement of five air vacuum valves at high points along corridor terrain and five blow-off valves at the lowest upland elevation points (therefore outside of Salt Creek wetland and the four non-vegetated channels). Once replaced, the existing air vacuum valves and blow-offs would be cut off at the surface and left in place to reduce disturbance of the surrounding vegetation.

Upon completion of the pipeline replacement, approximately 10-foot-wide internal access roads would be graded to connect the existing external access roads to the five air vacuum and five blow-off valves for long-term maintenance access. The internal access roads would be considered a permanent impact and are discussed in detail in Section 6.

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Section 2 Environmental Setting

The following is a description of the existing conditions on the project site.

2.1 Land Use

The project site is entirely within a 100-foot utility corridor owned in fee by the City of San Diego. No other land uses or development occurs on the project site.

As depicted on Figure 2, the project is within the Otay Ranch Preserve. The Otay Ranch Preserve is managed by the County of San Diego (County) and the City of Chula Vista. The parcel immediately west of the site, Village 10, is planned for residential development. East of the project site lies the Otay Water Treatment Plant and Lower Otay Lake, which serves as a critical water source for the City of San Diego. The Otay River is south of the project site and functions as the outlet for Salt Creek and the four non-vegetated channels that flow through the project site. Southeast of the project site are the East Mesa Juvenile Detention Facility and Richard J. Donovan Correctional Facility, which are the nearest full-scale developments. Residential land uses can be observed to the north, with the nearest housing development approximately one mile away.

2.2 Topography and Soils

Topography on the project site ranges in elevation from 275 to 414 feet above mean sea level (amsl) (Figure 3, USGS Topographic Map). The project site topography is varied with hills and valleys along the length of the pipeline alignment with Salt Creek and the four non-vegetated channels occurring at the bottom of the valleys.

The soil types mapped on the project site are characterized as well-drained and include Diablo-Olivenhain complex (nine to 30 percent slopes), Huerhuero loam (two to nine percent slopes), Olivenhain cobbly loam (two to nine percent slopes), and terrace escarpments (no slope percentage information available) (Figure 4, Soils) (USDA 2022). Huerhuero loam is the most widespread in the area and occupies most of the project site (Figure 4). The western portion of the project site east of Salt Creek is mapped as Diablo-Olivenhain complex, the eastern portion of the project site is mapped with terrace escarpments, and the central portion of the project site is mapped as Olivenhain cobbly loam (Figure 4). The acreages of each soil type are provided in Table 1.

Table 1. Soil Types on the Project Site

Soil Type	Acres
Diablo-Olivenhain complex	0.82
Huerhuero loam	7.77
Olivenhain cobbly loam	0.44
Terrace escarpments	1.01
Total	10.04

The USDA Soil Conservation Service (1973) describes these soils as follows:

- **Diablo-Olivenhain complex** consists of clayey-skeletal soils that are well-drained, that have slow or medium runoff, and have very slow permeability. They are gently sloping to strongly sloping and are typically found on dissected marine terraces at elevations of 100 to 600 feet amsl.
- **Huerhuero loam** consists of moderately well-drained loams that have a clay subsoil developed in sandy marine sediments. They are gently sloping and undulating and typically found at elevations between 10 to 400 feet amsl.
- **Olivenhain cobbly loam** consists of well-drained moderately deep to deep cobbly loams with a very cobbly clay subsoil that formed in old gravelly and cobbly alluvium. They are gently sloping to moderately sloping and typically found at elevations from 100 to 600 feet amsl.
- **Terrace escarpments** consists of loamy or gravelly soil over soft marine sandstone, shale, or gravelly sediments. They are steep to very steep escarpments that occur on the nearly even fronts of terraces or alluvial fans within the coastal plain and in small areas of the foothills and desert.

2.3 Hydrology

The project site is in the Otay Hydrologic Unit, which encompasses the Otay River Watershed (Figure 5, Watersheds). The Otay River Watershed encompasses approximately 160 square miles in southwest San Diego County and is one of the three hydrologic units that discharge to San Diego Bay. The watershed consists largely of unincorporated areas in the County but also includes portions of the Cities of Chula Vista, Imperial Beach, Coronado, National City, and San Diego. From west to east, the watershed is composed of the Coronado, Otay Valley, and Dulzura Hydrologic Areas. The project site is in the Poggi Canyon Hydrologic Unit (Hydrologic Unit Code 12) in the larger Otay River Hydrologic Unit (Hydrologic Unit Code 10). The major inland hydrologic features, Upper and Lower Otay Lakes, are two water supply reservoirs that also provide important habitat and recreational opportunities. The project site is directly west of the Lower Otay Lake. The channels on the project site flow south into Otay River then southwest into San Diego Bay and the Pacific Ocean.

2.4 Climate

Meteorological data for the project site are gathered at the Chula Vista weather station approximately 5.5 miles southwest of the project site. On the project site, the normal daily maximum temperature is 82 degrees Fahrenheit (°F) in August, and the normal daily minimum temperature is 45°F in December. The average annual temperature is approximately 63°F, with very few days above 100°F or below freezing historically (NOAA 2022). Due to the temperate climate, the growing season is typically year-round.

The average precipitation on the project site is approximately 10 to 14 inches annually, occurring primarily from October through April. Based on data from the Chula Vista weather station, the vicinity of the project site receives the greatest amount of rain, an average of approximately 2.9 inches, during February.

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Section 3 Regulatory Framework

This section summarizes federal, state, regional, and local regulations, plans, policies, and programs that provide protection and management of sensitive biological resources that are applicable to the project. The federal government administers nonmarine plant- and wildlife-related issues through the USFWS, while waters of the United States issues are administered by the U.S. Army Corps of Engineers (USACE). California law relating to wetland, water-related, and wildlife issues is administered by the CDFW. Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA lead agency (in this case, the City of Chula Vista) pursuant to the CEQA Guidelines. Biological resources-related laws and regulations that apply include the federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), Clean Water Act (CWA), CEQA, California Endangered Species Act, and California Fish and Game Code.

3.1 Federal

CWA, Section 404 (33 CFR 328.3[a]). These provisions regulate the discharge of dredged or fill material in waters of the United States, including wetlands. Activities that discharge dredge or fill material into waters of the United States can be authorized by the USACE.

FESA, Sections 7 and 9 (16 USC 1531 et seq.; 50 CFR Part 402). This prohibits the "take" (i.e., harm, harass, or kill individuals, or destroy associated habitat) of species federally listed as threatened or endangered. Take incidental to otherwise lawful activities can be authorized by the USFWS through a permit under Sections 4(d), 7, or 10(a).

MBTA (16 USC 703–712; 50 CFR 10). The federal MBTA prohibits the direct or indirect take of migratory birds and their active nests unless permitted.

3.2 State

Birds of Prey Protection Provision (California Fish and Game Code, Section 3503.5). This provision prohibits the taking of birds of prey (Order Falconiformes and Strigiformes) including their nests and eggs.

California Endangered Species Act (California Fish and Game Code, Section 2050 et seq.). Section 2050 of the California Fish and Game Code prohibits any activities that would jeopardize or take a species designated as threatened or endangered by the state.

Streambed Alteration Agreement (California Fish and Game Code, Section 1600). The California Fish and Game Code requires any person who proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or

lake, or their tributaries, or use materials from a streambed, to submit a notification for a Streambed Alteration Agreement to the CDFW.

California Fish and Game Code, Section 1602. Section 1602 regulates water resources in the State of California. Activities that divert or obstruct the natural flow of, or change or use material from the bed, channel, or bank of any river stream or lake may be authorized by the CDFW. CDFW jurisdiction includes intermittent and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated or to the limit of the adjacent riparian vegetation, located contiguous to the watercourse, if the stream or lake is vegetated.

California Fish and Game Code, Section 3503. Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nests or eggs of any birds, except as otherwise provided by the code or any regulation made pursuant thereto.

CEQA, as amended (California Public Resources Code, Section 21000 et seq.). The goal of CEQA is to assist California public agencies in identifying potential significant negative environmental impacts caused by their actions and avoiding or mitigating those impacts when feasible.

California Fully Protected Wildlife Species Provision (California Fish and Game Code, Sections 3511, 4700, 5050, and 5515). These provisions prohibit the taking of fully protected birds, mammals, amphibians and fish.

California Native Plant Protection Act of 1977 (California Fish and Game Code, Section 1900–1913). These provisions preserve, protect, and enhance endangered or rare native plants of the state.

Regional Water Quality Control Board (RWQCB). The RWQCB regulates impacts to water quality under Section 401 of the CWA. A project must comply with Section 401 of the CWA before the USACE can issue a Section 404 Permit. The RWQCB will issue a Section 401 Water Quality Certification or Waiver of Certification, depending on the extent of impacts to waters of the United States. The RWQCB also regulates impact to waters of the state (usually limited to "isolated" waters or swales that may not fall under USACE jurisdiction) under the Porter-Cologne Water Quality Control Act.

Natural Community Conservation Planning Act (NCCP), as amended (California Fish and Game Code, Section 2800–2835). The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listing by focusing on the long-term suitability of wildlife and plant communities and including key interests in the process.

Porter-Cologne Water Quality Control Act (Porter-Cologne). Regulated by the RWQCB for impacts to waters of the state. Although water quality issues related to impacts to waterways are normally addressed during 401 Water Quality Certification, should a water of the State of California be

determined by the USACE not to have CWA jurisdiction, Porter-Cologne would be addressed under a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending on the level of impact and the properties of the waterway.

3.3 Local

While the project site is within a pipeline corridor owned in fee by the City of San Diego, the project site is within the City of Chula Vista's jurisdictional boundaries. Because the project is in the City of Chula Vista, which is processing the grading permit, the City of Chula Vista is the lead agency in preparation of the CEQA analysis for the project. The City of Chula Vista and the City of San Diego regulatory framework applicable to the project are described in the following subsections.

3.3.1 City of Chula Vista

The project site is within the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003) and Chula Vista General Plan (City of Chula Vista 2005) areas. The Chula Vista MSCP Subarea Plan and Chula Vista General Plan policies related to biological resources are discussed in detail in the following subsections.

3.3.1.1 Otay Ranch Resource Management Plan

The project site is within the Otay Ranch General Development Plan and Otay Ranch Resource Management Plan (RMP). Otay Ranch is identified as a Covered Project in the City's MSCP Subregional Plan. The RMP was adopted in 1993 with the approval of the Otay Ranch General Development Plan to establish a permanent Preserve within Otay Ranch. The RMP is composed of two separate documents, the Phase 1 RMP and Phase 2 RMP (adopted in 1996, revised in 2002, updated in 2018). The Phase 1 RMP identifies Preserve areas within Otay Ranch and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management, and funding (City of Chula Vista and County of San Diego 1993, 2002, 2018). The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources.

3.3.1.2 Chula Vista MSCP Subarea Plan

The MSCP Subregional Plan is implemented through individual Subarea Plans adopted by each jurisdiction receiving take authorization for covered species. The Chula Vista MSCP Subarea Plan was approved by the City of Chula Vista in May 2003 and received take authorization in January 2005. The Chula Vista MSCP Subarea Plan includes habitat for covered federal and state endangered, threatened, or sensitive species. The Chula Vista MSCP Subarea Plan also designates a preserve and provides a regulatory framework for determining impacts to the preserve and sensitive habitat throughout the City of Chula Vista and identifies mitigation to reduce those impacts.

The Chula Vista MSCP Subarea Plan also provides a process that allows the City of Chula Vista to convey "take" authorization under the federal and California Endangered Species Acts for the incidental take of threatened and endangered species. The Chula Vista MSCP Subarea Plan authorizes take in two ways (City of Chula Vista 2003):

1. It establishes "Covered Projects" for which take is authorized.
2. For projects located within mapped development areas that are outside of Covered Projects, take of covered species requires the issuance of a Habitat Loss and Incidental Take (HLIT) Permit. In addition, the Chula Vista MSCP Subarea Plan requires issuance of an incidental take permit for "all development within the City of Chula Vista's jurisdiction which is not located within the development areas of Covered Projects prior to issuance of any land development permit."

Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the project would be required to obtain an HLIT Permit from the City pursuant to the Chula Vista MSCP Subarea Plan and Chula Vista Municipal Code, Section 17.35.080. Written HLIT Ordinance Findings for the project are provided in Appendix B.

Chapter 6.0 of the Chula Vista MSCP Subarea Plan identifies allowed and permitted uses within the Preserve (City of Chula Vista 2003). The project site is owned in fee by the City of San Diego and is considered an existing legal use by Chula Vista MSCP Subarea Plan. Therefore, the project site is allowed within the Preserve. The project site, located within Otay Ranch (a Covered Project), is considered a water facility project but is not considered a Planned or Future Facility as defined by Section 6.3.3 of the Chula Vista MSCP Subarea Plan because the water pipeline passes through the City of Chula Vista but does not serve Otay Ranch or any other Covered Project. Although the project is not considered a Planned or Future Facility under the Subarea Plan, the project is subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the Chula Vista MSCP Subarea Plan. Compliance with the Facilities Siting Criteria ensures that the facilities within the Preserve have been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical. Appendix C provides the Facilities Siting Criteria for the Otay Pipeline 2 Segment A6 Replacement Project.

Chula Vista MSCP Subarea Plan Goals

The City of Chula Vista prepared the Chula Vista MSCP Subarea Plan with specific intent to meet the following goals (City of Chula Vista 2003):

1. To conserve covered species and their habitats through the conservation of interconnected significant habitat cores and linkages
2. To delineate and assemble a preserve using a variety of techniques including public acquisition, on- and off-site mitigation, and land use regulations

3. To provide a preserve management program that, together with federal and state management activities, will be carried out over the long-term, further ensuring the conservation of covered species
4. To provide necessary funding for a preserve management program and biological monitoring of the preserve
5. To reduce or eliminate redundant federal, state and local natural resource regulatory and environmental review of individual projects by obtaining federal and state take authorizations for 86 species

Narrow Endemic Species Protection

The project is located within Otay Ranch, a Covered Project, in the Chula Vista MSCP Subarea Plan. Covered projects provide protection for narrow endemic species through consideration of narrow endemic species in the preserve design for those projects. Take of covered species, including narrow endemic species, for development areas within Covered Projects will be extended at the time of development approval. There are no limitations on impacts to narrow endemic species within development areas of Covered Projects, other than those specified in project-specific management requirements or conditions for coverage.

Pursuant to Section 5.2.3.2 of the Chula Vista MSCP Subarea Plan, projects located within the 100 Percent Conservation Areas of Covered Projects (i.e., within the Preserve) are limited to uses described in Sections 6.1, 6.2, and 6.3 of the Chula Vista MSCP Subarea Plan. Impacts to covered narrow endemic species from Planned and Future Facilities located within the 100 Percent Conservation Areas of Covered Projects would be avoided to the maximum extent practicable. Where impacts are demonstrated to be unavoidable, impacts would be limited to five percent of the total narrow endemic species population within the project area. Findings of equivalency will be made by the City for such Take authorization for covered narrow endemic species, pursuant to Section 5.2.3.6 of the Chula Vista MSCP Subarea Plan. The City will forward written findings of equivalency to the wildlife agencies. Within 30 days of receipt of mailed notice of findings from the City, the wildlife agencies may submit to the City a written finding of non-concurrence on the facts of the City's findings. If such finding of non-concurrence is made within 30 days, the City will confer with the wildlife agencies to develop agreement upon an appropriate location for the Planned or Future Facility in question. If the wildlife agencies do not respond within 30 days after receipt of mailed notice, the City shall deem the written findings accepted.

The project site is within the 100 Percent Conservation Area of the Otay Ranch Preserve (a Covered Project) and, therefore, is required to avoid narrow endemic species to the maximum extent feasible. Potential impacts to narrow and endemic species on the project site and proposed mitigation pursuant to the Chula Vista MSCP Subarea Plan Section 5.2.3.2 are discussed in Section 6.

Wetlands Protection

As part of the CEQA review, projects that contain wetlands will be required to demonstrate that impacts to wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts to wetlands within the development area, the mitigation ratio will be in accordance with the wetlands mitigation ratios identified in the Subarea Plan. The wetlands mitigation ratios provide a standard for each habitat type but may be adjusted depending on both the functions and values of the impacted wetlands and the wetlands mitigation proposed by the project. The City of Chula Vista may also consider the wetland habitat types being impacted and used for mitigation in establishing whether these standards have been met.

3.3.1.3 Chula Vista General Plan

Environmental Element

The Environmental Element of the Chula Vista General Plan (City of Chula Vista 2005) provides the following objectives and policies that apply to biological resources:

- **Objective E1.** Conserve Chula Vista's sensitive biological resources
  - **Policy E1.1.** Implement the City of Chula Vista MSCP Subarea Plan
- **Objective E11.** Improve Chula Vista's open space and trails network, including the provision of additional internal connections between the various elements of the network
  - **Policy E11.1.** Provide an integrated network of open space areas, as needed, throughout the City of Chula Vista to serve residents, as well as to serve as a regional asset and attractor of visitors (e.g., on the bayfront and within the Otay River Valley)
  - **Policy E11.2.** Plan for the long-term preservation and enhancement of open space within the Chula Vista Greenbelt
  - **Policy E11.6.** The Sweetwater River corridor should be restored and enhanced as an environmental and recreational resource for the community
  - **Policy E11.9.** Work with utility owners and operators to promote the use of utility easements and corridors as open space and trail corridors
  - **Policy E11.10.** Encourage the retention of open space areas, including undeveloped natural areas and utility corridors, wildlife corridors, and key scenic corridors

3.3.1.4 Habitat Loss and Incidental Take Ordinance

In compliance with the MSCP Subregional Plan and the Chula Vista MSCP Subarea Plan, the City of Chula Vista has established development standards, the HLIT Ordinance, as a condition of issuance of take authorization by the wildlife agencies (i.e., USFWS and CDFW). The HLIT

Ordinance is consistent with the conservation and mitigation goals of the MSCP Subregional Plan and the Chula Vista MSCP Subarea Plan, which require impacts to sensitive vegetation communities to be avoided and minimized to the maximum extent practicable. Furthermore, the HLIT Ordinance identifies specific impact and mitigation requirements for impacts to native and some non-native communities (e.g., non-native grassland). Written HLIT Ordinance Findings for the project are provided in Appendix B.

3.3.2 City of San Diego

While the project site is within a pipeline corridor owned in fee by the City of San Diego, it is not within the City of San Diego General Plan area (City of San Diego 2008), and therefore, those policies are not applicable to the project. The project site is not within the City of San Diego MSCP Subarea Plan (City of San Diego 1997); however, the easternmost portion of the project site (in the Otay Water Treatment Plant property) is mapped within the City of San Diego Multi-Habitat Planning Area (MHPA) under the City of San Diego MSCP Subarea Plan. The City of San Diego MSCP Subarea Plan and MHPA policies that are applicable to the project are discussed in detail in the following subsections.

3.3.2.1 City of San Diego Biology Guidelines

The City of San Diego 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, San Diego Land Development Code, Chapter 14, Division 1, Section 143.0101 et seq., and the Open Space Residential (OR-1-2) Zone, Chapter 13, Division 2, Section 131.0201 et seq." (City of San Diego 2012). The guidelines also provide standards for the determination of impact and mitigation under CEQA. Sensitive biological resources, as defined by the Environmentally Sensitive Lands Regulations, include lands within the MHPA and 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.

3.3.2.2 City of San Diego Multiple Species Conservation Program Subarea Plan

The City of San Diego MSCP Subarea Plan forms the basis for the implementing agreement that is the contract between the City of San Diego and the wildlife agencies that ensures implementation of the City of San Diego MSCP Subarea Plan and, thereby, allows the City of San Diego to issue take permits at the local level. The City of San Diego MSCP Subarea Plan is also consistent with the MSCP Plan and qualifies as a standalone document to implement the City of San Diego's portion of the MSCP preserve.

The City of San Diego MHPA was developed by the City of San Diego in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The Preserve Design

Criteria contained in the MSCP Plan and the San Diego City Council adopted criteria for the creation of the MHPA were used as guides in the development of the City of San Diego MHPA. The City of San Diego MHPA delineates core biological resource areas and corridors targeted for conservation. Within the City of San Diego MHPA, limited development may occur.

The City of San Diego subarea encompasses 206,124 acres in the MSCP study area. The subarea is characterized by urban land uses with approximately three-quarters either built out or retained as open space/park system. The 1997 population within the subarea was approximately 1.3 million. The City of San Diego MHPA represents a "hard line" preserve, in which boundaries have been specifically determined. It is considered an urban preserve, which is constrained by existing or approved development, and is composed of linkages connecting several large areas of habitat.

The City of San Diego MHPA is approximately 56,831 acres and includes approximately 47,910 acres within City of San Diego jurisdiction and additional City of San Diego -owned lands (8,921 acres) in the unincorporated areas around San Vicente Reservoir, Otay Lakes, and Marron Valley. The City of San Diego MHPA comprises 29 percent of the regional MHPA and 58 percent of all habitat and vacant lands. The conserved lands in the City of San Diego MHPA total 53 percent of the vacant land in the City of San Diego (61 percent of total habitat land in City of San Diego). The City of San Diego MHPA preserves 77 percent of the core biological resource areas and 77 percent of the habitat linkages within its subarea. Lands that are outside of the biological core or linkage areas but are currently dedicated or designated as open space and provide some long-term conservation value are included in the City of San Diego MHPA. In addition, a few small holdings of military properties within the City of San Diego have been included in the MHPA. While these lands are shown pictorially in the MHPA, nothing in the City of San Diego MSCP Subarea Plan or implementing ordinances will apply to federally owned military property.

Approximately 90 percent of the MHPA lands (52,012 acres) in the City of San Diego subarea will be preserved for biological purposes. This is an overall average, and in some cases, 100 percent of an area will be preserved as a result of negotiations conducted during the subarea planning process.

City of San Diego Multiple Species Conservation Program Subarea Plan Goals and Objectives

The habitat management aspect of the City of San Diego MHPA is an important component of the MSCP related to the goal of the program. The overarching MSCP goal is to maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extirpation and ultimate extinction and minimizing the need for future listings while enabling economic growth in the region.

Where land is preserved as part of the MSCP through acquisition, regulation, mitigation or other means, management is necessary to continue to ensure that the biological values are maintained over time, and that the species and habitats that have been set aside are adequately protected and remain viable.

The City of San Diego will be responsible for and will continue the management and maintenance of its existing public lands (including those with conservation easement), at current levels. The City of San Diego will also manage and maintain lands obtained as mitigation where those lands have been dedicated to the City of San Diego in fee title or easement, and land acquired with regional funds within the City of San Diego MHPA boundaries. Likewise, the federal and state agencies will manage, maintain and monitor their present land holdings, as well as those they acquire on behalf of the MSCP, consistent with the MSCP. Lands in the MHPA that are set aside as open space through the development process but are not dedicated in fee to the City of San Diego, or other acceptable entity, will be managed by the landowner consistent with approved mitigation, monitoring and reporting programs or permit conditions. Private owners of land within the MHPA, who are not third party beneficiaries, will have no additional obligations for the management or maintenance of their land.

In order to assure that the goal of the MHPA is attained and fulfilled, management objectives for the City of San Diego MHPA are as follows (City of San Diego 1997):

1. To ensure the long-term viability and sustainability of native ecosystem function and natural processes throughout the MHPA
2. To protect the existing and restored biological resources from intense or disturbing activities within and adjacent to the MHPA while accommodating compatible public recreational uses
3. To enhance and restore, where feasible, the full range of native plant associations in strategic locations and functional wildlife connections to adjoining habitat in order to provide viable wildlife and sensitive species habitat
4. To facilitate monitoring of selected target species, habitats, and linkages in order to ensure long-term persistence of viable populations of priority plant and animal species and to ensure functional habitats and linkages
5. To provide for flexible management of the preserve that can adapt to changing circumstances to achieve the above objectives

The management directives are organized by priority into the following two categories. The priorities are intended to assist in the decisions on where to spend limited funds and direct mitigation efforts (City of San Diego 1997):

- **Priority 1:** Directives that protect the resources in the MHPA, including management actions that are necessary to ensure that the covered species are adequately protected.

Refer to City of San Diego MSCP Subarea Plan, Appendix A, Species Evaluated for Coverage under the MSCP.

- **Priority 2:** Directives other than those required for covered species status and other long-term items that may be implemented during the life of the Subarea Plan as funding becomes available.

Section 4 Methods

Before the biological resources surveys were performed, sensitive biological resources with potential to occur on the project site were identified through a review of existing maps, literature and other biological studies conducted in the area, and sensitive species occurrence databases.

4.1 Literature Review

The following were reviewed before the biological resources surveys were performed:

- Chula Vista MSCP Subarea Plan (City of Chula Vista 2003)
- Otay Ranch Phase 2 RMP (County of San Diego and City of Chula Vista 1996)
- Otay Ranch Phase 2 RMP Update (County of San Diego and City of Chula Vista 2018)
- Baseline Biodiversity Survey for the Otay Ranch Preserve (Dudek 2010)
- City of San Diego MSCP Subarea Plan (City of San Diego 1997)
- San Diego Municipal Code, Land Development Code, Biology Guidelines (City of San Diego 2012)
- California Natural Diversity Database (CDFW 2022)
- USFWS National Wetlands Inventory Wetlands Mapper (USFWS 2022a)
- USFWS Information for Planning and Consultation (USFWS 2022b)
- Calflora Database (Calflora 2022)
- The CNPS Rare Plant Program Inventory of Rare Plants (CNPS 2022)

4.2 General Biological Surveys

ECORP Consulting, Inc. (ECORP) botanist Greg Hampton and Harris senior biologist Melissa Tu conducted a general biological reconnaissance survey by walking transects throughout the project site on May 13, 14, and 15, 2018, to map vegetation communities, document plant and wildlife species, and evaluate the potential for occurrence of sensitive plant and wildlife species. Ms. Tu and Harris biologist Katie Laybourn conducted additional surveys of the project site on February 20 and May 20, 2020. Wildlife identifications were made in the field directly through visual observation or indirectly through call, burrow, track, or scat detection. Plant and wildlife species observed during the survey were recorded. Plants unable to be identified in the field by the surveyors were collected and subsequently identified using the Jepson Manual, Vascular Plants of California, Second Edition (Baldwin et al. 2012). Plant nomenclature follows the Checklist of the San Diego County Plant Atlas (San Diego Natural History Museum 2022) and Baldwin et al. (2012) where appropriate. Complete lists observed plant and wildlife species are provided in Appendix D, Plant and Wildlife Species Observed.

4.2.1 Vegetation Mapping

The biologists mapped the vegetation communities within the 100-foot wide City of San Diego fee ownership corridor. Vegetation communities were mapped on a one inch equals 200 feet scale aerial of the project site.

4.2.2 Aquatic Resources Delineation

Before conducting the delineation of jurisdictional waters field survey, Harris personnel reviewed existing background information pertaining to potential aquatic resources from the following sources:

- Aerial photographs of the project site and vicinity
- U.S. Geological Survey topographic maps to determine the presence of any "blue line" drainages or other mapped water features
- Historic and current aerial imagery (Google Earth 2022)
- USFWS National Wetlands Inventory to identify areas mapped as aquatic resources features (USFWS 2022a)
- USDA Natural Resources Conservation Service Web Soil Survey (USDA 2022)

Harris biologist Ms. Tu and environmental scientist Kelsey Hawkins and ECORP biologist Mr. Hampton conducted the delineation fieldwork on March 13 and 14 and May 15, 2018. The delineation was conducted using the routine on-site determination method described in the 2008 Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Arid West Region of the U.S. (USACE 2008a), 1987 USACE Wetlands Delineation Manual (USACE 1987), and 2008 Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (USACE 2008b). The project site was surveyed on foot to obtain total coverage.

As detailed in the 1987 USACE Wetlands Delineation Manual, 2008 Arid West Regional Supplement, and 2008 OHWM Guide, the surveyors collected and recorded data on vegetation, soil, and hydrological characteristics. The OHWM was determined based on the presence of the following characteristics in the channel: presence of litter or debris from high flows, change in character of the soil, and destruction of terrestrial vegetation (USACE 2014).

The surveyors mapped the USACE jurisdiction of non-wetland non-tidal waters at the OHWM. The OHWM represents the limit of potential USACE jurisdiction over non-wetland waters under Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. The surveyors identified the OHWM in each creek reach based on field observations of changes in vegetation, scour, drift lines, substrate composition, and bench and floodplain contours on the project site. The aquatic resources data was collected using an iSXBlue II Global Positioning System (GPS) receiver. The aquatic resources mapping and results were verified by Ms. Tu and Ms. Laybourn during the additional survey conducted on February 20, 2020.

4.3 Rare Plant Surveys

Ms. Tu and Ms. Laybourn conducted two separate rare plant surveys to identify any federally or state listed, MSCP-covered, and narrow endemic plant species on the project site on February 20 and May 20, 2020. Rare plant surveys were conducted by walking transects throughout the project site and mapping sensitive plant species. Limitations of the rare plant survey include surveying outside of the optimal blooming period for some sensitive species, particularly for species that have later blooming periods. Specifically, in the County in 2020, Otay tarplant was documented with a later than normal blooming period in southern portion of the County. This sensitive plant has a high potential to occur on the project site and could have been missed during the second rare plant survey in May 2020. The results of the rare plant surveys are detailed in Section 5, Results.

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Section 5 Results

The results presented below provide data from surveys conducted on the project site.

5.1 Vegetation Communities and Land Cover Types

The project site is in the Southern Coast Ranges subregion of the California Floristic Province (Jepson Online 2022). The vegetation classifications in this Biological Resources Technical Report conform to Oberbauer et al. (2008).

The vegetation communities and land cover types identified on the project site are Diegan coastal sage scrub (including disturbed), non-native grassland, coastal and valley freshwater marsh, non-vegetated channel, disturbed habitat, and urban/developed land (Figures 6 and 6a through 6d, Vegetation Communities). Table 2 provides a list of the different vegetation types within the site and their approximate acreages of cover.

Table 2. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community	Project Site (acres)
Upland	
Diegan Coastal Sage Scrub (including disturbed)[1] (32500)	7.11
Non-Native Grassland[1] (42200)	0.58
Subtotal	*7.69*
Riparian	
Coastal and Valley Freshwater Marsh[1] (52410)	0.05
Non-Vegetated Channel[1] (64200)	0.01
Subtotal	*0.06*
Developed/Disturbed	
Disturbed Habitat (11300)	1.09
Urban/Developed Land (12000)	1.20
Subtotal	*2.29*
Total	10.04

Source: Oberbauer et al. 2008.

Notes:

[1] Sensitive vegetation community

5.1.1 Diegan Coastal Sage Scrub (including Disturbed) (32500)

Diegan coastal sage scrub consists of low soft-woody shrubs, typically measuring 1.5 to 6.5 feet tall (Holland 1986). Species composition generally consists of California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*). Diegan coastal sage scrub is present in coastal Southern California from Los Angeles to Baja California, Mexico. It supports a rich diversity of sensitive plants and wildlife. However, it is estimated that Diegan coastal sage scrub has been

reduced by 75 to 80 percent of its historical coverage throughout Southern California. Because of this, it is the focus of the current State of California NCCP.

Approximately 7.11 acres of Diegan coastal sage scrub occurs throughout the project site. Diegan coastal sage scrub is the dominant vegetation on the project site. Dominant vegetation in the Diegan coastal sage scrub habitat includes California sagebrush, laurel sumac, California buckwheat, black sage, white sage, and lemonadeberry (*Rhus integrifolia*). Several coast prickly pear (*Opuntia littoralis*) and coastal cholla (*Cylindropuntia prolifera*) were also observed.

Areas characterized as disturbed Diegan coastal sage scrub were composed of a higher proportion of non-native grasses and black mustard (*Brassica nigra*). The dominant vegetation in the disturbed Diegan coastal sage scrub is California sagebrush, California buckwheat, and laurel sumac.

5.1.2 Non-Native Grassland (42200)

Non-native grassland consists of a dense to sparse cover of flowering annual grasses measuring approximately three feet high. It may occur where disturbance by maintenance (e.g., mowing, scraping, disking, spraying), grazing, repetitive fire, agriculture, or other mechanical disruption has altered soils and removed native seed sources from areas formerly supporting native vegetation. Non-native grassland typically occurs adjacent to roads or other developed areas where there has been some historical disturbance. Native wildflowers are often associated with this community, especially in years of favorable rainfall. Common plant species observed in non-native grasslands within the County include wild barley (*Hordeum murinum*), ripgut grass (*Bromus diandrus*), slender wild oat (*Avena barbata*), and foxtail (*Bromus madritensis*).

Approximately 0.58 acre of non-native grassland occurs throughout the project site (Figures 6, 6a, and 6d). The non-native grassland on the project site is dominated by wild oat, bromes (*Bromus* spp.), mustard, and filaree (*Erodium* spp.).

5.1.3 Coastal and Valley Freshwater Marsh (52410)

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots that grow to 1.3 to two meters tall. Uniform stands of bulrushes (*Scirpus* spp.) or cattails (*Typha* spp.) often characterize this habitat. Freshwater marsh occurs in wetlands that are permanently flooded by standing fresh water (Holland 1986; Oberbauer et al. 2008).

Approximately 0.05 acre of coastal and valley freshwater marsh surrounding Salt Creek occurs on the project site and is dominated by cattails (Figures 6 and 6a).

5.1.4 Non-Vegetated Channel (64200)

Non-vegetated channel consists of predominantly unvegetated sandy, gravelly, or rocky channels. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may

grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Oberbauer et al. 2008).

Approximately 0.01 acre of non-vegetated channels occurs on the project site (Figures 6, 6b through 6d, and 7, Aquatic Resources). These non-vegetated channels consist of four one-foot-wide non-vegetated earthen bottom channels. The four non-vegetated, earthen bottom channels are identified as C1 through C4 in Table 3 and on Figure 7.

Table 3. Non-Vegetated Channels on the Project Site

Non-Vegetated Channel	Acres	Width (feet)
C1	0.002	1
C2	0.002	1
C3	0.003	1
C4	0.002	1
Total[1]	0.01	—

Notes:

[1] Rounded to two decimal places.

Additional discussion of the non-vegetated channels is provided in Section 5.2, Jurisdictional Aquatic Resources.

5.1.5 Disturbed Habitat (11300)

Disturbed habitat consists of areas that have been physically disturbed and are no longer recognizable as a native or naturalized vegetation association, but continues to retain a soil substrate. Typically vegetation, if present, is nearly exclusively composed of non-native plant species, such as ornamentals or ruderal exotic species, that take advantage of disturbance, or shows signs of past or present wildlife use that removes any capability of providing viable natural habitat for uses other than dispersal. Disturbed habitat typically supports scattered non-native species such as mustard (*Brassica* sp.), wild radish (*Raphanus sativus*), sweet fennel (*Foeniculum vulgare*), Russian thistle (*Salsola tragus*), and thistle (*Centaurea* spp.).

Approximately 1.09 acres of disturbed land occurs in the central portion of the project site (Figures 6, 6b, and 6d). These disturbed areas are dominated by mustard, thistle, telegraph weed (*Heterotheca grandiflora*), and bromes.

5.1.6 Urban/Developed Land (12000)

Developed land consists of areas that have been constructed on or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation. Areas where no natural land is evident due to a large amount of debris or other materials being placed on it may also be considered developed (e.g., car recycling plant, quarry).

Approximately 1.21 acre of developed land occurs on the project site and consists of dirt access roads and unofficial trails (Figures 6 and 6a through 6d).

5.2 Jurisdictional Aquatic Resources

The jurisdictional aquatic resources delineation survey resulted in the determination of approximately 0.063 acre of aquatic resources on the project site that would be under the jurisdiction of the USACE, San Diego RWQCB, and CDFW. Biologists delineated 0.054 acre of freshwater marsh/emergent wetland and 0.009 acre of non-vegetated channel on the project site (Table 4).

Table 4. Jurisdictional Aquatic Resources on the Project Site

Aquatic Resource	Linear Feet	Acres
Freshwater Marsh/Emergent Wetland	100	0.054
Non-Vegetated Channel	400	0.009
Total	500	0.063

Descriptions of the freshwater marsh/emergent wetland and non-vegetated channels are provided below, and maps depicting the locations and dimensions are provided on Figure 7. Completed wetland and OHWM datasheets are provided in Appendix E, Wetland and OHWM Datasheets.

5.2.1 Non-Vegetated Channels (C1 through C4)

Non-vegetated channels C1 through C4 were mapped to be approximately 0.01 acre and occur in the eastern and central portions of the project site (Figure 7). Non-vegetated channels C1 through C4 are one foot wide and flow south through the project site. All four channels eventually empty into to the Otay River located approximately 0.25 mile south of the project site (USFWS 2022a).

5.2.2 Salt Creek Wetland

Salt Creek flows in a north–south direction, discharging into the Otay River approximately 0.5 mile south of the project site. Salt Creek and associated emergent wetland vegetation occur within the western portion of the project site (Figure 7). On the project site, the Salt Creek wetland is dominated by salt cedar (*Tamarix ramosissima*) and cattails and is surrounded by San Diego marsh elder and spiny rush (*Juncus acutus* spp. *leopoldii*).

5.3 Observed Species

5.3.1 Plant Species

Appendix D lists all vascular plant species observed on the project site during the biological resources surveys. A total of 116 plant taxa were observed on the project site, 74 (64 percent) of which were native and 42 (36 percent) of which were non-native. Of the 116 plants observed on

the project site, six are designated as sensitive. Sensitive plant species observed on the project site are described in Section 5.4, Sensitive Species.

5.3.2 Wildlife Species

Appendix D lists all wildlife species detected on the project site during the biological resources surveys. A total of 60 wildlife species were observed on the project site during the 2018 and 2020 surveys. One amphibian, 35 birds, 16 invertebrates, five mammals, and three reptiles were observed in total. Of the 60 wildlife species observed on the project site, nine are designated as sensitive. Sensitive wildlife species observed on the project site are described in Section 5.4.

Common bird species on the project site included California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), wrentit (*Chamaea fasciata*), bushtit (*Psaltriparus minimus*), house wren (*Troglodytes aedon*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), and mourning dove (*Zenaida macroura*).

5.4 Sensitive Species

Sensitive species are those recognized by federal, state, or local agencies as being potentially vulnerable to impacts because of rarity, local or regional reductions in population numbers, isolation/restricted genetic flow, or other factors. Special-status plants include those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and CDFW; those considered sensitive by the CDFW; and those species included in the California Rare Plant Rank (CRPR) inventory, maintained by the CNPS. Sensitive wildlife species include those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS and CDFW; or those considered sensitive by the CDFW.

As described in Section 4.1, Literature Review, distributions of historical sensitive species observations in the project vicinity were reviewed in preparation of this report. For the purposes of this biological resources assessment, those species that are either known to occur or have some potential to occur within the vicinity of the project site are addressed in this section. The list of potentially occurring sensitive plant and wildlife species is provided below in Table 5 along with an assessment of their potential for occurrence on the project site.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Plants				
Acanthomintha ilicifolia	San Diego thornmint	FT/SE/1B.1/CV MSCP, SD MSCP	Occurs in chaparral, coastal scrub, valley and foothill grassland and vernal pools.	*Not Expected.* No suitable habitat (vernal pool) is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Adolphia californica	California adolphia	None/None/2B.1/None	Occurs in chaparral, coastal sage scrub, and grasslands.	*Moderate.* Suitable habitat is present on the project site.
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1/None	Occurs in open coastal succulent scrub usually on canyon slopes with little herbaceous cover.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Ambrosia monogyra	Singlewhort burrobush	None/None/2B.2/None	Occurs in chaparral and Sonoran desert scrub.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2/SD MSCP	Occurs in chaparral and cismontane woodlands	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Atriplex pacifica	South coast saltscale	None/ None/1B.2/None	Occurs in coastal scrub, coastal bluff scrub, playas, and coastal dunes.	*Present.* South coast saltscale was observed in the central portion of the project site during the 2018 and 2020 surveys.
Bahiopsis laciniata	San Diego County viguiera	None/None/4.3/None	Occurs in chaparral and coastal scrub vegetation communities.	*Present*. San Diego County viguiera was observed in disturbed Diegan coastal sage scrub throughout the project site during the 2018 and 2020 surveys.
Bergerocactus emoryi	Golden-spined cereus	None/None/2B.2/None	Occurs in coastal scrub, chaparral, and closed-cone coniferous forest.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1/CV MSCP, SD MSCP	Occurs in chaparral, coastal sage scrub, valley and foothill grassland, and vernal pools.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1/CV MSCP, SD MSCP	Occurs in vernal pools, grassland, and scrub openings.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Calitropsis (=Cupressus) forbesii	Tecate cypress	None/None/1B.1/CV MSCP, SD MSCP	Occurs in closed-cone conifer forest and chaparral.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Calochortus dunnii	Dunn's mariposa lily	None/SR/1B.2/CV MSCP, SD MSCP	Occurs in closed-cone coniferous forest and chaparral.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2/CV MSCP, SD MSCP	Occurs in closed-cone conifer forest and chaparral.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2/None	Occurs in chaparral.	*Low.* No suitable habitat is present on the project site. This species was documented in 2010 within 0.5 mile of the project site.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2/None	Occurs in chaparral, coastal sage scrub, meadows and seeps, valley grassland, and vernal pools.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Comarostaphylis diversifolia ssp. *diversifolia*	Summer-holly	None/None/1B.2/None	Occurs in open chaparral, coastal scrub, and valley and foothill grasslands.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Cordylanthus orcuttianus	Orcutt's bird's-beak	None/None/2B.1/CV MSCP, SD MSCP	Occurs in coastal scrub.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Cylindropuntia (=opuntia) californica var. *californica*	Snake cholla	None/None/1B.1/CV MSCP, SD MSCP	Occurs in chaparral and coastal scrub.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Deinandra (=Hemizonia) conjugens	Otay tarplant	FT/SE/1B.1/CV MSCP, SD MSCP	Occurs in open coastal scrub and sparsely vegetated valley and foothill grasslands.	*High.* Suitable habitat is present on the project site. The project site lies within designated Critical Habitat for this species.
Deinandra (=Hemizonia) floribunda	Tecate tarplant	None/None/1B.2/None	Occurs in chaparral and coastal scrub.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Dudleya variegata	Variegated dudleya	None/None/1B.2/CV MSCP, SD MSCP	Occurs in chaparral, coastal scrub, cismontane woodland, and valley and foothill grassland.	*High.* Suitable habitat is present on the project site.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1/CV MSCP, SD MSCP	Occurs in open coastal scrub, valley and foothill grassland, and vernal pools.	*Not Expected.* No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1/CV MSCP, SD MSCP	Occurs in chaparral, coastal sage scrub, valley and foothill grassland, and vernal pools.	*Present.* San Diego barrel cactus was observed throughout the project site during the 2018 and 2020 surveys.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2/None	Occurs in chaparral, coastal scrub, and valley and foothill grassland with clay soils.	*Present*. Palmer's grapplinghook was observed throughout the project site during the 2018 and 2020 surveys.
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	None/None/1B.2/None	Occurs in chaparral, coastal scrub, and sandy, often disturbed areas.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Iva hayesiana	San Diego marsh elder	None/None/2B.2/None	Occurs in marshes, swamps and playas.	*Present.* San Diego marsh elder was observed in the western portion of the project site within the Salt Creek floodplain, adjacent to the C1 non-vegetated channel, and the eastern most channel, C4 during the 2018 and 2020 surveys.
Juncus acutus spp. *leopoldii*	Southwestern spiny rush	None/None/4.2/None	Occurs in coastal dunes with mesic soils, meadows and alkaline seeps, coastal saltwater marshes and swamps.	*Present.* Southwestern spiny rush was observed in the western portion of the project site within the Salt Creek floodplain and in the eastern portion of the project site east of the C4 non-vegetated channel.
Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3/CV MSCP, SD MSCP	Occurs in closed-cone conifer forest, chaparral, coastal scrub, and valley and foothill grassland.	*Not Expected*. The project site is outside of the elevation range and lacks suitable soils. Historical locations within region but not on the project site (CDFW 2022).
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/1B.2/None	Occurs in chaparral and coastal scrub.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Monardella stoneana	Jennifer's monardella	None/None/1B.2/None	Occurs in closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub, and along rocky, intermittent streambeds.	*Moderate.* Suitable habitat is present on the project site. Historical locations primarily in the Otay Ranch Open Space Preserve east of the project site and along the U.S.-Mexico border, but not on the project site (CDFW 2022).

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Myosurus minimus ssp. *apus*	Little mousetail	None/None/3.1/None	Occurs in vernal pools and valley and foothill grassland.	*Not Expected*. No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Navarretia fossalis	Spreading navarretia	FT/None/1B.1/CV MSCP	Occurs in chenopod scrub, shallow freshwater marshes and swamps, playas, and vernal pools	*Not Expected*. No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Orcuttia californica	California Orcutt grass	FE/SE/1B.1/None	Occurs in wetlands and vernal pools.	*Not Expected*. No suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Romneya coulteri	Coulter's matilija poppy	None/None/4.2/None	Occurs in chaparral and coastal scrub, often in burned areas.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Salvia munzii	Munz's sage	None/None/2B.2/None	Occurs in chaparral and coastal scrub.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Selaginella cinerascens	Ashy leaved spike-moss	None/None/None/None	Occurs in dry, open sites or under plants.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Senecio aphanactis	Chaparral ragwort	None/None/2.2/None	Occurs in chaparral, cismontane woodland, and coastal scrub.	*Moderate.* Suitable habitat is present on the project site. Historical locations within region but not on the project site (CDFW 2022).
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2/CV MSCP, SD MSCP	Occurs in chaparral, coastal scrub, and deciduous shrub.	*Not Expected.* Suitable habitat is present on the project site. However, the project site is below the known elevation range of this species.
Wildlife				
Invertebrates				
Bombus crotchii	Crotch's bumblebee	FE/CE/None/None	Occurs in open grassland and scrub habitats.	*Not Expected*. Critically endangered and extirpated throughout most of habitat and former range. Some scrub habitat on site but little foraging habitat available. Historical locations within region but not on the project site (CDFW 2022).
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/SSC/None/CV MSCP, SD MSCP	Occurs in vernal pools and ponded depressions.	*Low*. No suitable vernal pool habitat occurs on the project site.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Danaus plexippus	Monarch butterfly[1] (California overwintering population)	None/ST/None/None	Occurs in a variety of habitats where patches of milkweed (*Asclepias* sp.), the monarch caterpillar host plant, are present.	Present. Adult monarch butterflies were observed flying through the project site during the 2020 surveys. No milkweed patches occur on the project site that would be suitable host plants for monarch butterfly caterpillars to occupy.
Euphydryas editha quino	Quino checkerspot butterfly	FE/None/None/CV MSCP	Occurs in chaparral & coastal sage shrublands Requires dot-seed plantain (*Plantago erecta*) or owl's clover (*Castilleja exserta*) as a host plant.	*Assumed Present*. Patches of dot-seed plantain (*Plantago erecta*), Quino checkerspot butterfly host plant, occur throughout the project site. Critical habitat for Quino checkerspot butterfly occurs to the east and south the project site (Figure 8, Critical Habitat). Known populations of Quino checkerspot butterfly occur in the Otay Ranch Preserve (SDMMP 2022). Nectar sources available on site.
Lycaena hermes	Hermes copper butterfly	FSC/ST/None/None	Occurs in patches of spiny redberry buckthorn (*Rhamnus crocea*) in relation to California buckwheat (*Eriogonum fasciculatum*) that grows in southern mixed chaparral and coastal sage scrub	*Moderate*. Suitable Diegan coastal sage scrub occurs throughout the project site. However, no spiny redberry was observed on the project site during the 2018 and 2020 surveys.
Callophrys [Mitoura] thornei	Thorne's hairstreak	None/S1/None/CV MSCP, SD MSCP	Depends its host plant, Tecate cypress (*Cupressus forbesii*), which is associated with chaparral.	*Low*. No Tecate cypress was observed on the project site during the 2018 and 2020 surveys.
Streptocephalus woottoni	Riverside fairy shrimp	FE/None/None/CV MSCP, SD MSCP	Occurs in freshwater pond and vernal pool habitats.	*Low*. No freshwater ponds or vernal pools occur on the project site.
Amphibians				
Anaxyrus californicus	Arroyo toad	FE/SSC/None/CV MSCP, SD MSCP	Occurs in sandy washes and riverbanks.	*Low*. No suitable habitat occurs on the project site.
Spea hammondii	Western spadefoot	FC/SSC/None/None	Occurs primarily in grasslands with vernal pools or similar shallow, temporary pools for breeding.	*Low.* No suitable vernal pool habitat occurs on the project site

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Reptiles				
Anniella pulchra	California legless lizard	None/SSC/None/None	Occurs in loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodland, and riparian habitat.	*Moderate*. High-quality Diegan coastal sage scrub and suitable loose, sandy soils occur on the project site.
Aspidoscelis hyperythra	Orange-throated whiptail	None/WL/None/CV MSCP, SD MSCP	Occurs in coastal sage scrub, chaparral, edges of riparian woodlands, and washes. Also, found in weedy, disturbed areas adjacent to these habitats.	*High*. High-quality Diegan coastal sage scrub and weedy disturbed areas occur on the project site.
Aspidoscelis tigris stejnegeri	Coastal whiptail	None/SSC/None/None	Occurs in open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats.	*Moderate*. High-quality Diegan coastal sage scrub and open areas adjacent to dirt roads occur on the project site.
Crotalus ruber	Red diamond rattlesnake	None/SSC/None/None	Occurs in open chaparral and coastal sage scrub and along creek banks, particularly among rock outcrops or piles of debris with burrowing rodents for prey.	*High*. High-quality Diegan coastal sage scrub occurs on the project site and Salt Creek runs through the western portion of the project site.
Clemmys marmorata pallida	Southwestern pond turtle	None/SSC/None/CV MSCP, SD MSCP	Occurs in slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter.	*Low*. Suitable habitat occurs in Salt Creek, which runs through the western portion of the project site, and Lower Otay Lake, which is approximately 0.5 mile northeast of the project site.
Eumeces skiltonianus interparietalis	Coronado skink	None/SSC/None/None	Occurs in open areas, sparse brush, and oak woodlands and is usually under rocks, leaf litter, logs, debris, or in the shallow burrows it digs.	*Moderate*. Suitable Diegan coastal sage scrub and rocky, open areas occur on the project site.
Phrynosoma blainvillei	Blainville's horned lizard	None/SSC/None/CV MSCP, SD MSCP	Occurs in coastal sage scrub, chaparral, and grasslands in primarily loose soils. Forages primarily on harvester ants.	*High*. Suitable Diegan coastal sage scrub, open grassland areas, and rocky loose soils occur on the project site. Harvester ants were observed on the project site.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Salvadora hexalepis virgultea	Coast patchnose snake	None/SSC/None/None	Occurs in coastal sage scrub, chaparral, washes, sandy flats, and rocky areas.	*Moderate*. Suitable Diegan coastal sage scrub and rocky and sandy soils occur on the project site. Refugia (i.e., rodent burrows) are available on the project site.
Thamnophis hammondii	Two-striped garter snake	None/SSC/None/None	Occurs in and along permanent and intermittent streams bounded by dense riparian vegetation, vernal pools, and stock ponds.	*Moderate*. Suitable habitat along Salt Creek occurs in the western portion of the project site.
Birds				
Accipiter cooperii	Cooper's hawk	None/WL/None/CV MSCP, SD MSCP	Occurs where stands of trees are present, including oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.	*High.* High-quality suitable foraging habitat occurs on the project site and trees suitable for nesting occur within 0.5-mile of the project site.
Agelaius tricolor	Tricolored blackbird	BCC/SE/None/CV MSCP, SD MSCP	Occurs in freshwater wetlands with open water and protected nesting substrate.	*Low.* While a small area of freshwater marsh suitable for tricolored blackbird nesting habitat occurs in Salt Creek in the western portion of the project site, Salt Creek has not supported nesting colonies historically.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL/None/CV MSCP, SD MSCP	Occurs in coastal sage scrub and sparse mixed chaparral on rocky hillsides and in canyons; also found in open sage scrub/grassy areas of successional growth.	Present. Southern California rufous-crowned sparrow was observed foraging in the central portion of the project site during the 2020 surveys.
Artemisiospiza belli	Bell's sparrow	None/SSC/None/None	Occurs in chaparral dominated by chamise, and coastal sage scrub dominated by California sagebrush.	*High*. High-quality suitable foraging and nesting habitat occurs throughout the project site.
Athene cunicularia	Burrowing owl	None/SSC/None/CV MSCP, SD MSCP	Occurs in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	*Moderate*. Suitable grassland and Diegan coastal sage scrub habitat occurs throughout the project site.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Aguila chrysaetos	Golden eagle	BEGA/SSC/None/CV MSCP, SD MSCP	Occurs and hunts for prey in grasslands, sage scrub, and open chaparral. Nests on cliff ledges and trees on steep slopes and requires very large territories.	*Moderate.* High-quality suitable open scrub habitat for foraging occurs on the project site. No nesting habitat available. Rocky cliff faces suitable for nesting occurs in proximity southeast of the project site.
Buteo regalis	Ferruginous hawk	None/None/None/CV MSCP, SD MSCP	Occurs in grasslands, sage scrub, shrublands, and edges of pinyon-juniper forests.	*Low.* High-quality suitable Diegan coastal sage scrub and non-native grassland foraging habitat occurs on the project site. This species is known to winter in the Ramona Grasslands Preserve (approximately 28 miles north of the project site). However, it does not nest in the region and is unlikely to utilize the project site or surrounding area for foraging.
Buteo swainsoni	Swainson's hawk	None/ST/None/CV MSCP, SD MSCP	Occurs in mature riparian trees, oak groves, and mature roadside trees in proximity to large, open spaces for foraging.	*Low.* High-quality suitable foraging habitat occurs on the project site. Mature trees suitable for nesting occur within 0.5-mile of the project site. However, this species is a rare winter migrant to the coastal region and is primarily documented in Borrego Valley during the spring migration. This species is unlikely to utilize the project site or surrounding area for nesting or foraging.
Campylorhynchus brunneicapillus sandiegensis	Coastal cactus wren	BCC/SSC/None/CV MSCP, SD MSCP	Occurs in cholla and opuntia patches in Diegan coastal sage scrub.	*Present*. Coastal cactus wren individuals were observed in and around cholla cactus patches in the western portion of the project site during the 2020 surveys. One inactive nest was observed in the eastern portion of the project site during the 2018 survey.
Circus cyaneus hudsonius	Northern harrier	None/SSC/None /CV MSCP, SD MSCP	Occurs in grasslands and marshes.	*High.* Suitable nesting and foraging habitat occurs in the grassland and small area of freshwater marsh in Salt Creek on the project site.
Eremophila alpestris actia	California horned lark	None/SSC, WL/None /None	Occurs in prairies, fields, airports, shores, and open ground.	*Moderate.* Potentially suitable foraging and nesting habitat occurs in the grassland on the project site.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Falco mexicanus	Prairie falcon	None/SSC/None/None	Occurs in grasslands or alpine tundra that supports abundant ground squirrel or pika populations.	*Low.* Potentially suitable foraging habitat occurs in the grassland on the project site. No cliffs occur on or nearby the project site that could be utilized for nesting by this species. Prairie falcon is unlikely to utilize the project site as foraging habitat due to the absence of nearby suitable nesting habitat.
Falco peregrinus	Peregrine falcon	None/BCC/None/CV MSCP	Occurs in open landscapes with cliffs (or skyscrapers) for nest sites, as well as along rivers and coastlines or in cities.	*Low.* Suitable foraging habitat occurs throughout the project site. However, no suitable nesting habitat occurs on the project site.
Haliaeetus leucocephalus	Bald eagle	FP, BGEPA/SE/None/CV MSCP, SD MSCP	Occurs in woodlands near large lakes, ocean, or other surface water.	*Low.* No suitable foraging or nesting habitat occurs on the project site. However, suitable habitat occurs approximately 0.5 mile north at the Lower Otay Lake.
Icteria virens	Yellow-breasted chat	None/SSC/None/None	Occurs in well-developed riparian woodlands.	*Present.* One yellow-breasted chat was observed in the freshwater marsh habitat in the survey area along Salt Creek during the 2020 surveys.
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC/None/CV MSCP, SD MSCP	Occurs in coastal sage scrub.	*Present.* Several coastal California gnatcatcher pairs and family groups were observed within non-native grassland, coastal sage scrub, and mulefat scrub during the 2018 and 2020 surveys.
Setophaga petechial	Yellow warbler	BCC/SSC/None/None	Occurs in well-developed riparian woodlands and montane scrub, particularly along streams and wetlands.	*Low*. No riparian woodlands or montane scrub occur on the project site suitable nesting, however, freshwater marsh along Salt Creek occurs in the western portion of the project site that could be used for foraging or a migratory corridor connecting migrants to the large Otay River riparian corridor to the south of the project site.
Sialia mexicana	Western bluebird	None/None/None/CV MSCP, SD MSCP	Occurs in woodlands, grasslands, scrub, deserts, and agricultural habitats.	Present. Western bluebird was observed in the eastern portion of the survey area during the 2020 surveys.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Vireo bellii pusillus	Least Bell's vireo	FE/SE/None/CV MSCP, SD MSCP	Occurs in riparian scrub and riparian forest.	Present. Least Bell's vireo was observed north and south of the survey area in sparse riparian vegetation along Salt Creek during the 2020 surveys.
Mammals				
Chaetodipus californicus femoralis	Dulzura (California) pocket mouse	None/SSC/None/None	Occurs in coastal sage scrub, chaparral, annual grassland, and desert scrub.	*Moderate*. High-quality suitable Diegan coastal sage scrub and grassland habitats occur throughout the project site. However, the loamy, clay soils on the project site are not suitable for Dulzura (California) pocket mouse.
Corynorhinus townsendii	Townsend's big-eared bat	FSC/SSC/None/None/WBWG: H	Occurs in habitats with limited desert scrub vegetation. Roosting sites commonly in caves, cliffs, and rock ledges but have been found in abandoned mines and other human-made structures.	*Moderate*. High-quality suitable open scrub habitat for foraging occurs on the project site. Rocky cliff faces suitable for roosting occurs within 0.5 mile southeast of the project site.
Eumops perotis californicus	Western mastiff bat	None/SSC/None/None/WBWG: H	Roosts in high vertical cliffs, rock quarries, fractured boulder outcrops and occasionally tall buildings	*Moderate*. High-quality suitable scrub habitat for foraging occurs on the project site. Rocky cliff faces suitable for roosting occurs within 0.5 mile southeast of the project site.
Lasiurus blossevillii	Western red bat	None/SSC/None/None/WBWG: H	Occurs in wooded environments, associating primarily with riparian trees (cottonwoods, sycamores, and oaks). Found along streams and creeks.	*Low*. Little to no roosting habitat present, but some foraging habitat present.
Felis concolor	Mountain lion	None/None/None/CV MSCP, SD MSCP	Occurs in a variety of habitats throughout California. Rests in rocky areas and on cliffs or ledges that provide cover.	*Moderate*. No suitable rocky cliffs or ledges that could provide habitat occur on the project site, however, rocky cliffs and ledges occur within 0.5 mile southeast of the project site.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC/None/None	Occurs in chaparral, coastal sage scrub, and grassland.	*Present*. San Diego black-tailed jackrabbit was observed on the project site during the 2018 survey.
Myotis yumanensis	Yuma myotis	None/SSC/None/WBWG: LM	Forages over water sources including stock tanks and ponds. Roosts in a variety of habitats.	*Moderate*. Suitable foraging and roosting habitat present.

Table 5. Sensitive Plant and Wildlife Species Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/State/ CRPR/Regional	Habitat	Potential to Occur
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC/None/None	Occurs in high desert areas, chaparral, sagebrush flats, coastal sage scrub with dense undergrowth, woodlands, pinyon-juniper pine, and are primarily associated with rock outcroppings, boulders and cacti.	*Moderate*. High-quality Diegan coastal sage scrub habitat and cactus patches occur throughout the project site. However, San Diego desert woodrat middens were not observed on the project site.
Nyctinomops femorosaccus	Pocketed free-tailed bat	None/SSC/None/WBWG: M	Occurs in desert scrub, riparian with high cliffs or rocky outcrops.	*Moderate*. High-quality suitable open scrub habitat for foraging occurs on the project site. Rocky cliff faces suitable for roosting occurs within 0.5 mile southeast of the project site.
Odocoileus hemionus fuliginata	Southern mule deer	None/None/None/CV MSCP, SD MSCP	Occurs in grasslands, woodlands, and sparse shrub communities.	Present. Southern mule deer scat was observed throughout the project site during the 2018 and 2020 surveys.
Taxidea taxus	American badger	None/SSC/None/CV MSCP, SD MSCP	Occurs in open plains and prairies, farmland, and occasionally edges of woodlands.	*Low*. No suitable habitat occurs on the project site.

Notes:

BCC = bird of conservation concern; FSC = Federal Species of Concern ; FC = federal candidate; FE = federally endangered; FT = federally threatened; BGEPA = Bald and Golden Eagle Protection Act; CV MSCP = City of Chula Vista MSCP Subarea Plan-covered species; SD MSCP = City of San Diego MSCP Subarea Plan-covered species; SE = state endangered; ST = state threatened; SR = state rare; NE = narrow endemic; None = No status indicated for species; SCE = state candidate for listing as endangered; SE = state endangered; SSC = state species of special concern; ST = state threatened; USFWS = U.S. Fish and Wildlife Service; WL = state watch list species; WBWG: Western Bat Working Group, H: High, HM: High–Medium, M: Medium, LM: Low–Medium, L: Low

CNPS Rare Plant Ranking

1B = rare, threatened, or endangered in California and elsewhere; 2A = presumed extirpated in California but more common elsewhere; 2B = rare, threatened, or endangered in California but more common elsewhere; 3 = a watch list of species about which more information is needed; 4 = a watch list of species of limited distribution

Threat Ranks: .1 = seriously threatened; .2 = moderately threatened; .3 = not very threatened

Bold = present on the project site

[1] Under review for protection under FESA

Six sensitive plant species and nine sensitive wildlife species were observed and mapped on the project site during the 2018 and 2020 surveys (Figures 9 and 9a through 9d, Sensitive Plant Observations, and Figure 10, Sensitive Wildlife Observations). Although not observed during reconnaissance surveys, Quino checkerspot butterfly (*Euphydryas editha quino*) is assumed present on the project site. This is due to large, high-quality patches of dot-seed plantain (*Plantago erecta*), which is host plant for Quino checkerspot butterfly, mapped on the project site. Two common nectar sources for Quino checkerspot butterflies, popcorn flower (*Plagiobothrys* sp.) and fiddleneck (*Amsinckia* sp.), were observed throughout the project site. In addition, a known population occurs in the Otay Ranch Preserve surrounding the project site (SDMMP 2022); therefore, Quino are expected to be observed during flight season passing through and there is high potential for larvae on site. Sensitive plant and wildlife species that were observed or have a high potential to occur on the project site are also described in detail in Sections 5.4.2, Sensitive Plant Species Observed, through 5.4.5, Sensitive Wildlife Species Not Observed With a High Potential to Occur.

5.4.1 Critical Habitat

The potential presence of critical habitat on the project site was also analyzed. Critical habitat for the sensitive plant species Otay tarplant occurs on the project site. Critical habitat for the sensitive wildlife species Quino checkerspot butterfly occurs east and south of the project site. Critical habitat for these species is displayed on Figure 8.

5.4.2 Sensitive Plant Species Observed

The six sensitive plant species observed on the project site are described in the following subsections (Figures 9 and 9a through 9d).

5.4.2.1 Palmer's Grapplinghook

Palmer's grapplinghook (*Harpagonella palmeri*) is a CRPR 4.2 annual herb in the borage family that occurs in chaparral, coastal scrub, and valley and foothill grassland with clay soils at elevations between 60 and 3,100 feet amsl (Calflora 2022). Threats to this species include urbanization, non-native plants, and agriculture (CNPS 2022).

Palmer's grapplinghook was observed in multiple areas throughout the project site during the 2018 and 2020 surveys (Figures 9a through 9d).

5.4.2.2 San Diego Barrel Cactus

San Diego barrel cactus (*Ferocactus viridescens*) is a CRPR 2B.1 and Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. San Diego barrel cactus is a narrow endemic species under the Chula Vista MSCP Subarea Plan. San Diego barrel cactus is a

perennial stem succulent in the cactus family that occurs in chaparral, coastal sage scrub, valley and foothill grassland, and vernal pool habitat at elevations up to 1,500 feet amsl (Calflora 2022). Much of this species habitat has already been removed in the County, and its remaining habitat is threatened by development, agriculture, and other disturbances (CNPS 2022).

San Diego barrel cactus was observed in disturbed Diegan coastal sage scrub throughout the project site during the 2018 and 2020 surveys (Figures 9a through 9d).

5.4.2.3 San Diego County Viguiera

San Diego County viguiera (*Bahiopsis laciniata*) is a CRPR 4.3 perennial shrub in the sunflower family. San Diego County viguiera occurs in chaparral and coastal scrub vegetation communities at elevations between 200 and 2,460 feet amsl (Calflora 2022). This species is threatened primarily by urbanization (CNPS 2022).

San Diego County viguiera was observed in disturbed Diegan coastal sage scrub throughout the project site during the 2018 and 2020 surveys (Figures 9a through 9c).

5.4.2.4 San Diego Marsh Elder

San Diego marsh elder (*Iva hayesiana*) is a CRPR 2B.2 perennial herb in the sunflower family that occurs in marshes, swamps, and playas at elevations between 30 and 1,650 feet amsl (Calflora 2022). Threats to this species include waterway channelization, coastal development, vehicles, and non-native plant introduction (CNPS 2022).

San Diego marsh elder patches were observed in the western portion of the project site within the Salt Creek floodplain and surrounding the C1 and C4 non-vegetated channels (Figures 9a and 9d).

5.4.2.5 South Coast Saltscale

South coast saltscale (*Atriplex pacifica*) is a CRPR 1B.2 annual herb that occurs in coastal scrub, coastal bluff scrub, playas, and coastal dunes with alkali soils at elevations up to 500 feet amsl (Calflora 2022). Many known occurrences of this species are extirpated and the remaining populations are threatened primarily by urbanization (CNPS 2022).

South coast saltscale was observed in the central portion of the project site during the 2018 and 2020 surveys (Figure 9b).

5.4.2.6 Southwestern Spiny Rush

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) is a CRPR 4.2 perennial rhizomatous herb in the rush family that occurs in coastal dunes, meadows, and alkaline seeps, coastal salt marshes, and swamps. Southwestern spiny rush is highly tolerant of seasonal flooding and areas that do not drain of water. Threats to this species include urbanization and flood control (CNPS 2022).

Southwestern spiny rush was observed in the western portion of the project site within the Salt Creek floodplain and in the eastern portion of the project site east of the C4 non-vegetated channel (Figures 9a and 9d).

5.4.3 Sensitive Plant Species Not Observed With a High Potential to Occur

Based on the literature and database review, 39 sensitive plant species were considered for potential to occur on the project site, but only two species, Otay tarplant and variegated dudleya, were determined to have a high potential to occur on the project site but were not observed during the biological resources surveys (Table 5). Otay tarplant and variegated dudleya are narrow endemic species under the Chula Vista MSCP Subarea Plan. The two sensitive plant species with a high potential to occur on the project site are described in the following subsections.

5.4.3.1 Otay Tarplant

Otay tarplant (*Deinandra [=Hemizonia] conjugens*) is a CRPR 1B.1 and Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Otay tarplant is a narrow endemic species under the Chula Vista MSCP Subarea Plan. Otay tarplant is an annual herb that occurs in open coastal scrub and sparsely vegetated valley and foothill grasslands with clay soils at elevations between 80 and 1,000 feet amsl. Otay tarplant typically blooms in May through June. This species range is limited to southern San Diego County and northern Baja California. Otay tarplant is threatened by development, agriculture, vehicles, illegal dumping, trampling, non-native plants, habitat disturbance, landfill construction, and U.S. Border Patrol activities.

As discussed in Section 4.3, Rare Plant Surveys, Otay tarplant was documented with a later than normal blooming period in the southern portion of the County in 2020. While Otay tarplant was not observed during the two rare plant surveys in 2019 and 2020, this sensitive plant has a high potential to occur on the project site and could have been missed during the second rare plant survey in May 2020.

As discussed in Section 5.4 and shown on Figure 8, critical habitat for Otay tarplant occurs on the project site.

5.4.3.2 Variegated Dudleya

Variegated dudleya (*Dudleya variegata*) is a CRPR 1B.2 and Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Variegated dudleya is a narrow endemic species under the Chula Vista MSCP Subarea Plan. Variegated dudleya is a perennial herb that occurs in chaparral, coastal scrub, cismontane woodland, and valley and foothill grassland with rocky and clay soils at elevations less than 1,900 feet amsl. Variegated dudleya typically blooms from August through October. This species is threatened by development, non-native plant introduction, and grazing.

5.4.4 Sensitive Wildlife Species Observed

The 10 sensitive wildlife species observed on the project site are described in the following subsections (Figure 10).

Quino checkerspot butterfly (*Euphydryas editha quino*) is assumed present on the project site because patches of dot-seed plantain, a Quino checkerspot butterfly host plant, were observed throughout the project site and a known population occurs in the Otay Ranch Preserve surrounding the project site (SDMMP 2022).

5.4.4.1 Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) is under review for protection under the FESA as of March 2020 (USFWS 2021). Monarch butterfly occurs in patches of milkweed (*Asclepias* sp.*)*, the monarch caterpillar host plant. Monarch butterflies are found across North America wherever suitable feeding, breeding, and overwintering habitat exists. Threats to this species include habitat loss, climate change, and agriculture.

Adult monarch butterflies were observed flying through the project site during the 2020 surveys. No milkweed patches occur on the project site that would be suitable for monarch butterfly caterpillars to occupy.

5.4.4.2 Quino Checkerspot Butterfly

Quino checkerspot butterfly is a federally endangered species and Chula Vista covered species. Quino checkerspot butterfly occurs in sunny openings within chaparral & coastal sage shrublands in parts of Riverside & San Diego counties. Habitat for Quino checkerspot butterfly is characterized by patchy shrub or small tree landscapes with openings of several feet between woody plants, or a landscape of open swales alternating with dense patches of shrubs. This species requires dot-seed plantain or owl's clover (*Castilleja exserta*) as a primary larva host plant. Quino checkerspot butterfly is threatened by urbanization, wildfires, habitat fragmentation, climate change, invasive plant species introduction, off-road vehicle activity, livestock grazing, and agriculture.

The Chula Vista MSCP Subarea Plan Section 5.2.8.1, Infrastructure in the Preserve, provides avoidance and minimization measures for Quino checkerspot butterfly and suitable habitat specific to projects within the Otay Ranch Preserve east of State Route 125 in the Salt Creek drainage in which a portion of the project site is located. As defined in the Chula Vista MSCP Subarea Plan Section 5.2.8.1, single patches of dot-seed plantain equal to or greater than 538 square feet (50 square meters), or if less than 538 square feet (50 square meters) any combination of patches within 656 feet (200 meters) of each other which are equal to or greater than 538 square feet (50 square meters), are considered "significant QCB [Quino checkerspot butterfly] habitat patches." In compliance with the Chula Vista MSCP Subarea Plan avoidance and minimization measures, Quino checkerspot

butterfly host plant, dot-seed plantain, and significant QCB habitat patches were mapped on the project site during the 2018 and 2020 habitat assessments (Figure 11, Quino Checkerspot Butterfly Suitable Habitat). Approximately 2.71 acres of dot-seed plantain patches determined to be significant QCB habitat patches occur on the project site (Figure 11).

While dot-seed plantain itself is not considered a sensitive plant, Quino checkerspot butterfly is a federally endangered species, and impacts to dot-seed plantain are considered significant. Quino checkerspot butterfly was not observed on the project site during the 2018 and 2020 surveys, and critical habitat does not occur on the project site. However, critical habitat for Quino checkerspot butterfly occurs in the Otay Ranch Preserve less than 0.5 mile east and south of the project site, and a known population occurs in the Otay Ranch Preserve surrounding the project site (Figure 8) (SDMMP 2022). Nectar sources for Quino were observed throughout the site during the 2018 and 2020 surveys as well. Therefore, Quino checkerspot butterfly is assumed present on the project site.

5.4.4.3 Coastal Cactus Wren

Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) is a USFWS bird of conservation concern, CDFW species of special concern, Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Coastal cactus wren occurs in coastal cholla (*Cylindropuntia prolifera*) and prickly pear (*Opuntia littoralis* and *Opuntia oricola*) patches in coastal sage scrub vegetation. Coastal cactus wren nests almost exclusively in prickly pear and coastal cholla. Coastal cholla is the typical choice in southern San Diego County, where large prickly pears are scarce. Coastal cactus wren forages primarily on the ground or low in the vegetation for insects. This species is threatened by urbanization, habitat loss and fragmentation, and agriculture.

Coastal cactus wren was observed in and around coastal cholla patches in the western portion of the project site during the 2020 surveys (Figure 10). The majority of the project site provides suitable foraging habitat for coastal cactus wren. The cholla cactus patches throughout the project site provide suitable nesting habitat for coastal cactus wren.

5.4.4.4 Coastal California Gnatcatcher

Coastal California gnatcatcher (*Polioptila californica californica*) is a federally threatened species, a CDFW species of special concern and a Chula Vista MSCP Subarea Plan-covered species. Coastal California gnatcatchers are endemic sage scrub habitats throughout Southern California and northern Baja California. The Coastal California gnatcatcher historically occupied from southern Ventura County to the Counties of Los Angeles, San Bernardino, Riverside, Orange and San Diego and into Baja California, Mexico, near El Rosario, approximately 30 degrees north latitude (USFWS 2010). The coastal California gnatcatcher is the nominate and northernmost subspecies of California gnatcatcher (Atwood 1991).

Coastal California gnatcatchers are an insectivorous bird, spending intense amounts of time gleaning entire shrubs one at a time of any insects during foraging. Typically, coastal California gnatcatchers are found nesting on slopes with gradients less than 40 percent and can be found in the lower portions of gullies and drainages on steeper slopes. Breeding season territories range anywhere from two to 14 acres (USFWS 2010), coastal California gnatcatcher breeding season begins mid-February and extends into mid-August, although earlier starts and later ends have been documented (USFWS 1993). Mid-March through early August is the main breeding season for California gnatcatchers in the County, with clutch sizes between four and six eggs, with an average of four. Both adults will incubate the nest and feed chicks. Nest replacement clutches are common after nest predations. Nests are typically placed in California sagebrush but can also be found in California buckwheat, broom Baccharis, and other low-lying shrub species. Coastal California gnatcatcher juveniles will disperse from parental breeding territories, but usually do not travel farther than two miles to find their own breeding territories. Hatch year birds have completely dispersed by October and stay within chosen locations through the winter. As this is not a migrating species, winter territories are usually smaller than breeding territories, but are in the same general location.

Although the coastal California gnatcatcher is strongly associated with coastal sage scrub habitats, it has been observed and documented using broom baccharis and mulefat scrub, sage scrub-chaparral scrub, chamise chaparral, and other scrub habitat types for reproduction (Bontrager 1991; Hercules Joint Venture 2019; Mastrelli pers obs. 2019). California gnatcatchers may be observed in laurel sumac, black sage, and sumac (*Rhus* sp.)-dominated coastal sage scrub, but these observations are most likely foraging or patrolling observations because these shrubs likely support higher densities of insects especially in the fall compared to adjacent shrubs (Hercules Joint Venture 2018). In short, coastal California gnatcatchers may occur in other nearby plant communities during the non-breeding season but are most closely tied to California sagebrush dominated and like-type coastal sage scrub for reproduction.

Alternate vegetation types are of great importance to coastal California gnatcatchers for dispersal; however, distance between coastal sage scrub habitats juveniles are dispersing to is of importance. The greater the distance between coastal sage scrub habitats, the more likely the dispersing bird will perish (Bontrager 1991). Therefore, habitat destruction and fragmentation and habitat modification (including fire and invasive and exotic vegetation) are among the main reasons for decline of this species. However, coastal California gnatcatchers are yearly in peril due to domestic on non-domestic nest predators and parasitism by brown-headed cowbirds.

At least one coastal California gnatcatcher family group was observed in the Diegan coastal sage scrub vegetation on the slopes east and west of the four non-vegetated channels C1 through C4 on the project site and adjacent to the project site during the 2018 and 2020 surveys (Figure 10). However, the high number of observations during the 2018 and 2020 surveys indicates anywhere from one to five family group occupying the habitat in and around the project site but likely one to

three are in existence at minimum. When caring for and feeding recently fledged juveniles, California gnatcatchers do not venture as far as they do when the juveniles are older. Plentiful foraging and nesting habitat is present throughout the project site that is adjacent to high-quality coastal sage scrub habitat.

California gnatcatcher home ranges are mostly determined by a variety of factors including (but not limited to) the presence (or absence) of neighboring gnatcatchers, unsuitable habitat surrounding the territory, the amount of disturbance within the chosen territory (habitat), overall habitat quality, composition of coastal sage scrub, and shrub density. Due to the availability of coastal sage scrub habitat both on the project site and immediately adjacent, the number of gnatcatcher observations during surveys in 2018 and 2020, and the high availability of vegetated dispersal corridors nearby, the project site is presumed to be occupied by California gnatcatchers.

5.4.4.5 Least Bell's Vireo

Least Bell's vireo (*Vireo bellii pusillus*) is a federally endangered, state endangered, and a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Least Bell's vireo occurs in riparian habitat in California and Baja California, Mexico. This species feeds on insects and spiders, foraging among dense shrubs and trees along rivers and streams. Least Bell's vireo is restricted to riparian woodland and is most frequent in areas that combine an understory of dense young willows or mulefat with a canopy of tall willows. Historically, least Bell's vireo was a common summer visitor to riparian habitat throughout much of California. Currently, this subspecies is found only in riparian woodlands in Southern California, with most breeding pairs in San Diego, Santa Barbara, and Riverside counties- with some in Los Angeles and Ventura Counties. Least Bell's vireo arrives in breeding grounds in late March and early April and returns to its wintering ground in September. Riparian plant succession is an important factor maintaining vireo habitat. This species is threatened by urbanization, agriculture, wildfires, firewood cutting, livestock grazing, flood control projects, and reservoir construction.

Least Bell's vireo was observed north and south of the project site in riparian vegetation along Salt Creek during the 2020 surveys (Figure 10).

5.4.4.6 Southern California Rufous-Crowned Sparrow

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a CDFW watch list and Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Southern California rufous-crowned sparrow occurs in coastal sage scrub and sparse mixed chaparral on rocky hillsides and in canyons and is also found in open sage scrub/grassy areas of successional growth. Periodic wildfire helps Southern California rufous-crowned sparrow by keeping the habitat open and tends to be more common in areas that have burned in the past 15 years. This species is found in the County year-round. This species is threatened by urbanization, habitat fragmentation, suppression of natural wildfires, agriculture, and livestock grazing.

Southern California rufous-crowned sparrow was observed foraging in the central portion of the project site during the 2020 surveys (Figure 10). The majority of the project site provides foraging habitat for Southern California rufous-crowned sparrow.

5.4.4.7 Yellow-Breasted Chat

Yellow-breasted chat (*Icteria virens*) is a CDFW species of special concern. Yellow-breasted chat is a summer resident that inhabits riparian thickets of willow and other brushy tangles near watercourses. Yellow-breasted chat is a large warbler with a bright yellow breast and bold face markings with olive-green above. It has a large repertoire of calls and songs that make it easily identifiable. The yellow-breasted chat is a summer resident in California, primarily observed along the coast and the foothills of the Sierra Nevada at elevations up to 4,800 feet amsl. It winters in southern Mexico and Guatemala. The yellow-breasted chat forages on insects and spiders in dense riparian thickets. This species is threatened by urbanization, livestock grazing, and agriculture.

One yellow-breasted chat was observed in the freshwater marsh habitat on the project site along Salt Creek during the 2020 surveys (Figure 10).

5.4.4.8 Western Bluebird

Western bluebird (*Sialia mexicana*) is a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. It is found throughout California year-round, except at mountaintops and in the eastern deserts. Western bluebird inhabits open oak woodlands, riparian forests, and coniferous forests with herbaceous understories. This species can thrive in disturbed areas such as burned forests or logged areas that still contain dead trees suitable for nesting and perching. Western bluebird is a bright blue and rust-colored small thrush. Males exhibit brighter coloration than females. It primarily feeds on insects and other small invertebrates. Western bluebird is threatened by urbanization, habitat loss, suppression of natural wildfires, invasive species introduction, livestock grazing, and agriculture.

Western bluebird was observed in the eastern portion of the survey area during the 2020 surveys (Figure 10).

5.4.4.9 San Diego Black-Tailed Jackrabbit

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) is a CDFW species of special concern. San Diego black-tailed jackrabbit occurs in chaparral, sparse Diegan coastal sage scrub, agricultural fields, and grassland habitats. This species is not typically found in high grass or dense brush. Nesting sites are generally under bushes or shrubs that have shallow depressions. This species is threatened by urbanization, hunting, pest control, and agriculture.

San Diego black-tailed jackrabbit was observed on the project site during the 2018 survey (Figure 10). Diegan coastal sage scrub and non-native grassland habitat for San Diego black-tailed jackrabbit occurs throughout and adjacent to the project site.

5.4.4.10 Southern Mule Deer

Southern mule deer (*Odocoileus hemionus fuliginata*) is a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Southern mule deer occurs in grasslands, woodlands, and sparse shrub communities throughout California. Shrub habitats and woodlands interspersed with meadows or grasslands are important for food resources, as well as cover for shade and protection from predators. Southern mule deer are mobile but non-migratory. They prefer to move through areas where there is high vegetative cover, such as ridgetops or riparian corridors, and typically avoid areas of sparse vegetative cover, agricultural areas, urban areas, and areas with high levels of human activity. Access to dependable water sources is important for mule deer, especially during the summer. Home ranges for southern mule deer the County are generally small (average 120 acres). This species is threatened by urbanization, habitat fragmentation, vehicle strikes, and climate change.

Southern mule deer scat was observed throughout the project site during the 2018 and 2020 surveys.

5.4.5 Sensitive Wildlife Species Not Observed With a High Potential to Occur

Based on the literature and database review, 48 sensitive wildlife species were considered for potential to occur on the project site and are discussed in Table 5.

Ten sensitive wildlife species, including one invertebrate, three reptiles, four birds, and two mammals, have a high potential to occur on the project site and are described in the following subsections.

5.4.5.1 Blainville's Horned Lizard

Blainville's horned lizard (*Phrynosoma blainvillei*) is a CDFW species of special concern and a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. It is a medium-sized horned lizard that ranges widely in coloration. The Blainville's horned lizard has distinctive horns along its entire back and sides. It occurs in riparian woodlands, coniferous forests, chaparral, coastal sage scrub, and annual grassland habitats with loose soils for burrowing. The Blainville's horned lizard is found in the Sierra Nevada foothills and throughout the central and Southern California coasts, at elevations up to 6,000 feet amsl. It feeds on the ground in open areas, primarily hunting native ants, though it will feed on other small invertebrates. Blainville's horned lizard relies primarily on camouflage for protection, often remaining motionless when approached by a predator (CDFW 2022). Threats to Blainville's horned lizard include urban development, conversion of habitat to agriculture, and collecting of individuals for the pet trade. In addition to these threats, the non-native and less palatable Argentine ant (*Iridomyrmex humile*) is displacing native ants, an important food source for this species, in many areas.

High-quality Diegan coastal sage scrub, open grassland areas, and rocky loose soils occur on the project site that have the potential to support Blainville's horned lizard. Harvester ants were observed on the project site. Blainville's horned lizard was documented approximately 1.5 miles east of the project site in 2020. Blainville's horned lizard was not observed during the 2018 and 2020 surveys.

5.4.5.2 Orange-Throated Whiptail

The orange-throated whiptail (Aspidoscelis hyperythra) is a CDFW watch list and a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Orange-throated whiptail is a medium-sized lizard that inhabits chaparral, coastal sage scrub, and woodland habitats in the Counties of San Diego, Orange, and Riverside. Orange-throated whiptail also occurs in disturbed areas. It occurs exclusively west of the Peninsular Ranges, especially in areas with morning fog. Orange-throated whiptail actively forage on a variety of small arthropods, especially termites (*Reticulitermes* sp.) (CDFW 2022). The primary threat to orange-throated whiptail is development, resulting in highly fragmented populations.

High-quality Diegan coastal sage scrub and weedy disturbed areas occur on the project site that have the potential to support orange-throated whiptail. Orange-throated whiptail was documented approximately 0.5 mile south of the project site in the Otay River corridor in 2018 and approximately two miles north of the project site in 2020. Orange-throated whiptail was not observed during the 2018 and 2020 surveys.

5.4.5.3 Red Diamond Rattlesnake

Red diamond rattlesnake (*Crotalus ruber*) is a CDFW species of special concern. Red diamond rattlesnake can be found in the Counties of San Bernardino, Riverside, and San Diego. Its habitat includes arid desert in rocky areas, chaparral, woodland, and dense vegetation. This species can also occur from sea level up to 3,000 feet in elevation and is active from mid-spring into fall. The red diamond rattlesnake is successful as an ambush predator and will actively seek prey on the ground and in bushes. As temperatures increase throughout the season, this species becomes less active during the day and becomes fully nocturnal. Young are typically born from mid-August to October. Threats to red diamond rattlesnake include urban development, pest control and off-road vehicle activity.

The high-quality Diegan coastal sage scrub and Salt Creek wetland corridor that occur on the project site provide potential habitat that could support red diamond rattlesnake. Red diamond rattlesnake was documented approximately 0.5 mile southwest of the project site in the Otay River corridor in 2019 and approximately one mile north of the project site in 2017 and 2018. Red diamond rattlesnakes were not observed during the 2018 and 2020 surveys.

5.4.5.4 Bell's Sparrow

Bell's sparrow (*Artemisiospiza belli belli*) is a CDFW species of special concern. Bell's sparrow occurs in chaparral dominated by chamise, and coastal sage scrub dominated by California sagebrush throughout California. In chaparral, they tend toward younger, less dense stands that are growing back from recent fires; they are less common in older, taller stands that have remained unburned. Bell's sparrow is omnivorous and nests on or close to the ground in dense scrub or chaparral. This species is threatened by urbanization, suppression of wildfires, and habitat loss and fragmentation.

High-quality suitable foraging and nesting habitat occurs throughout the project site. Bell's sparrow was documented approximately 0.5 mile north of the project site in the Salt Creek Preserve in 2010. Bell's sparrow was not observed during the 2018 and 2020 surveys.

5.4.5.5 Cooper's Hawk

Cooper's hawk (*Accipiter cooperii*) is a CDFW watch list and a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Cooper's hawk occurs year-round throughout the County's coastal slope where stands of trees are present. Found in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests. Cooper's hawk adapted to urban living and is as numerous in urban eucalyptus trees and as it is in natural habitat settings. Breeding Cooper's hawks are widespread over the County's coastal slopes wherever there are stands of trees and are most numerous in lowland and foothill canyons and in urban areas. This species is threatened by habitat fragmentation and loss, hunting, and pest control.

High-quality suitable foraging occurs on the project site. While no trees suitable for nesting occur on the project site, large trees occur to the east of the project site surrounding Lower Otay Lake that could provide suitable nesting habitat. Cooper's hawk was documented in Otay Lakes County Park directly south of Lower Otay Lake approximately 0.3 mile east of the project site in 2020. Cooper's hawk was not observed during the 2018 and 2020 surveys.

5.4.5.6 Northern Harrier

Northern harrier (*Circus cyaneus hudsonius*) is a CDFW species of special concern and Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Northern harrier occurs in marshes, grassland, and agricultural fields. Breeding northern harriers are most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. This species often breeds in freshwater and brackish marshes, dry upland habitats, lightly grazed meadows, and fallow agricultural fields. During winter, northern harrier uses a range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes. This species is threatened by urbanization, habitat loss and fragmentation, wetlands destruction, pest control, hunting, and agriculture.

Suitable grassland for foraging and a small area of freshwater marsh suitable for nesting in Salt Creek occurs in the survey area. Northern harrier was documented approximately 0.5 mile southeast of the project site south of Lower Otay Lake in 2019. Northern harrier was not observed during the 2018 and 2020 surveys.

5.4.6 Wildlife Corridors and Habitat Linkages

Wildlife corridors provide routes for local movement and also regional linkages and corridors, often following linear topographical, vegetation, or water features. These corridors can be continuous habitats features, or "stepping stone" areas, providing critical rest and foraging areas for, for example, birds traveling along migratory routes. Local routes of movement provide constant connections to resources that include sources of water, home/cover sites, and foraging areas. Regional linkages and movement corridors provide larger patches of open space to allow relatively free movement of wildlife species along multiple paths between important resources. These areas allow for not only long-term genetic flow between subpopulations but also critical pathways of seasonal/migratory movements. Larger predatory mammals often use regional corridors for hunting and reproduction needs. Potential wildlife corridors can include streams, riparian areas, and culverts under roadways. Habitat characteristics considered included topography, habitat quality, and adjacent land uses.

The area surrounding the project site provides movement and suitable nesting, foraging, and dispersal areas of wildlife species and connections to nearby open space within the Otay Ranch Preserve surrounding the project site and Otay River Valley to the south. The Otay River corridor is part of an extensive regional habitat corridor due to its size and high-quality habitats. The Otay River corridor provides foraging and limited water sources for a variety of mammal, avian, reptile and amphibian species, including sensitive species. Coastal California gnatcatcher has been documented within coastal sage scrub communities in the area, and the area has potential to support the federally listed as endangered Quino checkerspot butterfly. Southern willow scrub in the area has been documented to support the federally and state-listed as endangered least Bell's vireo and provides suitable nesting habitat for a variety of bird species protected by the MBTA. The dry conditions in the Otay River floodplain have allowed for the establishment of several groves of the Tecate cypress. A major population of this species was severely affected by the Otay Fire in 2003; this floodplain population may be an important source for seed for restoration on Otay Mountain and other areas.

Before the field survey, the Chula Vista MSCP Subarea Plan was reviewed to confirm the presence of designated habitat linkages and dispersal corridors on the project site. During the field survey, biologists assessed areas identified in the Chula Vista MSCP Subarea Plan on the project site for potential wildlife corridor functions. In addition to reviewing the project site for presence of continuous movement corridors, the project site was also reviewed for potential habitat suitability for coastal California gnatcatcher based on habitat type and quality, size of habitat patches, and distance separating habitat patches.

The project site is likely to be used as a movement corridor for both sensitive and common wildlife species because of its proximity to the Otay River to the south, presence of native vegetation communities, and its being surrounded by open space. The presence of the Otay Water Treatment Plant directly to the east, the Otay Ranch residential development approximately one mile to the north and west, and the South Bay Expressway approximately one mile to the west of the project site have the potential to limit east-west wildlife movement in the surrounding area. However, the open space immediately surrounding the project site has been designated as important habitat connectivity areas in the Otay River Valley and Chula Vista MSCP Subarea Plan.

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Section 6 Impacts and Mitigation

6.1 Significance Criteria

Appendix G of the CEQA Guidelines (CEQA Guidelines, Section 15000 et seq.) defines "significant effect on the environment" as a "substantial, or potentially substantial adverse change in the environment." Appendix G of the CEQA Guidelines further indicates that there may be a significant effect on biological resources if the project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

6.2 Impacts

Impacts to biological resources from implementation of the project are categorized quantitatively as direct and indirect impacts.

Direct impacts to biological resources occur when significant alterations or destruction occurs during the course of, or because of, project implementation. Examples of such impacts include removing, disturbing, or grading vegetation; dredging or grading a stream bank; filling wetlands with any materials; erecting any structures, including in a stream; and severing or physically restricting wildlife corridors and the distribution of individual species or resources. Other direct impacts may include loss of foraging or nesting habitat and loss of individual species as a result of habitat clearing.

Indirect impacts may include elevated levels of noise or lighting, change in surface water hydrology within a floodplain, and increased erosion or sedimentation. These types of indirect impacts can affect

vegetation communities or their potential use by sensitive species. They can also cause the disruption of normal wildlife functions or activities, impacting individual species.

Within the direct and indirect quantitative impacts categories, impacts are also qualified temporally as permanent and temporary impacts.

Permanent impacts may result in irreversible damage to biological resources, including habitat or removal of species from a particular area. Specific to the project, permanent impacts are those that occur within the on-site maintenance access roads footprints as these areas will be graded and maintained to allow access to pipeline infrastructure for periodic maintenance activities.

Temporary impacts are interim changes in the local environment due to construction and would not extend beyond project-associated construction, including revegetation of temporarily disturbed areas adjacent to native habitats. Specific to the project, temporary impacts are those that occur during construction of the project outside of the on-site maintenance access roads permanent impact areas.

6.2.1 Threshold 1: Sensitive Plant and Wildlife Species

6.2.1.1 Guidelines for Determination of Significance

Significant impacts to sensitive plant and wildlife species could result if the project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW and USFWS.

6.2.1.2 Impact Analysis

Sensitive Plant Species

Construction

Direct Impacts. Sensitive plant species that have been observed or have a high potential to occur on the project site are listed in Sections 5.4.2, Sensitive Plant Species Observed, and 5.4.3, Sensitive Plant Species Not Observed With a High Potential to Occur. Implementation of the project could result in the direct loss of four sensitive plant species observed or with a high potential to occur on the project site. Table 6 lists the four sensitive plant species that could be directly impacted by project construction. Figures 12 and 12a through 12d, Sensitive Plant Impacts, show the locations of the sensitive plant species mapped on the project site that may be subject to direct impacts from project construction.

Table 6. Summary of Potential Direct Impacts to Sensitive Plant Species

Plant Species	Status (Federal/State/ CNPS/Regional)	Impacts (acres)		Impacts (individuals)	
		Permanent	Temporary	Permanent	Temporary
Palmer's grapplinghook (*Harpagonella palmeri*)	None/None/4.2/None	0.05	0.67	NA	NA
San Diego County viguiera (*Bahiopsis laciniata*)	None/None/4.3/None	0.06	0.41	NA	NA
San Diego barrel cactus (*Ferocactus viridescens*)	None/None/2B.1/ CV MSCP, SD MSCP	NA	NA	3	39
San Diego marsh elder (*Iva hayesiana*)	None/None/ 2B.2/None	—	0.11	NA	NA
South coast saltscale (*Atriplex pacifica*)	None/None/ 1B.2/None	NA	NA	—	3
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii)*	None/None/4.2/None	NA	NA	—	2

Notes: CV MSCP = Chula Vista MSCP Subarea Plan-covered species; SD MSCP = City of San Diego MSCP Subarea Plan-covered species; NA = not applicable; None = No status indicated for species

CNPS Rare Plant Ranking: 1B = Rare, threatened, or endangered in California and elsewhere; 2A = Presumed extirpated in California but more common elsewhere; 2B = Rare, threatened, or endangered in California but more common elsewhere; 4 = A watch list of species of limited distribution

Threat Ranks: .1 = seriously threatened; .2 = moderately threatened; .3 = not threatened

Impacts to San Diego County viguiera, Palmer's grapplinghook, and southwestern spiny rush would not be significant due to their lack of sensitivity listing (are not state or federally listed or not listed by CNPS, are not Chula Vista MSCP Subarea Plan- or City of San Diego MSCP Subarea Plan-covered, or are CRPR List 3 or 4). San Diego County viguiera, Palmer's grapplinghook, and southwestern spiny rush are CRPR 4 species, which are relatively common in this portion of the County and are not considered significantly rare. The three species are not covered by the Chula Vista MSCP Subarea Plan or City of San Diego MSCP Subarea Plan; therefore, impacts to these non-covered species would not be significant under CEQA, and direct impacts are less than significant.

Implementation of the project would result in direct impacts to San Diego barrel cactus, a Chula Vista MSCP Subarea Plan narrow endemic species and City of San Diego MSCP Subarea Plan-covered and CRPR 2.1 species. Approximately three San Diego barrel cactus individuals occur in the pipeline alignment and would be removed during pipeline replacement and grading of the on-site maintenance access roads, resulting in permanent direct impacts to these individuals. Approximately 39 San Diego barrel cactus occur in the temporary construction impact area on the project site and could be disturbed by construction activity, including but not limited to dust generation, grading, and vegetation trimming, resulting in temporary impacts to these individuals. These permanent and temporary direct impacts to San Diego barrel cactus are significant.

Implementation of the project would result in temporary direct impacts to an approximately 0.11 acre patch of San Diego marsh elder, a CRPR 2B.2 species, in the western portion of the project site (Figures 9 and 9a, Sensitive Plant Observations). While this San Diego marsh elder patch occurs outside the pipeline alignment, it occurs in the temporary construction impact area on the project site and could be disturbed by construction activity. These temporary direct impacts to San Diego marsh elder are significant. Several patches of San Diego marsh elder (approximately 0.06 acre) that occur on the project site are within the Salt Creek corridor and Drainage 4 (Figures 9, 9a, and 9d). As discussed in Section 1, Introduction, the project has been designed to avoid impacting on-site jurisdictional aquatic resources, including Salt Creek and the four non-vegetated channels. Therefore, the San Diego marsh elder that occurs within these aquatic resource areas would be avoided, and impacts to these San Diego marsh elder individuals would not occur.

Implementation of the project would result in direct impacts to approximately three south coast saltscale individuals, a CRPR 1B.2 species. While these south coast saltscale individuals occur outside the pipeline alignment, the species occurs in the temporary construction impact area on the project site and could be disturbed by construction activity. These temporary direct impacts to south coast saltscale are significant.

Critical habitat for Otay tarplant occurs on the project site (Figure 8). Otay tarplant was not observed on the project site during the 2018 and 2020 surveys. However, it has high potential to occur on the project site due to the suitable open Diegan coastal scrub habitat throughout the project site. These potential impacts to Otay tarplant are significant.

Indirect Impacts. Indirect impacts to sensitive plants would primarily result from adverse edge effects. During construction of the project, edge effects could include trampling; dust, which could disrupt plant vitality in the short term; construction-related pollutant discharges; soil erosion; and runoff. Temporary indirect impacts to sensitive plants during construction activities are potentially significant.

Operation

Because the replacement pipeline would be underground and operate passively and similarly to current conditions, project operation would not result in permanent development-related direct or indirect impacts to plant species. Therefore, permanent direct and indirect operational impacts to sensitive plant species are less than significant.

Sensitive Wildlife Species

Construction

Direct Impacts. Sensitive wildlife species that were observed on the project site during surveys or have high potential to occur on the project site are described in Sections 5.4.4, Sensitive Wildlife Species Observed, and 5.4.5, Sensitive Wildlife Species Not Observed With a High Potential to Occur. The project has the potential to impact these species through temporary construction

activities including those that could displace individual wildlife or eliminate portions of their habitat (Figure 13, Sensitive Wildlife Impacts). In addition, some of the smaller species, such as reptiles and rodents, could be killed or injured by clearing, grading, and other construction activities. Implementation of the project would result in both permanent and temporary direct loss of habitat, including nesting and foraging habitat, for the majority of the sensitive wildlife species observed or with a high potential to occur on the project site described in Sections 5.4.4 and 5.4.5. These species include the following: Bell's sparrow, coastal cactus wren, coastal California gnatcatcher, Cooper's hawk, least Bell's vireo, northern harrier, Southern California rufous-crowned sparrow, yellow-breasted chat, western bluebird, monarch butterfly, Quino checkerspot butterfly, San Diego black-tailed jackrabbit, southern mule deer, orange-throated whiptail, red diamond rattlesnake, and Blainville's horned lizard.

Approximately 7.11 acres of Diegan coastal sage scrub occurs on the project site and provides suitable nesting habitat for sensitive bird species observed on and surrounding the project site, including coastal cactus wren, coastal California gnatcatcher, and Southern California rufous-crowned sparrow. Coastal cactus wren and coastal California gnatcatcher were observed in the Diegan coastal sage scrub (and disturbed) habitat on and surrounding the project site during the 2018 and 2020 surveys (Figure 13). Southern California rufous-crowned sparrow was observed in the Diegan coastal sage scrub north of the project site during the 2020 survey (Figure 13). Diegan coastal sage scrub also provides suitable habitat for other sensitive wildlife species, including San Diego black-tailed jackrabbit, orange-throated whiptail, red diamond rattlesnake, and Blainville's horned lizard. Direct and indirect impacts to Diegan coastal sage scrub could result in direct impacts to these sensitive wildlife species in the form of permanent and temporary habitat loss. Potential impacts to these sensitive wildlife species are significant.

Approximately 0.58 acre of non-native grassland occurs on the project site and provides suitable foraging habitat for sensitive wildlife species, including Cooper's hawk, northern harrier, western bluebird, San Diego black-tailed jackrabbit, and southern mule deer. Western bluebird was observed in the non-native grassland in the eastern portion of the project site (Figure 13). San Diego black-tailed jackrabbit was observed in the non-native grassland directly outside of the project site during the 2020 survey (Figure 13). Direct and indirect impacts to non-native grassland could result in direct impacts to these sensitive wildlife species in the form of permanent and temporary habitat loss. Potential impacts to these sensitive wildlife species are significant.

One yellow-breasted chat was observed in the Salt Creek riparian corridor during the 2020 survey (Figure 13). As discussed in Section 1, the project has been designed to avoid impacting Salt Creek, thereby avoiding direct impacts to the riparian habitat potentially occupied by yellow-breasted chat. Direct impacts to yellow-breasted chat would not occur.

Cholla cactus patches occur throughout the project site and provide suitable nesting habitat for the sensitive coastal cactus wren, which were observed throughout the western portion of the project site during the 2018 and 2020 surveys (Figure 13). Direct impacts to cholla cactus patches on the project site would result in direct impacts to coastal cactus wren in the form of permanent and temporary habitat loss. Potential impacts to coastal cactus wren are considered to be significant.

Adult monarch butterflies were observed flying through the project site during the 2020 surveys. However, no milkweed patches, the monarch caterpillar host plant, were observed on the project site. Therefore, direct impacts to monarch butterfly from implementation of the project are less than significant.

Critical habitat for Quino checkerspot butterfly does not occur on the project site; however, critical habitat can be found in the Otay Ranch Preserve less than 0.5 mile east and south of the project site, and a known population occurs in the Otay Ranch Preserve surrounding the project site (Figure 8) (SDMMP 2022). Therefore, this species is assumed to occur on the project site.

As discussed previously in Section 5.4.4.2, consistent with the Chula Vista MSCP Subarea Plan Section 5.2.8.1, avoidance and minimization measures for Quino checkerspot butterfly, dot-seed plantain and significant QCB habitat patches were mapped on the project site during the 2018 and 2020 habitat assessments (Figure 11). Although Quino checkerspot butterfly was not observed on the project site during the 2018 and 2020 surveys, consistent with the Chula Vista MSCP Subarea Plan Section 5.2.8.1, the project is designed to avoid impacts to the significant QCB habitat patches mapped on the project site to the maximum extent practicable. If significant QCB habitat patches cannot be avoided during project construction, potential impacts to significant QCB habitat patches would be considered significant, and mitigation consistent with the Chula Vista MSCP Subarea Plan Section 5.2.8.1 would be required.

Indirect Impacts. Temporary construction-related indirect impacts to wildlife generally include noise, vibration, lighting, increased human activity, hydrologic quality, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature), and trash and garbage, which can attract both introduced terrestrial and native terrestrial and avian predators (such as American crows [*Corvus brachyrhynchos*], common ravens [*Corvus corax*], coyotes [*Canis latrans*], domestic dogs [*Canis familiaris*], raccoons [*Procyon lotor*], and striped skunks [*Mephitis mephitis*]). These temporary construction-related impacts in the form of habitat disturbance and potential predation could have a significant impact on the sensitive wildlife species identified in Sections 5.4.4 and 5.4.5.

Operation

Because the replacement pipeline would be underground and operate passively and similarly to current conditions, project operation would not result in permanent development-related direct or

indirect impacts to sensitive wildlife species. Therefore, permanent direct and indirect operational impacts to sensitive wildlife species are less than significant.

Nesting Birds

As previously discussed, suitable nesting habitat for sensitive birds, including Bell's sparrow, coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, and Southern California rufous-crowned sparrow, occurs in the Salt Creek riparian corridor, Diegan coastal sage scrub, and cholla cactus patches throughout the project site. Although active coastal cactus wren nests and nesting behavior were not observed during any of the biological surveys, an inactive coastal cactus wren nest was observed in the eastern portion of the project site in 2018. Coastal California gnatcatchers that could be a part of at least one, but potentially upwards of three to five, family groups were observed in the Diegan coastal sage scrub vegetation throughout the project site in 2018 and 2020. Temporary direct and indirect construction-related impacts could have a significant impacts on the nesting bird species observed on the project site in the form of nesting habitat loss.

6.2.1.3 Mitigation Measures

Sensitive Plant Species

The project would result in direct impacts to San Diego barrel cactus and indirect impacts to San Diego marsh elder, south coast saltscale, and Otay tarplant during construction activities. Direct and indirect impacts to these sensitive plant species are considered significant and would be reduced to less than significant with implementation of MM BIO-1. Application of MM BIO-1 would preserve or restore sensitive upland vegetation communities that provide suitable habitat for sensitive plant species, including San Diego barrel cactus, San Diego marsh elder, south coast saltscale, and Otay tarplant (Appendix F, Revegetation Plan).

San Diego barrel cactus occurring within the temporary construction impact area on the project site would be avoided where feasible. Implementation of MM BIO-2 would translocate three San Diego barrel cactus individuals that occur along the pipeline alignment and on-site access roads, as well as any other individuals that have the potential to be impacted by temporary construction activities, in suitable habitat outside of the permanent impact areas on the project site (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan).

San Diego marsh elder, south coast saltscale, and Otay tarplant occurring within the temporary construction impact area on the project site would be avoided where feasible. Implementation of MM BIO-3 would avoid San Diego marsh elder, south coast saltscale, and Otay tarplant by flagging for avoidance.

As discussed previously in Section 3.3.1.1, the project is in a 100 Percent Conservation Area within Otay Ranch (a Covered Project) under the Chula Vista MSCP Subarea Plan. In accordance with the Chula Vista MSCP Subarea Plan Section 5.2.3.2, the Otay tarplant (a narrow endemic species) on the project site would be avoided to the maximum extent practicable. In accordance with the Chula Vista MSCP Subarea Plan Section 5.2.3.2, if impacts cannot be avoided, impacts up to five percent of the total Otay tarplant population within the project site would be allowed with findings of equivalency submitted to the wildlife agencies.

Potential temporary indirect impacts to sensitive plant species, including San Diego barrel cactus, San Diego marsh elder, south coast saltscale, and Otay tarplant, from soil erosion, litter, fire, and hydrologic changes occurring during construction activities would be reduced to less than significant with implementation of MMs BIO-4 and BIO-5. Application of MMs BIO-4 and BIO-5 would reduce indirect impacts to sensitive plant species to a less than significant level through preparing a Stormwater Pollution Prevention Plan (SWPPP), an approved biologist conducting pre-construction surveys, and implementing standard best management practices and requirements that address erosion and runoff, including the construction-related minimization measures required by the Chula Vista and City of San Diego MSCP Subarea Plans, CWA, and NPDES.

Implementation of MMs BIO-1 through BIO-5 would reduce direct and indirect permanent and temporary impacts to sensitive plant species to below a level of significance.

MM BIO-1 through BIO-5 are as follows:

BIO-1: Upland Restoration – Temporary and Permanent Impacts. Temporary impacts to sensitive upland vegetation communities, including Diegan coastal sage scrub (including disturbed) and non-native grassland, occurring in the temporary construction impact area on the project site are anticipated to require a total of 6.47 acres of revegetation. Temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland shall require in-kind revegetation in place.

Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland (Appendix F, Revegetation Plan). Revegetation for temporary impacts shall occur on the project site.

A 3:1 ratio of off-site restoration for permanent impacts to 0.75 acre of Diegan coastal sage scrub (including disturbed) occurring in the on-site maintenance access road permanent impact area would satisfy the mitigation ratio for impacts to Diegan coastal sage scrub outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading,

and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.75 acre of Diegan coastal sage scrub (including disturbed) at a 3:1 ratio (Appendix F, Revegetation Plan). The revegetation of 2.25 acres of Diegan coastal sage scrub shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for Diegan coastal sage scrub restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

A 2:1 ratio of off-site mitigation for permanent impacts to 0.06 acre of non-native grassland occurring in the on-site maintenance access road permanent impact area would satisfy the mitigation ratio for impacts to non-native grassland outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.06 acre of non-native grassland at a 2:1 ratio (Appendix F, Revegetation Plan). The revegetation of 0.12 acre of native grassland shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for native grassland restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

The Revegetation Plan shall include but not be limited to an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Applicant shall be required to enter into a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. The Applicant shall be required to prepare and implement the Revegetation Plan subject to the oversight and approval of the Development Services Director (or their designee).

BIO-2: San Diego Barrel Cactus Avoidance and Translocation. San Diego barrel cactus occurring within the temporary construction impact area on the project site shall be avoided where feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag each San Diego barrel cactus occurring in the temporary construction impact area on the project site for avoidance during the pre-construction survey. Removal of three individuals of San Diego barrel cactus occurring in on-site maintenance access road permanent impact area shall be mitigated at a 1:1 ratio in accordance with the City of Chula Vista and City of San Diego San Diego Multiple Species Conservation Program Subarea Plans. Mitigation shall consist of salvaging the three San Diego barrel cactus individuals within the pipeline corridor, on-site access roads, and any other individuals determined to be impacted within temporary

construction areas and relocation of these individuals to areas of suitable habitat on the project site consistent with the City of Chula Vista and City of San Diego San Diego Multiple Species Conservation Program Subarea Plans.

Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall prepare a Salvage and Translocation Plan (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan) for the San Diego barrel cactus. The Salvage and Translocation Plan shall be prepared by a qualified biologist to the satisfaction of the Development Services Director (or their designee). At a minimum, the plan shall identify and/or include (1) the areas where salvageable cacti are located, (2) number of cacti to be salvaged, (3) the methodology salvaging the cacti, (4) the location of suitable receptor sites, (5) the requirements for the preparation of receptor sites, and (6) the short- and long-term monitoring and maintenance requirements. The Applicant shall be required to enter into a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. Upon the City of Chula Vista's approval of the Salvage and Translocation Plan, the Applicant shall implement and monitor the plan subject to the oversight of the Development Services Director (or their designee).

BIO-3: Sensitive Plant Avoidance. San Diego marsh elder and south coast saltscale within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. All Otay tarplant occurring within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag the extent of each species patch or individual on the project site for avoidance during the pre-construction survey. If San Diego marsh elder, south coast saltscale, or Otay tarplant is observed in the permanent construction impact area during the pre-construction sensitive plant survey (Mitigation Measure BIO-5) or cannot be avoided during construction, individuals will be counted and permanent impacts shall be mitigated at a 1:1 ratio in suitable habitat outside of the permanent impact areas on the project site. If impacts occur to San Diego marsh elder, south coast saltscale, or Otay tarplant, revegetation shall follow the methods and requirements included in the City of Chula Vista-approved Revegetation Plan.

BIO-4: Stormwater Pollution Prevention Plan. Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall prepare a Stormwater Pollution Prevention Plan pursuant to National Pollution Discharge Elimination System General Construction Permit (Water Quality Order 99-08-DWQ). The Stormwater Pollution Prevention Plan shall address the potential sources and locations of stormwater contamination, characteristics and impacts of specific contaminants, and temporary and

permanent erosion-control practices and include water sampling data, construction practices that minimize stormwater contamination, coordination of best management practices with planned construction activities, and compliance with City of Chula Vista, City of San Diego, state, and federal regulations. The Stormwater Pollution Prevention Plan shall include, at a minimum, the best management practices listed below. The combined implementation of these requirements shall protect adjacent habitats and sensitive species during construction to the maximum extent practicable with the goal of providing multiple beneficial uses. At a minimum, the following measures and/or restrictions shall be incorporated into the Stormwater Pollution Prevention Plan and noted on construction plans, where appropriate, to avoid impacts on sensitive species, sensitive vegetation communities, and/or aquatic resources during construction. The approved biologist (Mitigation Measure BIO-5) shall verify the implementation of the following design requirements:

1. Littering shall be prohibited, and trash shall be removed from construction areas daily. All food-related trash and garbage shall be removed from the construction sites daily.
2. Any equipment or vehicles driven and/or operated shall abide by a speed limit of 15 miles per hour during daylight hours and 10 miles per hour during dark hours.
3. Construction activity shall not be permitted in aquatic resources.
4. Temporary structures and storage of construction materials shall not be in aquatic resources.
5. Staging/storage areas for construction equipment and materials shall not be in aquatic resources.
6. Any equipment or vehicles driven and/or operated in jurisdictional aquatic resources, as authorized by applicable law and permits, shall be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.
7. No stationary equipment, such as motors, pumps, generators, and welders, or fuel storage tanks, shall be located within aquatic resources.
8. No debris, bark, slash sawdust, rubbish, cement, or concrete, or washing thereof, oil, or petroleum products shall occur where it may be washed by rainfall or runoff into aquatic resources.
9. When construction operations are completed, any excess materials or debris shall be removed from the work area according to the conditions outlined in the permits.
10. No equipment maintenance shall be performed within or near aquatic resources, where petroleum products or other pollutants from the equipment may enter these areas.

BIO-5: Approved Biologist. To prevent inadvertent disturbance to areas outside the limits of grading, all grading locations shall be monitored by an approved biologist. Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, the Applicant shall provide written confirmation that a City of Chula Vista-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or

grading activities. The biologist shall attend all pre-construction meetings and monitor all clearing, grubbing, and/or grading activities on the project site. The biologist shall monitor these activities to ensure that the Applicant complies with the appropriate standard conditions and mitigation measures, including the following:

1. Prior to clearing and grading operations or other activities involving significant soil disturbance, the Applicant shall install fencing in accordance with Chula Vista Municipal Code, Section 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Otay Ranch Preserve and for all off-site facilities constructed within the Otay Ranch Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence that work was conducted as authorized under the approved land development permit and associated plans.
2. Prior to the start of construction activities, including clearing, grubbing, and grading, the Applicant shall retain a City of Chula Vista-approved biologist to conduct pre-construction surveys for San Diego barrel cactus, San Diego marsh elder, south coast saltscale, Otay tarplant, and coastal cholla patches, which are species determined to be present or to have a high potential to occur and that require additional measures for unavoidable impacts (Mitigation Measures BIO-2, BIO-3, and BIO-8).
3. A contractor education program shall be implemented for all workers and subcontractors and shall include a description of environmental restrictions relevant to construction and the penalties for violations. A chain of command and protocol for communicating problems or potential construction changes that may affect biological resources shall be established with the contractor and the City of Chula Vista. Workers shall be made aware of what resources require protection using photographs or on-the-ground demonstrations.
4. A monitoring biologist acceptable to the City of Chula Vista shall be on site during any clearing of natural vegetation (i.e., annual ground cover or shrubs). The monitoring biologist shall flush sensitive species (i.e., avian or other mobile species) from occupied habitat areas immediately before brush clearing and earthmoving activities. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City of Chula Vista Multiple Species Conservation Program Subarea Plan.
5. Following the completion of initial clearing/grading/earthmoving activities, the open space areas surrounding the project site to be avoided by construction equipment and personnel shall be marked with temporary fencing and other appropriate markers

clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.

6. Vehicle transportation routes between cut-and-fill locations shall be restricted to a minimal number consistent with project construction requirements. Waste dirt or rubble shall not be deposited outside of the project site. Regular pre-construction meetings involving the monitoring biologist, construction supervisors, and equipment operators shall be conducted and documented to ensure maximum practicable adherence to these measures.
7. The monitoring biologist shall verify that the construction site is implementing the following Stormwater Pollution Prevention Plan best management practices:
    a. Dust-control fencing
    b. Removal of construction debris and a clean work area
    c. Covered trash receptacles that are wildlife- and weather-proof
    d. Prohibition of pets on the construction site
    e. A speed limit of 15 miles per hour during the daylight hours and 10 miles per hour during nighttime hours
8. Open space areas in the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves, as recommended by the monitoring biologist.
9. Oversee the construction site so that cover and/or escape routes for wildlife from excavated areas shall be provided daily. All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and before sealing the exposed area) by an approved biologist to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.

Sensitive Wildlife Species

The project would result in temporary direct and indirect impacts to sensitive wildlife species that use Diegan coastal sage scrub and non-native grassland habitats on the project site, including Bell's sparrow, coastal California gnatcatcher, Cooper's hawk, northern harrier, Southern California rufous-crowned sparrow, western bluebird, San Diego black-tailed jackrabbit, southern mule deer, orange-throated whiptail, red diamond rattlesnake, and Blainville's horned lizard, during construction activities. Implementation of MMs BIO-1, BIO-4, and BIO-5 would reduce temporary

direct and indirect impacts to these sensitive wildlife species on the project site to less than significant through upland habitat restoration and conformance with the SWPPP and biological monitoring.

If constructed during the nesting bird season, the project would potentially result in temporary direct and indirect impacts to sensitive nesting birds, including Bell's sparrow, coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, Southern California rufous-crowned sparrow, western bluebird, and yellow-breasted chat. Impacts to these sensitive nesting birds would be reduced to less than significant through implementation of MM BIO-6, Migratory Bird Treaty Act Compliance.

The project would result in temporary direct and indirect impacts to coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo habitat. Impacts to coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo would be reduced to less than significant through implementation of MM BIO-7, focused coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo surveys prior to construction, to reaffirm the presence and extent of occupied habitat and the presence of a qualified monitor on site during the breeding season when work is being conducted in suitable habitat.

The project would result in temporary direct and indirect impacts to coastal cactus wren through potential destruction of coastal cholla patches. Impacts to coastal cactus wren would be reduced to less than significant through implementation of MM BIO-8, avoidance and salvage and translocation of impacted coastal cholla patches.

The project is designed to avoid impacts to the significant QCB habitat patches mapped on the project site to the maximum extent practicable, consistent with the Chula Vista MSCP Subarea Plan Section 5.2.8.1. In the event significant QCB habitat patches cannot be avoided during project construction, temporary direct and indirect impacts to Quino checkerspot butterfly would result. Impacts to significant QCB habitat patches would be reduced to less than significant through implementation of MM BIO-9, Quino checkerspot butterfly suitable habitat avoidance and restoration.

Implementation of MMs BIO-1 and BIO-4 through BIO-9 would reduce potentially significant direct and indirect impacts to sensitive wildlife species to less than significant. MMs BIO-6 through BIO-9 are as follows:

BIO-6: Migratory Bird Treaty Act Compliance. To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species (January 15 to August 31). If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Applicant shall retain a City of Chula Vista-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, the results of which

must be submitted to the City of Chula Vista for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan as deemed appropriate by the City of Chula Vista, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City of Chula Vista for review and approval and implemented to the satisfaction of the City of Chula Vista. The City of Chula Vista-approved mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

BIO-7: **Coastal Cactus Wren, Coastal California Gnatcatcher, and Least Bell's Vireo Pre-Construction Surveys.** For any work proposed between February 15 and August 15 (March 15 and September 15 for least Bell's vireo), a pre-construction survey for the coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo shall be performed in order to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the species shall encompass all potentially suitable habitat within the project work zone, as well as a 300-foot survey buffer. The pre-construction survey shall be performed to the satisfaction of the City of Chula Vista Development Services Director (or their designee) by a qualified biologist familiar with the Chula Vista Multiple Species Conservation Program Subarea Plan. The results of the pre-construction survey shall be submitted in a report to the Development Services Director (or their designee) for review and approval prior to initiating any construction activities. If California gnatcatcher, cactus wren, or least Bell's vireo is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected species In addition, on-site noise reduction/attenuation techniques shall be incorporated, as appropriate, to avoid impacts to breeding gnatcatcher, cactus wren, and least Bell's vireo from elevated construction noise levels during the breeding season. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. In addition, noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 A-weighted decibels or ambient whichever is greater, at the edge of occupied habitat).

BIO-8: Coastal Cactus Wren Habitat Management. Coastal cactus wren is a covered species under the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Because suitable and occupied habitat for this species, primarily coastal cholla patches, would be impacted by grading and construction of the project, avoidance and habitat restoration of coastal cactus wren habitat shall occur.

Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence the coastal cholla patches on the project site for avoidance. If a coastal cholla patch cannot be avoided by construction activities, the qualified biologist shall count coastal cholla individuals and map the acreage of the patch. Impacted coastal cholla shall be mitigated by salvaging and transplanting the individuals or patch in a suitable area on the project site or planting new coastal cholla individuals at a 1:1 ratio in suitable habitat on the project site after project completion. Salvage and translocation or new plantings of the coastal cholla individuals or patches shall follow the methods and requirements included in the City of Chula Vista Development Services Director (or their designee)-approved Salvage and Translocation Plan and Revegetation Plan (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan).

BIO-9: Quino Checkerspot Butterfly. Mitigation for impacts to suitable habitat for Quino checkerspot butterfly shall implement the following avoidance and minimization measures in compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, Infrastructure, in the Otay Ranch Preserve:

- Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence significant patches of dot-seed plantain and other Quino checkerspot butterfly host plants where observed on the project site for avoidance. As defined in the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, single patches of dot-seed plantain equal to or greater than 538 square feet (50 square meters), or if less than 538 square feet (50 square meters) any combination of patches within 656 feet (200 meters) of each other that are equal to or greater than 538 square feet (50 square meters), will be considered "significant Quino checkerspot butterfly habitat patches."

- If a significant Quino checkerspot butterfly habitat patch cannot be avoided by construction activities, the qualified biologist shall notify the City of Chula Vista Development Services Director (or their designee) and count the individuals and map the acreage of the impacted patch. Following methods and requirements included in the City of Chula Vista-approved Revegetation Plan, the qualified biologist shall oversee the planting of new dot-seed plantain, Coulter's snapdragon, rigid bird's beak, owl's clover, Chinese houses, and purple Chinese houses at a 2:1 ratio for acreage impacts in the on- and off-site revegetation areas as designated by the Revegetation Plan (Appendix F, Revegetation Plan).

- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved Stormwater Pollution Prevention Plan (Mitigation Measure BIO-4) shall include dust control measures, including but not limited to watering, and implemented during construction activities, including clearing, grubbing, and grading.

- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved grading plans and design specifications for construction of the internal access roads shall include the use of concrete-treated base material with aggregate rock to prevent weeds and vegetation growth on the road surface while allowing sufficient percolation to minimize stormwater flows.

6.2.1.4 Significance After Mitigation

Implementation of MMs BIO-1 through BIO-9 would mitigate all permanent and temporary direct and indirect impacts to sensitive plant and wildlife species to below a level of significance.

Permanent impacts to sensitive upland vegetation communities that provide habitat for sensitive plant and wildlife species, including 0.75 acre of Diegan coastal sage scrub (including disturbed) and 0.06 acre of non-native grassland, are anticipated with project implementation. Permanent and temporary direct impacts to sensitive upland communities would be reduced to less than significant with implementation of MM BIO-1, which would restore temporary impacts to sensitive upland communities on-site and provide off-site restoration for permanent impacts.

Permanent impacts to three San Diego barrel cactus individuals would result during project construction. Implementation of MM BIO-2 would require avoidance or, if avoidance is not feasible, salvage and translocation of impacted San Diego barrel cactus following the City-approved Salvage and Translocation Plan (Appendix G), reducing impacts to this sensitive plant species to less than significant.

Implementation of MM BIO-3 would avoid or, if avoidance is not feasible, salvage and transplant any San Diego marsh elder, south coast saltscale, and Otay tarplant that have the potential to be impacted by temporary construction activities on the project site.

Implementation of MMs BIO-1, BIO-4, and BIO-5 would reduce indirect impacts to sensitive plant and wildlife species through upland habitat restoration, conformance with the SWPPP and biological monitoring, and implementing standard best management practices and requirements that address erosion and runoff, including the construction-related minimization measures required by the Chula Vista MSCP Subarea Plan, CWA, and NPDES.

Impacts sensitive nesting birds, including Bell's sparrow, coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, Southern California rufous-crowned sparrow, western bluebird, and yellow-breasted chat, would be reduced to less than significant through implementation of MM BIO-6.

Impacts to coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo would be reduced to less than significant through implementation of MM BIO-7, a survey prior to construction to reaffirm the presence and extent of occupied habitat and the presence of a qualified monitor on site during the breeding season when work is being conducted in suitable habitat.

Impacts to coastal cactus wren habitat would be reduced to less than significant through implementation of MM BIO-8, avoidance and salvage and translocation of impacted coastal cholla patches following the City-approved Salvage and Translocation Plan (Appendix G).

Impacts to potential Quino checkerspot butterfly habitat would be reduced to less than significant through implementation of MM BIO-9, in compliance with the Chula Vista MSCP Subarea Plan Section 5.2.8.1, avoidance and minimization measures and planting dot-seed plantain and other Quino checkerspot butterfly suitable plant species following the City-approved Revegetation Plan (Appendix F).

6.2.2 Threshold 2: Riparian Habitat or Other Sensitive Natural Community

6.2.2.1 Guidelines for Determination of Significance

A significant impact would result if the project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS.

6.2.2.2 Impact Analysis

Direct Impacts. Implementation of the project would result in permanent impacts to approximately 0.99 acre of sensitive and non-sensitive vegetation communities and land cover types and temporary impacts to approximately 8.59 acres on the project site that occur in the temporary construction area, pipeline alignment, and on-site maintenance access roads permanent impact areas (Table 7; Figures 14 and 14a through 14d, Vegetation Community Impacts). These permanent impacts would result from the construction and associated grading of the on-site maintenance access roads. The temporary impacts could result from construction activities associated with the pipeline replacement. The freshwater marsh and non-vegetated channels on the project site would be avoided, and no permanent or temporary impacts would occur. As discussed in Section 1, the project would use existing access roads that were field-verified as suitable for construction access and City of San Diego maintenance vehicles access to the pipeline alignment during construction and operation, and no impacts would occur outside of the 100-foot corridor owned in fee by the

City of San Diego, encompassing the approximately 10-acre project site. All temporary impact areas would be revegetated to pre-construction conditions following construction.

Sensitive vegetation communities that would be permanently and temporarily impacted on the project site include Diegan coastal sage scrub (including disturbed) and non-native grassland (Table 7; Figures 14 and 14a through 14d). All direct permanent and temporary impacts to sensitive vegetation communities are considered significant.

Table 7. Impacts to Vegetation Communities and Land Cover Types

Vegetation Community	Impacts (acres)	
	Permanent	Temporary
Upland		
Diegan Coastal Sage Scrub (including disturbed)[1] (32500)	0.75	6.13
Non-Native Grassland[1] (42200)	0.06	0.35
Riparian		
Coastal and Valley Freshwater Marsh[1] (52410)	0.00[2]	0.00[2]
Non-Vegetated Channel[1] (64200)	0.00[2]	0.00[2]
Developed/Disturbed		
Disturbed Habitat (11300)	0.08	1.01
Urban/Developed Land (12000)	0.10	1.10
Total	0.99	8.59

Source: Oberbauer et al. 2008.

Notes:

[1] Sensitive vegetation community

[2] Aquatic resources impacts avoidance

Indirect Impacts. Most of the indirect impacts to sensitive plant species described in Section 6.2.1, Threshold 1: Sensitive Plant and Wildlife Species, also result in potentially significant indirect impacts to riparian habitats and other sensitive natural communities. Indirect impacts to sensitive vegetation communities could result from invasion by exotic species, exposure to construction-related pollutant discharges, and trampling by humans. Permanent indirect impacts to riparian habitats and other sensitive natural communities from development of the project are potentially significant.

6.2.2.3 Mitigation Measures

Implementation of MMs BIO-1, BIO-4, and BIO-5 listed in Section 6.2.1 would mitigate all direct and indirect permanent and temporary impacts to riparian habitats and other sensitive natural communities to below a level of significance.

Permanent impacts to sensitive upland vegetation communities, including 0.75 acre of Diegan coastal sage scrub (including disturbed) and 0.06 acre of non-native grassland, are anticipated with project implementation. Temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland will also result. Direct permanent and temporary

impacts to sensitive upland communities would be reduced to less than significant with implementation of MM BIO-1, which would restore temporary impacts to sensitive upland communities and provide off-site restoration for permanent impacts.

Implementation of MMs BIO-4 and BIO-5 would reduce indirect impacts to sensitive upland vegetation communities through preparing a SWPPP, an approved biologist conducting pre-construction surveys, and implementing standard best management practices and requirements that address erosion and runoff, including the construction-related minimization measures required by the Chula Vista MSCP Subarea Plan, CWA, and NPDES.

6.2.2.4 Significance After Mitigation

Implementation of MMs BIO-1, BIO-4, and BIO-5 would mitigate all direct and indirect permanent and temporary impacts to riparian habitats and other sensitive natural communities to below a level of significance.

6.2.3 Threshold 3: Jurisdictional Aquatic Resources

6.2.3.1 Guidelines for Determination of Significance

A significant impact would result if the project would have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means of disturbance.

6.2.3.2 Impact Analysis

Direct Impacts. As discussed in Section 1, the project has been designed to avoid impacting on-site jurisdictional aquatic resources, including Salt Creek and the four non-vegetated channels (Figure 15 and 15a through 15d, Aquatic Resources Impacts Avoidance).

Salt Creek would be avoided by using the jack and bore horizontal boring method during pipeline replacement activities (Figure 15 and 15a). The replacement pipeline would be tunneled using the jack-and-bore method parallel to the existing pipeline with a 60-foot avoidance buffer on either side of the creek. Upon completed installation of the replacement pipeline, the existing pipeline located underneath Salt Creek would be filled with an approved concrete slurry mixture, capped, and remain in place to avoid disturbance of Salt Creek. The jack and bore method has been chosen for its ability to replace the stretch of pipe running underneath Salt Creek without disturbing the surface. Temporary construction activities, including vehicle entry and construction personnel access, will be prohibited within the Salt Creek corridor.

The four non-vegetated channels would also be avoided by spanning the replacement pipeline over the channels and providing a 10-foot avoidance buffer from the edge of the channels on either side (Figure 15 and 15b through 15d). The existing pipeline spans over the four channels and would be

replaced by the new pipe in the same locations, avoiding disturbance of the four non-vegetated channels. Temporary construction activities, including vehicle entry and construction personnel access, will be prohibited within the four non-vegetated channels.

Therefore, direct impacts to jurisdictional aquatic resources are less than significant.

Indirect Impacts. Most of the indirect impacts to sensitive plant species and sensitive vegetation communities described in Sections 6.2.1 and 6.2.2 also result in potentially significant indirect impacts to jurisdictional aquatic resources. Indirect impacts to jurisdictional aquatic resources can result from generation of fugitive dust, changes in hydrology resulting from construction (including sedimentation and erosion), and exposure to construction-related pollutant discharges. Permanent indirect impacts to jurisdictional aquatic resources from development of the project are potentially significant.

6.2.3.3 Mitigation Measures

Implementation of MMs BIO-4 and BIO-5 would reduce indirect temporary impacts to jurisdictional aquatic resources through preparing a SWPPP, an approved biologist conducting pre-construction surveys, and implementing standard best management practices and requirements that address erosion and runoff, including the construction-related minimization measures required by the Chula Vista MSCP Subarea Plan, CWA, and NPDES.

6.2.3.4 Significance After Mitigation

Direct impacts to jurisdictional aquatic resources would be less than significant and no mitigation is required.

Implementation of MMs BIO-4 and BIO-5 would mitigate all indirect temporary impacts to jurisdictional aquatic resources to below a level of significance.

6.2.4 Threshold 4: Wildlife Corridors and Habitat Linkages

6.2.4.1 Guidelines for Determination of Significance

A significant impact would result if the project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

6.2.4.2 Impact Analysis

Direct Impacts. As discussed in Section 5.4.6, Wildlife Corridors and Habitat Linkages, the project site is likely to be used as a wildlife movement corridor because it is surrounded by open space within the Otay Ranch Preserve, its proximity to the Otay River corridor approximately 0.25 mile to the south, and the presence of native vegetation communities. The presence of the Otay Water Treatment Plant east, the Otay Ranch residential development north and west, and the South Bay

Expressway west of the project site are likely to somewhat impede movement for large mammals. However, the open space surrounding the project site has been designated as important habitat connectivity areas within the Otay River Valley and Chula Vista MSCP Subarea Plan, and these areas allow for opportunities of significant movement.

As previously discussed, temporary project construction activities will remain within the 100-foot fee ownership corridor that has been previously disturbed by past construction and maintenance of the pipeline. Direct impacts to sensitive wildlife species, and the vegetation communities that these species could be occupying while moving through the project site, during construction are potentially significant. Upon completion of project construction, the pipeline would be operating passively underground with periodic, temporary maintenance activity and would not result in potential impacts to wildlife corridors or habitat linkages.

No evidence that the project site functions as a nursery for native species including fish, bats or other mammals was observed during the biological resources surveys. Therefore, direct impacts on native wildlife nursery sites are less than significant.

Indirect Impacts. Wildlife movement will be impacted by many of the other indirect effects discussed in Section 6.2.1 for impacts to sensitive wildlife species. Temporary construction-related indirect impacts include noise, vibration, lighting, increased human activity, hydrologic and water quality (e.g., chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature), and trash and garbage, which can attract predators, such as American crows, common ravens, and coyotes, as well as raccoons and striped skunks. These temporary construction-related impacts would have a potentially significant impact to wildlife movement within regional corridors and habitat linkages during construction.

6.2.4.3 Mitigation Measures

Implementation of MM BIO-1 would restore temporary impacts to sensitive upland communities and provide off-site restoration for permanent impacts. Restoring these upland vegetation communities that function as habitat and potential wildlife movement corridors and linkages from the project site to off-site habitat areas within the surrounding Otay Ranch Preserve would reduce temporary project construction impacts to less than significant.

Implementation of MMs BIO-4 and BIO-5 would reduce indirect impacts to habitats that function as potential wildlife movement corridors and linkages through preparing a SWPPP, an approved biologist conducting pre-construction surveys and implementing standard best management practices and requirements that address erosion and runoff, including the construction-related minimization measures required by the Chula Vista MSCP Subarea Plan, CWA, and NPDES.

Implementation of MMs BIO-6, Migratory Bird Treaty Act compliance; BIO-7, coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo pre-construction surveys and qualified

monitor; BIO-8, avoidance and salvage and translocation of coastal cholla; and BIO-9, avoidance, minimization, and restoration of suitable habitat for Quino checkerspot butterfly, would reduce impacts to habitats that function as potential wildlife movement corridors and linkages from the project site to off-site habitat areas within the surrounding Otay Ranch Preserve would reduce direct temporary project construction impacts to less than significant.

6.2.4.4 Significance After Mitigation

Potential direct and indirect impacts to wildlife corridors and habitat linkages would be less than significant with implementation of MMs BIO-1 and BIO-4 through BIO-9.

6.2.5 Threshold 5: Local Policies or Ordinances

6.2.5.1 Guidelines for Determination of Significance

A significant impact would result if the project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6.2.5.2 Impact Analysis

The project will comply with local policies and ordinances protecting biological resources in the Chula Vista General Plan. Section 3.3, Local, outlines the Chula Vista General Plan goals and policies related to biological resources and implementation of the project.

As discussed in Section 6.2.3, Threshold 3: Jurisdictional Aquatic Resources, the project will avoid impacts to jurisdictional aquatic resources, thereby complying with the Chula Vista General Plan Objective E1, Policy E1.1, Policy E11.9, and Policy E11.10, regarding protection of aquatic resources in the City of Chula Vista.

As discussed in Sections 6.2.1 through Sections 6.2.3, the project's potential impacts to sensitive plant and wildlife species and sensitive upland vegetation communities are potentially significant before implementation of MMs. Therefore, with implementation of MMs BIO-1 through BIO-9, impacts to sensitive plant and wildlife species and sensitive vegetation communities would be fully mitigated to less than significant. Implementation of MMs BIO-1 through BIO-9, the project will not conflict with the Chula Vista General Plan Objective E1, Policy E1.1, Objective E11, Policy E11.1, Policy E11.2, Policy E11.6, Policy E11.9, and Policy E11.10 regarding protection of plant and wildlife species and sensitive vegetation communities in the City of Chula Vista .

The project would be consistent with the conservation goals and objectives outlined in the Chula Vista MSCP Subarea Plan. The project would result in less than significant impacts to biological resources with mitigation incorporated and is, therefore, compliant with the Chula Vista MSCP Subarea Plan conservation planning goals and policies.

Implementation of the project would not result in conflicts with any local policies or ordinances protecting biological resources, and impacts are less than significant.

6.2.5.3 Mitigation Measures

MMs BIO-1 through BIO-9.

6.2.5.4 Significance After Mitigation

Implementation of MMs BIO-1 through BIO-9 would mitigate all direct and indirect permanent and temporary impacts to biological resources to below a level of significance, thereby resulting in the project's compliance with local policies or ordinances.

6.2.6 Threshold 6: Regional Conservation Planning

6.2.6.1 Guidelines for Determination of Significance

A significant impact would result if the project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan.

6.2.6.2 Impact Analysis

As discussed in Section 3.3, the Chula Vista and City of San Diego MSCP Subarea Plans function as comprehensive plans that address biological and ecological diversity by conserving species and associated habitats while allowing approval of development within the City of Chula Vista and City of San Diego. It is the City of Chula Vista's and City of San Diego's policies to comply with the applicable MSCP Subarea Plan in its consideration and approval of development projects. Further, the Chula Vista and City of San Diego General Plans incorporate compliance with the applicable MSCP Subarea Plan in the goals and policies used to guide development in each city (City of Chula Vista 2005; City of San Diego 2008). The project's compliance with the Chula Vista and City of San Diego General Plans natural resources goals and policies was previously discussed in Section 6.2.5, Threshold 5: Local Policies or Ordinances.

The avoidance, minimization, and MMs proposed in Sections 6.2.1 through 6.2.4 would reduce potentially significant impacts to sensitive plant and wildlife species, sensitive vegetation communities, and jurisdictional aquatic resources to a less than significant level. Because the project would not contribute to the loss of sensitive vegetation or sensitive species, the project would comply with the Chula Vista and City of San Diego MSCP Subarea Plans. Therefore, with implementation of MMs, potentially significant impacts would not occur from conflicts with regional Conservation Plans.

6.2.6.3 Mitigation Measures

MMs BIO-1 through BIO-9.

6.2.6.4 Significance After Mitigation

Implementation of MMs BIO-1 through BIO-9 would mitigate all direct and indirect permanent and temporary impacts to biological resources to below a level of significance, thereby resulting in the project's compliance with regional Conservation Plans.

6.3 Cumulative Impacts

6.3.1.1 Cumulative Threshold 1: Sensitive Plant and Wildlife Species

The cumulative project study area was defined by surrounding areas with similar biological resources. Cumulative projects in the vicinity of the project site would have the potential to result in impacts to sensitive plant and wildlife species, including loss of habitat. Otay Village Projects 8, 9, and 10 and the University Park & Innovation Center were identified and evaluated to determine the extent of cumulative impacts to biological resources in the cumulative projects area (Figure 16, Cumulative Projects). Both the Otay Villages projects and the University Park & Innovation Center are required to comply with CEQA and planned within undeveloped areas. Implementation of these cumulative projects would result in loss of habitat and edge effects that would impact special-status plant and wildlife species.

Adjacent and nearby jurisdictions, including the City of San Diego and County, would be required to comply with applicable federal and/or state regulations that provide protections for sensitive plant and wildlife species, such as FESA, the California Endangered Species Act, and the California NCCP Act. In addition, some projects that impact sensitive species require approval from the USFWS and the CDFW. If significant impacts occur from particular cumulative projects, then MMs are implemented to reduce impacts to the extent feasible in compliance with CEQA.

The Chula Vista and City of San Diego MSCP Subarea Plans establish conservation goals and objectives to preserve critical biological resources at a sustainable level on a regional scale and set mitigation standards to be applied at the project level to minimize the cumulative effects of projects in the MSCP planning areas. The City of Chula Vista and City of San Diego have MSCP Subarea Plans in place that are applicable to the cumulative projects within their jurisdictions, and the cities are committed to applying the conservation standards of the MSCP Subarea Plans to development in the Cities of Chula Vista and San Diego. As discussed in Section 6.2.1, development under the project would have the potential to impact sensitive plant and wildlife species. Because cumulative projects, including the proposed project, would be required to meet or exceed MSCP requirements directed toward regional conservation, and project-specific MMs would be implemented to reduce the proposed project's impacts to sensitive plant and wildlife species to below a level of significance, the project would not contribute to a cumulatively significant impact. Therefore, the project's contribution to impacts on sensitive plant and wildlife species would not be cumulatively considerable.

6.3.1.2 Cumulative Threshold 2: Riparian Habitat or Other Sensitive Natural Community

Cumulative projects in the vicinity of the project site have the potential to result in impacts associated with riparian habitat and other sensitive natural communities through direct and indirect loss or degradation. Cumulative projects with the potential to result in cumulative impacts to riparian habitat and other sensitive natural communities include the Otay Villages 8, 9, and 10 University Park & Innovation Center (Figure 16). Several of the cumulative projects listed, including the Otay Villages, are planned within undeveloped areas and would likely result in impacts to riparian habitat and other sensitive natural communities.

Adjacent and nearby jurisdictions, including the City of San Diego and County, would be required to comply with applicable federal and/or state regulations such as the California Lake and Streambed Alteration Program or the California NCCP Act. These programs provide protections for riparian and other sensitive habitats. In addition, many projects that affect riparian or other protected habitat types require approval from the USFWS and the CDFW. If potentially significant impacts would occur from particular cumulative projects, then MMs would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.2.2, Threshold 2: Riparian Habitat and Other Sensitive Natural Communities, development under the project would have the potential to impact riparian and other sensitive habitats. Any projects, including the proposed project, approved within the City of Chula Vista's and City of San Diego's jurisdiction would be consistent with the MSCP Subarea Plans. The Chula Vista MSCP Subarea Plan is also intended to provide cumulative mitigation for impacts to covered species within the City of Chula Vista's jurisdiction and to ensure sufficient biological resources are conserved to assist in the conservation and recovery of covered species under the MSCP. Because cumulative projects and the proposed project would be required to meet or exceed MSCP requirements directed toward regional conservation and project-specific MMs would mitigate the project's impacts to riparian habitat or other sensitive communities to below a level of significance, the project would not contribute to a cumulatively significant impact. Therefore, the proposed project's contribution would not be cumulatively considerable.

6.3.1.3 Cumulative Threshold 3: Jurisdictional Aquatic Resources

Cumulative projects located in the vicinity of the project site would have the potential to result in a cumulative impact associated with federally or state protected wetlands. Several cumulative projects in the vicinity of the project would occur in previously developed and undeveloped areas that have the potential to result in disturbances to federally and state protected aquatic resources. Examples include the Otay Villages 8, 9, and 10 University Park & Innovation Center (Figure 16).

Adjacent and nearby jurisdictions, including the City of San Diego and the County, would be required to comply with applicable federal and/or state regulations such as Sections 401 and 404 of the CWA and the Porter-Cologne Act.

Existing regulations would ensure that a significant cumulative impact associated with federally or state protected aquatic resources would not occur. If potentially significant impacts would occur from particular cumulative projects, then MMs would be implemented to reduce impacts as required to meet the no-net-loss standard. As discussed in Section 6.2.3, the project would avoid impacts to jurisdictional aquatic resources, and no impact that would contribute to cumulative impacts to jurisdictional aquatic resources would result. Therefore, the project's contribution would not be cumulatively considerable.

6.3.1.4 Cumulative Threshold 4: Wildlife Corridors and Habitat Linkages

Cumulative projects located in the vicinity of the project site would have the potential to result in a cumulative impact associated with wildlife movement corridors and habitat linkages. Several cumulative projects, including the Otay Villages 8, 9, and 10 and University Park & Innovation Center, would occur in previously developed and undeveloped areas that have the potential to result in the regional loss of wildlife movement corridors and habitat linkages (Figure 16). Development of the project in combination with these cumulative projects would potentially impact wildlife movement corridors and habitat linkages within and through the City of Chula Vista to neighboring jurisdictions.

Adjacent and nearby jurisdictions, including the City of San Diego and County, would be required to comply with applicable federal and/or state regulations such as the California NCCP Act, which supports the continued provision of wildlife movement corridors. If potentially significant impacts would occur from particular cumulative projects, then MMs would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.2.4, Threshold 4: Wildlife Corridors and Habitat Linkages, upon completion of project construction, the pipeline would be operating passively underground and would not result in potential impacts to wildlife corridors or habitat linkages. Therefore, the project's contribution would not be cumulatively considerable.

6.3.1.5 Cumulative Threshold 5: Local Policies or Ordinances

Cumulative projects located in the vicinity of the project site would have the potential to result in a cumulative impact associated with conflicts with local policies or ordinances. Several cumulative projects, including the Otay Villages 8, 9, and 10 and University Park & Innovation Center, would occur in previously developed and undeveloped areas that have the potential to result in conflicts with local policies or ordinances (Figure 16). Development of the project in combination with these cumulative projects would potentially result in conflicts with these local policies or ordinances.

Adjacent and nearby jurisdictions, including the City of San Diego and County, would be required to comply with applicable local policies or ordinances. If potentially significant impacts would occur from particular cumulative projects, then MMs would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.2.5, the project would comply with local policies and ordinances protecting biological resources in the Chula Vista General Plan and would be consistent with the conservation goals and objectives outlined in the Chula Vista MSCP Subarea Plan and City of San Diego MSCP Subarea Plan. A significant cumulative impact associated with a conflict with a local policy or ordinance would not occur. Therefore, the project, in combination with other cumulative projects, would not result in a significant cumulative impact. The project's contribution would not be cumulatively considerable.

6.3.1.6 Cumulative Threshold 6: Regional Conservation Planning

Several cumulative projects, including the Otay Villages 8, 9, and 10 and University Park & Innovation Center, would occur in previously developed and undeveloped areas that would have the potential to result in the regional loss of sensitive biological resources protected under regional Conservation Plans (Figure 16). Development of the project in combination with these cumulative projects would potentially impact sensitive biological resources and result in a conflict with regional Conservation Plans.

Adjacent and nearby jurisdictions, including the City of San Diego and the County, would be required to comply with applicable regional or local Habitat Conservation Plans or NCCP Plans, such as the Chula Vista, City of San Diego, and County MSCP Subarea Plans. If potentially significant impacts would occur from particular cumulative projects, then MMs would be implemented to reduce impacts to the extent feasible.

As discussed in Section 6.2.6, Threshold 6: Regional Conservation Planning, the project would not contribute to the loss of sensitive vegetation or sensitive species, the project would comply with the Chula Vista and City of San Diego MSCP Subarea Plans. Therefore, with implementation of MMs, potentially significant impacts would not occur from conflicts with regional Conservation Plans. Therefore, the project, in combination with other cumulative projects, would not result in a significant cumulative impact. The project's contribution would not be cumulatively considerable.

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Appendix A. Figures

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Source: ESRI 2019.

Harris & Associates

N

0 5 10 Miles

Figure 1

Regional Location

Otay Pipeline

Date: 1/15/2021 – Last saved by: Randy Deodati – Path: C:\Users\Randy.Deodati\Desktop\Projects_Clone\Otay Pipeline Map Docs\STRFFigure2_ProjectSite.mxd

Source: USGS 2019;, SanGIS Imagery 2017.

Harris & Associates

N

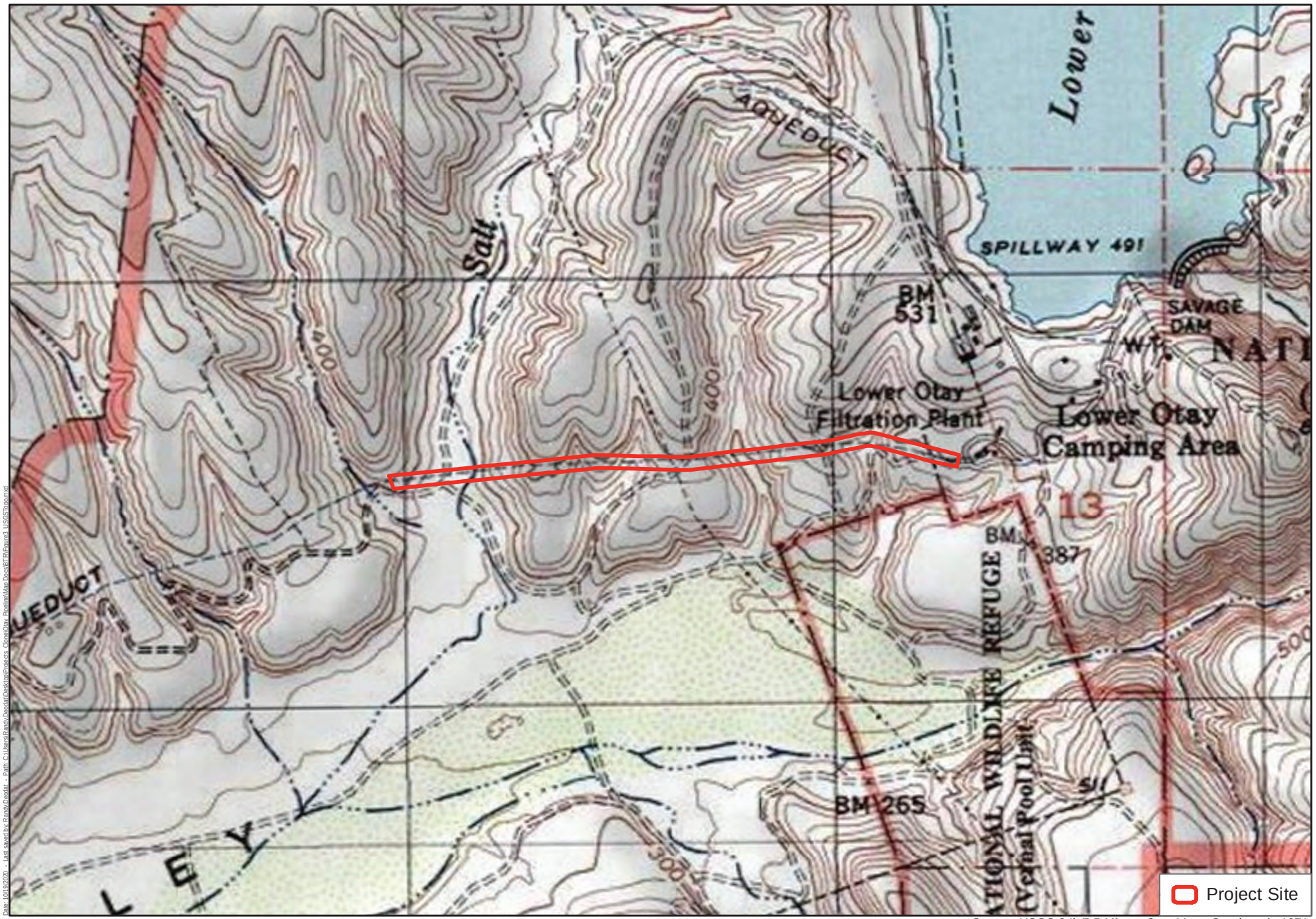
0 1,000 2,000

Feet

Figure 2

Project Site

Otay Pipeline



Source: USGS 24k 7.5-Minute Otay Mesa Quadrangle 1971.

Harris & Associates

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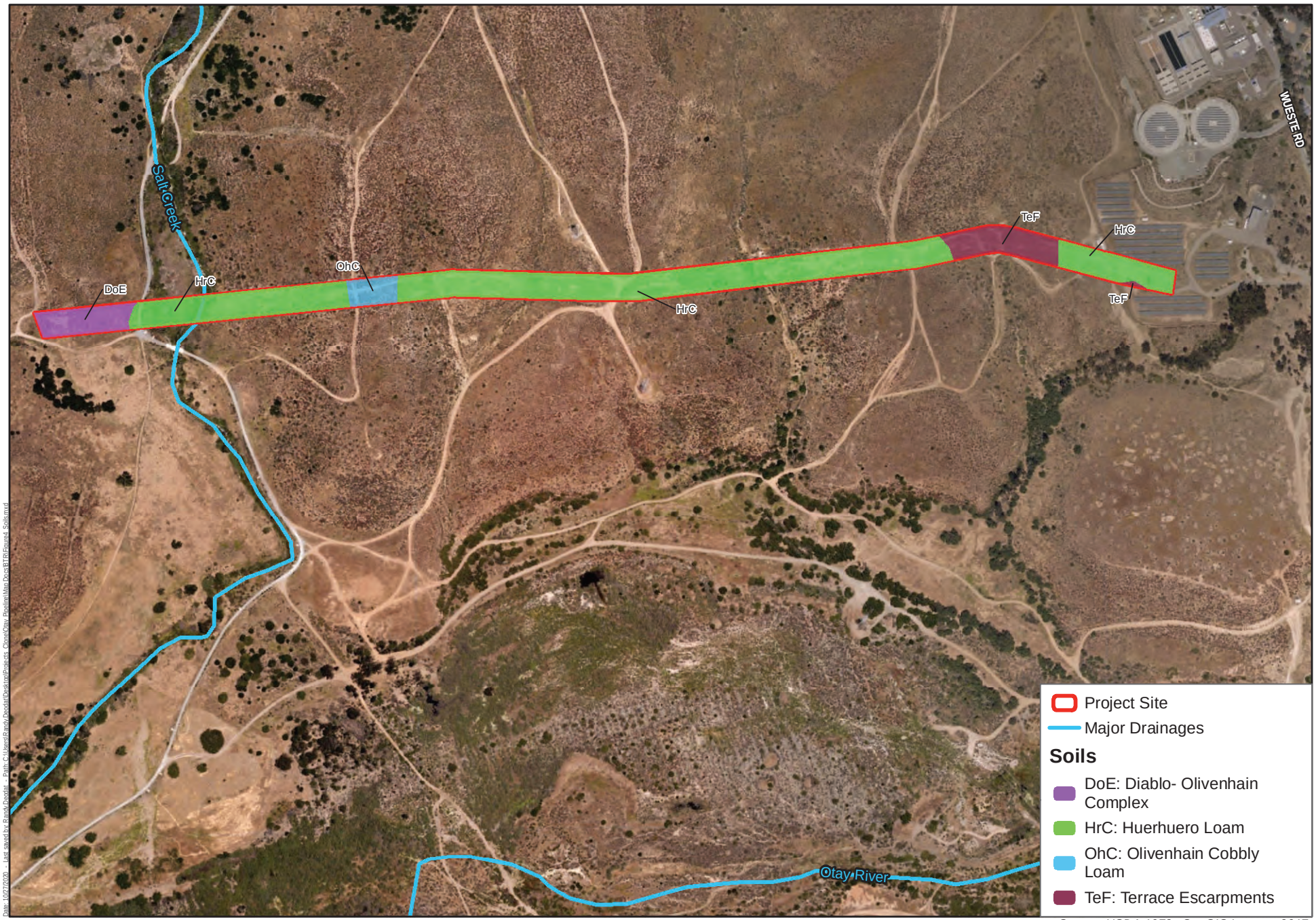
0 500 1,000

Feet

Figure 3

USGS Topographic Map

Otay Pipeline



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Source: USDA 1973;, SanGIS Imagery 2017.

Harris & Associates

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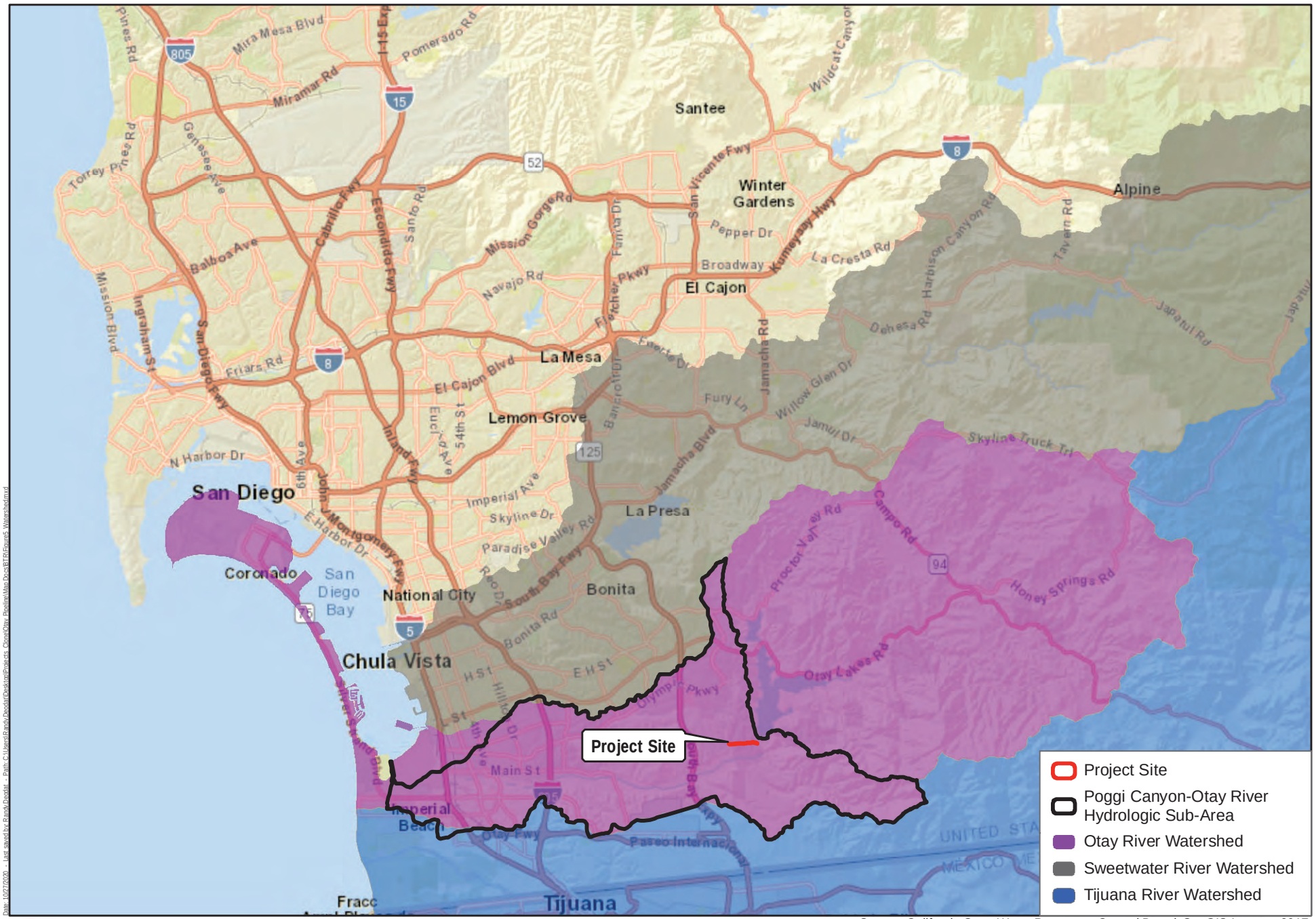
Feet

Figure 4

Soils

Otay Pipeline



Source: California State Water Resources Control Board; SanGIS Imagery 2017.

Harris & Associates

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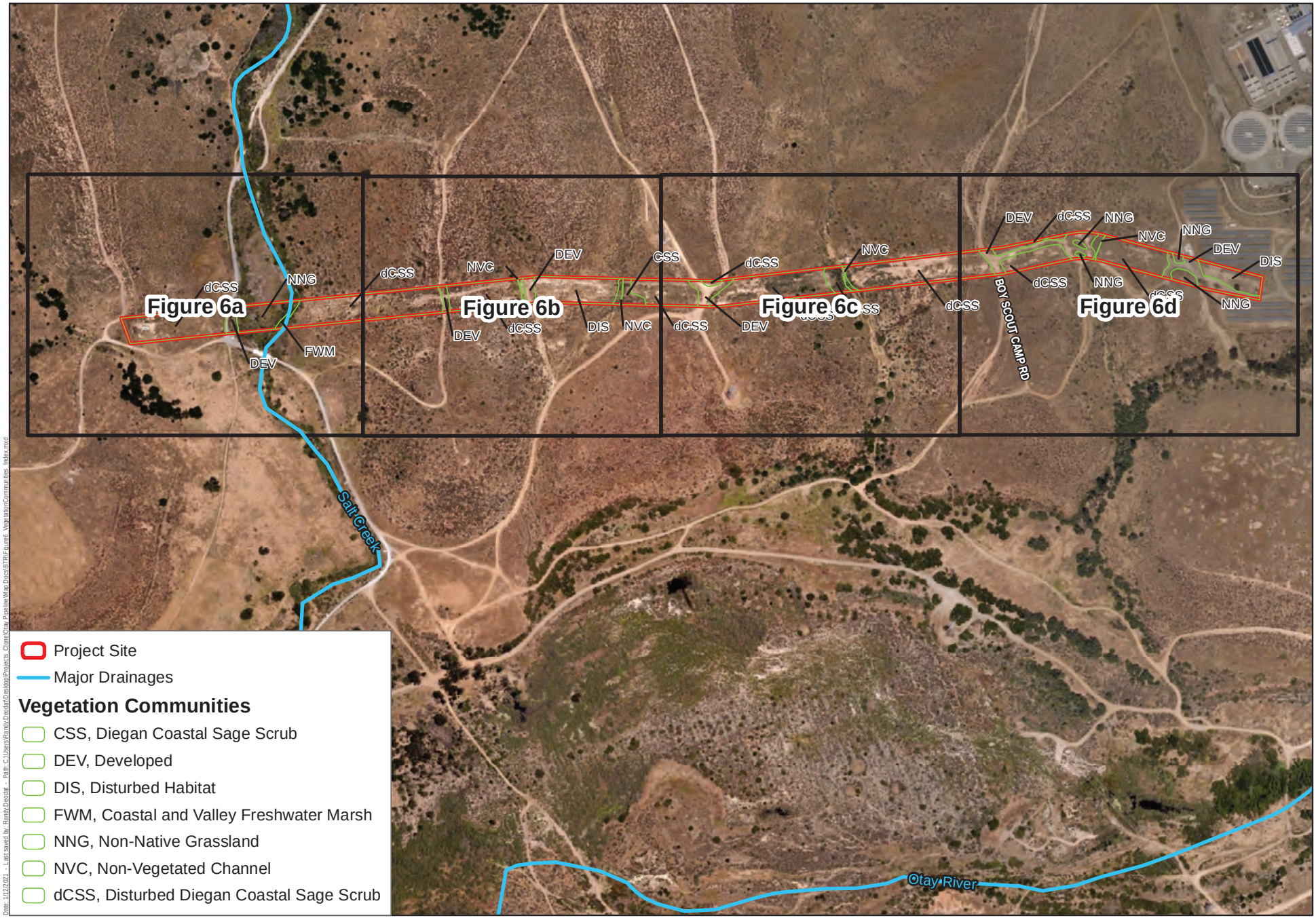
Miles

Figure 5

Watersheds

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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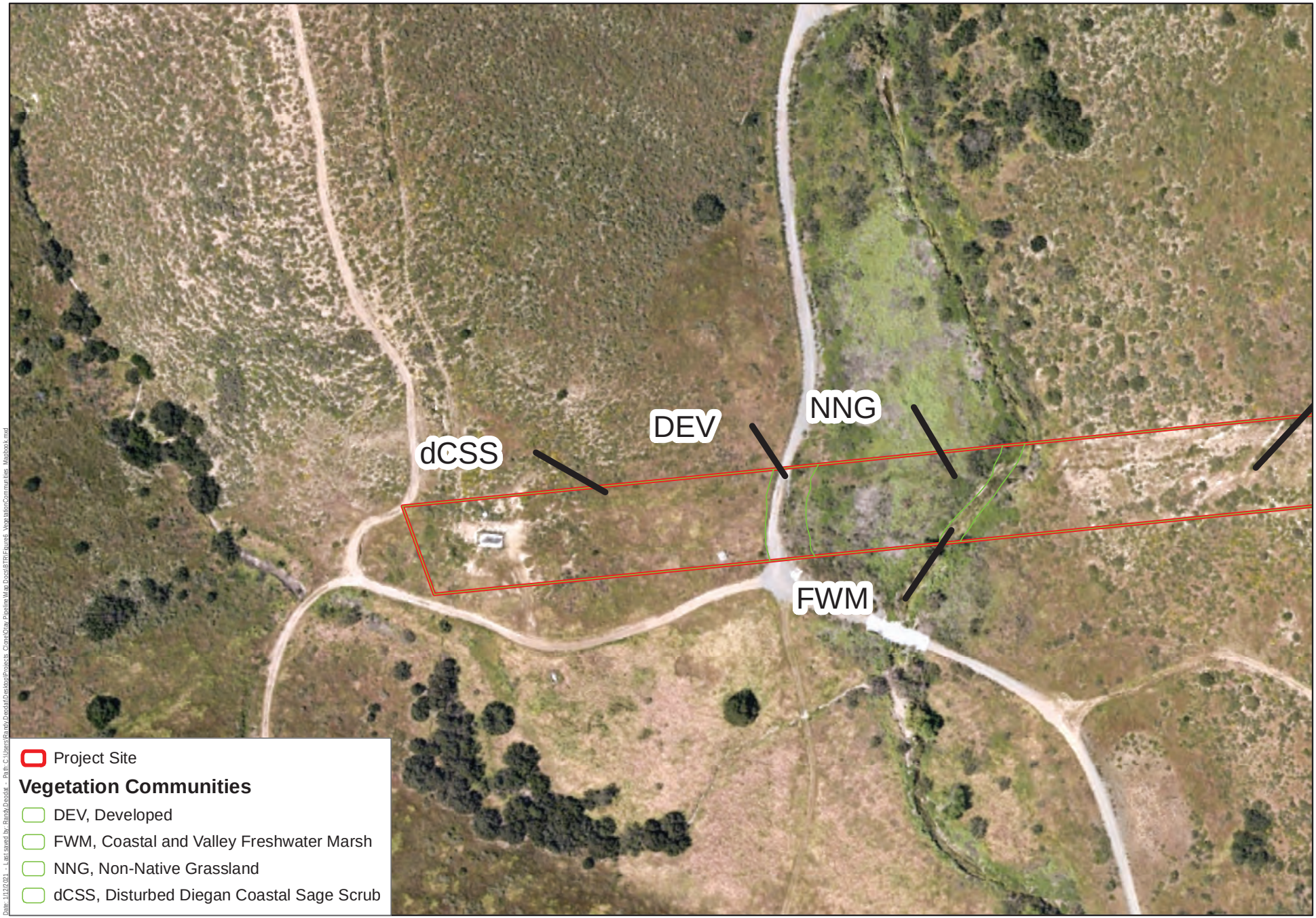
Feet

Figure 6

Vegetation Communities - Index

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

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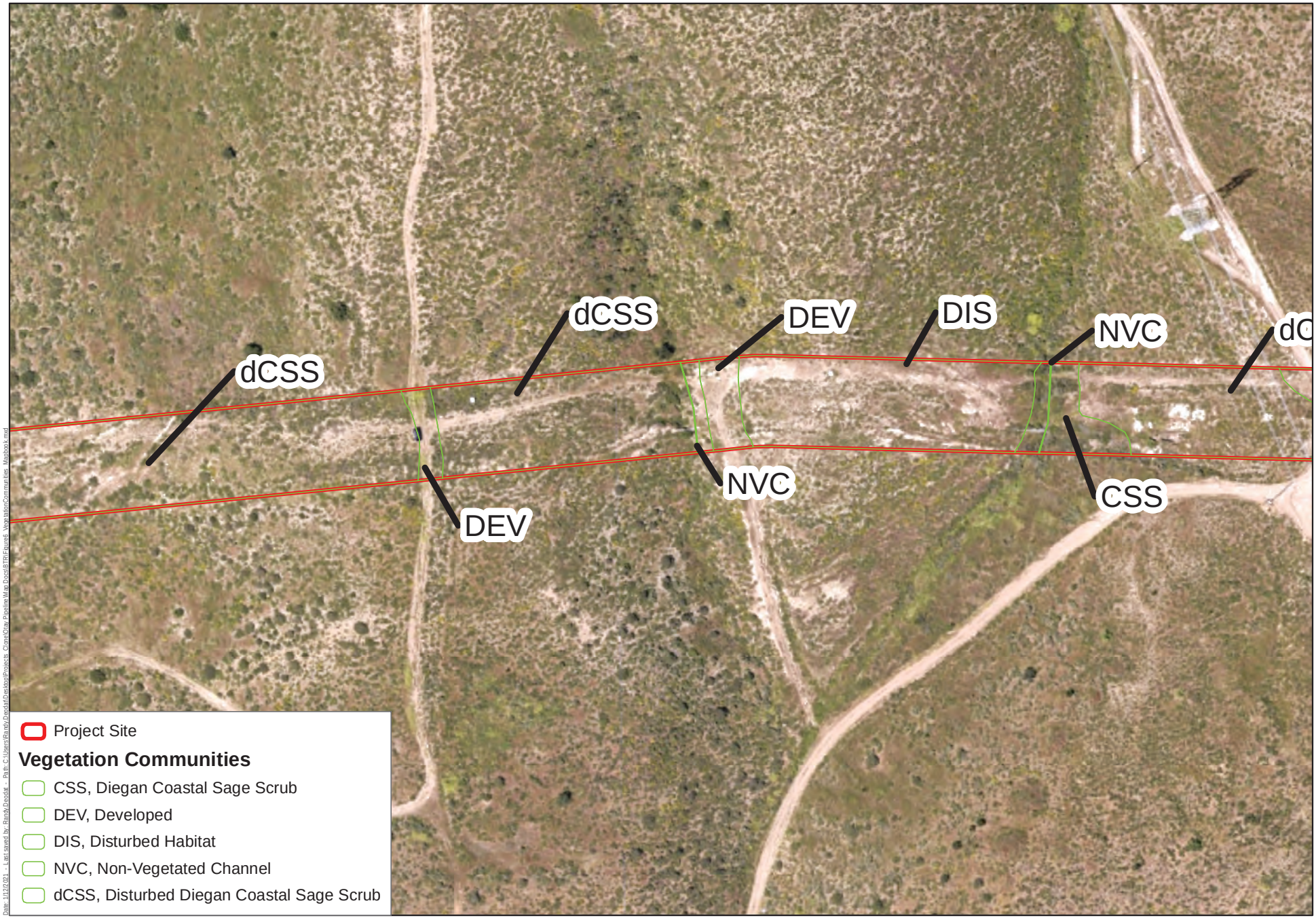
Feet

Figure 6a

Vegetation Communities

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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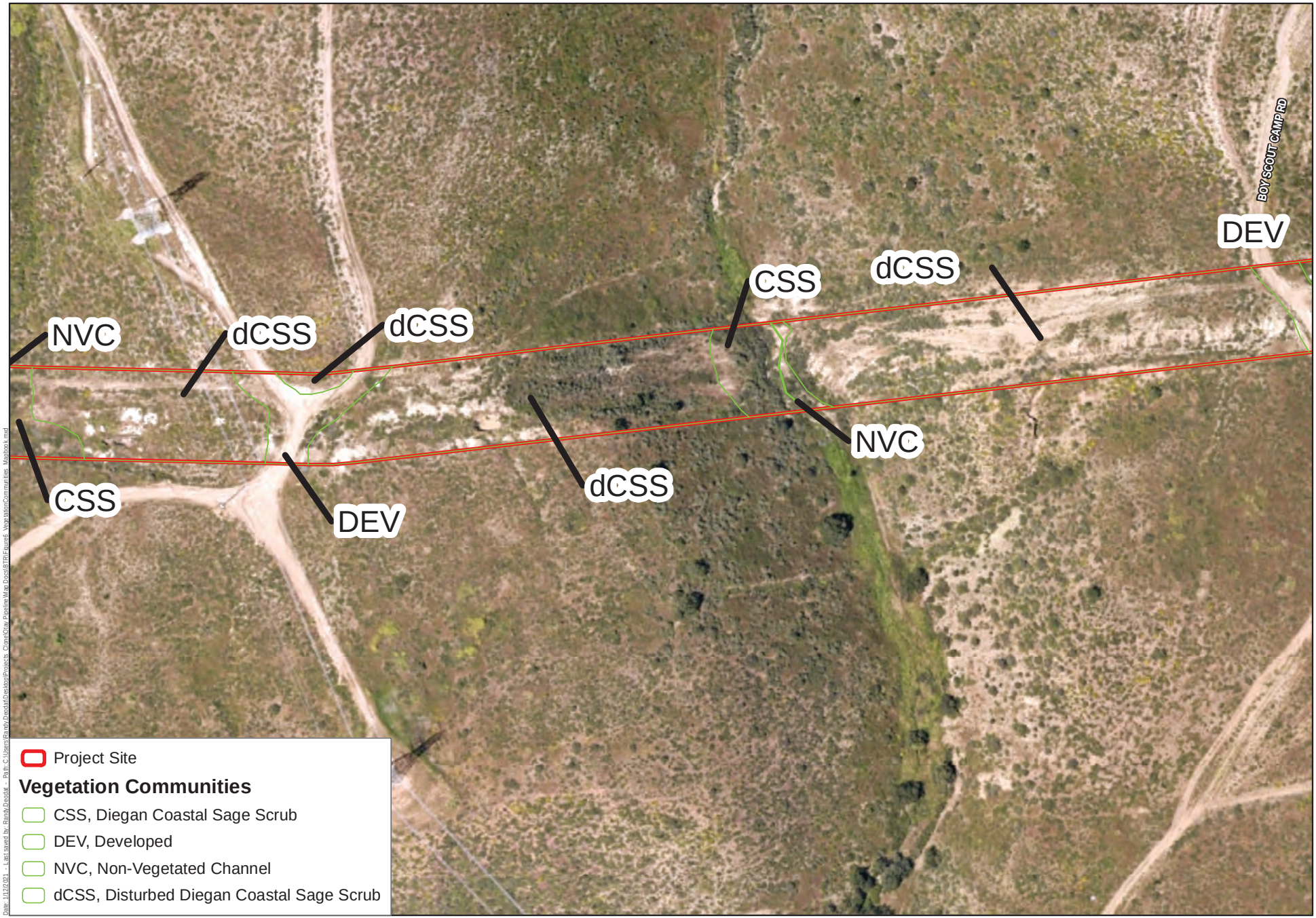
Feet

Figure 6b

Vegetation Communities

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

N

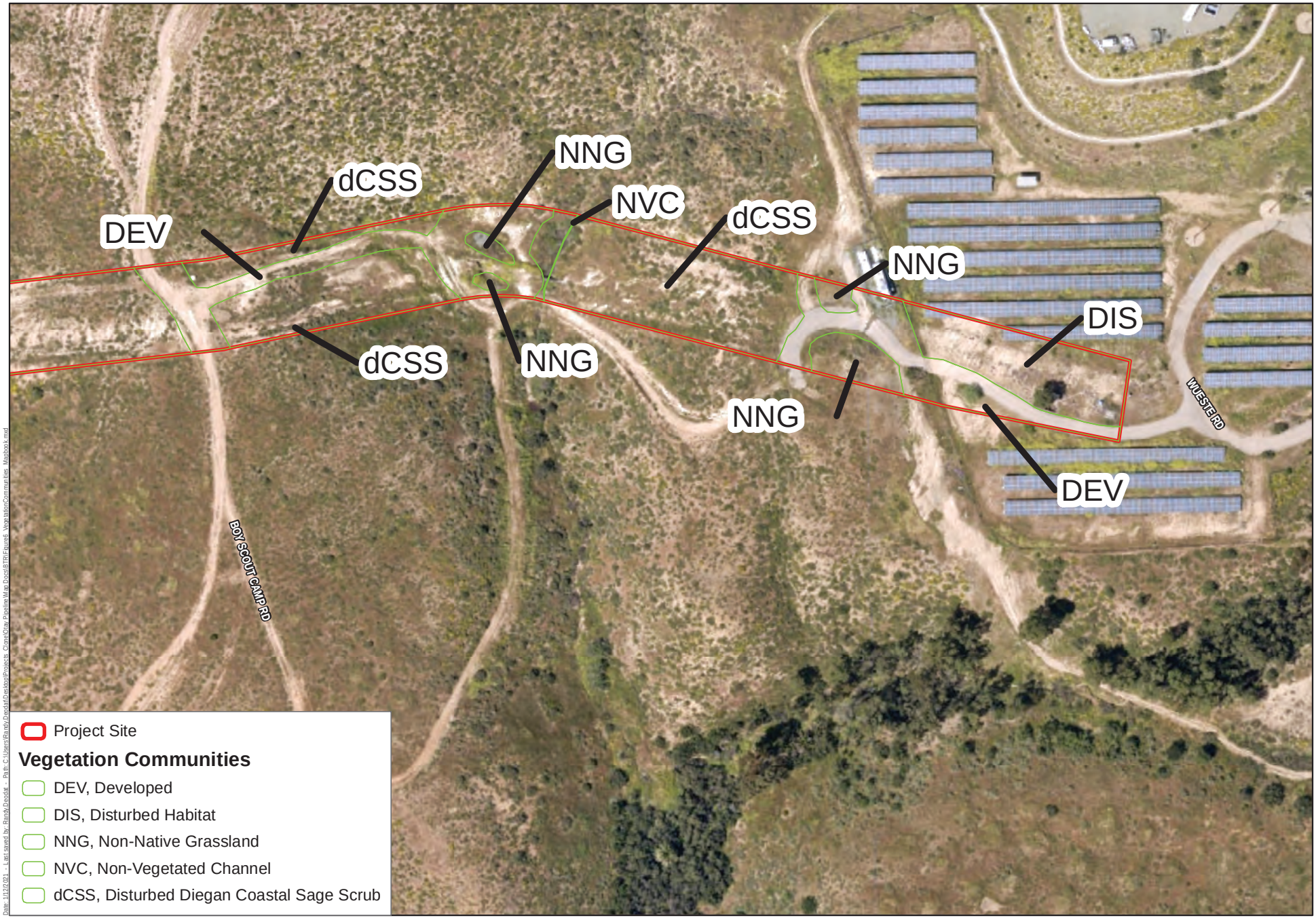
0 50 100

Feet

Figure 6c

Vegetation Communities

Otay Pipeline



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Harris & Associates

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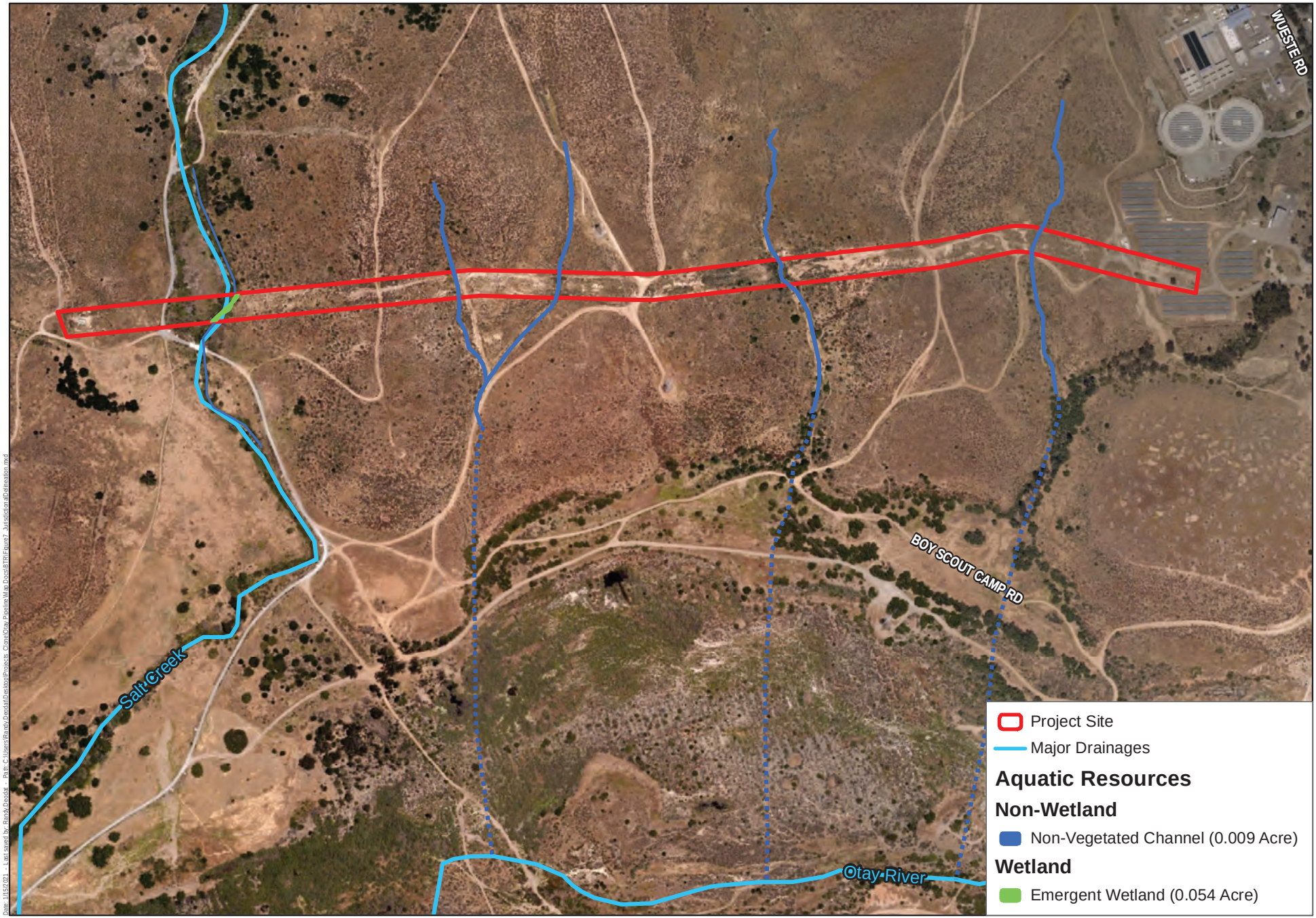
Feet

Figure 6d

Vegetation Communities

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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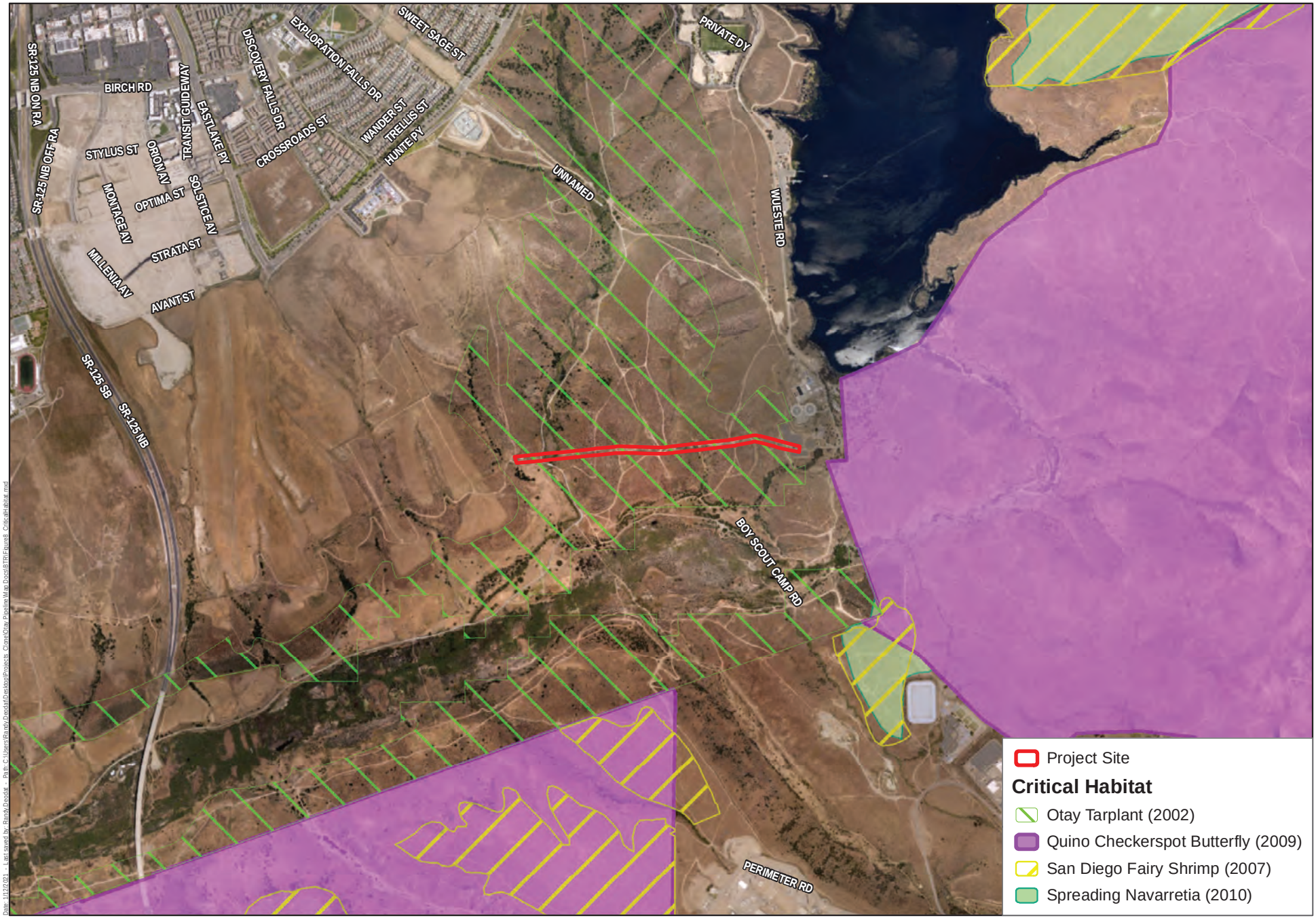
Feet

Figure 7

Aquatic Resources

Otay Pipeline



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Source: USFWS 2002, 2007, 2009, 2010; SanGIS Imagery 2017.

Harris & Associates

N

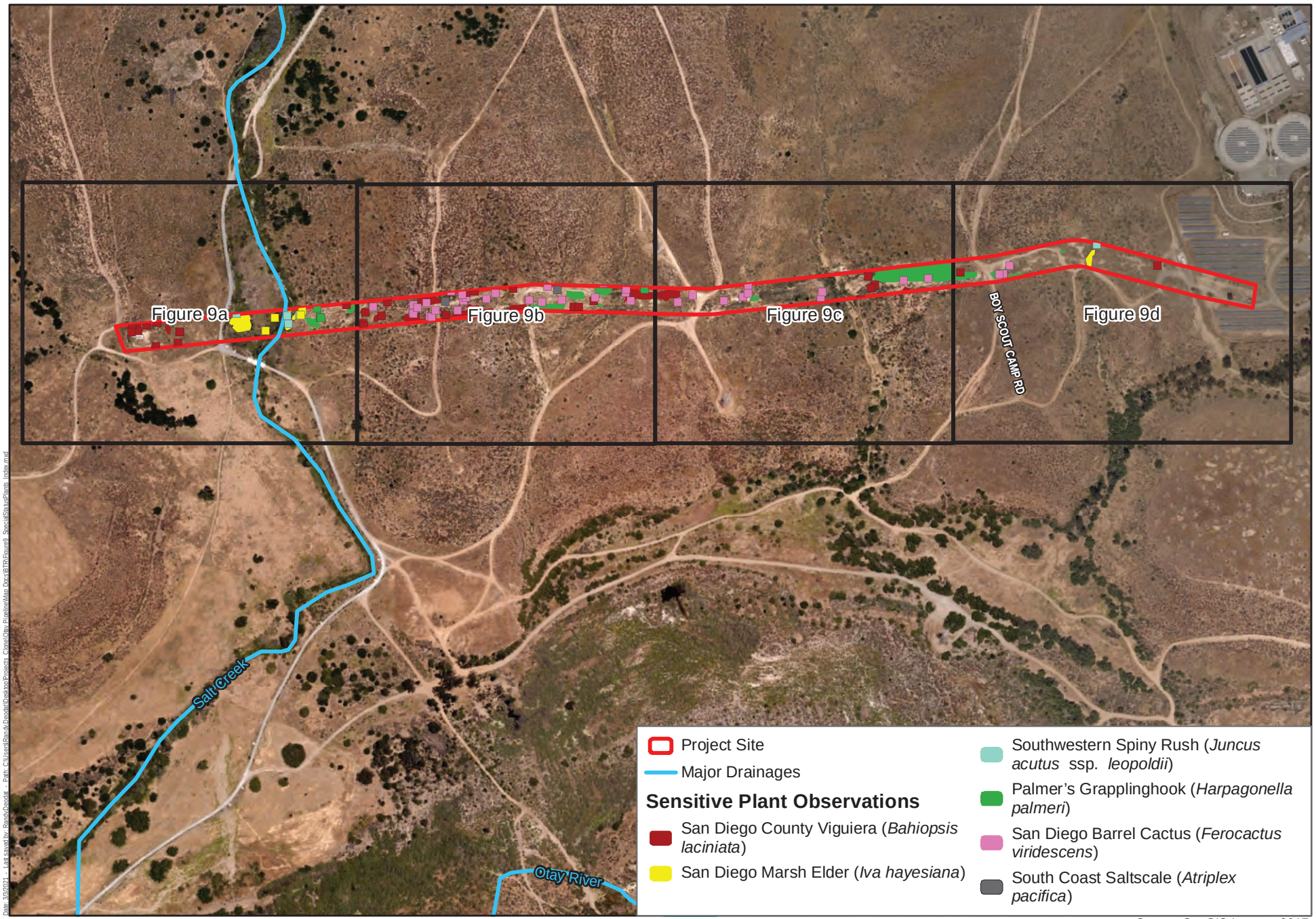
0 1,000 2,000

Feet

Figure 8

Critical Habitat

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

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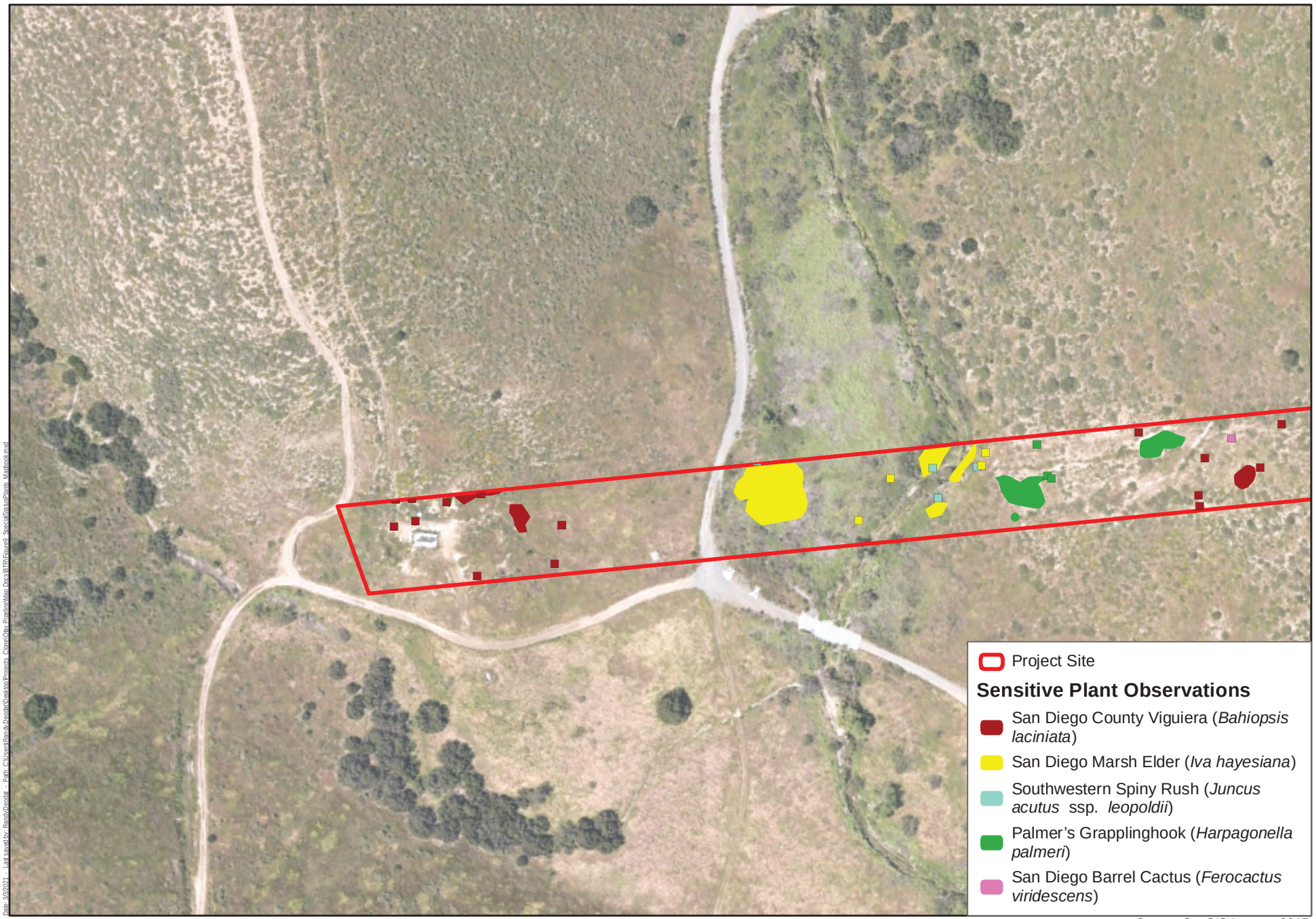
Feet

Figure 9

Sensitive Plant Observations - Index

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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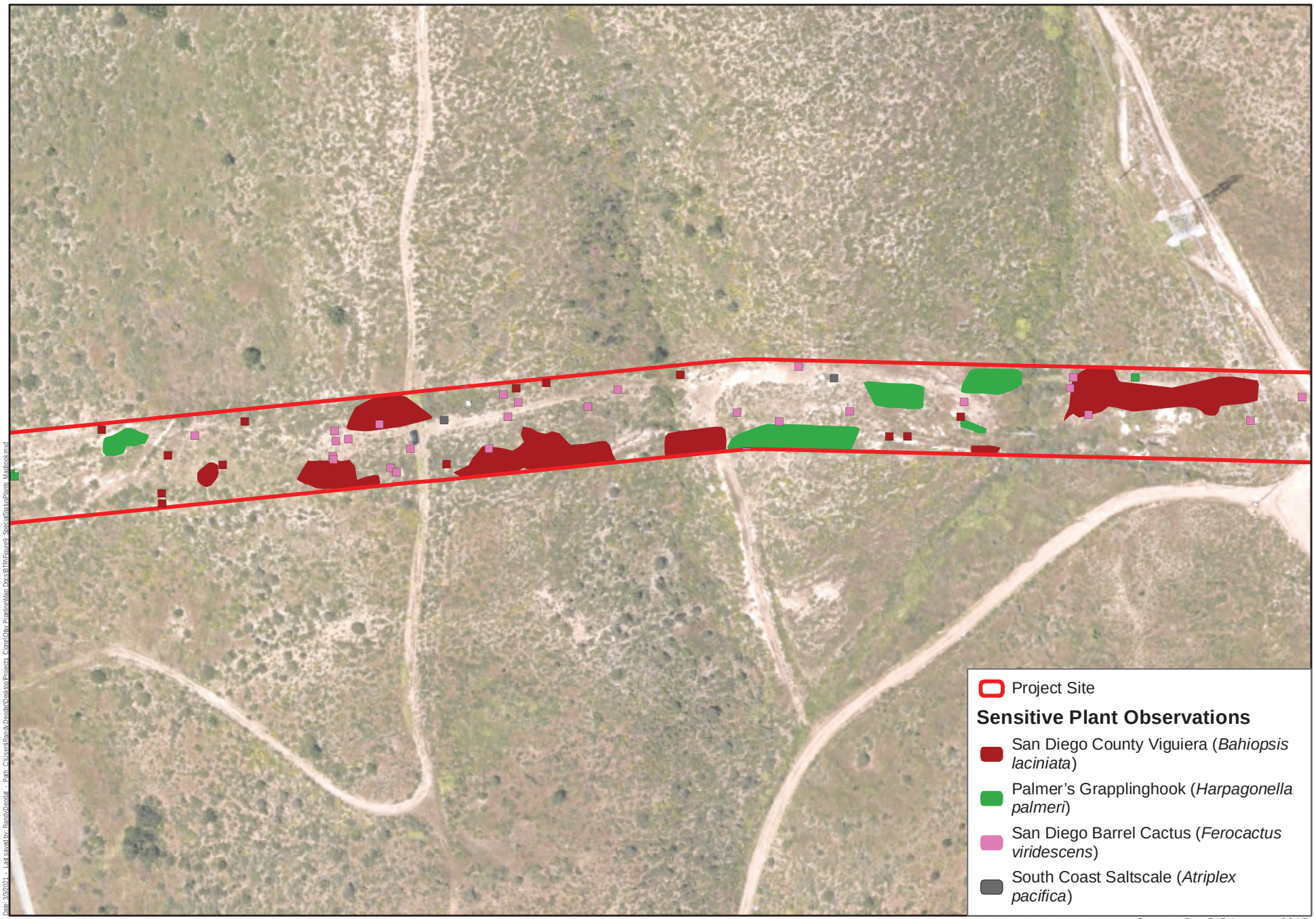
Feet

Figure 9a

Sensitive Plant Observations

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

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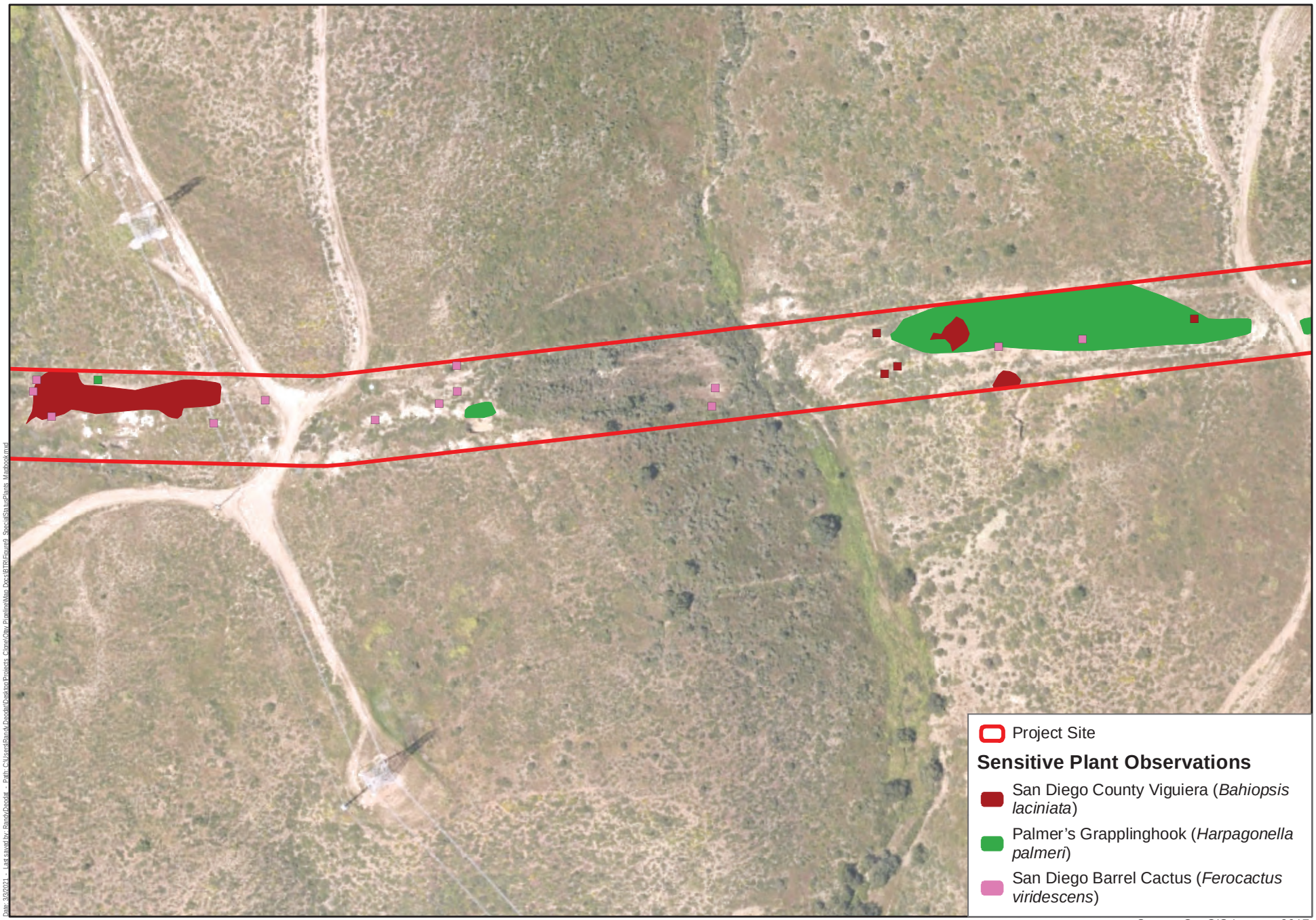
Feet

Figure 9b

Sensitive Plant Observations

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

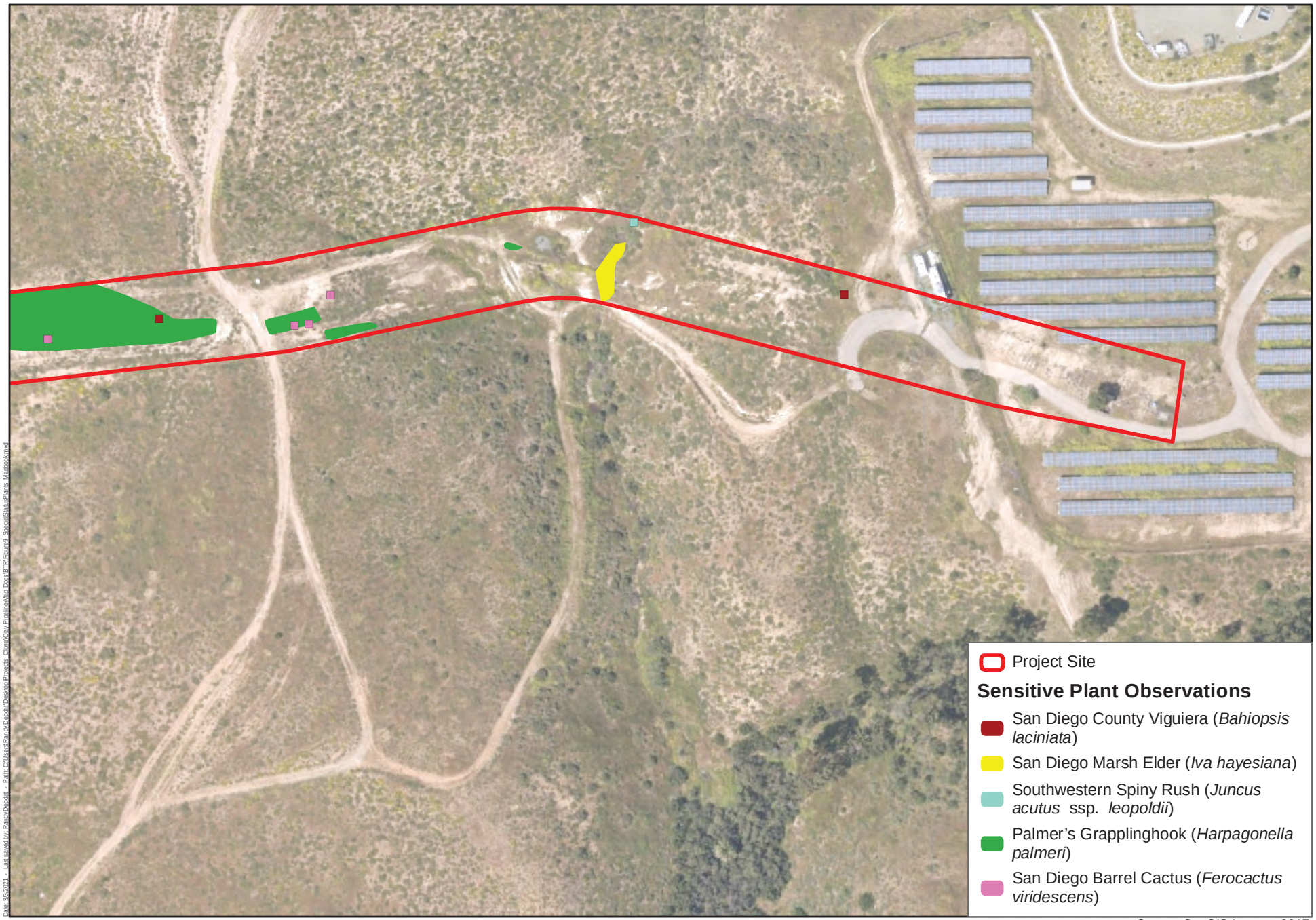
0 50 100

Feet

Figure 9c

Sensitive Plant Observations

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

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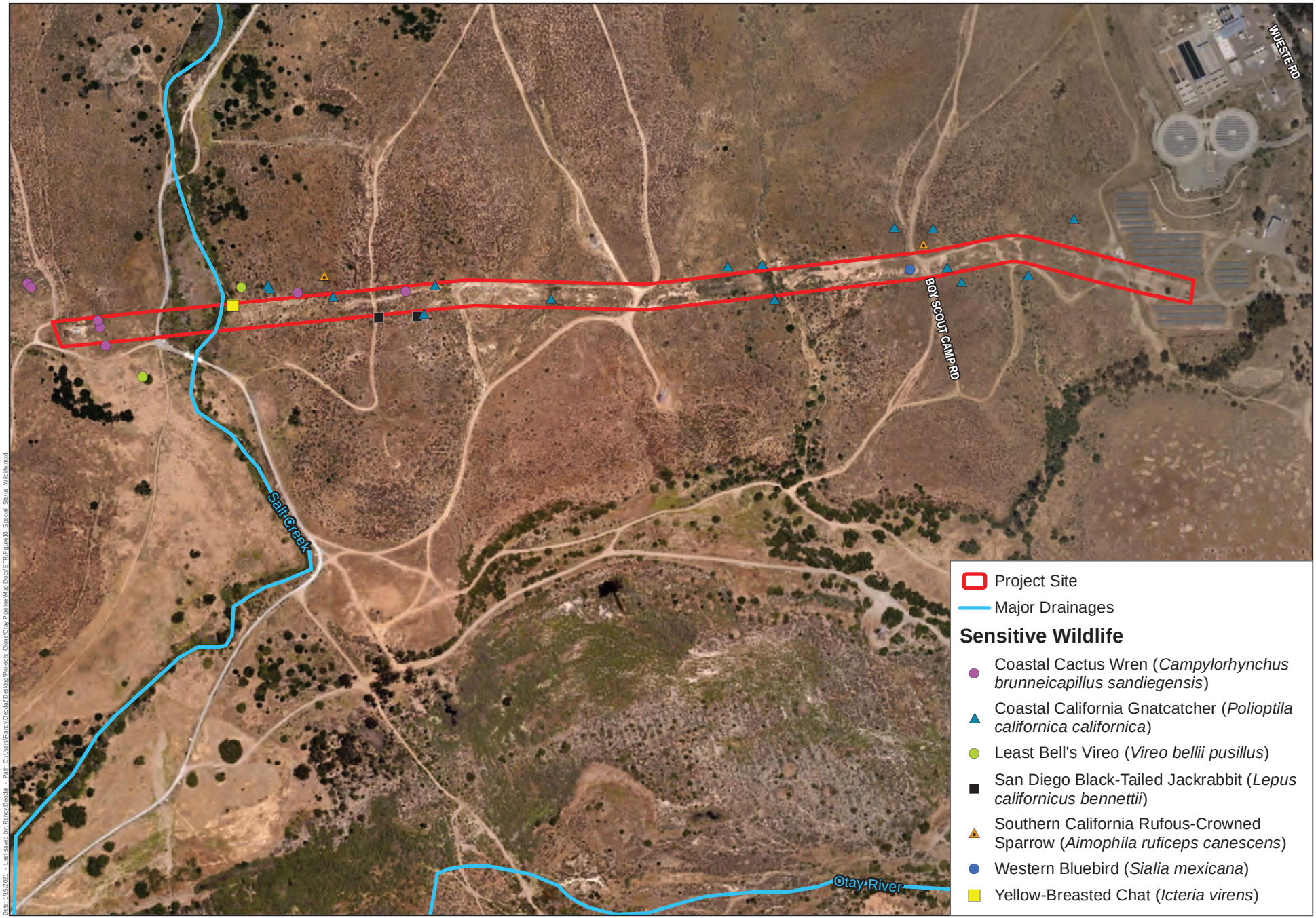
Feet

Figure 9d

Sensitive Plant Observations

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

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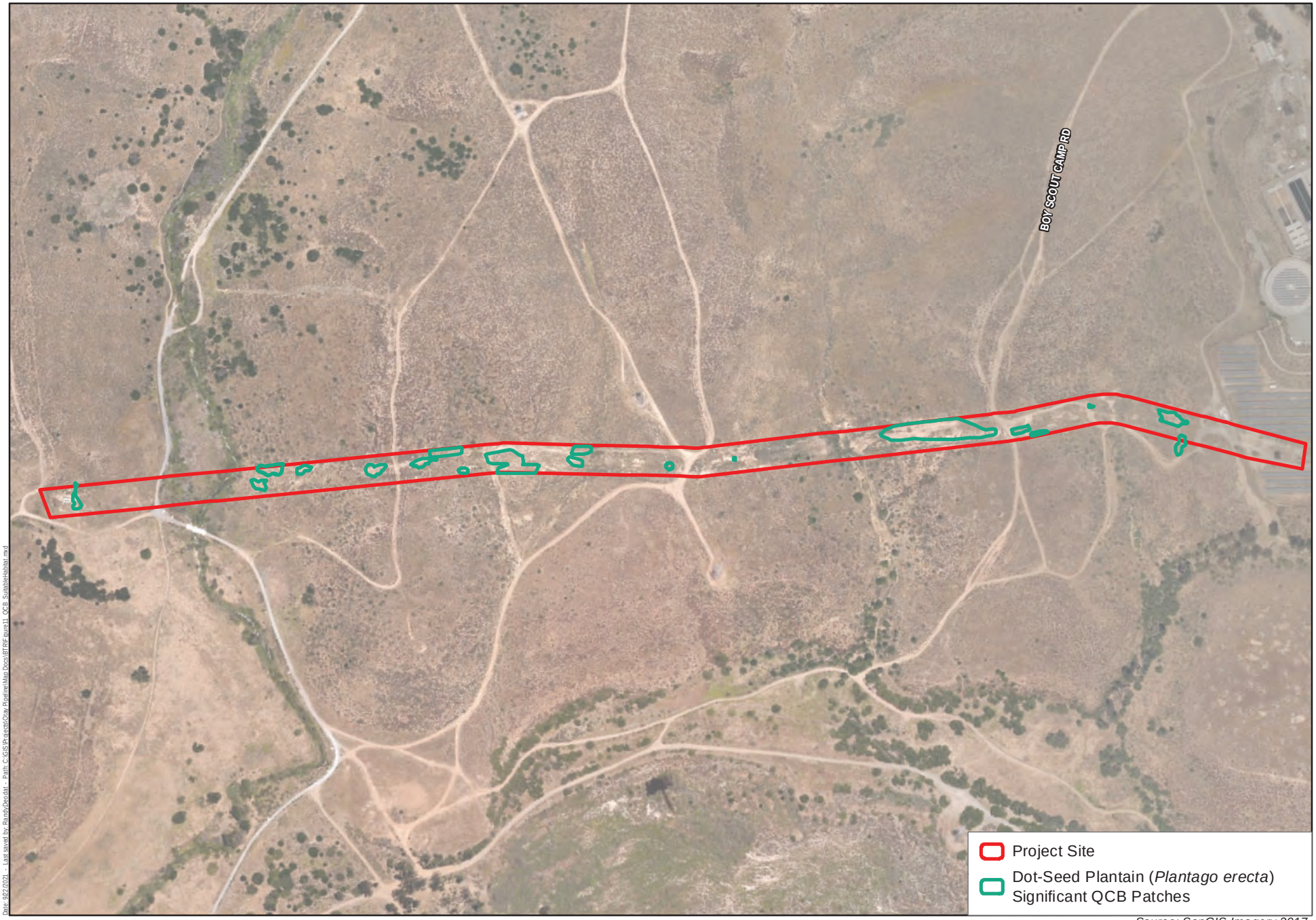
Feet

Figure 10

Sensitive Wildlife Observations

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

N

0 250 500

Feet

Figure 11

Quino Checkerspot Butterfly Suitable Habitat

Otay Pipeline

Project Site
Air Vac
Blow Off
Proposed Pipeline (Replace in Place)

Impacts

Permanent
Temporary

Sensitive Plant Observations

San Diego County Viguiera (*Bahiopsis laciniata*)
San Diego Marsh Elder (*Iva hayesiana*)
Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)
Palmer's Grapplinghook (*Harpagonella palmeri*)
San Diego Barrel Cactus (*Ferocactus viridescens*)
South Coast Saltscale (*Atriplex pacifica*)

Source: SanGIS Imagery 2017.

Harris & Associates

N

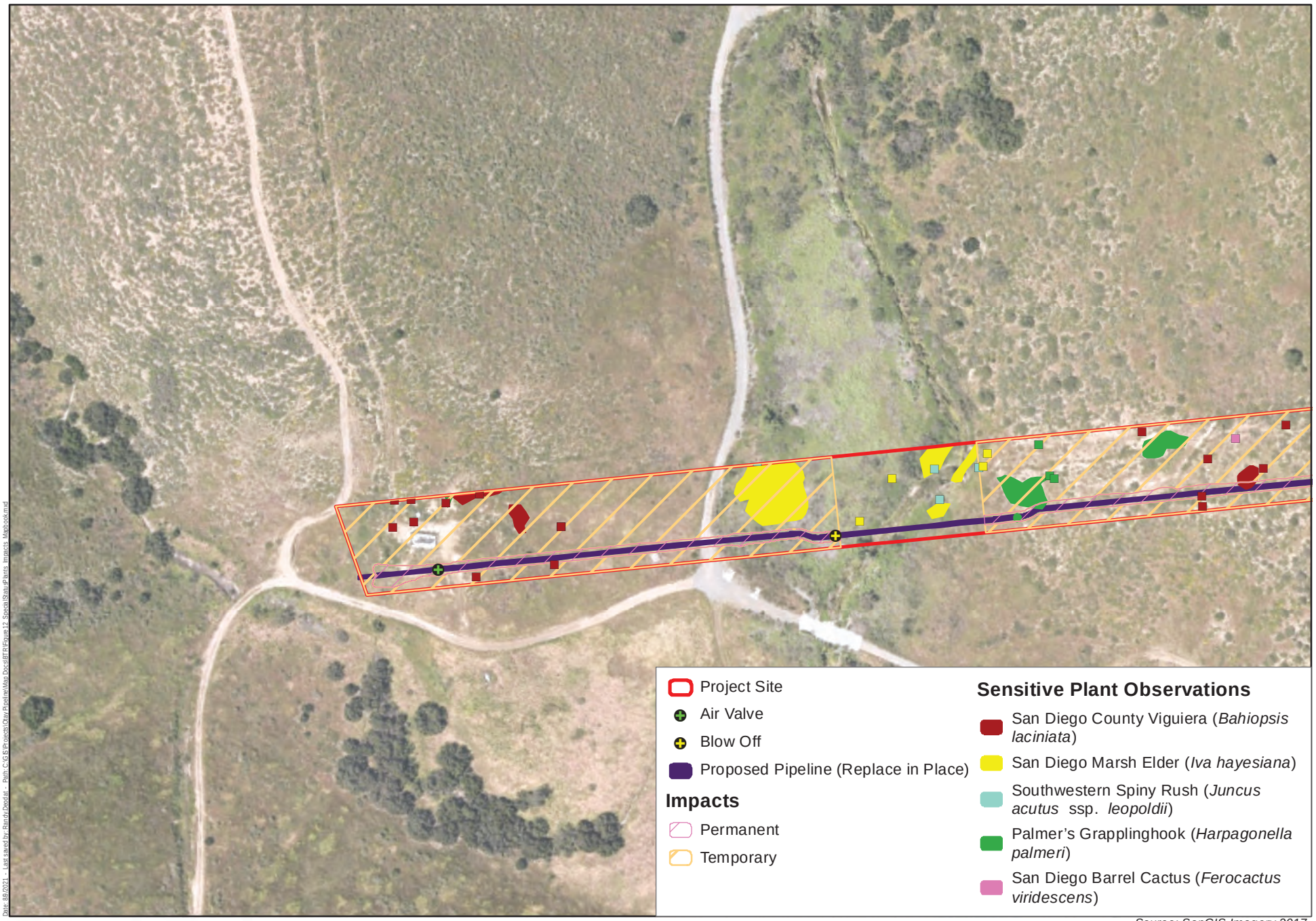
0 250 500

Feet

Figure 12

Sensitive Plant Impacts - Index

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

N

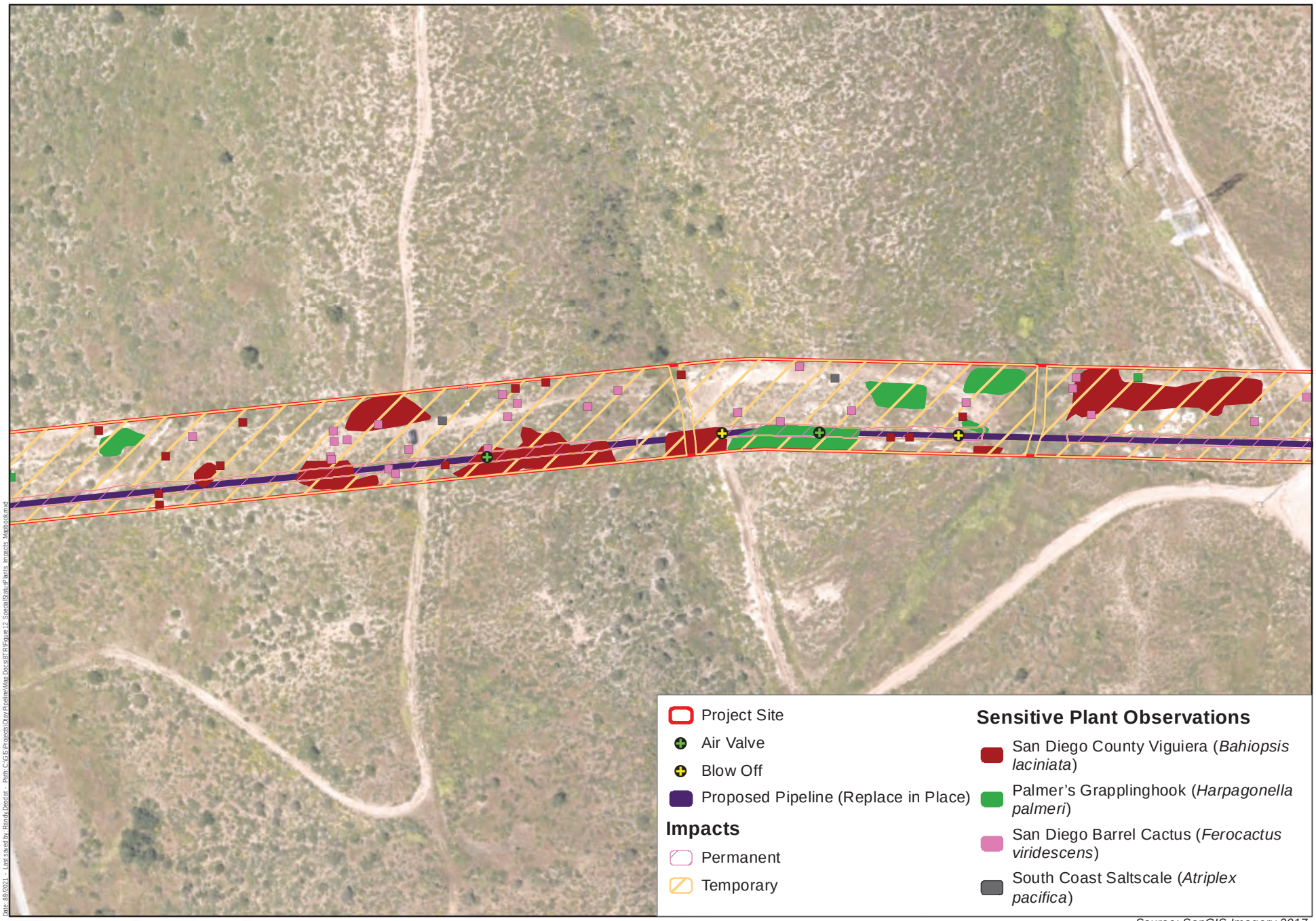
0 50 100

Feet

Figure 12a

Sensitive Plant Impacts

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

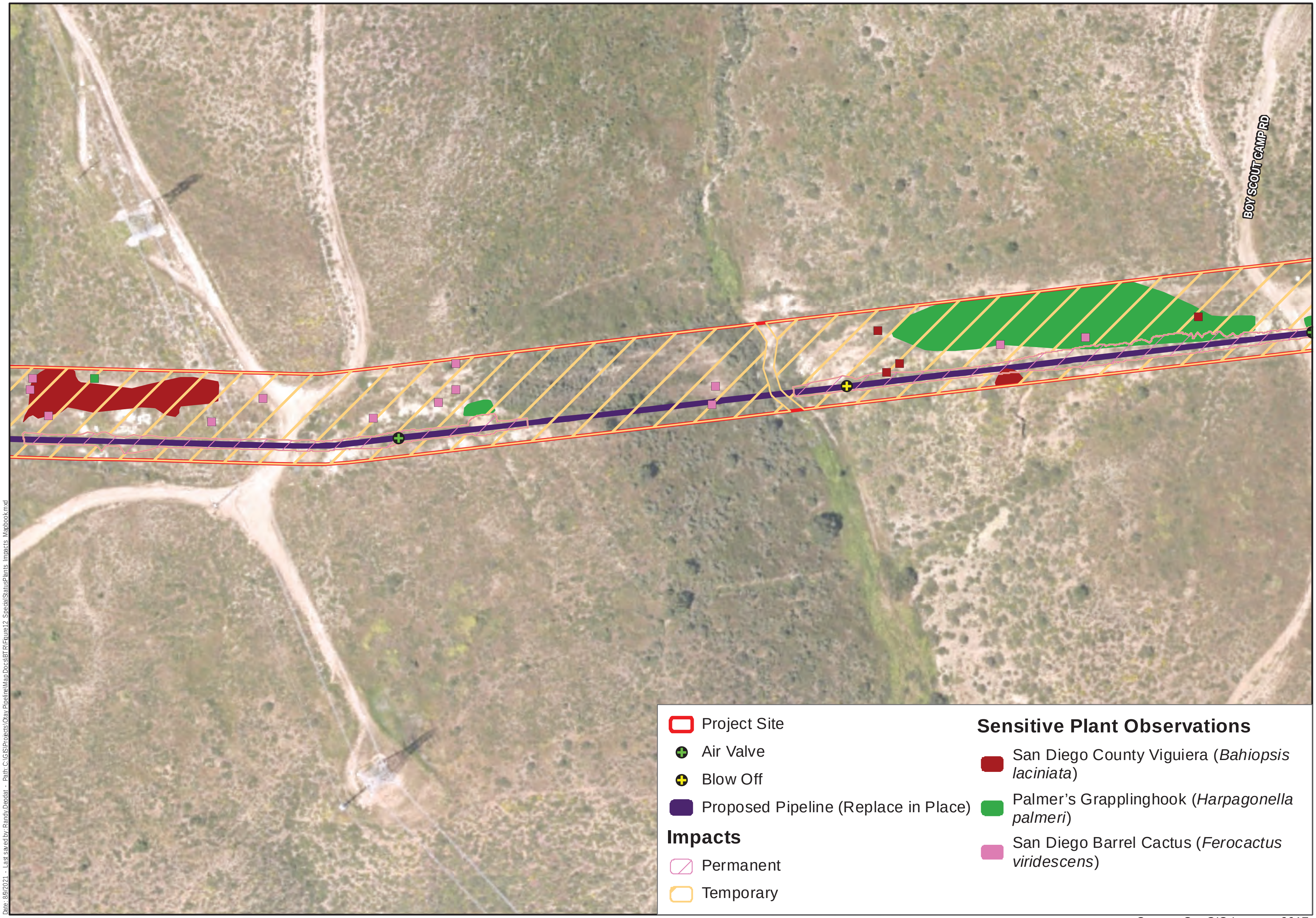
0 50 100

Feet

Figure 12b

Sensitive Plant Impacts

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

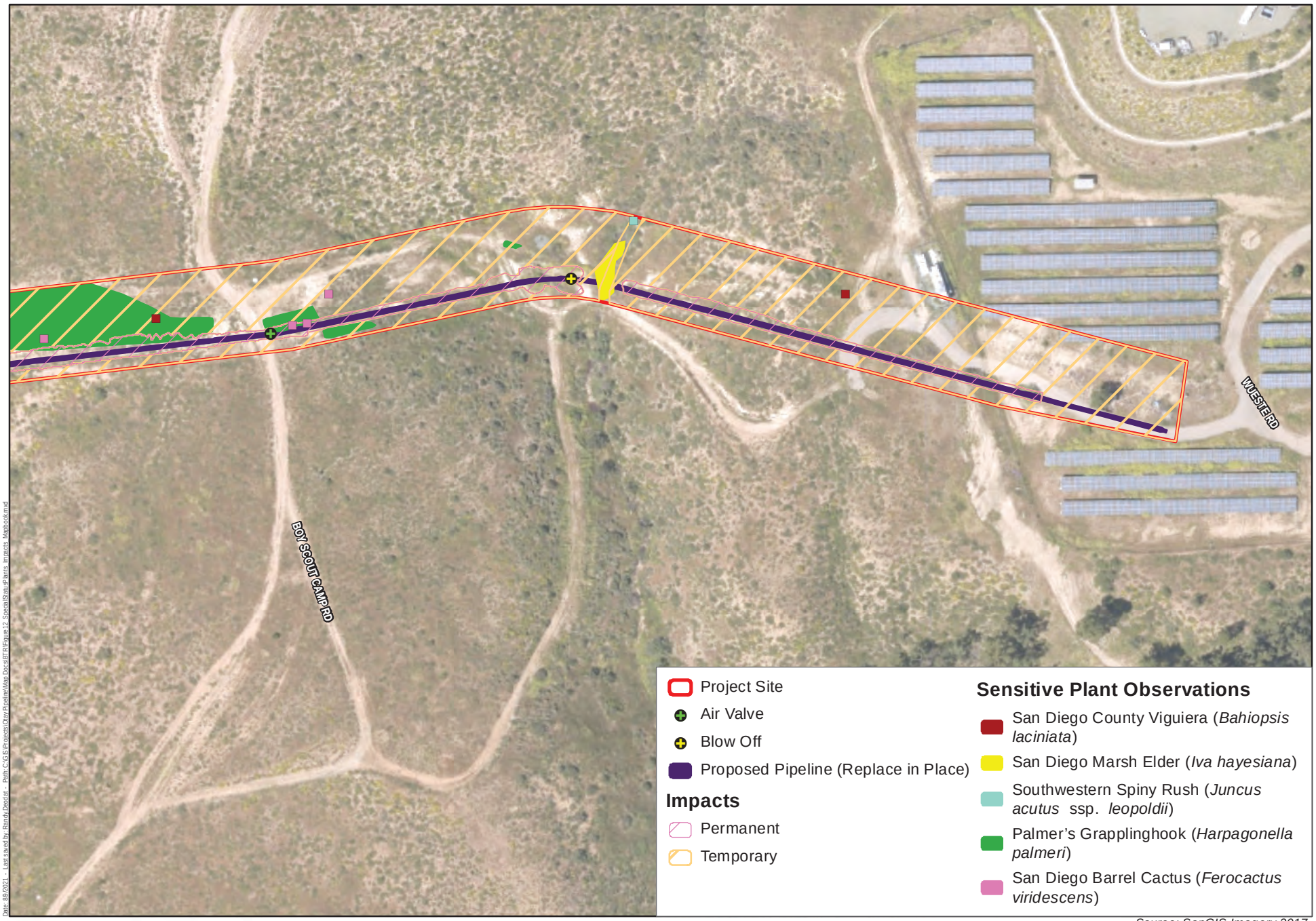
N

0 50 100
Feet

Figure 12c

Sensitive Plant Impacts

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

N

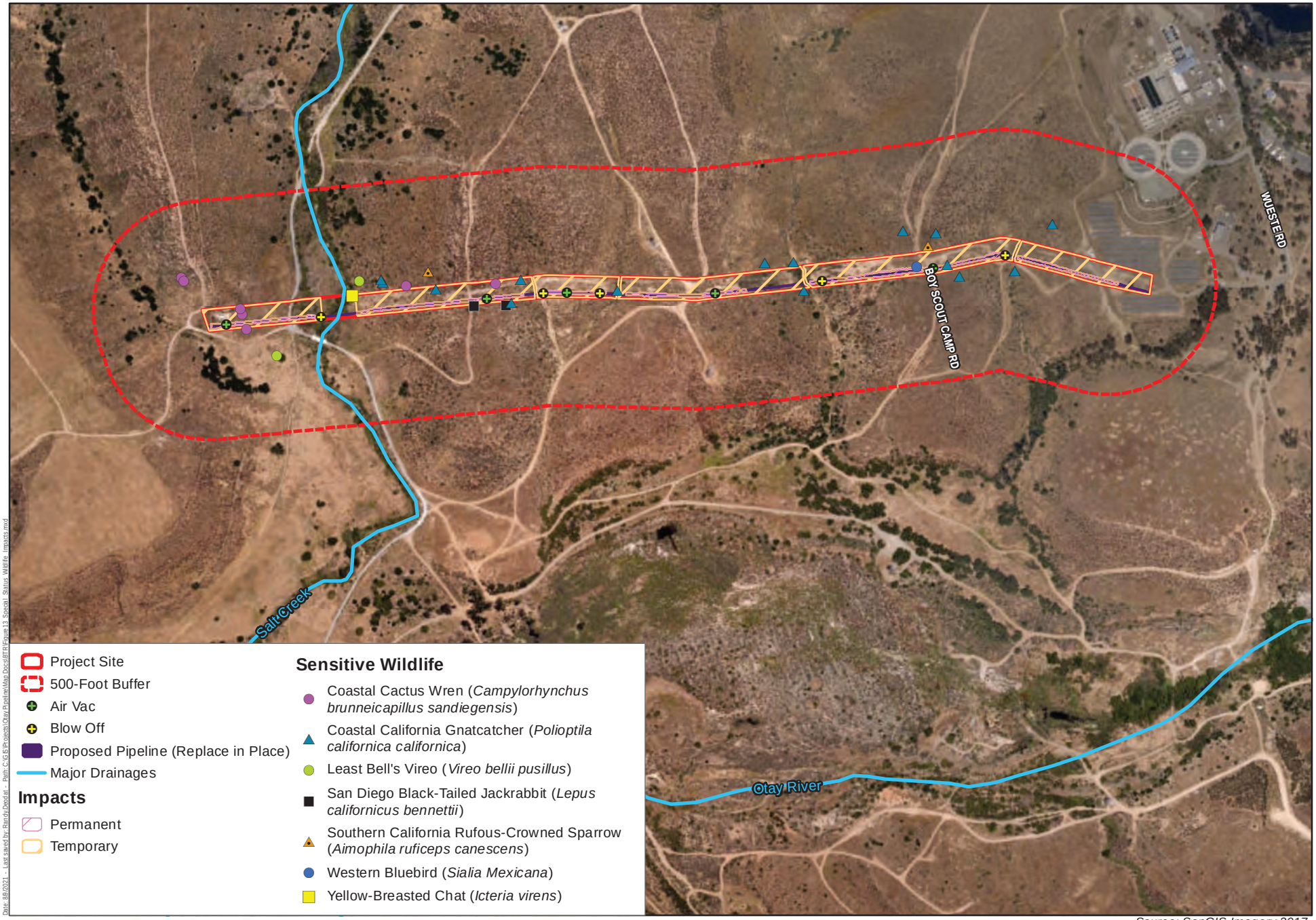
0 50 100

Feet

Figure 12d

Sensitive Plant Impacts

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

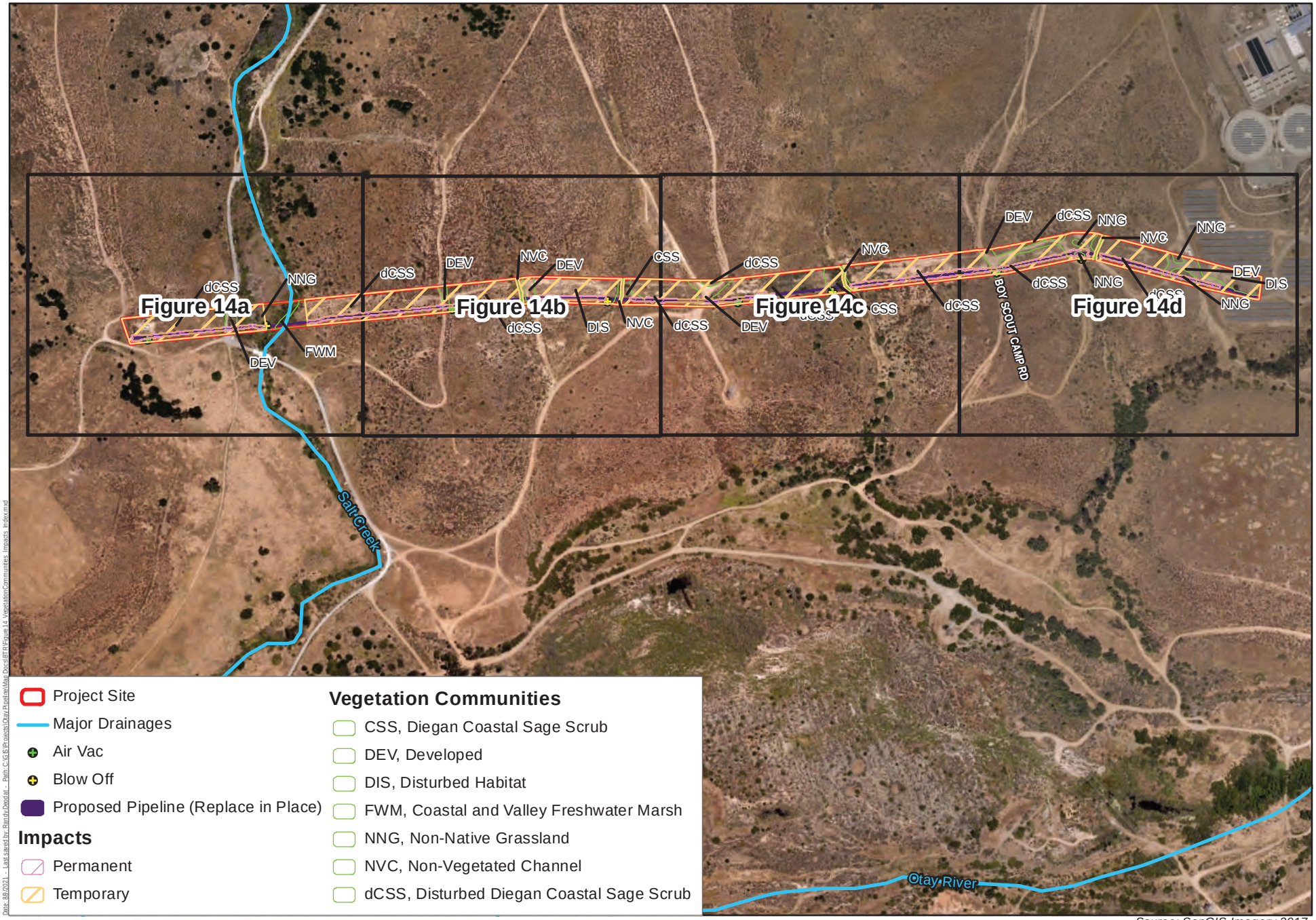
0 250 500

Feet

Figure 13

Sensitive Wildlife Impacts

Otay Pipeline



Project Site
Major Drainages
Air Vac
Blow Off
Proposed Pipeline (Replace in Place)

Impacts

Permanent
Temporary

Vegetation Communities

CSS, Diegan Coastal Sage Scrub
DEV, Developed
DIS, Disturbed Habitat
FWM, Coastal and Valley Freshwater Marsh
NNG, Non-Native Grassland
NVC, Non-Vegetated Channel
dCSS, Disturbed Diegan Coastal Sage Scrub

Date: 8/9/2021 - Last saved by: Randy.Dodd - Path: C:\GIS\Projects\Otay Pipeline\Map Docs\BTR\Figure 14 VegetationCommunities_Impacts_Index.mxd

Source: SanGIS Imagery 2017.

Harris & Associates

N

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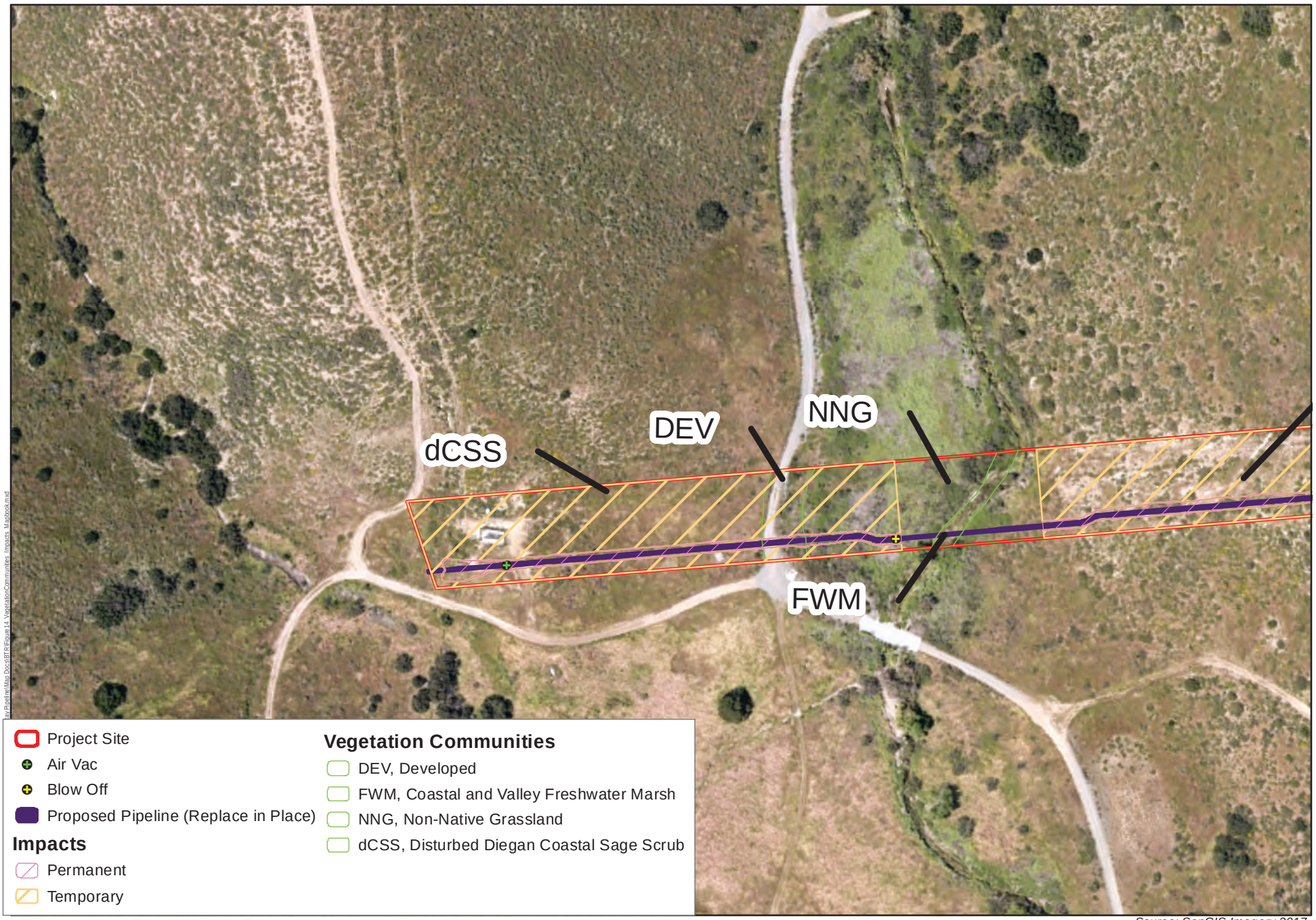
Feet

Figure 14

Vegetation Community Impacts - Index

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

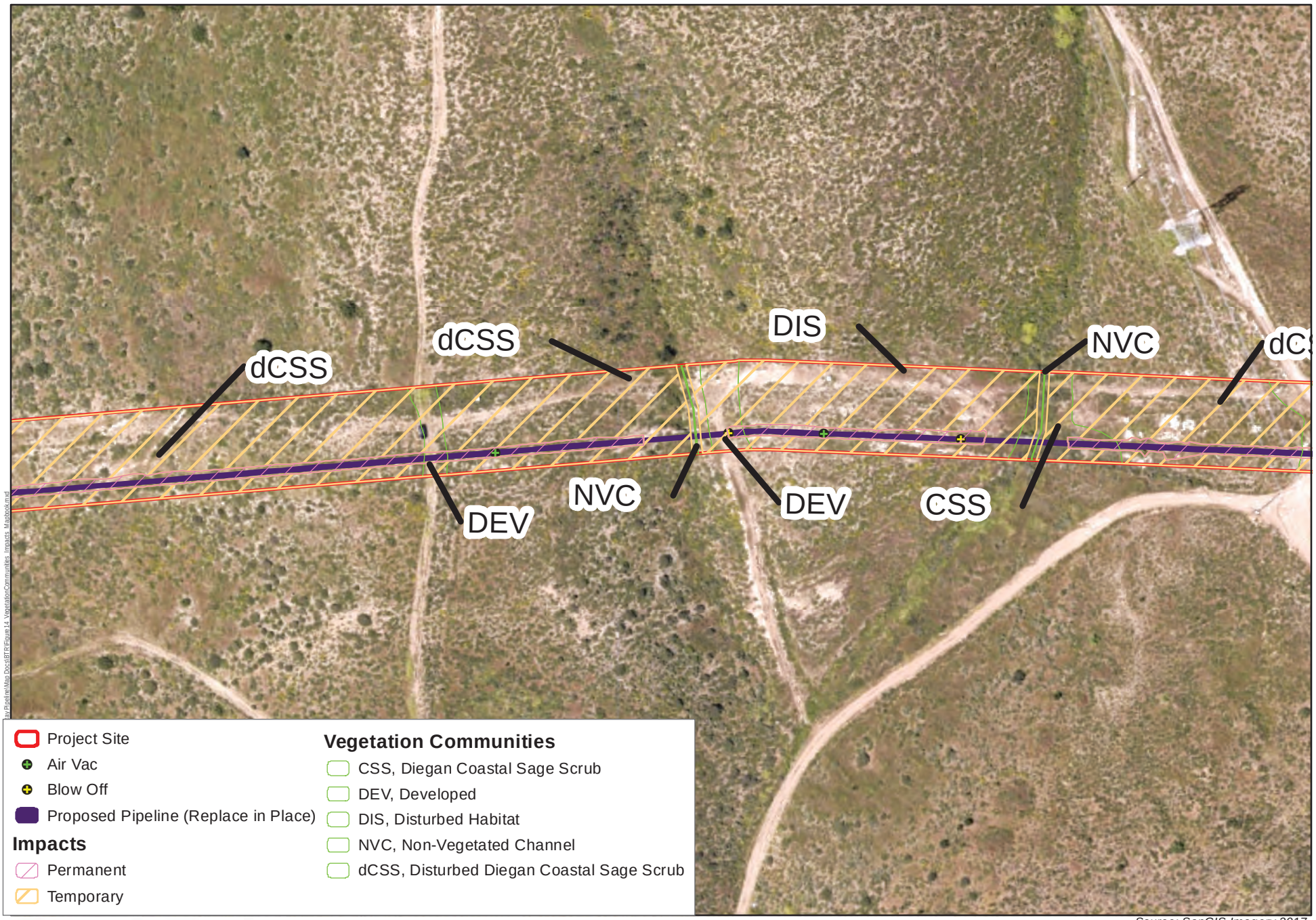
0 50 100

Feet

Figure 14a

Vegetation Community Impacts

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

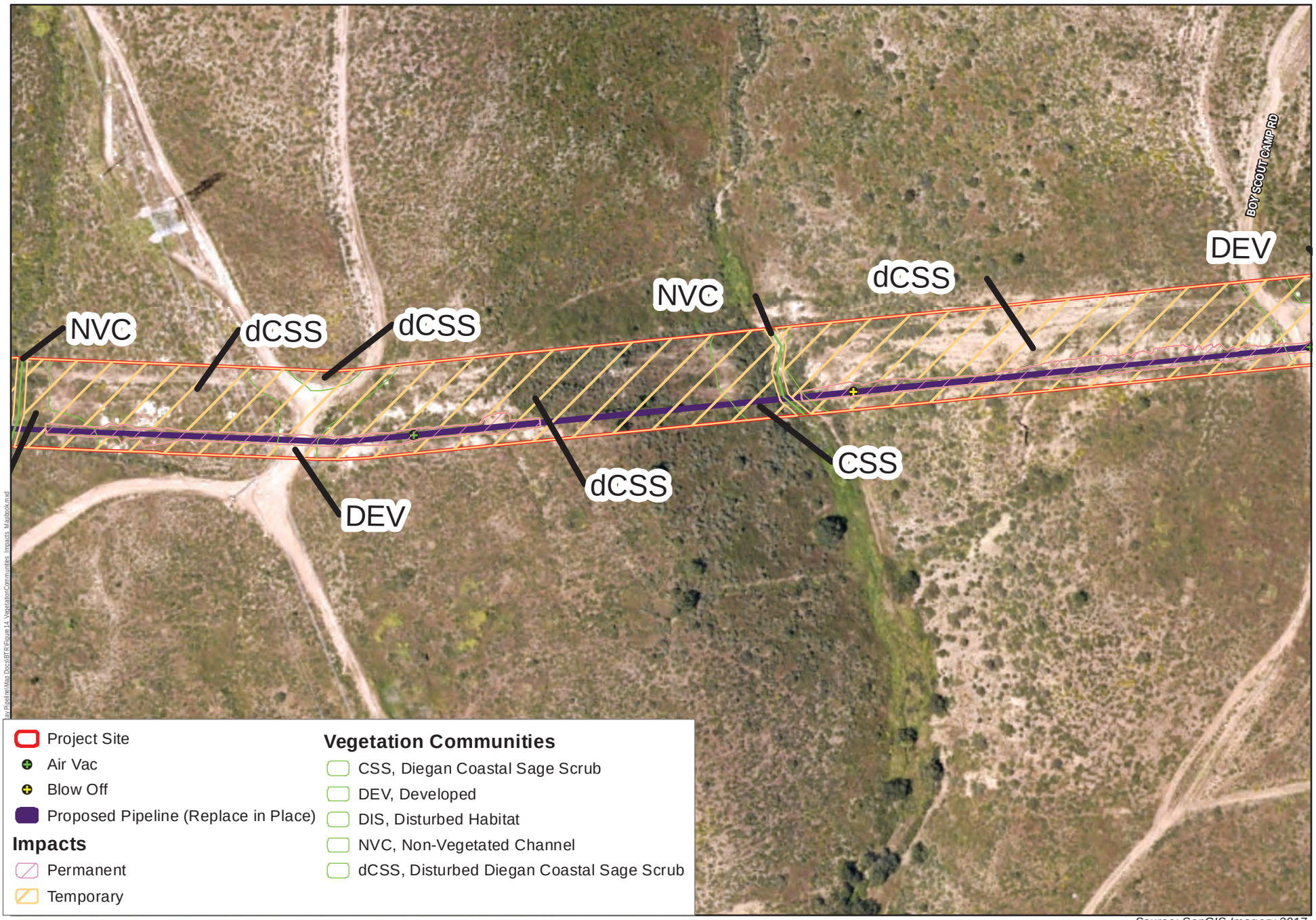
0 50 100

Feet

Figure 14b

Vegetation Community Impacts

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

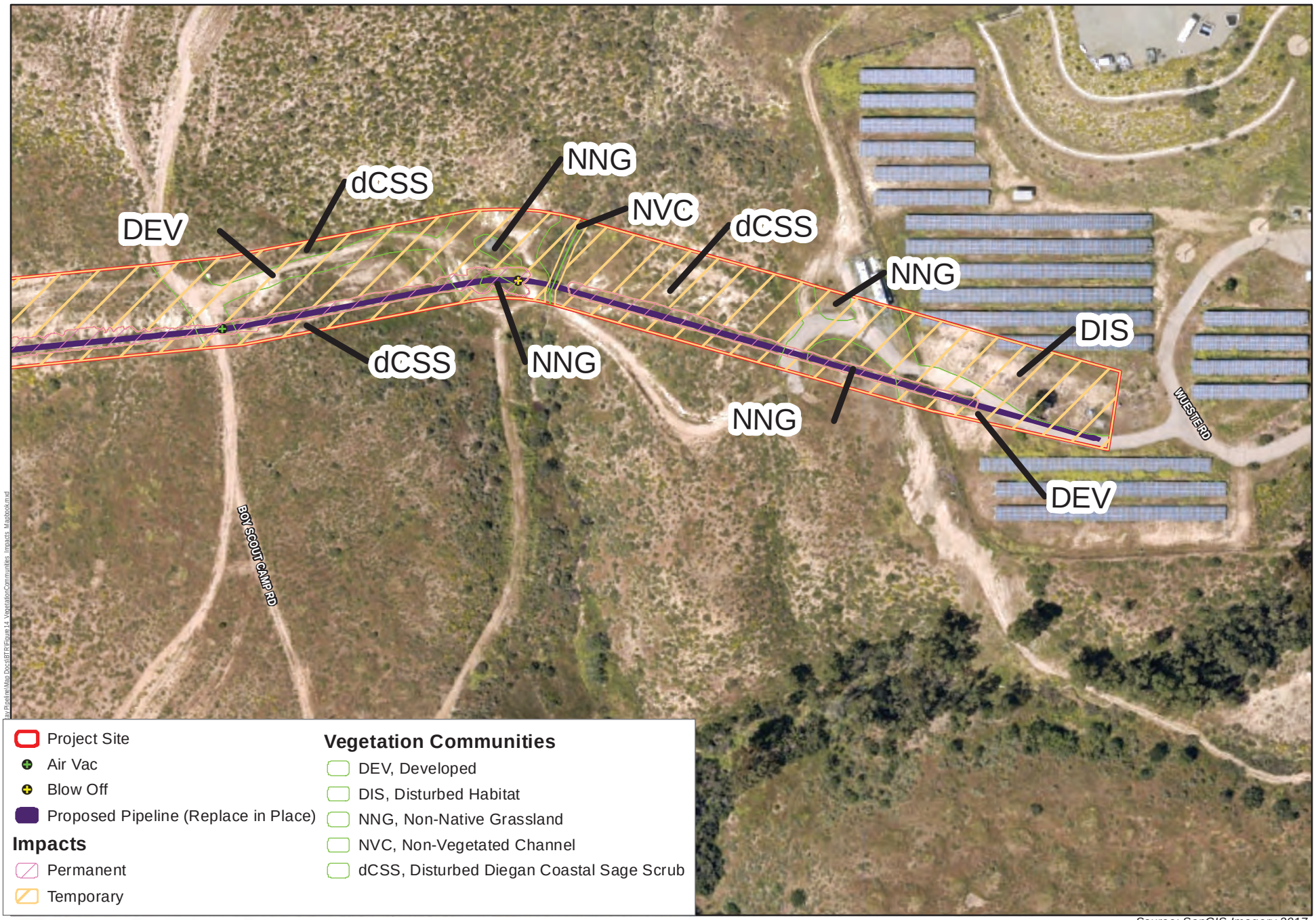
0 50 100

Feet

Figure 14c

Vegetation Community Impacts

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

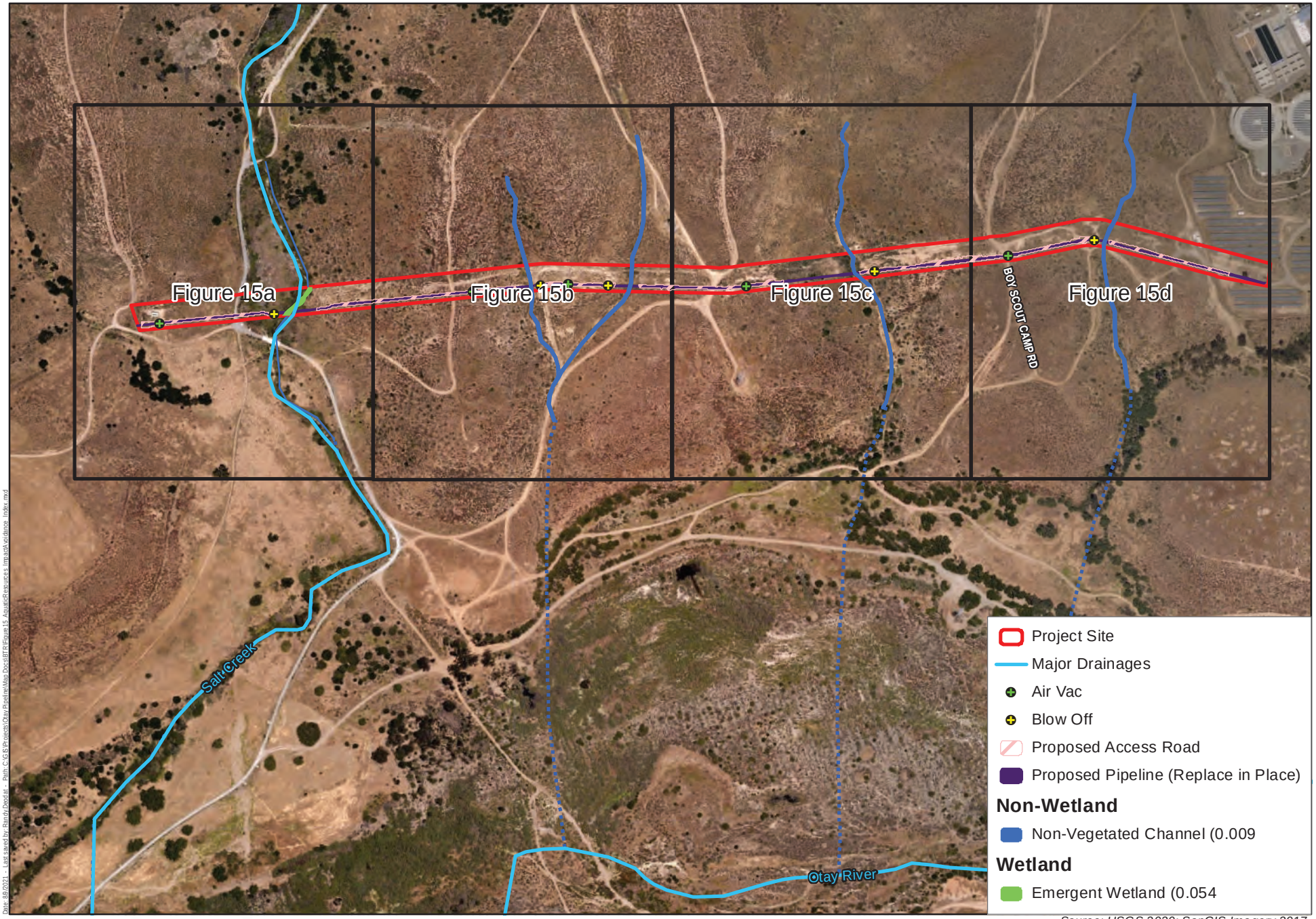
0 50 100

Feet

Figure 14d

Vegetation Community Impacts

Otay Pipeline



Source: USGS 2020; SanGIS Imagery 2017.

Harris & Associates

N

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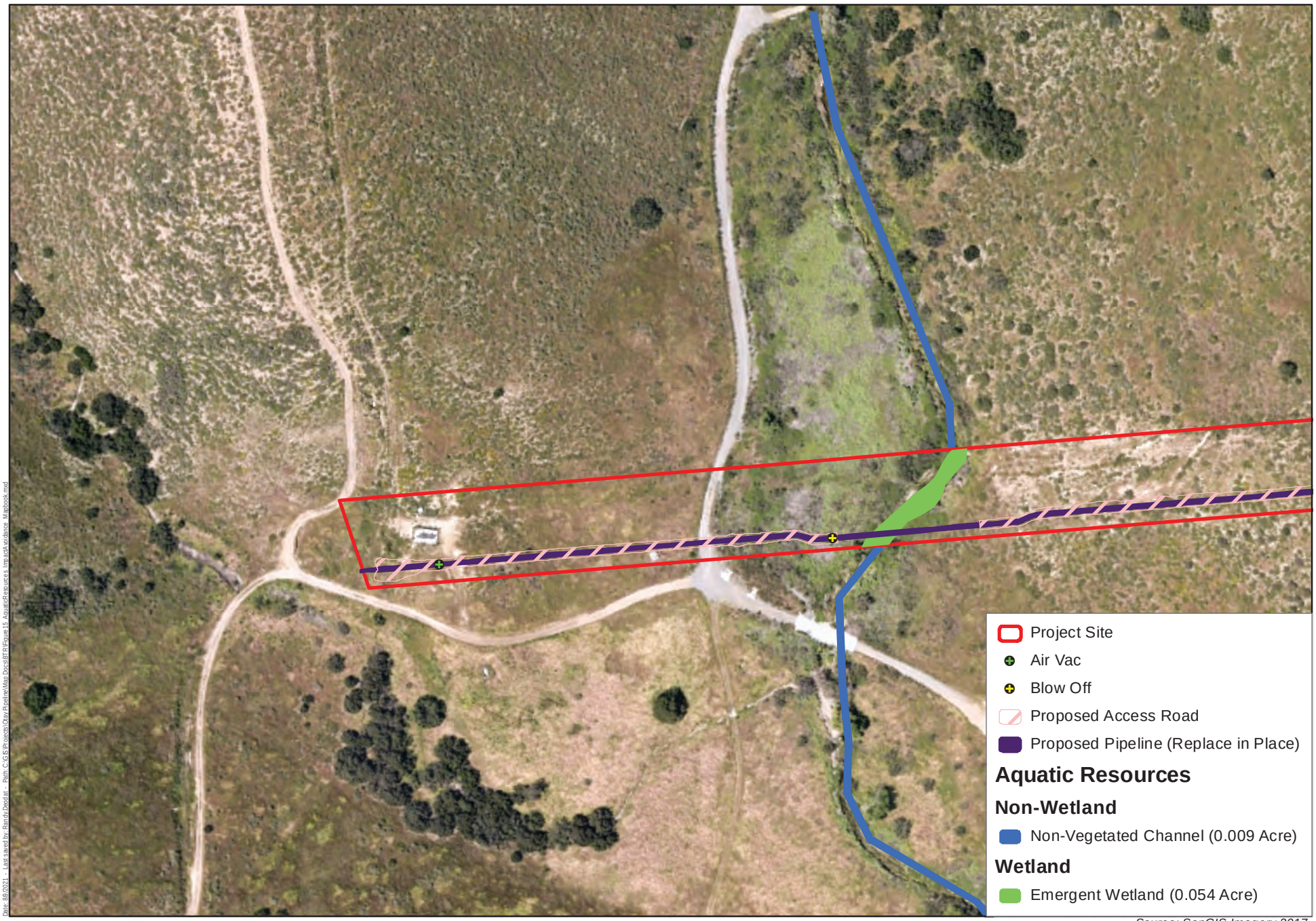
Feet

Figure 15

Aquatic Resources Impacts Avoidance - Index

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

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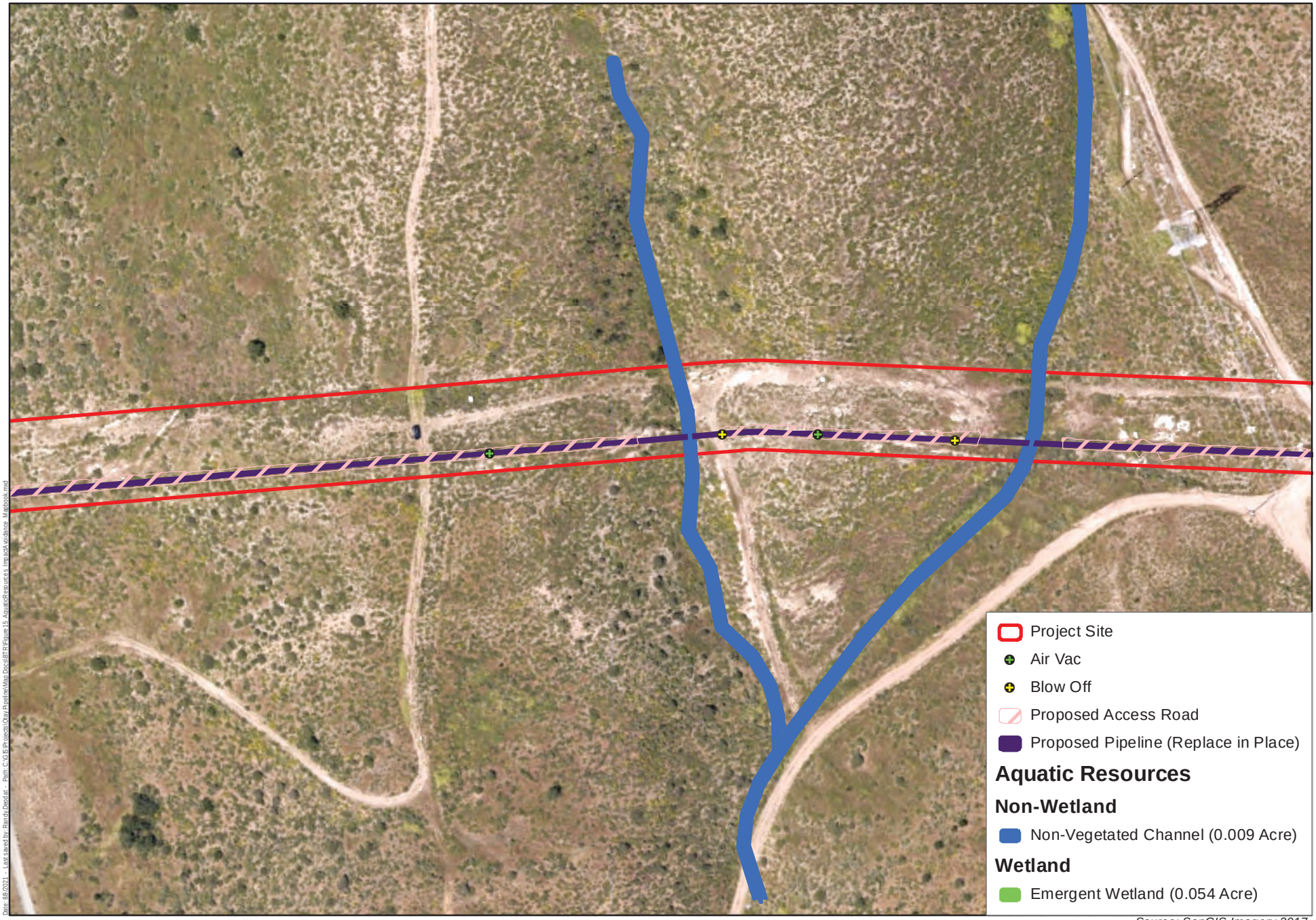
Feet

Figure 15a

Aquatic Resources Impacts Avoidance

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

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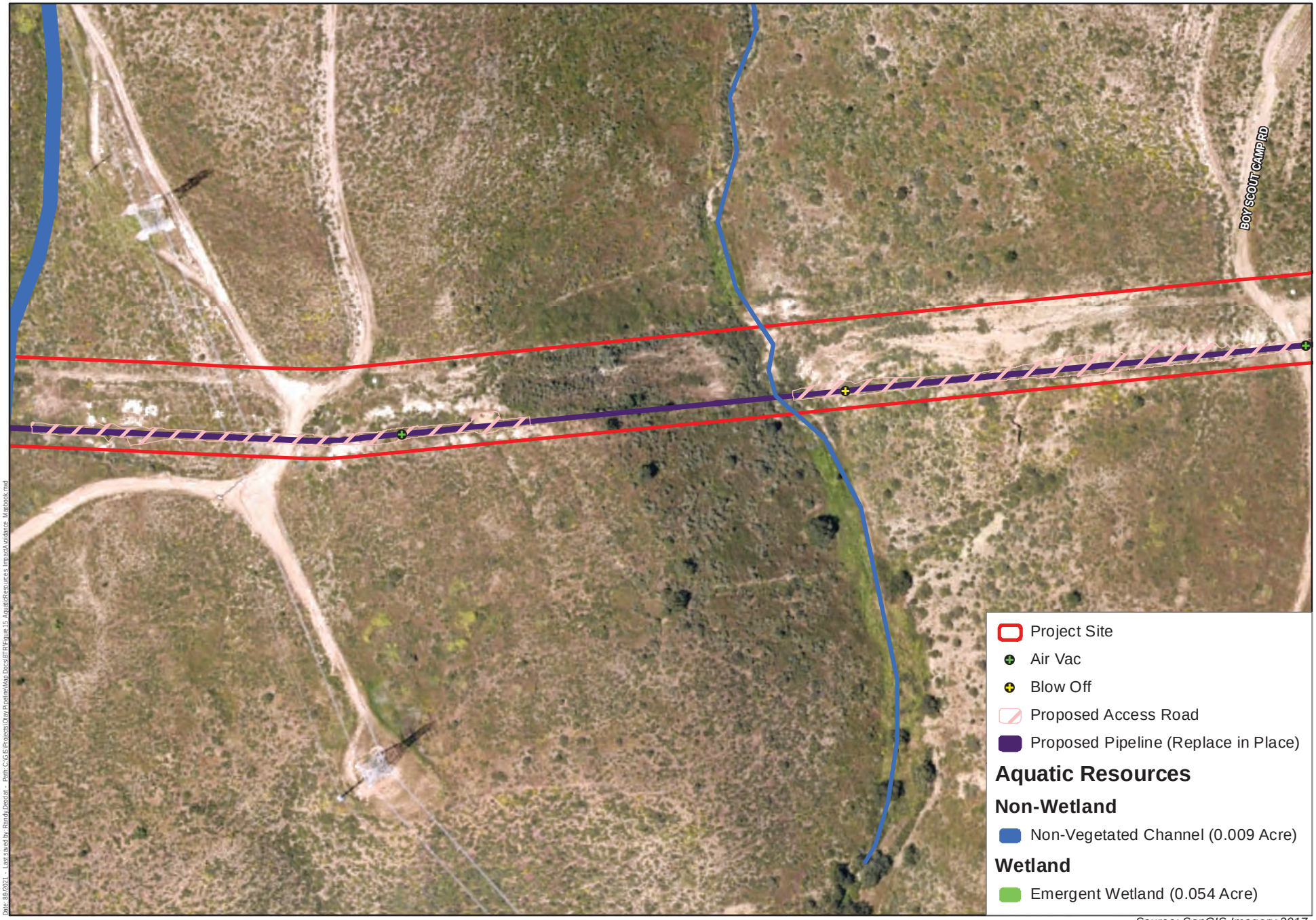
Feet

Figure 15b

Aquatic Resources Impacts Avoidance

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

N

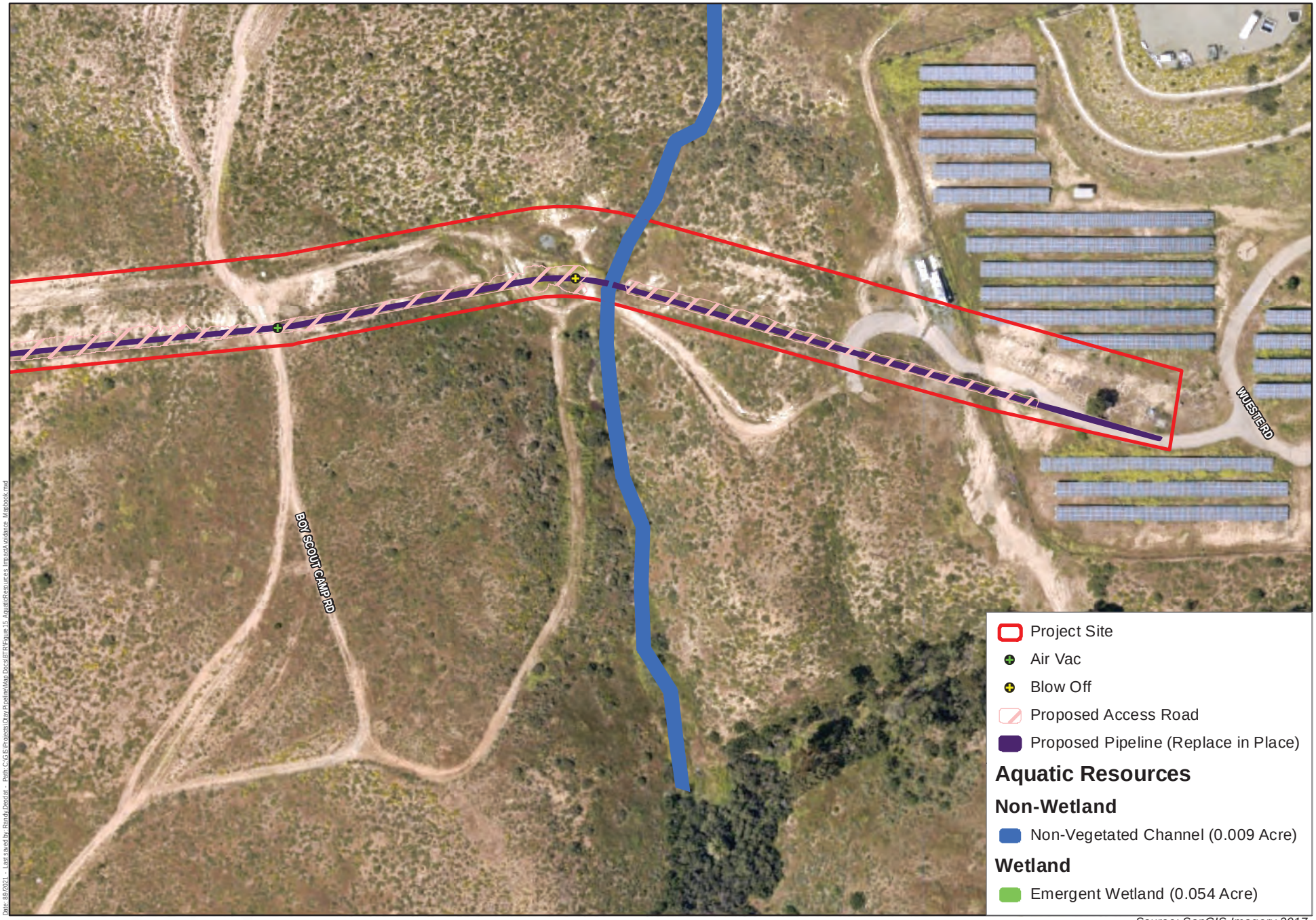
0 50 100

Feet

Figure 15c

Aquatic Resources Impacts Avoidance

Otay Pipeline



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Source: SanGIS Imagery 2017.

Harris & Associates

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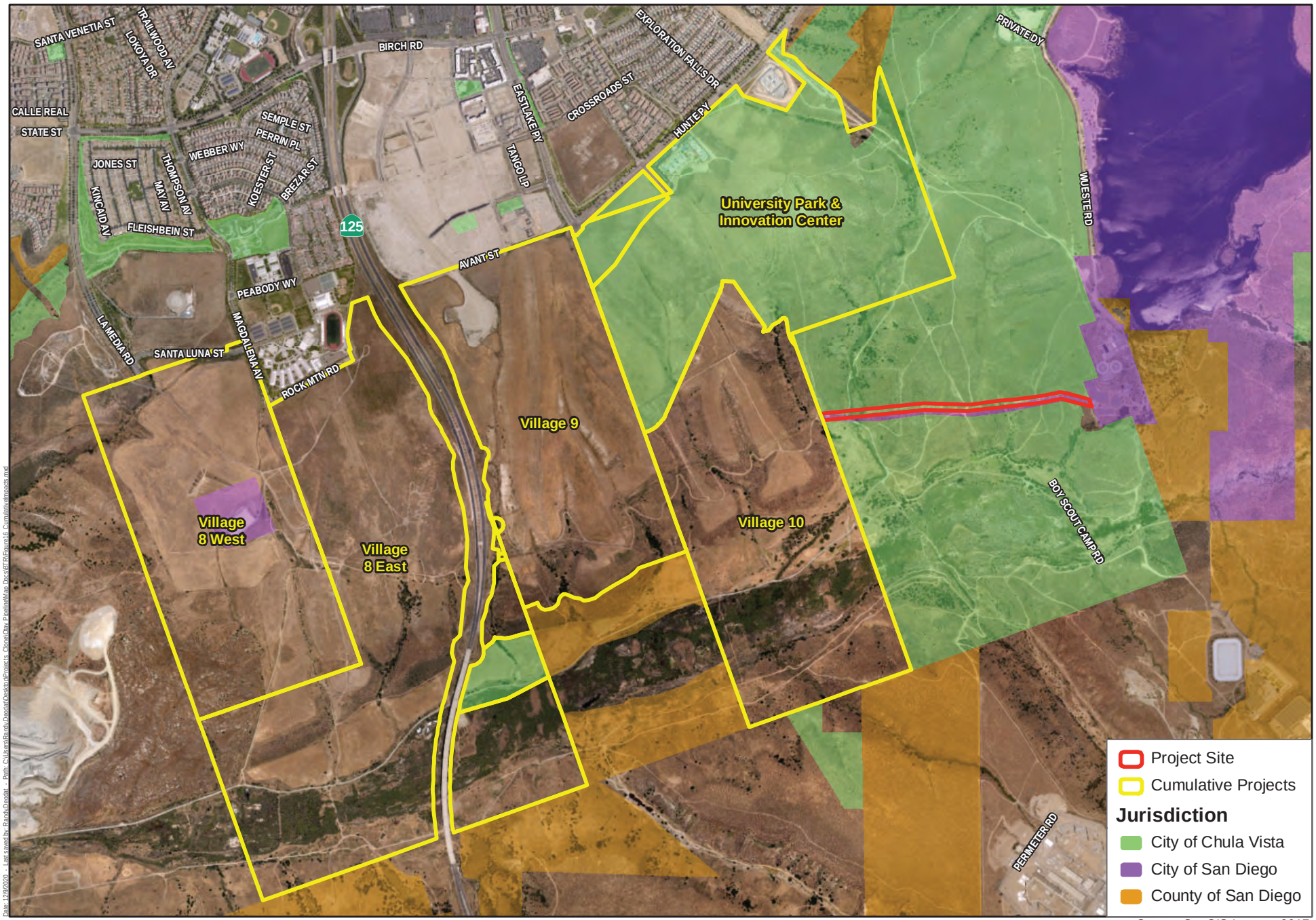
Figure 15d

Aquatic Resources Impacts Avoidance

Otay Pipeline



Source: SanGIS Imagery 2017.

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Figure 16

Cumulative Projects

Otay Pipeline

Appendix B. Habitat Loss and Incidental Take Ordinance Findings

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Habitat Loss and Incidental Take Ordinance Findings

Otay Pipeline 2 Segment A6 Replacement Project

March 2022

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Acronyms and Abbreviations

City	City of Chula Vista
HLIT	Habitat Loss and Incidental Take
MSCP	Multiple Species Conservation Program
project	Otay Pipeline 2 Segment A6 Replacement Project

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Section 1 Introduction

This report serves to provide the Habitat Loss and Incidental Take (HLIT) Findings for the Otay Pipeline 2 Segment A6 Replacement Project (project). The project site is located within the 100 Percent Conservation Area of the Otay Ranch Preserve (a Covered Project) and, therefore, is required to comply with the HLIT Ordinance. The HLIT Ordinance requires biological evaluation of all resources on site for project areas within the 100 Percent Conservation Area of the Otay Ranch Preserve Area. The purpose of this HLIT Findings report is to demonstrate the project's compliance with the City of Chula Vista (City) HLIT Ordinance.

1.1 HLIT Ordinance

The purpose of the HLIT regulations is to protect and conserve native habitat within the City of Chula Vista and the maintain viability of the species supported by those habitats. HLIT regulations are intended to implement the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan (City of Chula Vista 2003) and ensure that development occurs in a manner that protects the overall quality of the habitat resources and retains biodiversity and interconnected habitats. HLIT regulations also intend to protect public health, safety, and welfare (Chula Vista Municipal Code 17.35 et seq.).

Projects within the City of Chula Vista's jurisdiction are required to comply with the Chula Vista MSCP Subarea Plan. This includes obtaining a HLIT permit pursuant to the HLIT Ordinance. The project is subject to this ordinance because, as stated in Section 5.2.2, Habitat Loss and Incidental Take Ordinance, of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003), the plan requires issuance of an HLIT permit for "all development within the City's jurisdiction which is not located within the Development Areas of Covered Projects prior to issuance of any land development permit." The HLIT regulations apply to the earliest decision on any entitlement related to a project area located within the following mapped areas identified in the Chula Vista MSCP Subarea Plan (unless exempt as noted): (1) 100 Percent Conservation Areas, (2) 75–100 Percent Conservation Areas, and (3) Development Areas outside of Covered Projects.

The following are exempt from the requirements of the HLIT Ordinance:

1. Development of a project area that is one acre or less in size and located entirely in a mapped development area outside of Covered Projects.
2. Development of a project area that is located entirely within the mapped development area outside Covered Projects, and where it has been demonstrated to the satisfaction of the Director of Planning and Building, or designee, that no sensitive biological resources exist on the project area.
3. Development that is limited to interior modifications or repairs and any exterior repairs, alterations, or maintenance that does not increase the footprint of an existing building

or accessory structure, which will not encroach into identified sensitive biological resources during or after construction.

4. Any project within the development area of a Covered Project.
5. Any project that has an effective incidental take permit from the wildlife agencies.
6. Continuance of agricultural operations.

1.2 Project Description and Location

The project includes the replacement in place of approximately 4,000 linear feet of the Otay Pipeline 2 segment A6 40-inch steel pipe with an increased diameter 54-inch steel pipe in the same underground location except under Salt Creek, where the pipe will be replaced directly adjacent to the existing pipe. The project is in the City of Chula Vista, within the Otay Ranch Preserve under the Chula Vista MSCP Subarea Plan. The project lies within a 100-foot corridor owned in fee by the City of San Diego (herein referred to as the "project site") encompassing approximately 10 acres. The project site begins at the Otay Water Treatment Plant on the southwestern side of Lower Otay Lake, extends 4,000 feet west through Salt Creek to the Salt Creek and Village 10 parcel boundary, and ends where it connects to an existing pipeline that has already been replaced.

The project site is owned in fee by the City of San Diego and is considered an existing legal use by Chula Vista MSCP Subarea Plan and, therefore, is allowed within the Preserve. The project site, within Otay Ranch (a Covered Project), is considered a water facility project but is not considered a Planned or Future Facility as defined by Section 6.3.3 of the Chula Vista MSCP Subarea Plan because the water pipeline passes through the City of Chula Vista but does not serve Otay Ranch or any other Covered Project.

Section 2 HLIT Ordinance Consistency Analysis

Pursuant to the City of Chula Vista's HLIT Ordinance, Section 17.35.080, Required Findings for Issuance of an HLIT Permit, written findings need to be prepared and submitted to the City of Chula Vista for review and approval prior to issuance of any land development permits, including clearing and grubbing or grading permits. Table 1 and Table 2 summarize the project's conformity to the required findings and general MSCP development regulations for the HLIT Ordinance.

Table 1. Required Findings for Issuance of an HLIT Permit (Chula Vista Municipal Code, Section 17.35.080)

Required Findings for Issuance of an HLIT Permit (Section 17.35.080)	Analysis	Consistency
The proposed development in the Project Area and associated mitigation are consistent with the Chula Vista MSCP Subarea Plan as adopted on May 13, 2003, and as may be amended from time to time, the MSCP Implementation Guidelines, and the development standards set forth in Section 17.35.100 of the Municipal Code.	The project would impact sensitive biological resources within the project site. Mitigation for these impacts has been established in accordance with the appropriate ratios in the MSCP Subarea Plan. Mitigation Measures BIO-1 through BIO-5 have been incorporated into the project to avoid, minimize, and compensate for impacts to sensitive plant species (i.e., San Diego barrel cactus, San Diego marsh elder, south coast saltscale, and Otay tarplant). Mitigation in the form of revegetation for sensitive vegetation communities that may support sensitive plant species on the project site are described in Mitigation Measure BIO-1, sensitive vegetation community restoration. Mitigation Measure BIO-2 includes avoidance and translocation of San Diego barrel cactus. Mitigation Measure BIO-3 includes sensitive plant avoidance, specifically for San Diego marsh elder, south coast saltscale, and Otay tarplant. Additional mitigation measures that apply include preparation of a SWPPP (BIO-4) and an approved biological monitor (BIO-5). Mitigation Measures BIO-1 (sensitive vegetation community revegetation), BIO-4.3-4.10 (SWPPP), and BIO-5.1, 5.3-5.7 (biological monitor) have been incorporated into the project to compensate for direct and indirect impacts to sensitive vegetation communities (i.e., Diegan coastal sage scrub (and disturbed) and non-native grassland). Mitigation Measures BIO-1 (sensitive vegetation community revegetation), BIO-5.1, 5.3-5.7 (biological monitor), BIO-6 (Migratory Bird Treaty Act compliance), BIO-7 (coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo pre-construction surveys), BIO-8 (coastal cactus wren habitat management), and BIO-9 (Quino checkerspot butterfly) have been incorporated into the project to compensate for direct and indirect impacts to sensitive wildlife species (i.e., Bell's sparrow, coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, Southern California rufous-crowned sparrow, western bluebird, yellow-breasted chat, and Quino checkerspot butterfly) occurring on or moving through the project site.	Consistent
The nature and extent of mitigation required as a condition of the permit is reasonably related to and calculated to alleviate negative impacts created in the Project Area.	Appropriate mitigation measures, consistent with the MSCP, have been proposed and will be implemented for the project. Mitigation Measures BIO-1 (sensitive vegetation community revegetation), BIO-2 (avoidance and translocation of San Diego barrel cactus), BIO-3 (sensitive plant avoidance), BIO-4.1-4.10 (SWPPP), BIO-5.1-5.9 (biological monitor), BIO-6 (Migratory Bird Treaty Act compliance), BIO-7 (coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo pre-construction surveys), BIO-8 (coastal cactus wren habitat management), and BIO-9	Consistent

Table 1. Required Findings for Issuance of an HLIT Permit (Chula Vista Municipal Code, Section 17.35.080)

Required Findings for Issuance of an HLIT Permit (Section 17.35.080)	Analysis	Consistency
	(Quino checkerspot butterfly) are provided within the Biological Resources Technical Report to which this HLIT Findings is an appendix. These mitigation measures adequately alleviate negative impacts projected to be created by project activities within the project site.	
Narrow Endemic Findings	One narrow endemic species, San Diego barrel cactus, has been documented on the project site. Barrel cactus on the project site will be avoided to the maximum extent practicable (mitigation measures BIO-5.1-5.4 and 5.6-5.8, biological monitor, and BIO-2, San Diego barrel cactus avoidance and translocation). Where impacts are demonstrated to be unavoidable, impacts within the project site will be limited to 5% of the total population within the area (Mitigation Measure BIO-2). Two other narrow endemic species (Otay tarplant and variegated dudleya) were determined to have a high potential to occur on the project site. If Otay tarplant and variegated dudleya were observed on the project site during the pre-construction surveys (Mitigation Measures BIO-5.1–5.4 and 5.6–5.8, biological monitor), these species will be avoided to the maximum extent practicable (Mitigation Measure BIO-3, sensitive plant avoidance). Where impacts are demonstrated to be unavoidable, impacts within the area will be limited to 5% of the total population within the area (Mitigation Measure BIO-3). Findings of equivalency, as defined in Section 5.2.3.6 of the Subarea Plan (City 2003), will be made by the City for such take authorization of the covered narrow endemic species.	Consistent
Wetland Findings	Wetland delineations have been conducted for the project site and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been avoided and minimized to the maximum extent possible through implementation of Mitigation Measures BIO-4.3–4.10 (SWPPP) and BIO-5.1 and 5.3–5.7 (biological monitor).	Consistent
Prior to the issuance of a Land Development Permit or Clearing and Grubbing Permit, the project proponent will be required to obtain any applicable state and federal permits, with copies provided to the Director of Planning and Building or his/her designee.	The project will result in permanent removal of vegetation identified as Tiers II and III (Diegan coastal sage scrub and non-native grassland) on Table 5-3 of the Chula Vista MSCP Subarea Plan (City 2003). The areas require a permit issued pursuant to Section 17.35 of the Municipal Code (the HLIT Ordinance). The HLIT Ordinance includes a provision for issuance of a Clearing and Grubbing Permit that allows removal of vegetation, including removal of root systems, which is not in association with other Land Development Work. Wetland delineations have been conducted for the project site and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been avoided and minimized to the maximum extent possible through implementation of Mitigation Measures BIO-4.3–4.10 (SWPPP) and BIO-5.1 and 5.3–5.7 (biological monitor).	Consistent
Impacts to wetlands have been avoided and/or minimized to the maximum extent practicable, consistent with the	Wetland delineations have been conducted for the project site and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been	Consistent

Table 1. Required Findings for Issuance of an HLIT Permit (Chula Vista Municipal Code, Section 17.35.080)

Required Findings for Issuance of an HLIT Permit (Section 17.35.080)	Analysis	Consistency
City of Chula Vista MSCP Subarea Plan Section 5.2.4.	avoided and minimized to the maximum extent possible through implementation of mitigation BIO-4.3-4.10 (SWPPP) and BIO-5.1, 5.3-5.7 (biological monitor).	
Unavoidable impacts to wetlands have been mitigated pursuant to Section 17.35.110.	Wetland delineations have been conducted for the project site and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been avoided and minimized to the maximum extent possible through implementation of Mitigation Measures BIO-4.3–4.10 (SWPPP) and BIO-5.1 and 5.3–5.7 (biological monitor).	Consistent

Table 2. General MSCP Development Regulations (Chula Vista Municipal Code 17.35.090)

General MSCP Development Regulations (Section 17.35.090)	Analysis	Consistency
Overall development within the Project Area including public facilities and circulation shall be located to minimize impacts to Sensitive Biological Resources in accordance with this chapter of the Chula Vista MSCP Subarea Plan and the MSCP Implementation Guidelines.	As described in Section 5.1.9.3 of the HLIT Ordinance, compliance with several standard measures will be required to address habitat loss. Impacts to native upland vegetation communities are considered significant under the City's HLIT Ordinance and require mitigation (Subarea Plan Tables 5-3 and 5-6; City of Chula Vista 2003). Impacts to sensitive vegetation communities on the project site are provided in Table 7 in the Biological Resources Technical Report. Mitigation for sensitive vegetation communities on the project site are described in Mitigation Measures BIO-1 (sensitive vegetation community revegetation), BIO-4.1-4.10 (SWPPP), and BIO-5.1-5.9 (biological monitor). Mitigation will be in accordance with the HLIT Ordinance as described in Table 1. The narrow endemic species, San Diego barrel cactus, on the project site will be avoided to the maximum extent practicable (Mitigation Measures BIO-5.1–5.4 and 5.6–5.8, biological monitor, and BIO-2, San Diego barrel cactus avoidance and translocation). Where impacts are demonstrated to be unavoidable, impacts within the area will be limited to 5% of the total population within the area (Mitigation Measure BIO-2). Two other narrow endemic species (Otay tarplant and variegated dudleya) were determined to have a high potential to occur on the project site. If Otay tarplant and variegated dudleya were observed on the project site during the pre-construction surveys (Mitigation Measure BIO-5.1–5.4 and 5.6–5.8, biological monitor), these species will be avoided to the maximum extent practicable (Mitigation Measure BIO-3, sensitive plant avoidance). Where impacts are demonstrated to be unavoidable, impacts within the area will be limited to 5% of the total population within the area (Mitigation Measure BIO-3). Findings of equivalency, as defined in Section 5.2.3.6 of the Subarea Plan (City of Chula Vista 2003), will be made by the City for such take authorization of the covered narrow endemic species. Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall mitigate for direct impacts pursuant to Section 5.2.2 of the Chula Vista MSCP Subarea Plan (Mitigation Measure BIO-1, sensitive vegetation community revegetation).	Consistent

Table 2. General MSCP Development Regulations (Chula Vista Municipal Code 17.35.090)

General MSCP Development Regulations (Section 17.35.090)	Analysis	Consistency
	In compliance with the Chula Vista MSCP Subarea Plan, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for temporary and permanent impacts consistent with the upland ratios specified in Table 18 (City of Chula Vista 2003).	
Pursuant to Chapter 15.04 of the Chula Vista Municipal Code, no Land Development or Clearing and Grubbing Permit that allows clearing, grubbing, or grading of Natural Vegetation shall be issued on any portion of a Project Area where impacts are proposed to Wetlands or Listed Non-covered Species until all applicable federal and state permits have been issued.	Wetland delineations have been conducted for the project site, and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been avoided and minimized to the maximum extent possible through implementation of Mitigation Measures BIO-4.3–4.10 (SWPPP) and BIO-5.1 and 5.3–5.7 (biological monitor). No impacts to listed non-covered species requiring federal or state permits will occur as a result of the project.	Consistent
Impacts to Wetlands shall be avoided to the maximum extent practicable. Where impacts to Wetlands are not avoided, impacts shall be minimized and mitigated pursuant to Section 17.35.110 of the Municipal Code.	Wetland delineations have been conducted for the project site and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been avoided and minimized to the maximum extent possible through implementation of Mitigation Measures BIO-4.3–4.10 (SWPPP) and BIO-5.1 and 5.3–5.7 (biological monitor).	Consistent
No temporary disturbance or storage of material or equipment is permitted in Sensitive Biological Resources unless the disturbance or storage occurs within an area approved by the City for development or unless it can be demonstrated that the disturbance or storage will not cause permanent habitat loss and the land will be revegetated and restored in accordance with the MSCP Implementation Guidelines.	Temporary impacts to sensitive vegetation communities will be mitigated through implementation of Mitigation Measure BIO-1, which includes on- and off-site revegetation in compliance with the City-approved and MSCP-compliant Revelation Plan (Biological Resources Technical Report Appendix F). Temporary staging areas will be restricted to developed land or disturbed habitat.	Consistent
Grading during wildlife breeding seasons shall be avoided or modified consistent with the requirements of the Chula Vista MSCP Subarea Plan and in accordance with the MSCP Implementation Guidelines.	To avoid any direct impacts to sensitive wildlife species associated with construction activities, implementation of Mitigation Measures BIO-5.4 (biological monitor), BIO-6 (Migratory Bird Treaty Act compliance), BIO-7 (coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo pre-construction surveys), BIO-8 (coastal cactus wren habitat management) are will encourage construction to occur outside of the general bird breeding season (January 15 through August 31), as well as specific breeding seasons for the sensitive bird species occurring on the project site. If construction does occur during the breeding season, specific	Consistent

Table 2. General MSCP Development Regulations (Chula Vista Municipal Code 17.35.090)

General MSCP Development Regulations (Section 17.35.090)	Analysis	Consistency
	actions would be taken to avoid impacts consistent with the requirements of the Migratory Bird Treaty Act, Chula Vista MSCP Subarea Plan, and in accordance with the MSCP Implementation Guidelines (see Mitigation Measures BIO-5.1–5.9, biological monitor, and BIO-6, Migratory Bird Treaty Act compliance).	
All fuel modification brush management zones required as a result of new development and as required by the City Fire Marshal shall be located outside the Preserve.	No permanent fuel modification brush management zones are proposed as part of the project. The Initial Study/Mitigated Negative Declaration for the project includes Mitigation Measures HAZ-1 (combustible materials management) and HAZ-2 (fire suppression equipment) to reduce potential wildfire impacts during temporary construction activities. These mitigation measures do not include clearing or trimming of vegetation on the project site.	Consistent

Section 3 Mitigation

The mitigation measures included in Tables 1 and 2 are from the Initial Study/Mitigated Negative Declaration and Biological Resources Technical Report for the project and address the proposed project's significant effects on sensitive species and vegetation communities on the project site. With implementation of the proposed mitigation, the identified impacts will be reduced to less than significant and maintain the project's conformity to the Required Findings for the HLIT Ordinance.

3.1 Sensitive Vegetation Communities

BIO-1: **Upland Restoration – Temporary and Permanent Impacts.** Temporary impacts to sensitive upland vegetation communities, including Diegan coastal sage scrub (including disturbed) and non-native grassland, occurring in the temporary construction impact area on the project site are anticipated to require a total of 6.47 acres of restoration. Temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland shall require in-kind restoration in place.

Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland (Appendix F, Revegetation Plan). Revegetation for temporary impacts shall occur on the project site.

A 3:1 ratio of off-site restoration for permanent impacts to 0.75 acre of Diegan coastal sage scrub (including disturbed) occurring in the on-site maintenance access road permanent impact area would satisfy the mitigation ratio for impacts to Diegan coastal sage scrub outlined in the City of Chula Vista and City of San Diego Multiple Species

Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.75 acres of Diegan coastal sage scrub (including disturbed) at a 3:1 ratio (Appendix F, Revegetation Plan). The revegetation of 2.25 acres of Diegan coastal sage scrub shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for Diegan coastal sage scrub restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

A 2:1 ratio of off-site mitigation for permanent impacts to 0.06 acre of non-native grassland occurring in the on-site maintenance access road permanent impact areas would satisfy the mitigation ratio for impacts to non-native grassland outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.06 acre of non-native grassland at a 2:1 ratio (Appendix F, Revegetation Plan). The revegetation of 0.12 acre of native grassland shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for native grassland restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

The Revegetation Plan shall include but not be limited to an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Applicant shall be required to enter into a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. The Applicant shall be required to prepare and implement the Revegetation Plan subject to the oversight and approval of the Development Services Director (or their designee).

3.2 Sensitive Plant Species

BIO-2: **San Diego Barrel Cactus Avoidance and Translocation.** San Diego barrel cactus occurring within the temporary construction impact area on the project site shall be avoided where feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag each San Diego barrel cactus occurring in the temporary construction impact area on the project

site for avoidance during the pre-construction survey. Removal of three individuals of San Diego barrel cactus occurring in on-site maintenance access road permanent impact area shall be mitigated at a 1:1 ratio in accordance with the City of Chula Vista and City of San Diego San Diego Multiple Species Conservation Program Subarea Plans. Mitigation shall consist of salvaging the three San Diego barrel cactus individuals within the pipeline corridor, on-site access roads, and any other individuals determined to be impacted within temporary construction areas and relocation of these individuals to areas of suitable habitat on the project site consistent with the City of Chula Vista and City of San Diego San Diego Multiple Species Conservation Program Subarea Plans.

Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall prepare a Salvage and Translocation Plan (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan) for the San Diego barrel cactus. The Salvage and Translocation Plan shall be prepared by a qualified biologist to the satisfaction of the Development Services Director (or their designee). At a minimum, the plan shall identify and/or include (1) the areas where salvageable cacti are located, (2) number of cacti to be salvaged, (3) the methodology salvaging the cacti, (4) the location of suitable receptor sites, (5) the requirements for the preparation of receptor sites, and (6) the short- and long-term monitoring and maintenance requirements. The Applicant shall be required to enter into a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. Upon the City of Chula Vista's approval of the Salvage and Translocation Plan, the Applicant shall implement and monitor the plan subject to the oversight of the Development Services Director (or their designee).

BIO-3: **Sensitive Plant Avoidance.** San Diego marsh elder and south coast saltscale within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. All Otay tarplant occurring within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag the extent of each species patch or individual on the project site for avoidance during the pre-construction survey. If San Diego marsh elder, south coast saltscale, or Otay tarplant is observed in the permanent construction impact area during the pre-construction sensitive plant survey (Mitigation Measure BIO-5) or cannot be avoided during construction, individuals will be counted and permanent impacts shall be mitigated at a 1:1 ratio in suitable habitat outside of the permanent impact areas on the project site. If impacts occur to San Diego marsh elder,

south coast saltscale, or Otay tarplant, revegetation shall follow the methods and requirements included in the City of Chula Vista-approved Revegetation Plan.

3.3 Construction

BIO-4: **Stormwater Pollution Prevention Plan.** Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall prepare a Stormwater Pollution Prevention Plan pursuant to National Pollution Discharge Elimination System General Construction Permit (Water Quality Order 99-08-DWQ). The Stormwater Pollution Prevention Plan shall address the potential sources and locations of stormwater contamination, characteristics and impacts of specific contaminants, and temporary and permanent erosion-control practices and include water sampling data, construction practices that minimize stormwater contamination, coordination of best management practices with planned construction activities, and compliance with City of Chula Vista, City of San Diego, state, and federal regulations. The Stormwater Pollution Prevention Plan shall include, at a minimum, the best management practices listed below. The combined implementation of these requirements shall protect adjacent habitats and sensitive species during construction to the maximum extent practicable with the goal of providing multiple beneficial uses. At a minimum, the following measures and/or restrictions shall be incorporated into the Stormwater Pollution Prevention Plan and noted on construction plans, where appropriate, to avoid impacts on sensitive species, sensitive vegetation communities, and/or aquatic resources during construction. The approved biologist (Mitigation Measure BIO-5) shall verify the implementation of the following design requirements:

1. Littering shall be prohibited, and trash shall be removed from construction areas daily. All food-related trash and garbage shall be removed from the construction sites daily.
2. Any equipment or vehicles driven and/or operated shall abide by a speed limit of 15 miles per hour during daylight hours and 10 miles per hour during dark hours.
3. Construction activity shall not be permitted in aquatic resources.
4. Temporary structures and storage of construction materials shall not be in aquatic resources.
5. Staging/storage areas for construction equipment and materials shall not be in aquatic resources.
6. Any equipment or vehicles driven and/or operated in jurisdictional aquatic resources, as authorized by applicable law and permits, shall be checked and maintained by the Operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.

7. No stationary equipment, such as motors, pumps, generators, and welders, or fuel storage tanks, shall be located within aquatic resources.
8. No debris, bark, slash sawdust, rubbish, cement, or concrete, or washing thereof, oil, or petroleum products shall occur where it may be washed by rainfall or runoff into aquatic resources.
9. When construction operations are completed, any excess materials or debris shall be removed from the work area according to the conditions outlined in the permits.
10. No equipment maintenance shall be performed within or near aquatic resources, where petroleum products or other pollutants from the equipment may enter these areas.

BIO-5: **Approved Biologist.** To prevent inadvertent disturbance to areas outside the limits of grading, all grading locations shall be monitored by an approved biologist. Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, the Applicant shall provide written confirmation that a City of Chula Vista-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biologist shall attend all pre-construction meetings and monitor all clearing, grubbing, and/or grading activities on the project site. The biologist shall monitor these activities to ensure that the Applicant complies with the appropriate standard conditions and mitigation measures, including the following:

1. Prior to clearing and grading operations or other activities involving significant soil disturbance, the Applicant shall install fencing in accordance with Chula Vista Municipal Code, Section 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Preserve and for all off-site facilities constructed within the Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence that work was conducted as authorized under the approved land development permit and associated plans.
2. Prior to the start of construction activities, including clearing, grubbing, and grading, the Applicant shall retain a City of Chula Vista-approved biologist to conduct pre-construction surveys for San Diego barrel cactus, San Diego marsh elder, south coast saltscale, Otay tarplant, and coastal cholla patches, which are species determined to be present or to have a high potential to occur and that require additional measures for unavoidable impacts (Mitigation Measures BIO-2, BIO-3, and BIO-8).

3. A contractor education program shall be implemented for all workers and subcontractors and shall include a description of environmental restrictions relevant to construction and the penalties for violations. A chain of command and protocol for communicating problems or potential construction changes that may affect biological resources shall be established with the contractor and the City of Chula Vista. Workers shall be made aware of what resources require protection using photographs or on-the-ground demonstrations.
4. A monitoring biologist acceptable to the City of Chula Vista shall be on site during any clearing of natural vegetation (i.e., annual ground cover or shrubs). The monitoring biologist shall flush sensitive species (i.e., avian or other mobile species) from occupied habitat areas immediately before brush clearing and earthmoving activities. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City of Chula Vista Multiple Species Conservation Program Subarea Plan.
5. Following the completion of initial clearing/grading/earthmoving activities, the open space areas surrounding the project site to be avoided by construction equipment and personnel shall be marked with temporary fencing and other appropriate markers clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.
6. Vehicle transportation routes between cut-and-fill locations shall be restricted to a minimal number consistent with project construction requirements. Waste dirt or rubble shall not be deposited outside of the project site. Regular pre-construction meetings involving the monitoring biologist, construction supervisors, and equipment operators shall be conducted and documented to ensure maximum practicable adherence to these measures.
7. The monitoring biologist shall verify that the construction site is implementing the following Stormwater Pollution Prevention Plan best management practices:
    a. Dust-control fencing
    b. Removal of construction debris and a clean work area
    c. Covered trash receptacles that are wildlife-proof and weather-proof
    d. Prohibition of pets on the construction site
    e. A speed limit of 15 miles per hour during the daylight hours and 10 miles per hour during nighttime hours
8. Open space areas in the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves, as recommended by the monitoring biologist.

9. Oversee the construction site so that cover and/or escape routes for wildlife from excavated areas shall be provided daily. All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and before sealing the exposed area) by an approved biologist to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.

3.4 Sensitive Wildlife Species

BIO-6: **Migratory Bird Treaty Act Compliance.** To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species (January 15 to August 31). If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Applicant shall retain a City of Chula Vista-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, the results of which must be submitted to the City of Chula Vista for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan as deemed appropriate by the City of Chula Vista, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City of Chula Vista for review and approval and implemented to the satisfaction of the City of Chula Vista. The City of Chula Vista-approved mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

BIO-7: **Coastal Cactus Wren, Coastal California Gnatcatcher, and Least Bell's Vireo Pre-Construction Surveys.** For any work proposed between February 15 and August 15 (March 15 and September 15 for least Bell's vireo), a pre-construction survey for the coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo shall be performed in order to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the species shall encompass all potentially suitable habitat within the project work zone, as well as a 300-foot survey buffer. The pre-construction survey shall be performed to the satisfaction of the City of Chula Vista

Development Services Director (or their designee) by a qualified biologist familiar with the Chula Vista Multiple Species Conservation Program Subarea Plan. The results of the pre-construction survey shall be submitted in a report to the Development Services Director (or their designee) for review and approval prior to initiating any construction activities. If California gnatcatcher, cactus wren, or least Bell's vireo is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected species In addition, on-site noise reduction/attenuation techniques shall be incorporated, as appropriate, to avoid impacts to breeding gnatcatcher, cactus wren, and least Bell's vireo from elevated construction noise levels during the breeding season. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. In addition, noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 A-weighted decibels or ambient whichever is greater, at the edge of occupied habitat).

BIO-8: **Coastal Cactus Wren Habitat Management.** Coastal cactus wren is a covered species under the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Because suitable and occupied habitat for this species, primarily coastal cholla patches, would be impacted by grading and construction of the project, avoidance and habitat restoration of coastal cactus wren habitat shall occur.

Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence the coastal cholla patches on the project site for avoidance. If a coastal cholla patch cannot be avoided by construction activities, the qualified biologist shall count coastal cholla individuals and map the acreage of the patch. Impacted coastal cholla shall be mitigated by salvaging and transplanting the individuals or patch in a suitable area on the project site or planting new coastal cholla individuals at a 2:1 ratio in suitable habitat on the project site after project completion. Salvage and translocation of the coastal cholla individuals or patches shall follow the methods and requirements included in the City of Chula Vista Development Services Director (or their designee)-approved Salvage and Translocation Plan and Revegetation Plan (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan).

BIO-9: Quino Checkerspot Butterfly. Mitigation for impacts to suitable habitat for Quino checkerspot butterfly shall implement the following avoidance and minimization measures in compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, Infrastructure, in the Otay Ranch Preserve:

- Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence significant patches of dot-seed plantain and other Quino checkerspot butterfly host plants where observed on the project site for avoidance. As defined in the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, single patches of dot-seed plantain equal to or greater than 538 square feet (50 square meters), or if less than 538 square feet (50 square meters) any combination of patches within 656 feet (200 meters) of each other that are equal to or greater than 538 square feet (50 square meters), will be considered "significant Quino checkerspot butterfly habitat patches."
- If a significant Quino checkerspot butterfly habitat patch cannot be avoided by construction activities, the qualified biologist shall notify the City of Chula Vista Development Services Director (or their designee) and count the individuals and map the acreage of the impacted patch. Following methods and requirements included in the City of Chula Vista-approved Revegetation Plan, the qualified biologist shall oversee the planting of new dot-seed plantain, Coulter's snapdragon, rigid bird's beak, owl's clover, Chinese houses, and purple Chinese houses at a 2:1 ratio for acreage impacts in the on- and off-site revegetation areas as designated by the Revegetation Plan (Appendix F, Revegetation Plan).
- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved Stormwater Pollution Prevention Plan (Mitigation Measure BIO-4) shall include dust control measures, including but not limited to watering, and implemented during construction activities, including clearing, grubbing, and grading.
- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved grading plans and design specifications for construction of the internal access roads shall include the use of concrete-treated base material with aggregate rock to prevent weeds and vegetation growth on the road surface while allowing sufficient percolation to minimize stormwater flows.

3.5 Wildfire Risk

HAZ-1: **Maintain Construction Area Clear of Combustible Materials.** During construction, the contractor shall ensure that staging areas and areas slated for construction using spark-producing equipment shall be cleared of combustible vegetation or other materials that could serve as fire fuel. Vegetation clearing shall be coordinated with the project's qualified biologist before removal (Mitigation Measure BIO-5). The contractor shall keep these areas clear of combustible materials to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be in good working

order. This includes but is not limited to vehicles, heavy equipment, and chainsaws. This requirement shall be included on individual project Construction Plans and be submitted to the City of San Diego Development Services Department for review before approval of final design.

HAZ-2: **Provide Accessible Fire Suppression Equipment.** Work crews shall be required to have sufficient fire suppression equipment readily available to ensure that any fire resulting from construction activities is immediately extinguished. Off-road equipment using internal combustion engines shall be equipped with spark arrestors. This requirement shall be included on individual project Construction Plans and be submitted to the City of San Diego Development Services Department for review before approval of final design.

Section 4 References

City of Chula Vista. 2003. Chula Vista Multiple Species Conservation Program Subarea Plan. February.

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Appendix C. Facilities Siting Criteria

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DRAFT

Facilities Siting Criteria

Otay Pipeline 2 Segment A6 Replacement Project

March 2022

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Acronyms and Abbreviations

BRTR	Biological Resources Technical Report
City	City of Chula Vista
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
project	Otay Pipeline 2 Segment A6 Replacement Project
QCB	Quino checkerspot butterfly

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Section 1 Introduction

This report serves to provide the Facilities Siting Criteria for the Otay Pipeline 2 Segment A6 Replacement Project (project). The project site, located within Otay Ranch (a Covered Project), is considered a water facility project but is not considered a Planned or Future Facility as defined by Section 6.3.3 of the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan because the water pipeline passes through the City of Chula Vista but does not serve Otay Ranch or any other Covered Project. Although the project is not considered a Planned or Future Facility under the Subarea Plan, the project is subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the Subarea Plan. The purpose of this Facilities Siting Criteria report is to demonstrate the project has been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical, as required by the Chula Vista MSCP Subarea Plan Section 6.3.3.4, Facilities Siting Criteria.

1.1 Facilities Siting Criteria

Section 6.3.3 of the Subarea Plan differentiates between "Planned Facilities" and "Future Facilities." Planned Facilities are major roads and infrastructure which were planned for development through existing plans and/or project approvals (i.e., General Plan and GDP) and allowed to be constructed, operated, and maintained within the Preserve at the time of writing of the Subarea Plan. These Planned Facilities are identified in Table 6-1 of the Subarea Plan. Future Facilities are those facilities necessary to support planned development that were not identified at the time of the Subarea Plan but were anticipated to be required. Table 6-2 of the Subarea Plan identifies Future Facilities and Implementation Criteria.

Both Planned and Future Facilities located within the Preserve are subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the Subarea Plan. Compliance with the Facilities Siting Criteria ensures that the facilities located within the Preserve have been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical.

The following is a summary of the Facilities Siting Criteria (Section 6.3.3.4 and Table 6-1 of the Subarea Plan) as required by the Subarea Plan:

1. Such facilities will be located in the least environmentally sensitive location feasible, and use existing roads, trails and other disturbed areas, including use of the active recreation areas in the Otay River Valley, as much as possible (except where such areas are occupied by the Quino checkerspot butterfly [QCB]). Facilities should be routed through developed or developing areas where possible. If no other routing is feasible, alignments should follow previously existing roads, easements, rights-of-way, and disturbed areas, minimizing habitat fragmentation.

2. Such facilities shall avoid, to the maximum extent practicable, impact to Covered Species and Wetlands, and will be subject to the provisions, limitations and mitigation requirements for narrow endemic species and Wetlands pursuant to Sections 5.2.3 and 5.2.4 of the Subarea Plan.
3. Where roads cross the Preserve, they should provide for wildlife movement in areas that are graphically depicted on and listed in the Chula Vista MSCP Subarea Plan Generalized Core Biological Resource Areas and Linkages map (Figure 1-4) as a core biological area or a regional linkage between core biological areas. All roads crossing the Preserve should be designed to result in the least impact feasible to Covered Species and Wetlands. Where possible at wildlife crossings, road bridges for vehicular traffic rather than tunnels for wildlife use will be employed. Culverts will only be used when they can achieve the wildlife crossing/movement goals for a specific location. To the extent feasible, crossings will be designed as follows: the substrate will be left in a natural condition or revegetated if soils engineering requirements force subsurface excavation and vegetated with native vegetation if possible; a line-of-sight to the other end will be provided; and if necessary, low-level illumination will be installed in the tunnel.
4. To minimize habitat disruption, habitat fragmentation, impediments to wildlife movement and impact to breeding areas, road and/or right-of-way width shall be narrowed from existing City design and engineering standards, to the maximum extent practicable. In addition, roads shall be located in lower quality habitat or disturbed areas to the maximum extent practicable.
5. Impacts to covered species and habitats within the Preserve resulting from construction of Future Facilities will be evaluated by the City during project review and permitting. The City may authorize take for impacts to covered species and habitats resulting from construction of Future Facilities located outside the Preserve, pursuant to the Subarea Plan and consistent with the Facility Siting Criteria.
6. The City may authorize take for impacts to covered species and habitats resulting from construction of Future Facilities located within the Preserve, subject to a limitation of two acres of impact for individual projects and a cumulative total of 50 acres of impact for all Future Facilities. Wildlife Agency concurrence will be required for authorization of take for any impacts to covered species and habitat within the Preserve that exceed two acres that may result from construction of any individual Future Facility. Wildlife Agency concurrence will be required for authorization of take for impacts to covered species and habitat within the Preserve that exceed 50 acres that may result from all Future Facilities combined.
7. Planned and Future Facilities must avoid impacts to covered narrow endemic species and the QCB to the maximum extent practicable. When such impacts cannot be avoided, impacts to covered narrow endemic species within the Preserve that will result

from construction of Planned and Future Facilities located within the Preserve are subject to equivalency findings and the limitations and provisions of Section 5.2.3.6 of the Subarea Plan. Impacts to QCB that will result from construction of Planned and Future Facilities within the Preserve are subject to the provisions of Section 5.2.8 of the Subarea Plan.

1.2 Project Description

The project includes the replacement in place of approximately 4,000 linear feet of the Otay Pipeline 2 segment A6 40-inch steel pipe with an increased diameter 54-inch steel pipe in the same underground location, except under Salt Creek where the pipe will be replaced directly adjacent to the existing pipe. The project is located within the 100 Percent Conservation Area of the Otay Ranch Preserve, a Covered Project, in the Chula Vista MSCP Subarea Plan. The project lies within a 100-foot corridor owned in-fee by the City of San Diego (herein referred to as the project site) encompassing approximately 10 acres. Chapter 6.0 of the Chula Vista MSCP Subarea Plan identifies permitted uses within the Preserve. The project is considered a water facility within the Preserve as described in Section 6.3.3 of the Subarea Plan and an existing legal use by Chula Vista MSCP Subarea Plan, and is therefore allowed within the Preserve. The project includes permanent impacts to the Preserve resulting from the replacement and upsizing of the A6 segment of the Otay Pipeline 2.

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Section 2 Impacts and Mitigation Summary

This section summarizes the project design, construction methods, and resulting impacts to biological resources as they relate to the Facilities Siting Criteria. The mitigation measures proposed to minimize impacts to the sensitive biological resources are outlined at the end of this section. Detailed descriptions and analysis is included in the Biological Resources Technical Report (BRTR) for the Otay Pipeline 2 Segment A6 Replacement Project, to which this Facilities Siting Criteria analysis is an appendix.

2.1 Project Design and Construction Methods

The project components were sited to avoid biological resources, including sensitive plant and wildlife species, sensitive vegetation communities, and jurisdictional aquatic resources, to the maximum extent practicable. The project impact area was sited to occur primarily in previously disturbed areas, developed land, and non-native grassland. The project was designed to replace the existing pipeline in the same underground location, utilizing the previously disturbed land directly above the pipeline corridor. Designated construction staging areas are restricted to developed land or disturbed habitat. Existing access roads, some of which are currently used by the City of Chula Vista and San Diego Gas & Electric for regular maintenance activities in the area, were identified and field-verified as suitable for construction access and City of San Diego maintenance vehicles access to the pipeline alignment. Construction and maintenance personnel will use the existing access roads during construction and operation, and no improvements or alterations to the access roads outside of the 100-foot fee ownership corridor are proposed as part of the project.

The project was designed to avoid Salt Creek, which runs through the western portion of the project site. The jack-and-bore construction method was chosen for its ability to replace the stretch of pipeline running under Salt Creek without disturbing the flow, bed, bank, and immediate upland areas surrounding the creek.

The project was designed to avoid impacts to the four non-vegetated channels that occur in the eastern and central portions of the project site. The existing pipeline currently spans over the four non-vegetated channels, and the pipeline will be replaced in the same locations and no impacts to the four channels would occur.

Outside the limits of Salt Creek and the four non-vegetated channels, the pipeline will be replaced underground in the existing pipeline trench using open-trench construction methods. After the pipeline within each trench section is replaced, the trench will be backfilled before the next section trench is opened.

Installation of the replacement pipeline would include the replacement of five air vacuum valves at high points along corridor terrain and five blow-off valves at the lowest upland elevation points

(therefore outside of Salt Creek wetland and the four non-vegetated channels). Once replaced, the existing air vacuum valves and blow-offs would be cut off at the surface and left in place to reduce disturbance of the surrounding vegetation.

Upon completion of the pipeline replacement, approximately 10-foot wide internal access roads would be graded to connect the existing external access roads to the five air vacuum and five blow-off valves for long-term maintenance access.

2.2 Project Impacts

This section summarizes the potential temporary and permanent impacts to biological resources from implementation of the project.

2.2.1 Impacts to Sensitive Species

Impacts to sensitive plant and wildlife species are summarized in the following subsections.

2.2.1.1 Sensitive Plant Species

Implementation of the project could result in the direct loss of four sensitive plant species. Table 1 lists the four sensitive plant species that could be directly impacted by project construction. BRTR Figures 12 and 12a through 12d, Sensitive Plant Impacts, show the locations of the sensitive plant species mapped on the project site that may be subject to direct impacts from project construction.

Table 1. Summary of Potential Direct Impacts to Sensitive Plant Species

Plant Species	Status (Federal/State/ CNPS/Regional)	Impacts (acres)		Impacts (individuals)	
		Permanent	Temporary	Permanent	Temporary
Palmer's grapplinghook (*Harpagonella palmeri*)	None/None/4.2/None	0.05	0.67	NA	NA
San Diego County viguiera (*Bahiopsis laciniata*)	None/None/4.3/None	0.06	0.41	NA	NA
San Diego barrel cactus (*Ferocactus viridescens*)	None/None/2B.1/CV MSCP, SD MSCP	NA	N/A	3	39
San Diego marsh elder (*Iva hayesiana*)	None/None/2B.2/None	—	0.11	NA	NA
South coast saltscale (*Atriplex pacifica*)	None/None/1B.2/None	NA	NA	—	3
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii)*	None/None/4.2/None	NA	NA	—	2

Notes: CV MSCP = Chula Vista MSCP Subarea Plan-covered species; SD MSCP = City of San Diego MSCP Subarea Plan-covered species; NA = not applicable; None = No status indicated for species

CNPS Rare Plant Ranking: 1B = Rare, threatened, or endangered in California and elsewhere; 2A = Presumed extirpated in California but more common elsewhere; 2B = Rare, threatened, or endangered in California but more common elsewhere; 4 = A watch list of species of limited distribution

Threat Ranks: .1 = seriously threatened; .2 = moderately threatened; .3 = not threatened

Impacts to San Diego County viguiera, Palmer's grapplinghook, and southwestern spiny rush would not be significant due to their lack of sensitivity listing (are not state or federally listed or not listed by CNPS, are not Chula Vista MSCP Subarea Plan- or City of San Diego MSCP Subarea Plan-covered, or are CRPR List 3 or 4).

Implementation of the project would result in direct impacts to San Diego barrel cactus, a Chula Vista MSCP Subarea Plan narrow endemic species and City of San Diego MSCP Subarea Plan-covered and CRPR 2.1 species.

One patch San Diego marsh elder and three south coast saltscale individuals occur outside the pipeline alignment but within the temporary construction impact area on the project site and could be disturbed by temporary construction activity.

Critical habitat for Otay tarplant, a Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species, occurs on the project site. Otay tarplant is a narrow endemic species under the Chula Vista MSCP Subarea Plan. Otay tarplant was not observed on the project site during the 2018 and 2020 surveys. However, it has high potential to occur on the project site due to the suitable open Diegan coastal scrub habitat throughout the project site.

2.2.1.2 Sensitive Wildlife Species

Implementation of the project would result in both permanent and temporary direct loss of habitat, including nesting, roosting, foraging and refugia habitat for the majority of the sensitive wildlife species observed or with a high potential to occur on the project site. These species include the following: Bell's sparrow, coastal cactus wren, coastal California gnatcatcher, Cooper's hawk, least Bell's vireo, northern harrier, Southern California rufous-crowned sparrow, yellow-breasted chat, western bluebird, monarch butterfly, Quino checkerspot butterfly, San Diego black-tailed jackrabbit, southern mule deer, orange-throated whiptail, red diamond rattlesnake, and Blainville's horned lizard.

2.2.2 Impacts to Vegetation Communities and Land Cover Types

Implementation of the project would result in permanent impacts to approximately 0.99 acres of sensitive and non-sensitive vegetation communities and land cover types and temporary impacts to approximately 8.59 acres on the project site that occur in the pipeline alignment and on-site maintenance access roads permanent impact areas (Table 2; BRTR Figures 14 and 14a through 14d, Vegetation Community Impacts). These permanent impacts would result from the construction and associated grading of the on-site maintenance access roads and replacement of the five air vacuum valves and blow-offs. All permanent impacts to sensitive vegetation communities would be mitigated through off-site restoration consistent with the ratios required by the Chula Vista MSCP Subarea Plan. The temporary impacts would result from construction activities associated with the pipeline replacement, including staging areas. All temporary impacts

to sensitive vegetation communities would be revegetated to pre-construction conditions following construction. The freshwater marsh and non-vegetated channels on the project site would be avoided, and no permanent or temporary impacts would occur.

Sensitive vegetation communities that would be permanently and temporarily impacted on the project site include Diegan coastal sage scrub (including disturbed) and non-native grassland (Table 2).

Table 2. Impacts to Vegetation Communities and Land Cover Types

Vegetation Community	Impacts (acres)	
	Permanent	Temporary
Upland		
Diegan Coastal Sage Scrub (including disturbed)[1] (32500)	0.75	6.13
Non-Native Grassland[1] (42200)	0.06	0.35
Riparian		
Coastal and Valley Freshwater Marsh[1] (52410)	0.00[2]	0.00[2]
Non-Vegetated Channel[1] (64200)	0.00[2]	0.00[2]
Developed/Disturbed		
Disturbed Habitat (11300)	0.08	1.01
Urban/Developed Land (12000)	0.10	1.10
Total	0.99	8.59

Source: Oberbauer et al. 2008.

Notes:

[1] Sensitive vegetation community

[2] Aquatic resources impacts avoidance

2.2.3 Impacts to Jurisdictional Aquatic Resources

The project has been designed to avoid impacting on-site jurisdictional aquatic resources, including Salt Creek and the four non-vegetated channels (BRTR Figure 15 and 15a through 15d, Aquatic Resources Impacts Avoidance).

2.3 Mitigation Measures

The mitigation measures proposed to reduce potential impacts to biological resources from implementation of the project are provided in the following subsections.

2.3.1 Sensitive Vegetation Communities

BIO-1: **Upland Restoration – Temporary and Permanent Impacts.** Temporary impacts to sensitive upland vegetation communities, including Diegan coastal sage scrub (including disturbed) and non-native grassland, occurring in the temporary construction impact area on the project site are anticipated to require a total of 6.47 acres of restoration. Temporary

impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland shall require in-kind restoration in place.

Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland (Appendix F, Revegetation Plan). Revegetation for temporary impacts shall occur on the project site.

A 3:1 ratio of off-site restoration for permanent impacts to 0.75 acre of Diegan coastal sage scrub (including disturbed) occurring in the on-site maintenance access road permanent impact area would satisfy the mitigation ratio for impacts to Diegan coastal sage scrub outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.75 acres of Diegan coastal sage scrub (including disturbed) at a 3:1 ratio (Appendix F, Revegetation Plan). The revegetation of 2.25 acres of Diegan coastal sage scrub shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for Diegan coastal sage scrub restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

A 2:1 ratio of off-site mitigation for permanent impacts to 0.06 acre of non-native grassland occurring in the on-site maintenance access road permanent impact areas would satisfy the mitigation ratio for impacts to non-native grassland outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.06 acre of non-native grassland at a 2:1 ratio (Appendix F, Revegetation Plan). The revegetation of 0.12 acre of native grassland shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for native grassland restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

The Revegetation Plan shall include but not be limited to an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Applicant shall be required to enter into

a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. The Applicant shall be required to prepare and implement the Revegetation Plan subject to the oversight and approval of the Development Services Director (or their designee).

2.3.2 Sensitive Plant Species

BIO-2: **San Diego Barrel Cactus Avoidance and Translocation.** San Diego barrel cactus occurring within the temporary construction impact area on the project site shall be avoided where feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag each San Diego barrel cactus occurring in the temporary construction impact area on the project site for avoidance during the pre-construction survey. Removal of three individuals of San Diego barrel cactus occurring in on-site maintenance access road permanent impact area shall be mitigated at a 1:1 ratio in accordance with the City of Chula Vista and City of San Diego San Diego Multiple Species Conservation Program Subarea Plans. Mitigation shall consist of salvaging the three San Diego barrel cactus individuals within the pipeline corridor, on-site access roads, and any other individuals determined to be impacted within temporary construction areas and relocation of these individuals to areas of suitable habitat on the project site consistent with the City of Chula Vista and City of San Diego San Diego Multiple Species Conservation Program Subarea Plans.

Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall prepare a Salvage and Translocation Plan (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan) for the San Diego barrel cactus. The Salvage and Translocation Plan shall be prepared by a qualified biologist to the satisfaction of the Development Services Director (or their designee). At a minimum, the plan shall identify and/or include (1) the areas where salvageable cacti are located, (2) number of cacti to be salvaged, (3) the methodology salvaging the cacti, (4) the location of suitable receptor sites, (5) the requirements for the preparation of receptor sites, and (6) the short- and long-term monitoring and maintenance requirements. The Applicant shall be required to enter into a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. Upon the City of Chula Vista's approval of the Salvage and Translocation Plan, the Applicant shall implement and monitor the plan subject to the oversight of the Development Services Director (or their designee).

BIO-3: **Sensitive Plant Avoidance.** San Diego marsh elder and south coast saltscale within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. All Otay tarplant occurring within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag the extent of each species patch or individual on the project site for avoidance during the pre-construction survey. If San Diego marsh elder, south coast saltscale, or Otay tarplant is observed in the permanent construction impact area during the pre-construction sensitive plant survey (Mitigation Measure BIO-5) or cannot be avoided during construction, individuals will be counted and permanent impacts shall be mitigated at a 1:1 ratio in suitable habitat outside of the permanent impact areas on the project site. If impacts occur to San Diego marsh elder, south coast saltscale, or Otay tarplant, revegetation shall follow the methods and requirements included in the City of Chula Vista-approved Revegetation Plan.

2.3.3 Construction

BIO-4: **Stormwater Pollution Prevention Plan.** Prior to issuance of any land development permits, including clearing or grubbing and grading permits, the Applicant shall prepare a Stormwater Pollution Prevention Plan pursuant to National Pollution Discharge Elimination System General Construction Permit (Water Quality Order 99-08-DWQ). The Stormwater Pollution Prevention Plan shall address the potential sources and locations of stormwater contamination, characteristics and impacts of specific contaminants, and temporary and permanent erosion-control practices and include water sampling data, construction practices that minimize stormwater contamination, coordination of best management practices with planned construction activities, and compliance with City of Chula Vista, City of San Diego, state, and federal regulations. The Stormwater Pollution Prevention Plan shall include, at a minimum, the best management practices listed below. The combined implementation of these requirements shall protect adjacent habitats and sensitive species during construction to the maximum extent practicable with the goal of providing multiple beneficial uses. At a minimum, the following measures and/or restrictions shall be incorporated into the Stormwater Pollution Prevention Plan and noted on construction plans, where appropriate, to avoid impacts on sensitive species, sensitive vegetation communities, and/or aquatic resources during construction. The approved biologist (Mitigation Measure BIO-5) shall verify the implementation of the following design requirements:

1. Littering shall be prohibited, and trash shall be removed from construction areas daily. All food-related trash and garbage shall be removed from the construction sites daily.

2. Any equipment or vehicles driven and/or operated shall abide by a speed limit of 15 miles per hour during daylight hours and 10 miles per hour during dark hours.
3. Construction activity shall not be permitted in aquatic resources.
4. Temporary structures and storage of construction materials shall not be in aquatic resources.
5. Staging/storage areas for construction equipment and materials shall not be in aquatic resources.
6. Any equipment or vehicles driven and/or operated in jurisdictional aquatic resources, as authorized by applicable law and permits, shall be checked and maintained by the Operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.
7. No stationary equipment, such as motors, pumps, generators, and welders, or fuel storage tanks, shall be located within aquatic resources.
8. No debris, bark, slash sawdust, rubbish, cement, or concrete, or washing thereof, oil, or petroleum products shall occur where it may be washed by rainfall or runoff into aquatic resources.
9. When construction operations are completed, any excess materials or debris shall be removed from the work area according to the conditions outlined in the permits.
10. No equipment maintenance shall be performed within or near aquatic resources, where petroleum products or other pollutants from the equipment may enter these areas.

BIO-5: Approved Biologist. To prevent inadvertent disturbance to areas outside the limits of grading, all grading locations shall be monitored by an approved biologist. Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, the Applicant shall provide written confirmation that a City of Chula Vista-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biologist shall attend all pre-construction meetings and monitor all clearing, grubbing, and/or grading activities on the project site. The biologist shall monitor these activities to ensure that the Applicant complies with the appropriate standard conditions and mitigation measures, including the following:

1. Prior to clearing and grading operations or other activities involving significant soil disturbance, the Applicant shall install fencing in accordance with Chula Vista Municipal Code, Section 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Preserve and for all off-site facilities constructed within the Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide

evidence that work was conducted as authorized under the approved land development permit and associated plans.

2. Prior to the start of construction activities, including clearing, grubbing, and grading, the Applicant shall retain a City of Chula Vista-approved biologist to conduct pre-construction surveys for San Diego barrel cactus, San Diego marsh elder, south coast saltscale, Otay tarplant, and coastal cholla patches, which are species determined to be present or to have a high potential to occur and that require additional measures for unavoidable impacts (Mitigation Measures BIO-2, BIO-3, and BIO-8).
3. A contractor education program shall be implemented for all workers and subcontractors and shall include a description of environmental restrictions relevant to construction and the penalties for violations. A chain of command and protocol for communicating problems or potential construction changes that may affect biological resources shall be established with the contractor and the City of Chula Vista. Workers shall be made aware of what resources require protection using photographs or on-the-ground demonstrations.
4. A monitoring biologist acceptable to the City of Chula Vista shall be on site during any clearing of natural vegetation (i.e., annual ground cover or shrubs). The monitoring biologist shall flush sensitive species (i.e., avian or other mobile species) from occupied habitat areas immediately before brush clearing and earthmoving activities. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City of Chula Vista Multiple Species Conservation Program Subarea Plan.
5. Following the completion of initial clearing/grading/earthmoving activities, the open space areas surrounding the project site to be avoided by construction equipment and personnel shall be marked with temporary fencing and other appropriate markers clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.
6. Vehicle transportation routes between cut-and-fill locations shall be restricted to a minimal number consistent with project construction requirements. Waste dirt or rubble shall not be deposited outside of the project site. Regular pre-construction meetings involving the monitoring biologist, construction supervisors, and equipment operators shall be conducted and documented to ensure maximum practicable adherence to these measures.
7. The monitoring biologist shall verify that the construction site is implementing the following Stormwater Pollution Prevention Plan best management practices:
    a. Dust-control fencing
    b. Removal of construction debris and a clean work area

c. Covered trash receptacles that are wildlife-proof and weather-proof
d. Prohibition of pets on the construction site
e. A speed limit of 15 miles per hour during the daylight hours and 10 miles per hour during nighttime hours

8. Open space areas in the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves, as recommended by the monitoring biologist.
9. Oversee the construction site so that cover and/or escape routes for wildlife from excavated areas shall be provided daily. All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and before sealing the exposed area) by an approved biologist to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.

2.3.4 Sensitive Wildlife Species

BIO-6: **Migratory Bird Treaty Act Compliance.** To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species (January 15 to August 31). If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Applicant shall retain a City of Chula Vista-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, the results of which must be submitted to the City of Chula Vista for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan as deemed appropriate by the City of Chula Vista, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City of Chula Vista for review and approval and implemented to the satisfaction of the City of Chula Vista. The City of Chula Vista-approved mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

BIO-7: **Coastal Cactus Wren, Coastal California Gnatcatcher, and Least Bell's Vireo Pre-Construction Surveys.** For any work proposed between February 15 and August 15 (March 15 and September 15 for least Bell's vireo), a pre-construction survey for the coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo shall be performed in order to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the species shall encompass all potentially suitable habitat within the project work zone, as well as a 300-foot survey buffer. The pre-construction survey shall be performed to the satisfaction of the City of Chula Vista Development Services Director (or their designee) by a qualified biologist familiar with the Chula Vista Multiple Species Conservation Program Subarea Plan. The results of the pre-construction survey shall be submitted in a report to the Development Services Director (or their designee) for review and approval prior to initiating any construction activities. If California gnatcatcher, cactus wren, or least Bell's vireo is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected species In addition, on-site noise reduction/attenuation techniques shall be incorporated, as appropriate, to avoid impacts to breeding gnatcatcher, cactus wren, and least Bell's vireo from elevated construction noise levels during the breeding season. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. In addition, noise monitoring may be required to ensure that the elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 A-weighted decibels or ambient whichever is greater, at the edge of occupied habitat).

BIO-8: **Coastal Cactus Wren Habitat Management.** Coastal cactus wren is a covered species under the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Because suitable and occupied habitat for this species, primarily coastal cholla patches, would be impacted by grading and construction of the project, avoidance and habitat restoration of coastal cactus wren habitat shall occur.

Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence the coastal cholla patches on the project site for avoidance. If a coastal cholla patch cannot be avoided by construction activities, the qualified biologist shall count coastal cholla individuals and map the acreage of the patch. Impacted coastal cholla shall be mitigated by salvaging and transplanting the individuals or patch in a suitable area on the project site or planting new coastal cholla individuals at a 2:1 ratio in suitable habitat on the project site after project completion. Salvage and translocation of the coastal cholla individuals or patches shall follow the methods and requirements included in the City of Chula Vista Development Services Director (or their designee)-approved Salvage and

Translocation Plan and Revegetation Plan (Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan).

BIO-9: **Quino Checkerspot Butterfly.** Mitigation for impacts to suitable habitat for Quino checkerspot butterfly shall implement the following avoidance and minimization measures in compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, Infrastructure, in the Otay Ranch Preserve:

- Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence significant patches of dot-seed plantain and other Quino checkerspot butterfly host plants where observed on the project site for avoidance. As defined in the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, single patches of dot-seed plantain equal to or greater than 538 square feet (50 square meters), or if less than 538 square feet (50 square meters) any combination of patches within 656 feet (200 meters) of each other that are equal to or greater than 538 square feet (50 square meters), will be considered "significant Quino checkerspot butterfly habitat patches."
- If a significant Quino checkerspot butterfly habitat patch cannot be avoided by construction activities, the qualified biologist shall notify the City of Chula Vista Development Services Director (or their designee) and count the individuals and map the acreage of the impacted patch. Following methods and requirements included in the City of Chula Vista-approved Revegetation Plan, the qualified biologist shall oversee the planting of new dot-seed plantain, Coulter's snapdragon, rigid bird's beak, owl's clover, Chinese houses, and purple Chinese houses at a 2:1 ratio for acreage impacts in the on- and off-site revegetation areas as designated by the Revegetation Plan (Appendix F, Revegetation Plan).
- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved Stormwater Pollution Prevention Plan (Mitigation Measure BIO-4) shall include dust control measures, including but not limited to watering, and implemented during construction activities, including clearing, grubbing, and grading.
- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved grading plans and design specifications for construction of the internal access roads shall include the use of concrete-treated base material with aggregate rock to prevent weeds and vegetation growth on the road surface while allowing sufficient percolation to minimize stormwater flows.

Section 3 Project Facilities Siting Criteria

Table 3 provides a summary of how the project complies with the Facilities Siting Criteria.

Table 3. Project Facilities Siting Criteria

Facilities Siting Criteria	Project Impacts (0.81 acre of permanent impacts)
Least environmentally sensitive location	The project was designed to utilize the previously disturbed utility corridor and replace the pipeline in the same underground location. Permanent impacts to sensitive vegetation were minimized to the maximum extent practicable, with only the constructed internal access roads and replacement of the air-vacuums and blow-offs representing the 0.81 acre of permanent impacts to sensitive vegetation communities. Permanent impacts to sensitive vegetation communities will be mitigated through off-site restoration consistent with the ratios required by the Chula Vista MSCP Subarea Plan. The remaining temporary impacts to sensitive vegetation communities will be restored on-site consistent with the Chula Vista MSCP Subarea Plan requirements once construction is complete (Mitigation Measure BIO-1, sensitive vegetation community restoration, and Revegetation Plan [BRTR Appendix F]). Construction staging areas will be restricted to developed land or disturbed habitat. Construction and maintenance access will utilize existing access roads and no improvements to the access roads outside of the 100-foot fee ownership corridor are proposed as part of the project. The project has been designed to avoid direct impacts to wetlands and non-wetland waters on the project site, including Salt Creek and the four non-vegetated drainages. Potential indirect impacts to wetlands and non-wetland waters within the project site have been avoided and minimized to the maximum extent practicable.
Avoids wetlands and covered species and addresses narrow endemic species	Wetland delineations have been conducted for the project site and all jurisdictional wetlands and waters have been avoided in the project design. No direct impacts to wetlands will occur as a result of the project. Potential indirect impacts to wetlands within the project site have been avoided and minimized to the maximum extent possible through implementation of Mitigation Measures BIO-4.3–4.10 (SWPPP) and BIO-5.1 and 5.3–5.7 (biological monitor). One narrow endemic species, San Diego barrel cactus, has been documented on the project site. Barrel cactus on the project site will be avoided to the maximum extent practicable (Mitigation Measures BIO-5.1–5.4 and 5.6–5.8, biological monitor, and BIO-2, avoidance and translocation of San Diego barrel cactus). Where impacts are demonstrated to be unavoidable, impacts within the project site will be limited to 5% of the total population within the area (Mitigation Measure BIO-2). Two other narrow endemic species (Otay tarplant and variegated dudleya) were determined to have a high potential to occur on the project site. If Otay tarplant and variegated dudleya are observed on the project site during the pre-construction surveys (Mitigation Measure BIO-5.1–5.4 and 5.6–5.8, biological monitor), these species will be avoided to the maximum extent practicable (Mitigation Measure BIO-3, sensitive plant avoidance). Where impacts are demonstrated to be unavoidable, impacts within the area will be limited to 5% of the total population within the area (Mitigation Measure BIO-3). Findings of equivalency, as defined in Section 5.2.3.6 of the Subarea Plan (City 2003), will be made by the City for such take authorization of the covered narrow endemic species.
Provide for wildlife movement	Temporary project construction activities will remain within the 100-foot fee ownership corridor that has been previously disturbed by past construction and maintenance of the pipeline. Temporary direct impacts to sensitive wildlife species, and the vegetation communities that these species could be occupying while moving through the project site, could occur during construction. Implementation of Mitigation Measures BIO-1 (sensitive vegetation community restoration), BIO-4.2–4.4, 4.7–4.9 (SWPPP), BIO-5.4, 5.6–5.9 (biological monitor), BIO-6 (Migratory Bird Treaty Act [MBTA] compliance), BIO-7 (coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo pre-construction surveys), BIO-8 (coastal cactus wren habitat management), and BIO-9 (Quino checkerspot butterfly)would reduce impacts to sensitive wildlife species potentially occupying or moving through the project site to the maximum extent practicable.

Table 3. Project Facilities Siting Criteria

Facilities Siting Criteria	Project Impacts (0.81 acre of permanent impacts)
	Upon completion of project construction, the pipeline will be operating passively underground with periodic, temporary maintenance activity and would not impact wildlife movement through the project site or in the surrounding Otay Ranch Preserve.
Road widths are narrowed and in lower quality habitat	Upon completion of the pipeline replacement, approximately 10-foot wide internal access roads will be graded to connect the existing external access roads to the five air vacuum and five blow-off valves for long-term maintenance access. The internal access roads were designed to be the minimum allowable widths per the maintenance vehicles safety requirements and are located directly above the pipeline to provide maintenance and emergency access while avoiding the need for future impacts to the surrounding sensitive vegetation communities that will be restored once construction is complete (Mitigation Measure BIO-1, sensitive vegetation community restoration, and Revegetation Plan [BRTR Appendix F]).
Future facilities are limited to 2 acres or cumulative total of 50 acres	The project would result in a total of 0.81 acre of permanent impacts to sensitive vegetation communities, which are limited to the construction of internal access roads and replacement of the air-vacuums and blow-offs. Up to 6.48 acre of potential temporary impacts to sensitive vegetation communities could occur during construction. Both temporary and permanent impacts will be restored on- and off-site consistent with the Chula Vista MSCP Subarea Plan requirements once construction is complete (Mitigation Measure BIO-1, sensitive vegetation community restoration, and Revegetation Plan [BRTR Appendix F]).
Avoid impacts to covered narrow endemic species and QCB	Impacts to the narrow endemic species San Diego barrel cactus will be avoided to the maximum extent practicable (Mitigation Measures BIO-5.1–5.4 and 5.6–5.8, biological monitor, and BIO-2, avoidance and translocation of San Diego barrel cactus). Where impacts are demonstrated to be unavoidable, impacts within the project site will be limited to 5% of the total population within the area (Mitigation Measure BIO-2). In the event the two other narrow endemic species (Otay tarplant and variegated dudleya) are observed on the project site during the pre-construction surveys (Mitigation Measure BIO-5.1–5.4 and 5.6–5.8, biological monitor), these species will be avoided to the maximum extent practicable (Mitigation Measure BIO-3, sensitive plant avoidance). Where impacts are demonstrated to be unavoidable, impacts within the area will be limited to 5% of the total population within the area (Mitigation Measure BIO-3). Findings of equivalency, as defined in Section 5.2.3.6 of the Subarea Plan (City 2003), will be made by the City for such take authorization of the covered narrow endemic species. Impacts to potential Quino checkerspot butterfly habitat will be minimized through implementation of Mitigation Measure BIO-9 (Quino checkerspot butterfly), in compliance with the Chula Vista MSCP Subarea Plan Section 5.2.8.1 avoidance and minimization measures and planting dot-seed plantain and other Quino checkerspot butterfly suitable plant species following the City-approved Revegetation Plan (BRTR Appendix F).

Appendix D. Plant and Wildlife Species Observed

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Plant Species Observed on the Project Site

Scientific Name	Common Name
Dicots	
Aizoaceae	**Fig-Marigold Family**
Mesembryanthemum crystallinum[1]	Crystalline iceplant
Mesembryanthemum nodiflorum[1]	Slender-leaved iceplant
Anacardiaceae	**Cashew Family**
Malosma laurina	Laurel sumac
Rhus integrifolia	Lemonadeberry
Apiaceae	**Carrot Family**
Apium graveolens[1]	Wild celery
Daucus pusillus	American wild carrot
Foeniculum vulgare[1]	Sweet fennel
Sanicula sp.	Sanicle
Asteraceae	**Sunflower Family**
Ambrosia psilostachya	Western ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	California sagewort
Artemisia dracunculus	Wild tarragon
Baccharis salicifolia	Mulefat
Baccharis sarothroides	Desert broom
Bahiopsis laciniata CNPS Rank 4.3	San Diego County viguiera
Carduus pycnocephalus[1]	Italian thistle
Centaurea melitensis[1]	Tocalote
Cirsium sp.[1]	Thistle
Corethrogyne filaginifolia	Sand aster
Deinandra fasciculata	Clustered tarweed
Encelia californica	bush sunflower
Erigeron bonariensis[1]	Flax-leaved horseweed
Eriophyllum confertiflorium	Golden yarrow
Glebionis coronaria[1]	Garland daisy
Grindelia camporum	Gumplant
Helminthotheca echioides[1]	Bristly ox-tongue
Heterotheca grandiflora	Telegraph weed
Isocoma menziesii	Menzies' goldenbush
Iva hayesiana CNPS Rank 2B.2	San Diego marsh elder
Lactuca serriola[1]	Prickly lettuce
Logfia	Filago
Pluchea odorata	Salt marsh fleabane
Pseudognaphalium bicolor	Two-color rabbit-tobacco

Plant Species Observed on the Project Site

Scientific Name	Common Name
Silybum marianum[1]	Milk thistle
Sonchus asper[1]	Prickly sowthistle
Boraginaceae	**Borage Family**
Amsinckia menziesii	Common fiddleneck
Harpagonella palmeri CNPS Rank 4.2	Palmer's grapplinghook
Pectocarya linearis	Sagebrush combseed
Plagiobothrys acanthocarpus	Adobe popcornflower
Brassicaceae	**Mustard Family**
Brassica nigra[1]	Black mustard
Hirschfeldia incana[1]	Shortpod mustard
Lepidium nitidum.	Shining peppergrass
Cactaceae	**Cactus Family**
Cylindropuntia prolifera	Coast cholla
Ferocactus viridescens CNPS Rank 2B.1	San Diego barrel cactus
Mammillaria dioica	Fish hook cactus
Opuntia littoralis	Coast prickly pear
Caryophyllaceae	**Pink Family**
Spergularia rubra[1]	Purple sand spurry
Chenopodiaceae	**Goosefoot Family**
Atriplex argentea	Silverscale
Atriplex pacifica CNPS Rank 1B	South coast saltscale
Atriplex semibaccata[1]	Australian saltbush
Salsola tragus[1]	Prickly Russian thistle
Cleomaceae	**Spiderflower Family**
Peritoma arborea	Bladderpod
Convolvulaceae	**Morning Glory Family**
Calystegia macrostegia	Morning glory
Cuscuta californica	Chaparral dodder
Crassulaceae	**Stonecrop Family**
Crassula connata	Sand pygmy weed
Dudleya pulverulenta	Chalk dudleya
Euphorbiaceae	**Spurge Family**
Croton setiger	Doveweed
Fabaceae	**Legume Family**
Acmispon glaber	Deerweed
Acmispon strigosus	Strigose lotus
Lupinus sp.	Lupine
Medicago polymorpha[1]	California burclover

Plant Species Observed on the Project Site

Scientific Name	Common Name
Melilotus indicus[1]	Annual yellow sweetclover
Trifolium sp.[1]	Clover
Gentianaceae	**Gentian Family**
Zeltnera venusta	California centaury
Geraniaceae	**Geranium Family**
Erodium botrys[1]	Big heron bill
Erodium cicutarium[1]	Red-stem filaree
Erodium moschatum[1]	Musk stork's-bill
Lamiaceae	**Mint Family**
Marrubium vulgare[1]	Horehound
Salvia apiana	White sage
Salvia mellifera	Black sage
Lythraceae	**Loosestrife Family**
Lythrum hyssopifolia[1]	Grass-poly
Malvaceae	**Mallow Family**
Malva parviflora[1]	Cheeseweed
Sidalcea sparsifolia	Southern checkerbloom
Myrsinaceae	**Myrsine Family**
Anagallis arvensis[1]	Scarlet pimpernel
Nyctaginaceae	**Four o'clock Family**
Mirabilis laevis	Wishbone bush
Onagraceae	**Evening-Primrose Family**
Oenothera suffulta	Roadside gaura
Oxalidaceae	**Wood Sorrel Family**
Oxalis californica	California wood sorrel
Plantaginaceae	**Plantain Family**
Antirrhinum nuttallianum	Nuttall's snapdragon
Plantago erecta	Dot-seed plantain
Plumbaginaceae	**Leadwort Family**
Limonium perezii[1]	Perez's sea lavender
Polemoniaceae	**Phlox Family**
Eriastrum filifolium	Lavender wollystar
Polygonaceae	**Buckwheat Family**
Chorizanthe fimbriata	Fringed spineflower
Eriogonum fasciculatum	California buckwheat
Rumex crispus[1]	Curly dock
Primulaceae	**Primrose Family**
Primula clevelandii	Padre's shooting star
Rubiaceae	**Bedstraw Family**
Galium angustifolium	Narrowleaf bedstraw

Plant Species Observed on the Project Site

Scientific Name	Common Name
Saxifragaceae	**Saxifrage Family**
Jepsonia parryi	Parry's jepsonia
Simmondsiaceae	**Jojoba Family**
Simmondsia chinensis	Jojoba
Solanaceae	**Nightshade Family**
Lycium andersonii	Water jacket
Nicotiana glauca[1]	Tree tobacco
Tamaricaceae	**Tamarisk Family**
Tamarix ramosissima[1]	Salt cedar
Verbenaceae	**Verbena Family**
Verbena sp.	Verbena
Lycophytes	
Selaginellaceae	**Spike-Moss Family**
Selaginella bigelovii	Bushy spikemoss
Monocots	
Iridaceae	**Iris Family**
Sisyrinchium bellum	Blue-eyed grass
Juncaceae	**Rush Family**
Juncus acutus ssp. *leopoldii* CNPS Rank 4.2	Southwestern spiny rush
Liliaceae	**Lily Family**
Calochortus splendens	Splendid mariposa lily
Chlorogalum sp.	Soaproot
Poaceae	**Grass Family**
Avena fatua[1]	Wild oat
Brachypodium distachyon[1]	False-brome
Bromus carinatus	California brome
Bromus hordeaceus	Soft chess
Bromus madritensis ssp. *rubens*[1]	Red brome
Distichlis spicata	Saltgrass
Festuca perennis[1]	Italian rye grass
Festuca myuros[1]	Rattail sixweeks grass
Lamarckia aurea[1]	Toothbrush grass
Phalaris aquatica[1]	Harding grass
Polypogon monspeliensis[1]	Annual beard grass
Schismus barbatus[1]	Common Mediterranean grass
Stipa lepida	Purple needlegrass
Stipa miliacea[1]	Smilo grass
Stipa pulchra	Purple needlegrass

Plant Species Observed on the Project Site

Scientific Name	Common Name
Themidaceae	**Brodiaea Family**
Bloomeria crocea	Golden star
Dichelostemma capitatum	Blue dicks
Typhaceae	**Cattail Family**
Typha sp.	Cattail
Pteridophyta	
Pteridaceae	**Maidenhair Fern Family**
Pentagramma triangularis	Goldenback fern

Notes:

[1] = Non-native or invasive species

California Native Plant Society (CNPS) Rare Plant Ranking

2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.

4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

.1 = Species seriously threatened in California (over 80 percent of occurrences threatened; high degree and immediacy of threat).

.2 = Species fairly threatened in California (20–80 percent occurrences threatened; moderate degree and immediacy of threat).

.3 = Species not very threatened in California (<20 percent of occurrences threatened; low degree and immediacy of threat or no current threats known).

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Wildlife Species Observed on the Project Site

Family	Common Name	Scientific Name
Amphibians		
Anura (Frogs and Toads)		
Hylidae New World Tree Frogs	Baja California treefrog	*Pseudacris hypochondriaca hypochondriaca*
Birds		
Accipitriformes (Hawks, Kites, Eagles, and Allies)		
Accipitridae Hawk, Eagle, Kite, and Allies	Northern harrier	*Circus hudsonius*
	Red-tailed hawk	*Buteo jamaicensis*
Alcedinidae Kingfishers	Belted kingfisher	*Megaceryle alcyon*
Caprimulgiformes (Nightjars)		
Trochilidae Hummingbirds	Anna's hummingbird	*Calypte anna*
Cuculiformes (Cuckoos, Roadrunners, Anis)		
Cuculidae Cuckoos, Roadrunners, Anis	Greater roadrunner	*Geococcyx californianus*
Galliformes (Fowls)		
Odontophoridae New World Quails	California quail	*Callipepla californica*
Passeriformes (Perching Birds)		
Columbiformidae Dove	Mourning dove	*Zenaida macroura*
Corvidae Jays, Magpies, and Crows	American crow	*Corvus brachyrhynchos*
	Common raven	*Corvus corax*
Fringillidae Finches	House finch	*Haemorhous mexicanus*
	Lesser goldfinch	*Spinus psaltria*
Mimidae Mockingbirds and Thrashers	California thrasher	*Toxostoma redivivum*
	Northern mockingbird	*Mimus polyglottos*
Odontophoridae New World Quails	California quail	*Callipepla californica*
Passerellidae New World Sparrows	California towhee	*Melozone crissalis*
	Song sparrow	*Melospiza melodia*
	Southern California rufous-crowned sparrow[1,2,3]	*Aimophila ruficeps*
	Spotted towhee	*Pipilo maculatus*
	White-crowned sparrow	*Zonotrichia leucophrys*

Wildlife Species Observed on the Project Site

Family	Common Name	Scientific Name
Tyrannidae Tyrant Flycatcher	Cassin's kingbird	*Tyrannus vociferans*
	Say's phoebe	*Sayornis saya*
	Western kingbird	*Tyrannus verticalis*
Vireonidae Vireos	Least Bell's vireo[1,2,4,5]	*Vireo bellii pusillus*
Turdidae Thrushes	Western bluebird[1,2]	*Sialia mexicana*
Icteridae American Blackbirds, Orioles, and New World Blackbirds	Hooded oriole	*Icterus cucullatus*
	Red-winged blackbird	*Agelaius phoeniceus*
	Yellow-breasted chat[6]	*Icteria virens*
Parulidae Wood Warblers	Common yellowthroat	*Geothlypis trichas*
Sylviidae Sylviid Warblers	Wrentit	*Chamaea fasciata*
Laridae Gulls, Terns, and Skimmers	Gull species (*sp.*)	*Larus* sp.
	Western gull	*Larus occidentalis*
Aegithalidae Bushtits	Bushtit	*Psaltriparus minimus*
Polioptilidae Gnatcatchers	Coastal California gnatcatcher[1,2,4,6]	*Polioptila californica californica*
Troglodytidae Wrens	Coastal cactus wren[1,2,6,7]	*Campylorhynchus brunneicapillus sandiegensis*
	House wren	*Troglodytes aedon*
Invertebrates		
Arachnida (Spiders, Scorpions and Relatives)		
Araneae Spiders	Silver garden spider	*Argiope argentata*
Hymenoptera (Wasps, Bees, and Ants)		
Apidae Bees	Honey bee	*Apis* sp.
Lepidoptera (Butterflies)		
Nymphalidae Brush-footed Butterflies	California ringlet	*Coenonympha tullia california*
	Cloudless Sulphur	*Phoebis sennae*
	Common buckeye	*Junonia coenia grisea*
	Monarch butterfly[9]	*Danaus plexippus*
	Mourning cloak	*Nymphalis antiopa*
	Painted lady	*Vanessa cardui*
	Variegated fritillary	*Euptoieta claudia*

Wildlife Species Observed on the Project Site

Family	Common Name	Scientific Name
Lycaenidae Coppers	Acmon blue	*Plebejus acmon*
Papilionidae Swallowtails	Western Tiger Swallowtail	*Papilio rutulus*
Pierinae Whites	Pacific (Sara) orange-tip	*Anthocharis sara*
	Cabbage white	*Pieris rapae*
Pyrginae Spread-winged Skipper	Funereal duskywing	*Erynnis funeralis*
Odonata (Dragonflies and Damselflies)		
Libellulidae Dragonfly Family	Blue dasher	*Pachydiplax longipennis*
	Flame skimmer	*Libellula saturata*
Mammals		
Artiodactyla (Cloven-Hoofed Mammals)		
Cervidae Deer, Elk, and Relatives	Southern mule deer[1,2]	*Odocoileus hemionus fuliginata*
Lagomorpha (Rabbits, Hares, and Pika)		
Leporidae Rabbits and Hares	Desert cottontail rabbit	*Sylvilagus audubonii*
	Botta's pocket gopher	*Thomomys bottae*
Rodentia (Rodents)		
Sciuridae Squirrels, Chipmunks, and Marmots	California ground squirrel	*Spermophilus beecheyi*
Carnivora (Carnivores)		
Canidae Foxes, Wolves, and Relatives	Coyote	*Canis latrans*
Reptiles		
Squamata (Lizards and Snakes)		
Anguidae Alligator Lizards	California alligator lizard	*Elgaria multicarinata multicarinata*
Viperidae Vipers	Southern Pacific rattlesnake	*Crotalus oreganus helleri*
Iguanidae American Arboreal Lizards, Chuckwallas, and Iguanas	Western fence lizard	*Sceloporus occidentalis*

Notes:

[1] City of Chula Vista MSCP Subarea Plan-covered

[2] City of San Diego MSCP Subarea Plan-covered

[3] California Department of Fish and Wildlife watch list

[4] Federally endangered

[5] State endangered

[6] California Department of Fish and Wildlife species of special concern

[7] Bird of conservation concern

[8] Federally threatened

[9] Under review for protection under the federal Endangered Species Act

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Appendix E. Wetland and OHWM Datasheets

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Otay Pipeline 2, Segment A6 City/County: Chula Vista, San Diego Sampling Date: 5/15/18

Applicant/Owner: City of San Diego State: CA Sampling Point: _____

Investigator(s): Melissa Tu, Kelsey Hawkins Section, Township, Range: S 34, T 17 South, R 1 West

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): C-Mediterranean CA Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Iva hayesiana	10	Y	FACW
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Typha sp.	70	Y	OBL
2.			
3. Leppidum latifolia	5	N	FAC
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks: Flowing water in channel could not dig soil pit

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Otay Pipeline 2, Segment A6 City/County: Chula Vista, San Diego Sampling Date: 5/15/18

Applicant/Owner: City of San Diego State: CA Sampling Point: _____

Investigator(s): Melissa Tu, Kelsey Hawkins Section, Township, Range: S 34, T 17 South, R 1 West

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): C-Mediterranean CA Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Iva hayesiana	95	Y	FACW
2.			
3.			
4.			
5.			
	95 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y3/3	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 6

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix F. Revegetation Plan

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DRAFT

Revegetation Plan

Otay Pipeline 2 Segment A6 Replacement Project

March 2022

Prepared for:

City of Chula Vista, Development Services
276 Fourth Avenue, Building B
Chula Vista, California 91910
Contact: Dai Hoang

Prepared by:

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San Diego, California 92101
(619) 481-5015
Contact: Ryan Binns, PMP, ENV SP

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Appendices

GPS	Global Positioning System
IS/MND	Initial Study/Mitigated Negative Declaration
MSCP	Multiple Species Conservation Program
MSCP Subarea Plan	City of Chula Vista MSCP Subarea Plan
Otay Ranch RMP	Otay Ranch Resource Management Plan
plan	Revegetation Plan
Preserve	Otay Ranch Preserve
project	Otay Pipeline 2 Segment A6 Replacement Project
QCB	Quino checkerspot butterfly

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As a requirement of the mitigation measures included in the Initial Study/Mitigated Negative Declaration prepared for the Otay Pipeline 2 Segment A6 Replacement Project (project), this Revegetation Plan (plan) has been developed for the project. The project is in the City of Chula Vista, California, and within the City of Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan (MSCP Subarea Plan) Area. This plan has been developed in accordance with the City of Chula Vista MSCP Subarea Plan and the Otay Ranch Resource Management Plan (RMP) (City of Chula Vista 2003).

The project would replace the current pipe with a larger pipe to provide a redundant water supply line to handle current and anticipated future water flows from the Otay Water Treatment Plant to users in the City of San Diego. The existing pipeline infrastructure on the project site is composed of two separate pipelines. Otay Pipeline 3 is an existing adjacent pipeline within the same 100-foot fee ownership corridor that is currently in service.

Project activities will result in temporary impacts to approximately 0.35 acre of non-native grassland and approximately 6.13 acres of Diegan coastal sage scrub (including disturbed) on the project site that occur in the temporary construction area and pipeline alignment. Temporary impacts to non-native grassland will require mitigation through on-site native grassland revegetation within the temporary impact areas. Temporary impacts to Diegan coastal sage scrub (including disturbed) will require mitigation through on-site revegetation within the temporary impact areas. Permanent impacts to 0.06 acre of non-native grassland and 0.75 acre of Diegan coastal sage scrub (including disturbed) will require mitigation through off-site revegetation at a 3:1 ratio for Diegan coastal sage scrub (including disturbed) and a 2:1 ratio for non-native grassland. The revegetation of 2.25 acre of Diegan coastal sage scrub and 0.12 acre of native grassland will occur on restorable land in the Wolf Canyon parcel (west of the project site north of the Otay River corridor) currently vegetated by non-native grassland, which is owned by the City of Chula Vista and managed by the Otay Ranch Preserve Owner/Manager. Both on-site temporary impacts and off-site permanent impacts mitigation are outlined in this Revegetation Plan.

The project will avoid impacts to San Diego marsh elder (*Iva hayesiana*) (0.11 acre patch), south coast saltscale (*Atriplex pacifica*) (3 individuals), Otay tarplant (*Deinandra* [=*Hemizonia*] *conjugens*) (not observed during surveys, but has potential to occur), and coastal cholla (*Cylindropuntia prolifera*) patches within the temporary construction impact area on the project site to the maximum extent feasible. If San Diego marsh elder, south coast saltscale, Otay tarplant, or coastal cholla patches cannot be avoided during construction, individuals or populations will be counted and permanent impacts shall be mitigated at a 1:1 ratio in suitable habitat outside of the permanent impact areas on the project site (Mitigation Measure BIO-3).

The project will result in direct impacts to three San Diego barrel cactus (*Ferocactus viridescens*) individuals in the permanent impact area and has the potential to impact up to 39 San Diego barrel cactus individuals in the temporary impact area of the project site. These impacts will be mitigated through avoidance, then if avoidance is not possible, through salvage and translocation, the methods of which are detailed in Biological Resources Technical Report Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan (Mitigation Measure BIO-2). Mitigation for San Diego barrel cactus is therefore not further discussed within this document.

The project will avoid 0.07 acre of temporary and 1.09 acre of permanent impacts to significant patches of dot-seed plantain (*Plantago erecta*) and other Quino checkerspot butterfly (QCB) (*Euphydryas editha quino*) host plants where observed on the project site. If significant QCB habitat patches cannot be avoided by construction activities, loss of this habitat will be mitigated through restoration of QCB suitable habitat in areas of the Otay Ranch Preserve surrounding the project site as recommended by the City of Chula Vista Development Services Director (or their designee) (Mitigation Measure BIO-9).

Section 1 Introduction

1.1 Project Location

The Otay Pipeline 2 Segment A6 Replacement Project (project) is in the City of Chula Vista (City), California within the Otay Ranch Preserve (Preserve) in the Chula Vista MSCP Subarea Plan (Appendix A, Figures; Figure 1, Regional Location, and Figure 2, Project Site). Although the project occurs within City limits, the project lies within a 100-foot corridor owned in fee by the City of San Diego encompassing approximately 10 acres (Assessor's Parcel Number 644-080-24). The project site begins at the Otay Water Treatment Plant on the southwestern side of Lower Otay Lake, extends 4,000 feet west through Salt Creek to the Salt Creek and Village 10 parcel boundary, and ends where it connects to an existing pipeline that has already been replaced (Figure 2).The project will temporarily and permanently impact sensitive vegetation communities (Diegan coastal sage scrub, non-native grassland) and sensitive plant species (San Diego marsh elder, south coast salt scale, and barrel cactus).

1.2 Project Purpose and Description

The project proposes to replace and upsize 4,000 linear feet of 40-inch steel pipe to 54-inch steel pipes in anticipation of increased service. The A6 segment of Otay Pipeline 2 is currently not in use but is proposed for replacement because it is in poor condition with several portions of the current pipe exposed and corroded/oxidized. The project would replace the current pipe with a larger pipe to provide a redundant water supply line to handle current and anticipated future water flows from the Otay Water Treatment Plant to users in the City of San Diego. The existing pipeline infrastructure on the project site is composed of two separate pipelines. Otay Pipeline 3 is an existing adjacent pipeline within the same 100-foot fee ownership corridor that is currently in service. Otay Pipeline 2 provides redundancy for and Otay Pipeline 3. The pipeline is operated and maintained by the City of San Diego.

Except for Salt Creek and other aquatic resource areas, the project includes the replacement in place of approximately 4,000 linear feet of the Otay Pipeline 2 segment A6 40-inch steel pipe with an increased diameter 54-inch steel pipe in the same underground location. After the pipeline within each trench section is replaced, the trench would be backfilled with the same soils removed from the trench before the next section trench is opened. Upon completion of the pipeline replacement, approximately 10-foot wide internal access roads would be graded to connect the existing external access roads to the five air vacuum and five blow-off valves for long-term maintenance access.

1.3 Project Impacts

The project will result in temporary impacts to approximately 0.35 acre of non-native grassland and approximately 6.13 acres of Diegan coastal sage scrub (including disturbed) on the project site

that occur in the temporary construction area and pipeline alignment (Table 1, Impacts to Sensitive Vegetation Communities). Permanent impacts to approximately 0.06 acre of non-native grassland and approximately 0.75 acre of Diegan coastal sage scrub (including disturbed) will result from the construction and associated grading of the on-site maintenance access roads (Table 1).

Table 1. Impacts to Sensitive Vegetation Communities

Vegetation Community	Impacts (acres)	
	Permanent	Temporary
Upland		
Diegan Coastal Sage Scrub (including disturbed)[1] (32500)	0.75	6.13
Non-Native Grassland[1] (42200)	0.06	0.35

The project could result in temporary impacts to an approximately 0.11-acre patch of San Diego marsh elder, three south coast saltscale individuals, and coastal cholla patches in the temporary construction impact area on the project site (Table 2, Potential Impacts to Sensitive Plant Species)[1]. While not observed on the project site, Otay tarplant has a high potential to occur in the Diegan coastal sage scrub habitat on the project site, and if found during pre-construction surveys, could be temporarily impacted during construction.

Table 2. Potential Impacts to Sensitive Plant Species

Plant Species	Impacts (acres)		Impacts (individuals)	
	Permanent	Temporary	Permanent	Temporary
San Diego marsh elder (*Iva hayesiana*)	—	0.11	NA	NA
South coast saltscale (*Atriplex pacifica*)	NA	NA	—	3

Notes: NA = not applicable

Consistent with the Chula Vista MSCP Subarea Plan Section 5.2.8.1 avoidance and minimization measures for QCB, approximately 2.71 acres of dot-seed plantain and significant QCB habitat patches were mapped on the project site during the 2018 and 2020 habitat assessments (Figure 3, Quino Checkerspot Butterfly Suitable Habitat). The project could result in 0.07 acre of temporary and 1.09 acre of permanent impacts to the significant QCB habitat patches within the project site during construction.

1.4 Mitigation Requirements

To mitigate temporary and permanent impacts to a less than significant level, the project's Initial Study/Mitigated Negative Declaration (IS/MND) requires that a Revegetation Plan (plan) be written and implemented (Mitigation Measure BIO-1). Mitigation for permanent impacts to non-native grassland, Diegan coastal sage scrub (and disturbed), and QCB habitat will be mitigated

[1] Potential temporary and permanent impacts to San Diego barrel cactus will be mitigated through avoidance, then if avoidance is not possible, through salvage and translocation, the methods of which are detailed in BRTR Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan (Mitigation Measure BIO-2). Mitigation for San Diego barrel cactus is not discussed within this Revegetation Plan.

through off-site revegetation on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for Diegan coastal sage scrub and native grassland restoration (Mitigation Measures BIO-1, BIO-3, and BIO-9). The Wolf Canyon parcel is part of the Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

Portions of the mitigation measures relevant to revegetation of temporary and permanent impacts to sensitive vegetation communities, sensitive plant species, and sensitive wildlife habitat are included below.

BIO-1: **Upland Restoration – Temporary and Permanent Impacts.** Temporary impacts to sensitive upland vegetation communities, including Diegan coastal sage scrub (including disturbed) and non-native grassland, occurring in the temporary construction impact area on the project site are anticipated to require a total of 6.47 acres of restoration. Temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland shall require in-kind restoration in-place.

Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for temporary impacts to 6.13 acres of Diegan coastal sage scrub (including disturbed) and 0.35 acre of non-native grassland (Appendix F, Revegetation Plan). Revegetation for temporary impacts shall occur on the project site.

A 3:1 ratio of off-site restoration for permanent impacts to 0.75 acre of Diegan coastal sage scrub (including disturbed) occurring in the on-site maintenance access road permanent impact area would satisfy the mitigation ratio for impacts to Diegan coastal sage scrub outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.75 acres of Diegan coastal sage scrub (including disturbed) at a 3:1 ratio (Appendix F, Revegetation Plan). The revegetation of 2.25 acres of Diegan coastal sage scrub shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for Diegan coastal sage scrub restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

A 2:1 ratio of off-site mitigation for permanent impacts to 0.06 acre of non-native grassland occurring in the on-site maintenance access road permanent impact areas would satisfy the mitigation ratio for impacts to non-native grassland outlined in the City of Chula Vista and City of San Diego Multiple Species Conservation Program Subarea

Plans. Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the Applicant shall provide a City of Chula Vista-approved Revegetation Plan for permanent impacts to 0.06 acre of non-native grassland at a 2:1 ratio (Appendix F, Revegetation Plan). The 0.12 acre of native grassland shall occur on restorable land in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for native grassland restoration. The Wolf Canyon parcel is part of the Otay Ranch Preserve and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager.

The Revegetation Plan shall include but not be limited to an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Applicant shall be required to enter into a Secured Agreement with the City of Chula Vista consisting of a letter of credit, bond, or cash for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan. The Applicant shall be required to prepare and implement the Revegetation Plan subject to the oversight and approval of the Development Services Director (or their designee).

BIO-3: **Sensitive Plant Avoidance.** San Diego marsh elder and south coast saltscale within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. All Otay tarplant occurring within the temporary construction impact area on the project site shall be avoided to the maximum extent feasible. Prior to construction activities, including clearing, grubbing, and grading, the approved biologist (Mitigation Measure BIO-5) shall flag the extent of each species patch or individual on the project site for avoidance during the pre-construction survey. If San Diego marsh elder, south coast saltscale, or Otay tarplant is observed in the permanent construction impact area during the pre-construction sensitive plant survey (Mitigation Measure BIO-5) or cannot be avoided during construction, individuals will be counted and permanent impacts shall be mitigated at a 1:1 ratio in suitable habitat outside of the permanent impact areas on the project site. If impacts occur to San Diego marsh elder, south coast saltscale, or Otay tarplant, revegetation shall follow the methods and requirements included in the City of Chula Vista-approved Revegetation Plan.

BIO-9: **Quino Checkerspot Butterfly.** Mitigation for impacts to suitable habitat for Quino checkerspot butterfly shall implement the following avoidance and minimization measures in compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, Infrastructure, in the Otay Ranch Preserve:

- Prior to construction activities, including clearing, grubbing, and grading, the qualified biologist (Mitigation Measure BIO-5) shall flag and fence significant patches of dot-seed plantain and other Quino checkerspot butterfly host plants where observed on the project site for avoidance. As defined in the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, single patches of dot-seed plantain equal to or greater than 538 square feet (50 square meters), or if less than 538 square feet (50 square meters) any combination of patches within 656 feet (200 meters) of each other that are equal to or greater than 538 square feet (50 square meters), will be considered "significant Quino checkerspot butterfly habitat patches."

- If a significant Quino checkerspot butterfly habitat patch cannot be avoided by construction activities, the qualified biologist shall notify the City of Chula Vista Development Services Director (or their designee) and count the individuals and map the acreage of the impacted patch. Following methods and requirements included in the City of Chula Vista-approved Revegetation Plan, the qualified biologist shall oversee the planting of new dot-seed plantain, Coulter's snapdragon, rigid bird's beak, owl's clover, Chinese houses, and purple Chinese houses at a 2:1 ratio for acreage impacts in the on- and off-site revegetation areas as designated by the Revegetation Plan (Appendix F, Revegetation Plan).

- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved Stormwater Pollution Prevention Plan (Mitigation Measure BIO-4) shall include dust control measures, including but not limited to watering, and implemented during construction activities, including clearing, grubbing, and grading.

- In compliance with the Chula Vista Multiple Species Conservation Program Subarea Plan, Section 5.2.8.1, the City of Chula Vista-approved grading plans and design specifications for construction of the internal access roads shall include the use of concrete-treated base material with aggregate rock to prevent weeds and vegetation growth on the road surface while allowing sufficient percolation to minimize stormwater flows.

1.5 Goals and Objectives/Mitigation Requirements

In compliance with Mitigation Measure BIO-1, temporarily and permanently impacted areas (0.35 acre and 0.06 acre of native grassland and 6.13 acre and 0.75 acre of Diegan coastal sage scrub [and disturbed] habitats, San Diego marsh elder, south coast saltscale, Otay tarplant, coastal cholla patches [if impacted], and QCB habitat [if impacts unavoidable]) will be regraded and revegetated to enhance the biological diversity in and surrounding the project site. To mitigate these temporary and permanent impacts to a less than significant level, the project's Initial Study/Mitigated Negative Declaration

(IS/MND) requires that a Revegetation Plan (plan) be written and implemented. The goal of this plan is to maintain and enhance the biological diversity in and surrounding the project site. This will be accomplished by on-site revegetation of 0.35 acre of native grassland and 6.13 acre of Diegan coastal sage scrub habitats, San Diego marsh elder, south coast saltscale, Otay tarplant, coastal cholla patches (if impacted), and QCB habitat (if impacts unavoidable), in addition to off-site revegetation of 0.12 acre of native grassland and 2.25 acres of Diegan coastal sage scrub habitats.

The revegetation of native grassland will continue to provide suitable foraging habitat for sensitive wildlife species observed or with a high potential to occur on the project site, including Cooper's hawk, northern harrier, western bluebird, San Diego black-tailed jackrabbit, and southern mule deer. In addition, the native grassland revegetation will include grassland species that include California plantain and other QCB host and nectar plants, enhancing the suitable QCB habitat on the project site. The revegetation of Diegan coastal sage scrub will continue to provide suitable nesting habitat for sensitive bird species observed on and surrounding the project site, including coastal cactus wren, coastal California gnatcatcher, and Southern California rufous-crowned sparrow, as well as suitable habitat for other sensitive wildlife species, including, San Diego black-tailed jackrabbit, orange-throated whiptail, red diamond rattlesnake, and Blainville's horned lizard. Temporary impacts to non-native grassland and Diegan coastal sage scrub (including disturbed) will be mitigated on-site through the implementation of in-kind revegetation at a 1:1 ratio. Permanent impacts to non-native grassland and Diegan coastal sage scrub (including disturbed) will be mitigated off-site through the implementation of in-kind revegetation at 2:1 and 3:1 ratios respectively.

If San Diego marsh elder, south coast saltscale, or Otay tarplant cannot be avoided during construction, individuals and/or populations will be counted and documented by the project biologist and revegetated at a 1:1 ratio in suitable habitat outside of the permanent impact areas on the project site. Revegetation of San Diego marsh elder, south coast saltscale, and Otay tarplant will ensure the project site and surrounding Preserve retain its current biodiversity.

If coastal cholla patches cannot be avoided during construction and if salvage and transplantation is not feasible (BRTR Appendix G, San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan), the patches will be revegetated at a 2:1 ratio in suitable habitat outside of the permanent impact areas on the project site. Revegetation of the coastal cholla patches will ensure the project site continues to provide suitable nesting habitat for coastal cactus wren.

If significant QCB habitat patches cannot be avoided during construction, this habitat will be restored at a 2:1 ratio in areas of the Preserve surrounding the project site as recommended by the City of Chula Vista Development Services Director (or their designee). Revegetation of the significant QCB habitat patches will ensure the project site continues to provide suitable habitat for QCB. As previously discussed, the native grassland revegetation will include California

plantain and other QCB host and nectar plants, further enhancing the suitable QCB habitat on the project site and connecting the on- and off-site revegetation of QCB habitat.

The long-term goal of this plan is to establish a self-sustainable, functioning ecosystem which would provide the following benefits to the natural community within the project area including:

- Protect the existing, restored, and revegetated biological resources within and adjacent to the project site while accommodating necessary and adequate long-term maintenance access to the pipeline corridor.
- Improve and maintain native plant associations and functional wildlife connections to provide viable sensitive plant and wildlife species habitat.
- Provide habitat for selected target species, which improves access to regional corridors/linkages and facilitates the long-term persistence of viable populations of sensitive plant and wildlife species.

The specific revegetation goal for the plan is to restore temporarily and permanently impacted areas after construction is complete. This goal will be met via the following three objectives:

- **Objective 1:** Restore temporary impacts to Diegan coastal sage scrub (including disturbed) and non-native grassland (with native grassland) by regrading any disturbed areas to previous grade/contours and planting native plants via seed and/or container plants.
- **Objective 2**: Restore permanent impacts to Diegan coastal sage scrub (including disturbed) and non-native grassland (with native grassland) by revegetating restorable land with native plants via seed and/or container plants in the Wolf Canyon parcel that has disturbed habitat and non-native grassland areas suitable for Diegan coastal sage scrub and native grassland restoration.
- **Objective 3:** Apply mulch or other erosion control materials to any bare soil between revegetation plantings to prevent loss of topsoil and erosion.

The specific revegetation goals for the plan are as follows:

- **Goal 1:** Restore and enhance the temporary impact areas currently vegetated with non-native grassland by revegetating these areas with native grassland species and QCB host and nectar plants.
- **Goal 2:** Restore and enhance the temporarily impacted Diegan coastal sage scrub (including disturbed) by revegetating these areas with suitable species diversity and density.
- **Goal 3**: Revegetate and enhance disturbed habitat and non-native grassland off-site in the Wolf Canyon parcel with Diegan coastal sage scrub and native grassland habitat to mitigate for permanent impacts to Diegan coastal sage scrub and non-native grassland.
- **Goal 4:** Protect the existing, restored, and revegetated biological resources on and off the project site while accommodating necessary and adequate long-term maintenance access to the pipeline corridor.

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Section 2 Roles and Responsibilities

The roles and responsibilities of implementing the Revegetation Plan are divided between the City of San Diego, City of Chula Vista, restoration ecologist, project biologist, and restoration (installation) contractor. Their roles and responsibilities are outlined in the following subsections.

2.1 City of San Diego

The City of San Diego Public Utilities Department shall be responsible for coordination and management of plan activities. Decisions to stop work are the responsibility of the City of San Diego Public Utilities Department, which shall have authority in decisions to suspend payment or terminate such contracts. This includes all phases of plan installation, maintenance, and biological monitoring.

2.2 City of Chula Vista

The City of Chula Vista Development Services Director (or their designee) shall be responsible for review and approval of this plan and the details herein.

2.3 Restoration Ecologist

The restoration ecologist shall be a qualified individual or team of qualified individuals with a minimum of four years' experience in upland habitat revegetation. The restoration ecologist shall perform the following tasks and be responsible for overseeing the monitoring of the revegetation in accordance with the Revegetation Plan specifications:

- Oversee the initiation of revegetation and revegetation activities to confirm conformance with the requirements and procedures established in this plan.
- Oversee the required monitoring and reporting in accordance with the procedures established in this plan.

2.4 Project Biologist

The project biologist shall be a qualified individual or team of qualified individuals with at least two years' experience monitoring construction activities. The project biologist shall perform the following tasks and be responsible for monitoring the revegetation in accordance with the Revegetation Plan specifications:

- Consult with the contractor on any activities that may disturb the site.
- Quantify and document the total project temporary and permanent impacts that occur during construction in a post-construction report and submit to the restoration ecologist and restoration contractor. The final impact acreage included in the post-construction report will be used by the restoration ecologist and restoration contractor for implementing the revegetation plan.

- Monitor qualified subcontractors in execution of plan implementation and maintenance.
- Provide any required documentation during the installation, maintenance, and/or monitoring activities to the restoration ecologist.
- Immediately report any issues or proposed deviations from the Revegetation Plan to the restoration ecologist.

2.5 Installation (Restoration) Contractor

The restoration contractor shall have a minimum of five years' experience in upland habitat revegetation and shall be a firm that specializes in installing and maintaining native habitat. The restoration contractor shall be responsible for implementing the tasks outlined in this plan under the supervision of the restoration ecologist and project biologist, including the following:

- Prepare areas for planting.
- Implement Revegetation Plan.
- Maintain site as outlined in this plan.
- Provide remediation activities, if necessary.

Section 3 Existing Conditions

3.1 On-Site Revegetation Area

The on-site revegetation area includes the approximately 8.59-acre temporary impact area within the approximately 10-acre project site contained within the 100-foot-wide, approximately 4,000-foot-long corridor owned in fee by the City of San Diego. Revegetation will occur within the temporary impact areas for the approximately 0.35 acre of non-native grassland (eastern portion of the site) and the approximately 6.13 acres of Diegan coastal sage scrub (throughout the project site, including disturbed) vegetation communities, herein referred to as the on-site revegetation area (Figures 4, 4a through 4d, On-Site Revegetation Area). The non-native grassland and Diegan coastal sage scrub (including disturbed) within the on-site revegetation area are shown on Figures 4, 4a through 4d. Revegetation activities are not permitted outside of the boundary of the on-site revegetation area.

Elevation in the on-site revegetation area ranges from 275 to 414 feet above mean sea level (Figure 5, USGS Topographic Map). Topography in the location of the on-site native grassland revegetation is moderately sloping with an increase in elevation where the project site enters the Otay Water Treatment Plant to the east. Topography throughout the on-site Diegan coastal sage scrub revegetation area is varied with hills and valleys along the length of the project site.

The existing Diegan coastal sage scrub in the surrounding Preserve will be used as a reference for the development of success standards. Because the Diegan coastal sage scrub in the Preserve is adjacent to the areas being restored, it will provide clear indication of the success of the on-site Diegan coastal sage scrub revegetation.

Although a reference site for native grassland revegetation does not occur within the Preserve immediately surrounding the on-site revegetation area, success criteria for the revegetation of temporarily impacted non-native grassland into native grassland specific to the region is provided in Section 5.3, Success Criteria.

The soils in the on-site revegetation area are characterized as well-drained, and include Diablo-Olivenhain complex (nine to 30 percent slopes), Huerhuero loam (two to nine percent slopes), Olivenhain cobbly loam (two to nine percent slopes), and terrace escarpments (no slope percentage information available; Figure 6, Soils; USDA 2022). Huerhuero loam is the most widespread in the area and occupies most of the on-site revegetation area (Figure 6). The western portion of the on-site revegetation area east of Salt Creek is mapped as Diablo-Olivenhain complex, the eastern portion is mapped with terrace escarpments, and the central portion is mapped as Olivenhain cobbly loam (Figure 6).

3.1.1 Access

Access to the on-site revegetation area can be achieved via existing access roads, some of which are currently used by the City of Chula Vista and San Diego Gas & Electric for regular maintenance activities in the area, which were identified and field-verified as suitable for construction access and City of San Diego maintenance vehicles access to the pipeline alignment (Figure 7, Project Components). Access to the entire length of the on-site revegetation area is achieved through the existing external access roads which connect to the 10-foot wide internal access roads that will be constructed as part of the project (Figure 7).

3.1.2 Locations of Revegetation

As discussed previously, on-site revegetation will occur in the following on-site revegetation areas:

- Revegetation of native grassland in the on-site non-native grassland revegetation areas in the eastern portion of the project site (Figures 4 and 4d).
- Revegetation of Diegan coastal sage scrub (including disturbed) in the on-site Diegan coastal sage scrub (including disturbed) revegetation areas throughout the length of the project site (Figures 4 and 4a through 4d).
- Revegetation of any San Diego marsh elder, south coast saltscale, or Otay tarplant patches or individuals temporarily impacted during construction will occur within the on-site revegetated native grassland or Diegan coastal sage scrub in the on-site revegetation areas upon completion of construction (Figures 4 and 4a through 4d).
- Revegetation of coastal cholla patches temporarily impacted during construction will occur within the revegetated Diegan coastal sage scrub in the on-site revegetation areas upon completion of construction (Figures 4 and 4a through 4d).
- Revegetation of QCB habitat patches temporarily impacted during construction will occur within the on-site native grassland revegetation area using a seed mix that contains QCB host and nectar plants (Figures 4 and 4d).

3.2 Off-Site Revegetation Area

The off-site revegetation area will occur in the approximately 8.7 acres of non-native grassland or in the approximately 4.2 acres of disturbed habitat available in the eastern portion of the Wolf Canyon parcel, whichever is determined by the restoration ecologist to be the most suitable areas for the revegetation of the 2.25 acres of Diegan coastal sage scrub and 0.12 acre of native grassland required to mitigate for permanent impacts on the project site (Figure 8, Off-Site Revegetation Area). The Wolf Canyon parcel, approximately 2.6 miles northwest of the project site immediately west of La Media Road, is part of the Preserve, and is owned by the City of Chula Vista and managed by the Preserve Owner/Manager. A segment of the Otay Pipeline 2 and surrounding easement owned in-fee by the City of San Diego is in the northern section of the parcel (Figure 8).

No off-site revegetation as mitigation for the project's permanent impacts will occur in that City of San Diego-owned easement under this plan.

As part of the Preserve, the Wolf Canyon parcel was surveyed in the spring of 2013 by RECON to gather baseline biological information, including vegetation mapping and general plant and wildlife surveys (RECON 2013). Subsequent annual reports documenting the preserve monitoring tasks have been produced for the Preserve parcels, including Wolf Canyon, the most recent was from 2017 (RECON 2018). This plan includes existing conditions information for the Wolf Canyon parcel from both the 2013 and 2018 RECON reports. Revegetation activities are not permitted outside of the boundaries of the approximately 8.7 acres of non-native grassland or in the approximately 4.2 acres of disturbed habitat available for restoration on the Wolf Canyon parcel, herein referred to as the off-site revegetation area.

Elevation in the off-site revegetation area ranges from 290 to 450 feet above mean sea level. Topography in the off-site revegetation area varies between relatively flat ground in the bottom of the canyon in the west and gently sloping, northwest facing slopes in the east (RECON 2013).

Like the on-site revegetation area, the existing Diegan coastal sage scrub in the Preserve surrounding the on-site revegetation area will be used as a reference for the development of success standards. The Diegan coastal sage scrub in the Preserve will provide clear indication of the success of the off-site Diegan coastal sage scrub revegetation.

Although a reference site for native grassland revegetation does not occur within the Preserve immediately surrounding the on-site revegetation area, success criteria for the off-site revegetation of permanently impacted non-native grassland into native grassland specific to the region is provided in Section 5.3, Success Criteria.

The soils in the off-site revegetation area are characterized as well-drained and include Salinas clay loam (two to nine percent slopes), Diablo clay (two to nine and 15 to 20 percent slopes), and Linne clay loam (nine to 30 percent slopes). Salinas clay loam and Diablo clay are the most widespread in the area and occupies most of the off-site revegetation area (RECON 2013).

3.2.1 Access

Access to the off-site revegetation area can be achieved via La Media Road which connects to existing dirt access roads running east-west on the northern and southern borders of the parcel (Figure 8). Some of these access roads are currently used by City of San Diego construction and maintenance vehicles to access to the Otay Pipeline 2 alignment in the northern portion of the parcel.

3.2.2 Locations of Revegetation

As discussed previously, off-site revegetation of the 2.25 acres of Diegan coastal sage scrub and 0.12 acre of native grassland will occur in the approximately 8.7 acres of non-native grassland or

in the approximately 4.2 acres of disturbed habitat available in the off-site revegetation area. Prior to implementation, the restoration ecologist will determine which areas within the available off-site revegetation area is the most suitable for the revegetation required to mitigate for permanent impacts to Diegan coastal sage scrub and non-native grassland that occur on the project site.

Section 4 Implementation

4.1 Revegetation Activities

Revegetation activities on the on- and off-site revegetation areas will include:

- Site preparation, including:
- Installation of the temporary irrigation system
- Hydroseeding and installation of container plants

4.2 Site Preparation

Site preparation will consist of site resource protection (fencing and signage) and topsoil salvage. Clearing and grubbing, erosion control measures and invasive and non-native species treatment are additional activities that may occur only as necessary.

4.2.1 Site Resource Protection

The on- and off-site revegetation areas are adjacent to sensitive vegetation communities and plant and wildlife species both within and surrounding the sites. To define the limits of the project sites and protect the revegetation areas from unauthorized access, temporary fencing will be installed along the edge of the project sites and surrounding all revegetation areas. Signage will be installed along the fence line to inform construction personnel, maintenance crews, and the public of the revegetation activities underway and to prevent trampling and destruction of the restored/revegetated areas by unauthorized entry.

4.2.2 Topsoil Salvage

In the on-site revegetation area, only topsoil within areas of Diegan coastal sage scrub will be salvaged and reapplied. The topsoil from on- and off-site revegetation areas of disturbed habitat and non-native grassland will contain seed bank of non-native species and would therefore not be salvaged. Replacement topsoil, in the top four to six inches of soil, for the revegetation of the non-native grassland areas with native grassland will be sourced from the Otay Valley area and will have similar characteristics to the soils in the revegetation areas, which consist of gravelly and clayey loam textures that are generally low in organic content.

In the on-site revegetation area, topsoil containing sensitive plant species, including San Diego marsh elder, south coast saltscale, and Otay tarplant, will be carefully excavated intact to the greatest extent feasible, and stored off-site until needed for on-site revegetation site preparation. Following vegetation clearing and grubbing (as necessary), any salvaged topsoil containing sensitive plant species will be re-installed to the on-site revegetation areas prior to planting and seeding.

4.2.3 Clearing and Grubbing (As Necessary)

Prior to planting and seeding, if clearing of any remnant vegetation in the non-native grassland, Diegan coastal sage scrub (including disturbed), or disturbed habitat on- and off- site revegetation areas is necessary, these areas will be dethatched and raked to expose the soil which will create viable germination microsites for seeding and suitable substrate for planting. Any non-native or invasive species that persist will need to be cleared and grubbed to remove the root systems. As mentioned in Section 4.2.1, Site Resource Protection, fencing will be installed along the perimeter of the on- and off- site revegetation areas, serving as a visual reminder to avoid clearing additional vegetation or damaging the soil outside of the designated revegetation areas.

Sensitive bird species, including the MSCP-covered coastal cactus wren, federally-listed and MSCP-covered coastal California gnatcatcher, and federally and state-listed and MSCP-covered least Bell's vireo, occur on and surrounding the on-site revegetation area. Sensitive bird species, including MSCP-covered and CDFW watch-list Cooper's hawk and federally listed and MSCP-covered coastal California gnatcatcher were observed on and adjacent to the off-site revegetation area during the 2013 RECON surveys (RECON 2013). To prevent impacts to these sensitive bird species, clearing and grubbing must be conducted outside of these species' breeding season (January 15 to August 31). If clearing and grubbing activities are to occur during the breeding season, the project shall adhere to all mitigation measures set forth in the Biological Resources Technical Report (Harris 2022).

4.2.4 Erosion Control (As Necessary)

Following vegetation clearing and grubbing, the restoration ecologist will assess the need for erosion control measures, such as certified weed-free® fiber rolls or silt fencing that contain no plastic and are installed per City of San Diego standards (City of San Diego 2018). These measures will be implemented if necessary, to help protect against erosion and site damage while the seed and container plantings establish.

4.2.5 Invasive and other Non-Native Species Treatment (As Necessary)

Invasive and non-native species treatment will consist of treating with chemical means (herbicide) and/or mechanical means (by hand, mowing or weed whipping) of removal of all invasive and non-native plant species.

Prior to the start of treatments, the project biologist will implement the following measures in compliance with the project Mitigation Monitoring and Reporting Program:

- Mark access routes to avoid impacts to sensitive vegetation communities and sensitive species during invasive/non-native plant removal.
- Coordinate with the City of San Diego and contractor in the field to review invasive/non-native plant removal areas, access routes, and disposal methods.

- Time the weed removal such that invasive/non-native species do not produce and disperse viable seed within the project site. Any viable seed found on invasive/non-native plants will be cut and bagged and disposed of at an approved facility.

Prior to the start of and during invasive/non-native plant removal, the contractor shall:

- Ensure appropriate notifications are made to inform the City of San Diego and City of Chula Vista of the use of herbicide.
- Document safe operating procedures including any emergency spill cleanup plan.

Invasive and non-native plant species treatment will consist of herbicide treatment of live, green weeds, followed by dethatching of dead weeds with line trimmers and rakes. Sensitive and native plants will be avoided in the treatment areas, and supplemental fencing or flagging will be conducted by the project biologist as necessary. Herbicide application will be conducted by licensed, experienced Pest Control Advisor (applicator). All invasive/non-native plant material removed will be carefully bagged and transported off-site and disposed of at an approved facility.

4.3 Schedule

Preparation of the on- and off- site revegetation areas will be planned so that they are ready to be seeded and planted in the fall to take advantage of the rainy season, generally October through April. This allows the greatest amount of time for seeds to germinate and for container plants to become established under a natural watering regime without the use of supplemental irrigation (see Section 4.5, Irrigation System Instillation, for supplemental irrigation design specifics).

4.4 Specific Habitats

On-site revegetation of habitat for coastal California gnatcatcher, coastal cactus wren, and QCB will be achieved through the revegetation of Diegan coastal sage scrub and native grassland.

Off-site revegetation of non-native grassland and disturbed habitat will provide a functional lift in habitat for the sensitive and non-sensitive species that occur on the Wolf Canyon parcel by revegetating these areas with high-quality Diegan coastal sage scrub and native grassland. Further, revegetating the off-site revegetation area will prevent the loss of sensitive Diegan coastal sage scrub habitat in the Preserve by mitigating for on-site permanent impacts to Diegan coastal sage scrub at a 3:1 ratio and non-native grassland (into native grassland) at a 2:1 ratio.

4.4.1 Diegan Coastal Sage Scrub

On-site Diegan coastal sage scrub revegetation will occur in temporary impact areas that were mapped as Diegan coastal sage scrub and disturbed Diegan coastal sage scrub (Figures 4 and 4a through 4d). Off-site Diegan coastal sage scrub revegetation will occur in suitable areas currently vegetated with non-native grassland or disturbed habitat. Both on- and off-site Diegan coastal sage

scrub revegetation will incorporate a seed mix composed of perennial shrubs and annual species along with a container plant palette of perennial shrub species that are appropriate for the sites. This method will restore the habitat for use by coastal California gnatcatcher both on- and off-site, and benefiting coastal cactus wren and QCB on-site. The container plants will be distributed in a random pattern to mimic the natural clumping of shrubs in Diegan coastal sage scrub habitat. Small open areas will be created in Diegan coastal sage scrub revegetation areas to encourage the establishment of annual species favored by QCB. If coastal cholla patches cannot be avoided during construction, the salvage and translocation or new plantings of coastal cholla patches shall be planted at an acreage ratio of 2:1 within the Diegan coastal sage scrub on-site revegetation areas (Figures 4 and 4a through 4d).

The Diegan coastal sage scrub seed mix and container plant palette is presented in Table 3, Diegan Coastal Sage Scrub Habitat Seed Mix (up to 8.72 acres), and Table 4, Diegan Coastal Sage Scrub Container Plant Palette (up to 8.72 acre). Up to 6.47 acres of Diegan coastal sage scrub revegetation will occur in the on-site revegetation area and 2.25 acres of Diegan coastal sage scrub revegetation will occur in the off-site revegetation area, totaling in up to 8.72 acres.

Table 3. Diegan Coastal Sage Scrub Habitat Seed Mix (up to 8.72 acres)

Common Name[1]	Scientific Name	Pounds per Acre	Maximum Total Pounds
California Sagebrush	*Artemisia californica*	4.0	34.88
Clustered Tarweed	*Deinandra fasciculata*	3.0	26.16
California Sunflower	*Encelia californica*	3.0	26.16
California Buckwheat	*Eriogonum fasciculatum*	8.0	69.76
Golden Yarrow	*Eriophyllum confertiflorum*	3.0	26.16
Coastal Goldenbush	*Isocoma menziesii*	4.0	34.88
Bladderpod	*Peritoma* (*Isomeris*) *arborea*	2.0	17.44
Deerweed	*Acmispon glaber* (*Lotus scoparius*)	6.0	52.32
Black Sage	*Salvia mellifera*	4.0	34.88
San Diego Sunflower	*Bahiopsis* (*Viguiera*) *laciniata*	4.0	34.88
	Total	41.0	357.52

Notes: [1] Changes or substitutions to plant species will require the approval of the City of San Diego and restoration ecologist prior to installation. Seeds should be sourced locally (within a 20-mile radius of San Diego County) to the maximum extent feasible.

Table 4. Diegan Coastal Sage Scrub Container Plant Palette (up to 8.72 acre)

Common Name[1]	Scientific Name	Container Size	Spacing (feet on center)	Number per Acre	Maximum Quantity
California Sagebrush	*Artemisia californica*	1 gallon	6	400	3,488
California Buckwheat	*Eriogonum fasciculatum*	1 gallon	6	400	3,488
Laurel Sumac	*Malosma laurina*	1 gallon	12	100	872
Lemonadeberry	*Rhus integrifolia*	1 gallon	12	100	872
White Sage	*Salvia apiana*	1 gallon	6	200	1,744
Black Sage	*Salvia mellifera*	1 gallon	6	200	1,744
			Total	1,400	12,208

Notes: [1] Changes or substitutions to plant species will require the approval of the City of San Diego and restoration ecologist prior to installation. Containers should be sourced locally (within a 20-mile radius of San Diego County) to the maximum extent feasible.

4.4.2 Native Grassland

On-site native grassland revegetation will occur in temporary impact areas that were mapped as non-native grassland (Figures 4 and 4a through 4d). Off-site native grassland habitat revegetation will occur in suitable areas currently vegetated with non-native grassland or disturbed habitat. Both on- and off-site revegetation of native grassland habitat will be achieved primarily with a seed mix that includes annual and perennial native grass and herb species that are suitable for the project site. Revegetation of QCB habitat will occur within the non-native grassland on- and off-site revegetation areas (Figures 4 and 4a through 4d). The following QCB host and nectar plant species will be included in the native grassland seed mix to re-establish and offset any impacts to suitable QCB habitat at an acreage ratio of 2:1: dot-seed plantain (*Plantago erecta*), Coulter's snapdragon (*Antirrhinum coulterianum*), rigid bird's beak (*Cordylanthus rigidus*), owl's clover (*Castilleja exserta*), Chinese houses (*Collinsia concolor*), and purple Chinese houses (*Collinsia heterophylla*). The plant palette will include plugs of foothill needlegrass and purple needlegrass to supplement and better establish the revegetation of the native grasses from seed.

The native grassland seed mix and plant palette are provided in Table 5, Native Grassland Habitat Seed Mix (up to 0.47 acre), and Table 6, Native Grassland Plant Palette (up to 0.47 acre). Up to 0.35 acre of native grassland revegetation will occur in the on-site revegetation area and 0.12 acre of native grassland revegetation will occur in the off-site revegetation area, totaling in up to 0.47 acre.

Table 5. Native Grassland Habitat Seed Mix (up to 0.47 acre)

Common Name[1]	Scientific Name	Pounds per Acre	Maximum Total Pounds
Bentgrass	*Agrostis exarata*	2.0	0.94
California Brome	*Bromus carinatus*	2.0	0.94
California Poppy	*Eschscholzia californica*	1.0	0.47
California Barley	*Hordeum californicum*	2.0	0.94
Goldfields	*Lasthenia glabrata*	1.0	0.47
Arroyo Lupine	*Lupinus succulentus*	1.0	0.47
Foothill Needlegrass	*Stipa (Nassella) lepida*	4.0	1.88
Purple Needlegrass	*Stipa (Nassella) pulchra*	4.0	1.88
Small Fescue	*Vulpia microstachys*	2.0	0.94
	Subtotal	*19*	*8.93*
Quino Checkerspot Butterfly Host and Nectar Plants (up to 5.42 acres)			
Dot-seed plantain	*Plantago erecta*	1.0	5.42
Coulter's snapdragon	*Antirrhinum coulterianum*	1.0	5.42
Rigid bird's beak	*Cordylanthus rigidus*	1.0	5.42
Owl's clover	*Castilleja exserta*	1.0	5.42
Chinese houses	*Collinsia concolor*	1.0	5.42
Purple Chinese houses	*Collinsia heterophylla*	1.0	5.42
	Subtotal	*6.0*	*32.52*
	Total	25	41.45

Notes: [1] Changes or substitutions to plant species will require the approval of the City of San Diego and restoration ecologist prior to installation. Seeds should be sourced locally (within a 20-mile radius of San Diego County) to the maximum extent feasible.

Table 6. Native Grassland Plant Palette (up to 0.47acre)

Common Name[1]	Scientific Name	Container Size	Number per Acre	Maximum Quantity
Foothill Needlegrass	*Stipa (Nassella) lepida*	Plug	400	188
Purple Needlegrass	*Stipa (Nassella) pulchra*	Plug	400	188
		Total	800	376

Notes: [1] Changes or substitutions to plant species will require the approval of the City of San Diego and restoration ecologist prior to installation. Containers should be sourced locally (within a 20-mile radius of San Diego County) to the maximum extent feasible.

4.5 Irrigation System Installation

Planting will be timed to occur during the fall and winter months to take advantage of cooler temperatures and seasonal rainfall. Although natural precipitation may provide sufficient moisture to germinate the seed, the irrigation system will be utilized during the first year of plant establishment to provide enough water for healthy plant establishment by supplying water during the dry months and supplementing natural rainfall in the winter, when necessary. Irrigation after Year 1 (Years 2 through 5) should only be performed during severe drought conditions or for weed grow/kill cycles.

Temporary irrigation systems will be designed by the restoration contractor at the on- and off-site revegetation areas to provide the plants with water as they establish and acclimate to the site. Irrigation system design will be approved by the restoration ecologist prior to installation, and the design must demonstrate appropriate coverage and frequency of watering for plant establishment. Excessive irrigation should be avoided, as it can encourage excessive growth of weeds and potentially cause disease. To adequately establish new plant materials and germinate and establish the applied seed, irrigation water shall be applied a manner that will encourage deep root growth (i.e., periodic deep irrigation versus frequent light irrigation). The restoration contractor will allow soil to dry in the top six to 10 inches after germination and during seedling establishment before the next irrigation cycle.

As-built drawings of the on- and off-site revegetation areas, including the irrigation systems, will be submitted to the Cities of San Diego and Chula Vista within 120 days of completion of installation. All irrigation will be maintained by the City of San Diego.

4.6 Plant Installation

As previously discussed, this plan includes native grassland and Diegan coastal sage scrub revegetation in on- and off-site areas that currently support non-native grassland, Diegan coastal sage scrub (including disturbed), and disturbed habitat. The plant palette for the revegetation areas will be the same across both sites for the two vegetation communities' respective areas, however, the restoration ecologist may direct installation of certain species in particular areas (such as installing a higher proportion of shrub species within or adjacent to existing Diegan coastal sage scrub habitat). Installation will include two phases: installation of container plants and hydroseeding (Tables 3 through 6).

4.6.1 Container Plants

The container plant palettes for the Diegan coastal sage scrub and native grassland revegetation areas (Tables 4 and 6) are designed to include native coastal sage scrub species, grasses, and forbs found on the project site and in the surrounding Preserve as well as on and surrounding the Wolf Canyon parcel, so the revegetated areas closely mimic the surrounding habitats.

The plants used in revegetation should originate from within San Diego County. To the degree feasible however, container plants should be propagated from seed collected within 20 miles of the project site, where possible, in quantities directed by the restoration ecologist. Container plants are to be grown in native soil and inoculated with beneficial mycorrhizae (mutualistic fungi), which contains natural fungi and other microorganisms.

Standard horticultural practices shall be followed for the revegetation of both on- and off-site areas. This involves digging a hole approximately twice the size (width and depth) of the plant's root ball. Plants are then positioned so that the surface of the soil in the container is at or slightly below

ground level, with backfill from the excavation of the hole added carefully beneath and around the installed plant's root ball. The soil is then firmly tamped in around the plant. Each planting will have a recessed watering basin to aid in the capture of natural rainfall and artificial irrigation.

The revegetation areas will be planted and seeded with species that are appropriate for native grassland and Diegan coastal sage scrub habitats in the area (see Tables 3 through 6). Two-inch to one-gallon container stock will be planted at the densities included in Tables 4 and 6. A figure showing the locations of the container plants for both on- and off-site revegetation areas shall be provided by the maintenance contractor and approved by the City of San Diego, City of Chula Vista, and restoration ecologist prior to installation. Any changes to the proposed plant palette shall be determined by the restoration ecologist and approved by the City of San Diego Public Utilities Department and City of Chula Vista Development Services Department.

4.6.2 Hydroseeding

Native plant seed shall be thoroughly mixed and broadcast evenly across the on- and off-site revegetation areas. Unless major rains are predicted to occur, water trucks shall be used the day following hydroseed application to provide initial immediate irrigation.

Native seed must be sourced from a supplier with at least five years of experience collecting native grass, coastal sage scrub, and other native plant seed for restoration projects in the San Diego region:

- Only species included in the seed palette (Tables 3 and 5) shall be used.
- Seed must originate within San Diego County. However, if possible, seed should be sourced from the vicinity of the project site or from within 20 miles of the project site.
- If locally available seed does not exist for a particular species, the restoration contractor shall consult with the restoration ecologist to determine alternatives.
- Seed shall be free from noxious weed species and be certified Pure Live Seed in quantities outlined in Tables 3 and 5.

4.7 Monitoring During Installation

The project biologist shall be present on both sites to monitor all revegetation activities to ensure the details of this plan are carried out. The project biologist shall immediately communicate any issues or deviations from this plan to the restoration ecologist and the City of San Diego Public Utilities Department (or their designee).

4.8 As-Built Report

Once the revegetation activities are complete, an as-built report for each revegetation area will be completed by the restoration ecologist and submitted to the City of San Diego and City of Chula Vista Public Utilities Departments (or their designees) within 60 days. For the on-site revegetation area, the report will include as-built construction drawings overlaid with habitat that was

temporarily impacted or avoided, including photographs, photo-documentation locations, sampling plot locations, and a description of the baseline conditions for each revegetation area including species seeded/planted and their densities if applicable. For the off-site revegetation area, the report will include the Wolf Canyon parcel vegetation map (RECON 2013) overlaid with habitat that was revegetated, including photographs, photo-documentation locations, sampling plot locations, and a description of the baseline conditions for each area including species seeded/planted and their densities if applicable. Deviations from this plan will also be noted.

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Section 5 Maintenance and Monitoring Program

5.1 Maintenance Activities

The purpose of the maintenance program is to increase the success of the on- and off-site revegetation areas plantings and to ensure that the sites ultimately achieve the final success criteria. The maintenance program is initially scheduled to last five years. Maintenance activities will include maintenance of the vegetation, maintenance of the irrigation systems, and maintenance of erosion control measures.

The project biologist will monitor all aspects of the revegetation efforts to detect any problems at an early stage. Potential problems could arise from irrigation failure, erosion, vandalism, competition from weeds and invasive species, and unacceptable levels of disease and predation. Any potential or actual problems detected by the project biologist will be relayed to the restoration ecologist for immediate correction. Damage to plants, the irrigation systems, and other facilities occurring because of unusual weather or vandalism will be repaired or replaced immediately.

5.1.1 Plant Replacement

The restoration contractor will be responsible for replacing all container stock plants that are terminally diseased or dead for a period of 120 days after plant installation. The restoration contractor will also be responsible for replacing all dead and/or declining plants as recommended by the project biologist or the restoration ecologist. Plant litter/debris from native plants will be left in place because it has an important role in the creation of microhabitat and soil enrichment.

Replacement plants shall conform to the species, size requirements, and spacing that was specified for the original plants being replaced except for any changes that are approved by the restoration ecologist. The replacement plants shall be purchased from inventory at the same native plant nursery where the contract-grown plant stock was purchased.

5.1.2 Weed Control

Weeds should be immediately removed by hand or controlled with an appropriate herbicide as determined by a licensed applicator. The restoration ecologist will be consulted and must approve any herbicide application in advance. Weed debris shall be removed from the revegetation areas as accumulated and shall be disposed of as permitted by law.

Weeds shall be manually removed or treated with herbicide before they can attain a height of three inches at intervals of not more than 30 days for the first two years of the revegetation project. All portions of the plant will be removed, including the roots when manual removal is appropriate. The project biologist (with the guidance of the restoration ecologist) shall direct the restoration contractor regarding the selection of target weed species, their location, and the timing of weed control operations to ensure that native plants are avoided to the maximum extent possible. Pulled

weeds will be placed on a tarp to prevent the seeds from touching the ground. Once collected, weeds will be disposed of at an approved off-site facility.

A cleared ground space 18 inches from the base of the plant will be maintained around each container plant to minimize competition from other plant species. Leaf and branch drop, and organic debris from native species, shall be left in place.

5.1.3 Irrigation System Maintenance

The restoration contractor will be responsible for the regular maintenance and repair of all aspects of the irrigation systems. Poorly functioning or non-functioning parts shall be replaced immediately to not endanger the establishment of the plantings.

General systems checks shall be conducted no less than weekly for the first month after installation to assure the systems are functioning correctly, and monthly thereafter, except during periods when the irrigation systems are not in operation as recommended by the project biologist. The irrigation systems shall be removed at the conclusion of the revegetation program such that vegetation and soils are not damaged or substantially disturbed.

5.1.4 Erosion Control

The loss of soil or sediment to erosion should be minimized with the use of silt fencing, fiber rolls, jute matting, and/or straw bales where necessary (e.g., high velocity flow areas, steep slopes). Any erosion control measures utilized will be inspected on a regular basis and replaced when no longer functioning as specified.

5.1.5 Schedule

Revegetation maintenance will begin after the completion of the implementation process and continue for five years following the completion of plant installation. The start of the five-year maintenance period begins when the implementation of revegetation has been certified as complete by the restoration ecologist. Revegetation maintenance will be performed monthly during first two years of the five-year maintenance program, bimonthly (every two months) during year three, and quarterly thereafter (Table 7, Maintenance Schedule). The five-year period may be extended if the project has not met the five-year success standards at the end of five years.

Table 7. Maintenance Schedule[1]

Year 1	Year 2	Year 3	Year 4	Year 5
Monthly	Monthly	Every 2 Months	Quarterly	Quarterly

Notes:

[1] This is a suggested maintenance schedule and may be adjusted, if needed, with approval from the restoration ecologist.

5.2 Monitoring

Monitoring for purposes of documenting compliance with success criteria will be conducted by the project biologist. Continuity within the personnel and methodology of monitoring will be maintained as much as possible to ensure comparable assessments throughout the duration of the monitoring program. Monitoring will commence with the completion of the installation of plantings and one full season of growth, continuing through the five-year post-installation period. The monitoring program will emphasize qualitative and quantitative assessments of the status of the revegetation project. Records of problems such as insect damage, herbivory, weed infestation, and soil loss, will be identified by the project biologist. Monitoring will assess the attainment of annual and final success criteria and identify the need to implement adaptive measures to assure ultimate success, or the need to implement contingency measures in the event of failure.

5.2.1 Qualitative Monitoring

Qualitative assessments will be conducted to assess the overall condition of the revegetation areas and determine the effectiveness of the weed eradication program and general development of the target habitat. Qualitative assessments will be completed during each monitoring visit and will consist of a site walkover and general habitat characterization. General observations, such as fitness and health of the target plant species, pest problems, herbivory, weed establishment, and drought stress, will be noted during each site visit. Additionally, vegetation growth patterns will also be noted during these visits if applicable. The project biologist will also note observations of wildlife use and native plant recruitment for the purpose of discussion in the annual reports. If necessary, the project biologist will determine remedial measures necessary to facilitate compliance with success criteria. The project biologist will submit these findings to the restoration ecologist and restoration contractor in a qualitative monitoring report after each visit to address and correct problems as soon as they are discovered. See Section 5.2.6.1 for additional qualitative monitoring reporting requirements. Remedial measures undertaken will be noted in the annual monitoring report.

5.2.2 Quantitative Monitoring

Quantitative analysis will be conducted during the spring of every year, ideally between April and June to coincide with the blooming periods of the greatest number of plants. Measurements that will determine the total plant cover, plant density, and species composition within the revegetation areas will be conducted utilizing point-intercept transects placed randomly throughout each of the vegetation communities being restored. The results of these measurements will be evaluated against the success criteria presented in Section 5.3.

As a guide, enough transects should be utilized to adequately sample the area in question. Typically, a minimum of three 50-meter transects are sampled per acre, with sampling occurring at 0.5-meter intervals. Transects may be altered by number or length if the initial results show that

an adjustment will better describe actual conditions found in the field. This determination will be made by the project biologist, and changes in methods will be documented in the annual monitoring and as-built reports. The specific location (Global Positioning System [GPS] coordinates) of transects shall be documented at the time they are established.

During the point-intercept transect surveys, any plant contacting a one meter long, 0.25-inch thick metal rod at 0.5-meter intervals will be recorded on a datasheet. All live vegetation that touches the rod, or the upward projection of the rod into a canopy of overhanging vegetation, will be counted as a hit. If no vegetation is recorded, the point will be counted as bare ground or plant litter as appropriate. This information will later be analyzed to calculate vegetative cover by species for each target habitat. Species observed during the surveys that do not fall along the transect line will be recorded and included on the list of species observed at each transect location.

5.2.3 Photo-documentation

Photographs will be taken to document the progress of the revegetation areas throughout the monitoring period. Photo-documentation locations will be established prior to the start of the revegetation and georeferenced once established. This information will be included in the first annual report for future reference. Photographs will be taken from exact angles and locations (recorded by GPS) so that direct comparisons can be made through time. Photograph locations will be collected with the transect locations (i.e., two photographs per transect). Formal photo-documentation will occur before the revegetation activities, immediately following the revegetation activities, and at minimum intervals of every quarter for the remainder of the monitoring period. Transect photo-documentation will occur annually at the time of spring quantitative monitoring.

5.2.4 Schedule

A revegetation monitoring program spanning five years will be conducted by the project biologist in conjunction with the revegetation maintenance program. The monitoring program is intended to document the progress of the revegetation efforts and document compliance with the success criteria. The monitoring program is designed to gather information on the success of plant establishment and habitat development, and to recommend any remedial actions if the sites are not progressing quickly enough to meet the final success criteria. The revegetation areas will be visited monthly during the first year, every other month (bimonthly) during the second year, and quarterly throughout the remainder of the monitoring program (Table 8, Monitoring Schedule). Quantitative annual monitoring visits will be conducted between April and June of each year following the first full growing season.

Table 8. Monitoring Schedule[1]

Monitoring Event	Year 1	Year 2	Year 3	Year 4	Year 5
Qualitative Monitoring	Monthly	Monthly	Every 2 months	Quarterly	Quarterly
Quantitative Monitoring	Annually April-June	Annually April-June	Annually April-June	Annually April-June	Annually April-June

Notes:

[1] This is a suggested monitoring schedule and may be adjusted with approval by the restoration ecologist.

5.2.5 Modification of Monitoring Period

The monitoring period is specified to be five years after completion and approval of implementation. Only areas failing to meet the final success criteria will require additional work and remedial measures. This process will continue until Year 5 criterion have been met, or until the Cities work together to determine that other actions are appropriate.

5.2.6 Reporting

5.2.6.1 Qualitative Monitoring Reports

A qualitative monitoring report will be submitted to the Cities, restoration ecologist, and restoration contractor after each monitoring visit. Each qualitative monitoring report will contain the following information, at a minimum:

1. A summary status of the site conditions, including, but not limited to, fitness and health of the target plant species, pest problems, herbivory, weed establishment, drought stress, vegetation growth patterns, wildlife use, and native plant recruitment.

2. A description of any issues that need to be addressed by the maintenance contractor and suggestions for remedial measures necessary to facilitate compliance with success criteria.

5.2.6.2 Annual Reports

An annual report will be submitted to the Cities no later than December 1 each year, beginning after the first full growing season. The final annual report (year five) will summarize the results of the entire revegetation effort, thereby providing a basis for comprehensive evaluation of the revegetation effort.

Each annual report will contain the following information, at a minimum:

1. A list of names, titles, and companies of all people who prepared the annual report and participated in monitoring activities for that year.
2. A brief description of the survey methods utilized and results of the survey.
3. An analysis of survey results with a discussion of all quantitative monitoring data (survival, percent cover), prepared in graph or table format in relation to the success criteria (success, failure, and remedial action).

4. A brief discussion of qualitative monitoring data, including wildlife utilization of the revegetation areas, specifically for QCB, coastal California gnatcatcher, and coastal cactus wren.
5. Color photos of all monitoring photographs.
6. Details of necessary remedial actions required, including reasons for requiring the remedial actions, and anticipated outcomes of the actions.
7. Maps identifying monitoring areas, transect locations, and areas requiring remedial measures.
8. Copies of completed field data forms included as an appendix of each annual report.

5.3 Success Criteria

Revegetation will be considered complete when the success criteria shown in Table 9, Success Criteria, have been met. If these standards have not been met, the maintenance period may be extended at the determination of the Cities. If success criteria are not met following any annual milestones, remediation measures described in Section 5.4, Remediation Measures, will be implemented. The first two years will include native cover percentage goals and the goals of container plant survivorship percentage, as well as minimal invasive cover. Years 3 through 5 success will be based on native cover and evidence of natural recruitment, and lack of invasive species only.

Table 9. Success Criteria

Milestone	Native Cover[1] (shrubs and herbs)	Invasive Cover[2] (not to exceed)	Other
Year 1	20%	Less than 10% Invasive Species	90% survival of container plants Erosion control measures in place and functional
Year 2	30%	Less than 5% Invasive Species	75% survival of container plants unless functions have been replaced by naturally recruited individuals Erosion control measures in place and functional
Year 3	50%	0% Invasive Species	Evidence of natural recruitment from multiple species including those required for QCB and CAGN Erosion control measures in place and functional
Year 4	65%	0% Invasive Species	Evidence of natural recruitment from multiple species including those required for QCB and CAGN Erosion control measures in place and functional
Year 5	75–100%	0% Invasive Species	Evidence of natural recruitment from multiple species including those required for QCB and CAGN Erosion control measures in place and functional

Notes:

[1] As a relative percentage of the revegetation areas.

[2] Absolute value.

5.4 Remediation Measures

In the event that plantings should fail to meet the specified success criteria, compliance will be attained by the execution of either or both of the following remedial procedures by the restoration contractor on an as-needed basis as directed by the project biologist: 1) replacing unsuccessful plantings with appropriate-sized stock or seed mixes to meet stated cover or survival requirements, and/or 2) performing maintenance procedures to ensure the site conditions are appropriate (e.g., non-native species removal). While remedial measures are partially defined herein, they are also left to the discretion of the restoration ecologist and project biologist.

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Section 6 Completion of Mitigation Notification

When the success criteria for the on- and off-site revegetation areas have been met, or other remedial measures agreed upon by the restoration ecologist and the Cities have been completed and approved, the Notice of Completion will be issued by the City of San Diego to the restoration contractor to signify the completion of the restoration contractor's responsibility for the revegetation project.

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Section 7 References

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City of San Diego. 2018. Storm Water Standards. October. Accessed March 2022. https://www.sandiego.gov/sites/default/files/storm_water_standards_manual_oct_2018.pdf.

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USDA. 2022. Web Soil Survey of San Diego County Area, California. Accessed March 2022. http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=CA.

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Appendix A. Figures

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Source: ESRI 2019.

Harris & Associates

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0 5 10 Miles

Figure 1

Regional Location

Otay Pipeline

Date: 1/15/2021 – Last saved by: Randy Deodati – Path: C:\Users\Randy.Deodati\Desktop\Projects_Clone\Otay Pipeline Map Docs\STRT Figure2_ProjectSite.mxd

Source: USGS 2019;, SanGIS Imagery 2017.

Harris & Associates

N

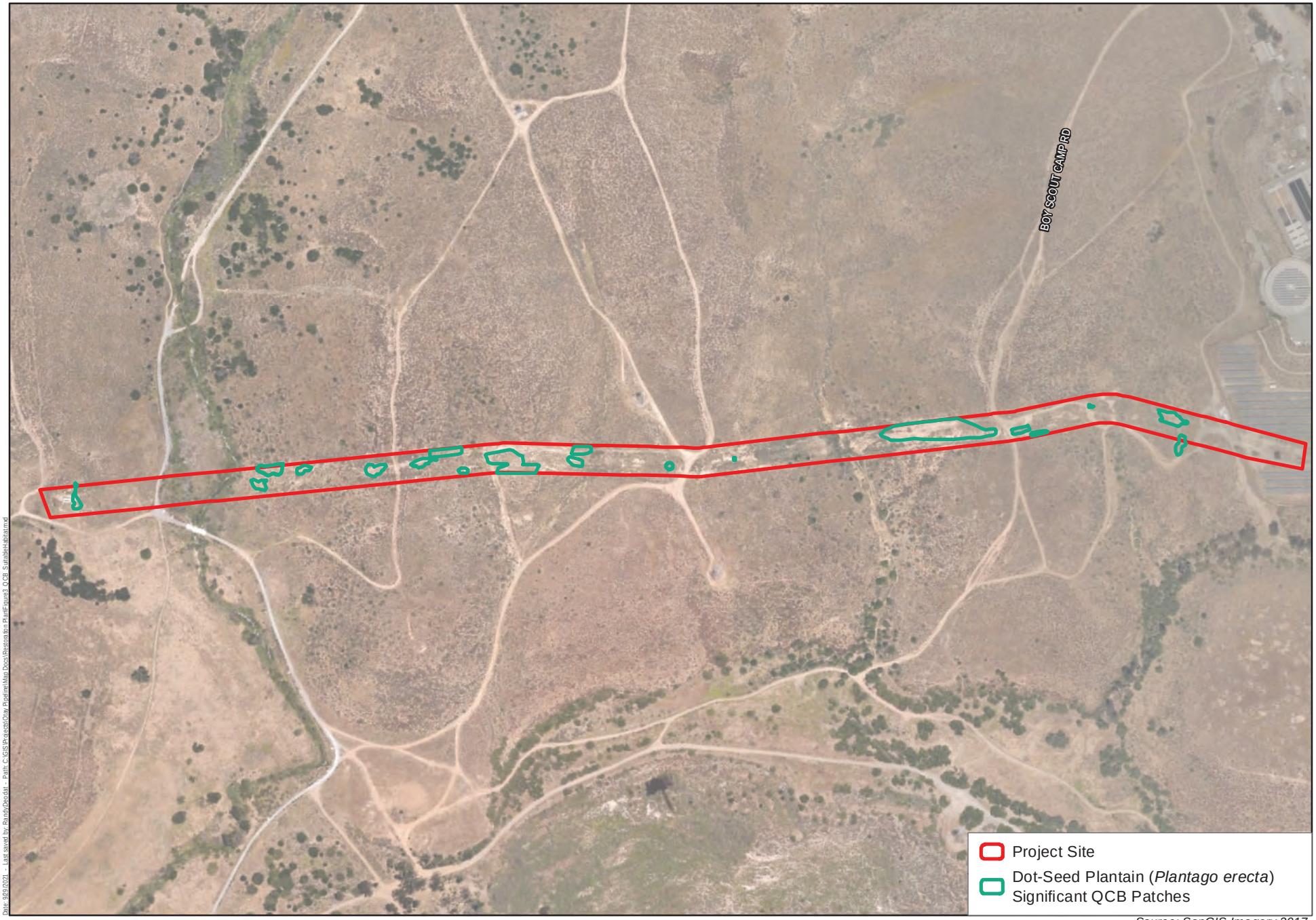
0 1,000 2,000

Feet

Figure 2

Project Site

Otay Pipeline



Date: 9/9/2021 - Last saved by: RandyDerdat - Path: C:\GIS\Projects\Otay Pipeline\Map Docs\Restoration Plan\Figure3 QCB Suitable Habitat.mxd

Source: SanGIS Imagery 2017.

Harris & Associates

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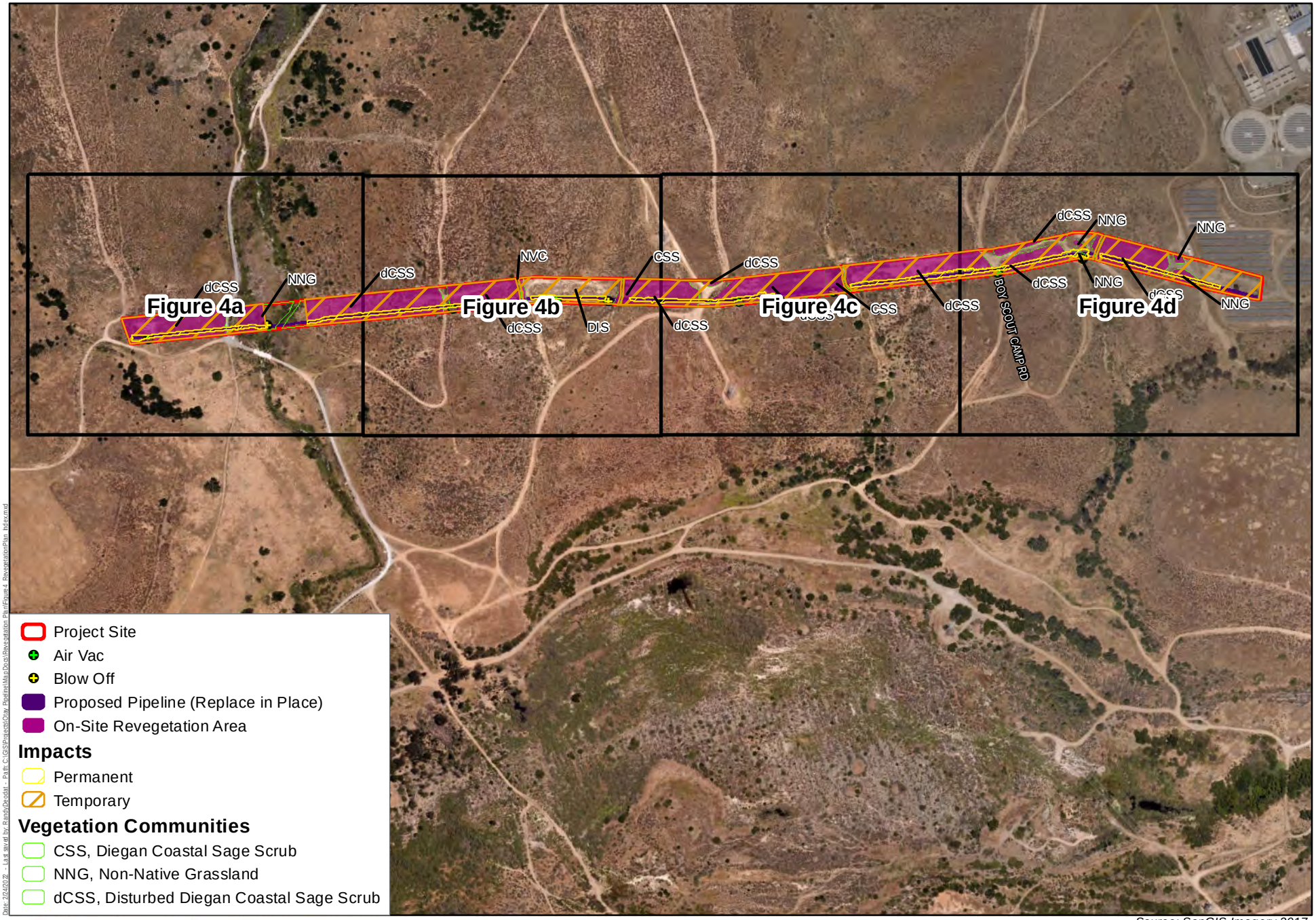
0 250 500

Feet

Figure 3

Quino Checkerspot Butterfly Suitable Habitat

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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0 250 500

Feet

Figure 4

On-Site Revegetation Area - Index

Otay Pipeline

Source: SanGIS Imagery 2017.

Harris & Associates

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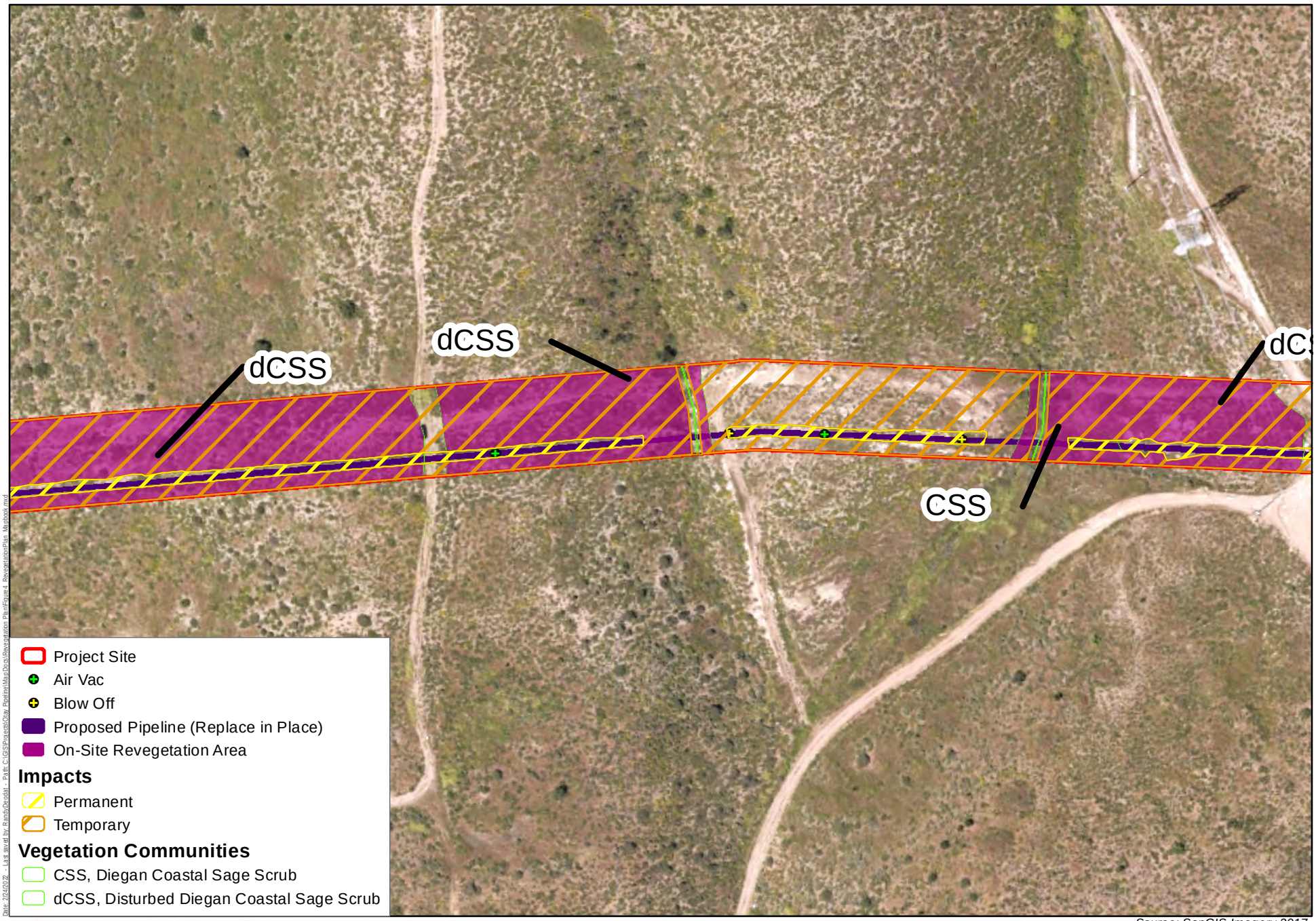
0 50 100

Feet

Figure 4a

On-Site Revegetation Area

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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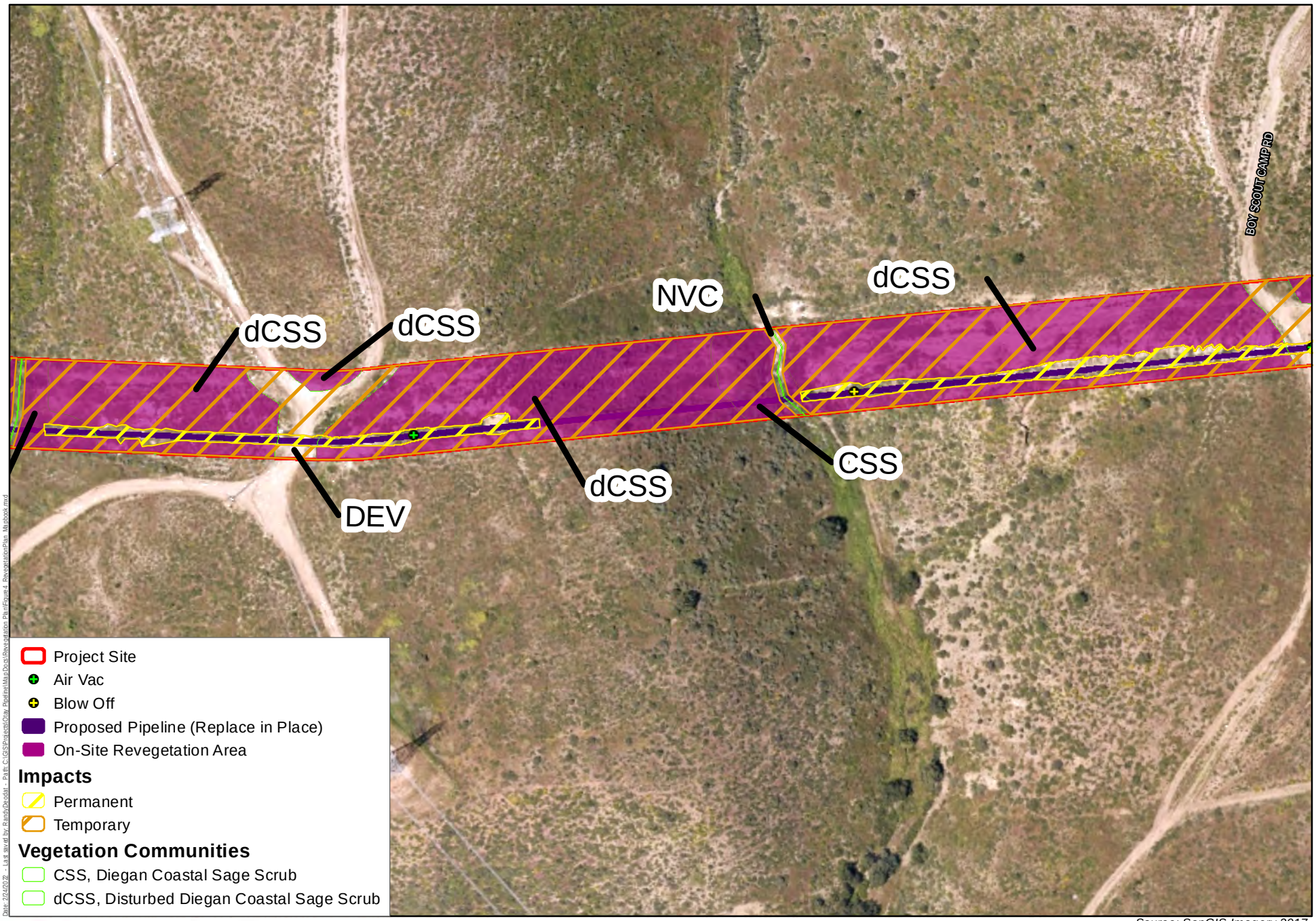
0 50 100

Feet

Figure 4b

On-Site Revegetation Area

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

N

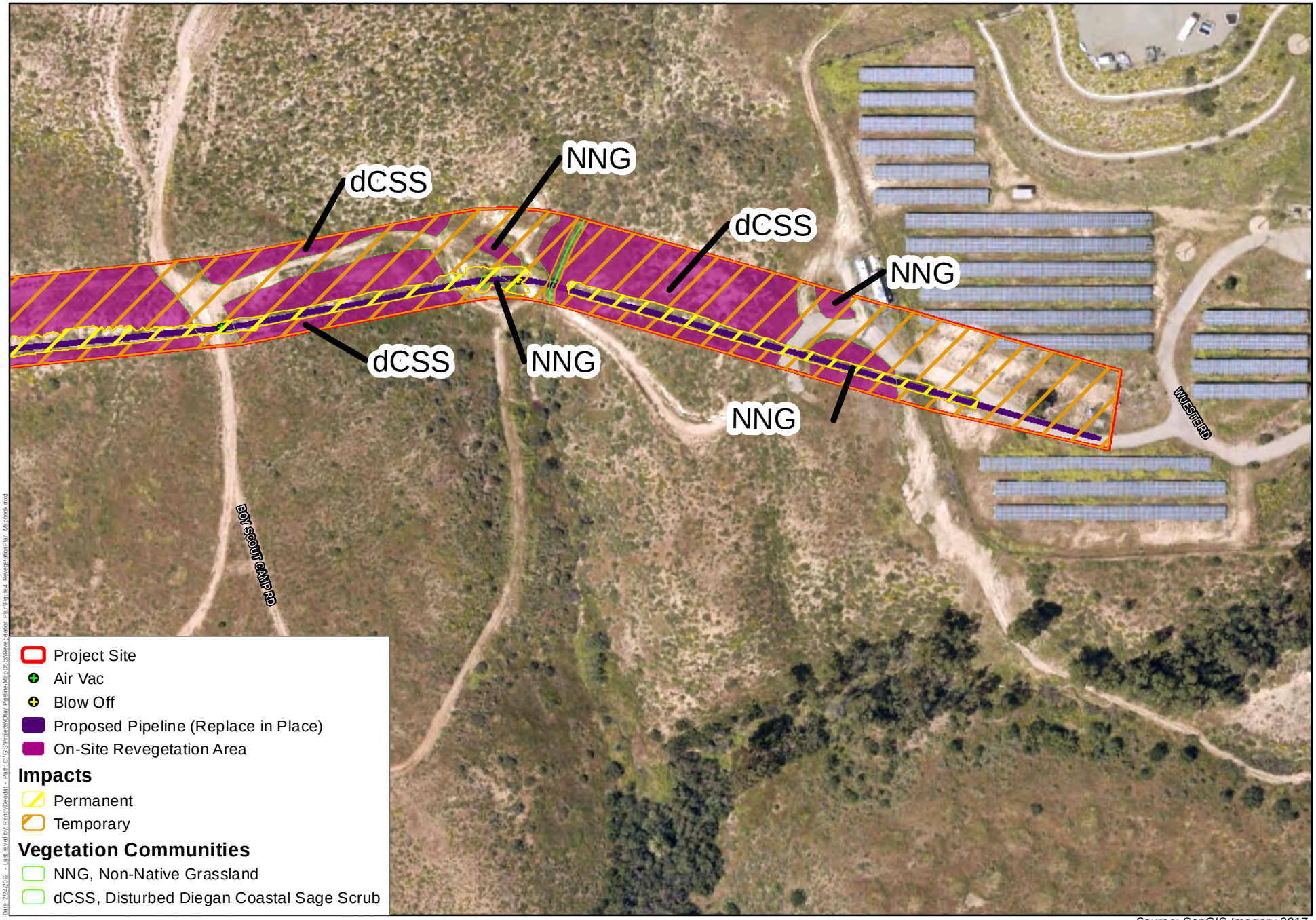
0 50 100

Feet

Figure 4c

On-Site Revegetation Area

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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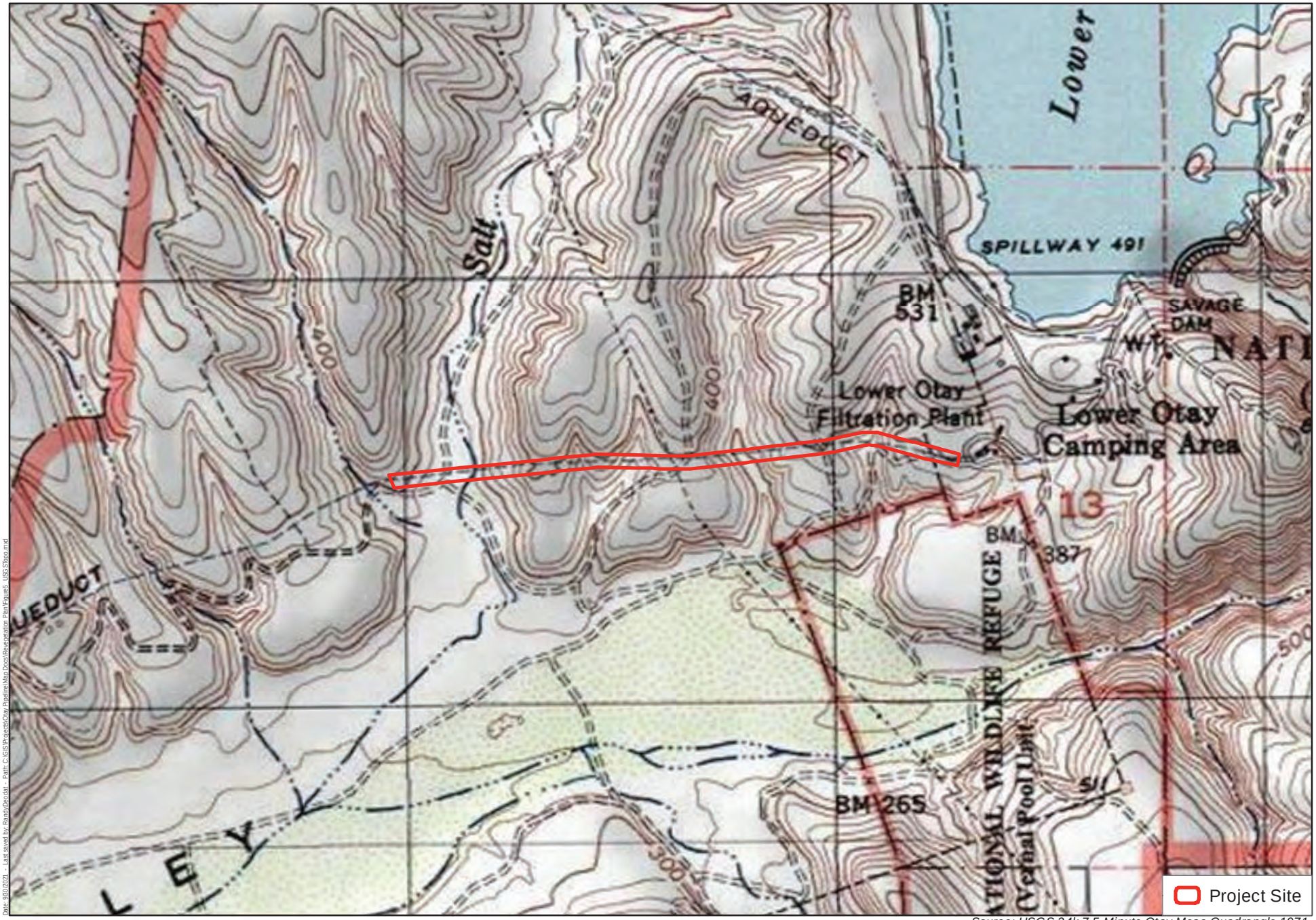
0 50 100

Feet

Figure 4d

On-Site Revegetation Area

Otay Pipeline



Source: USGS 24k 7.5-Minute Otay Mesa Quadrangle 1971.

Harris & Associates

N

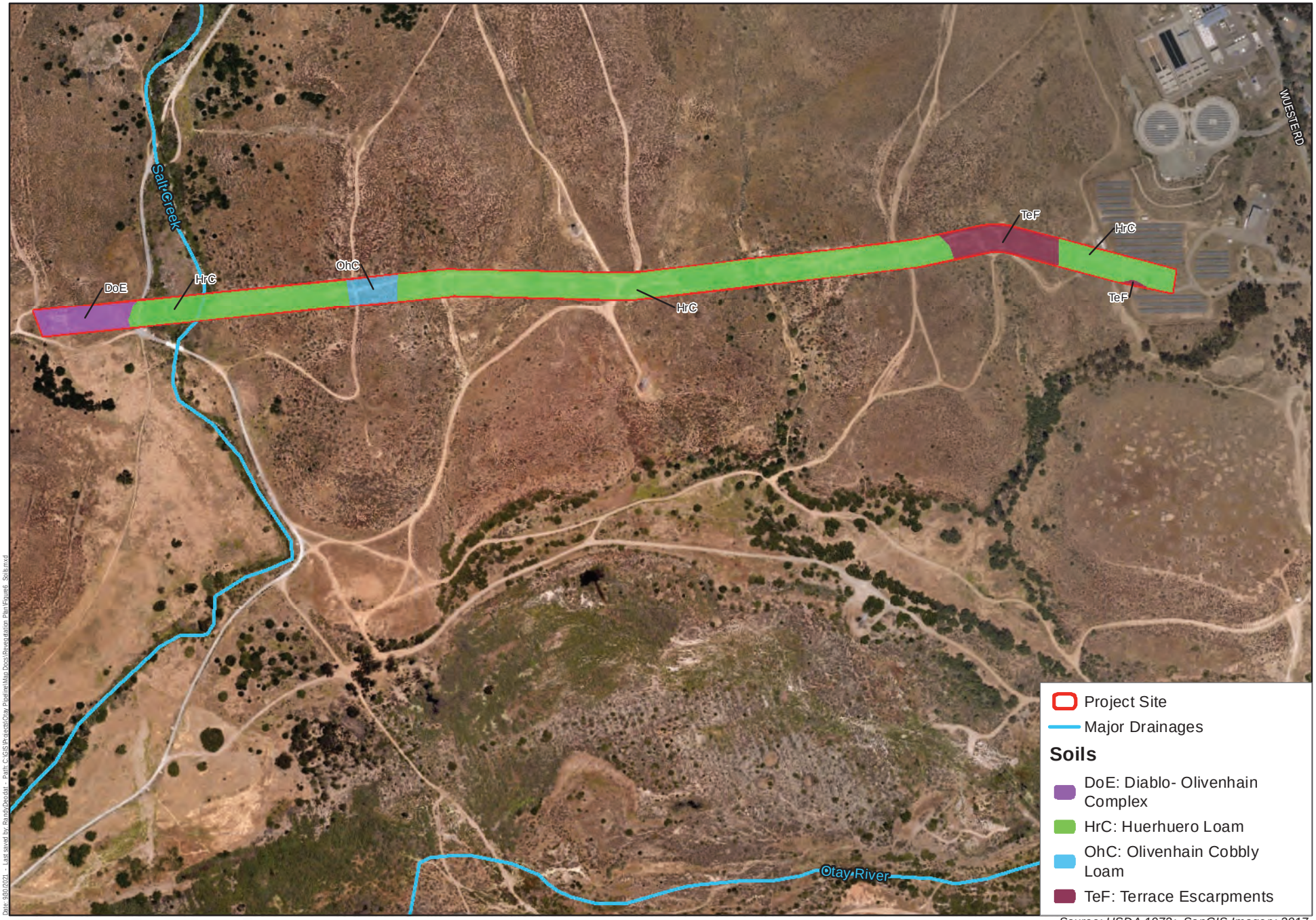
0 500 1,000

Feet

Figure 5

USGS Topographic Map

Otay Pipeline



Source: USDA 1973;, SanGIS Imagery 2017.

Harris & Associates

N

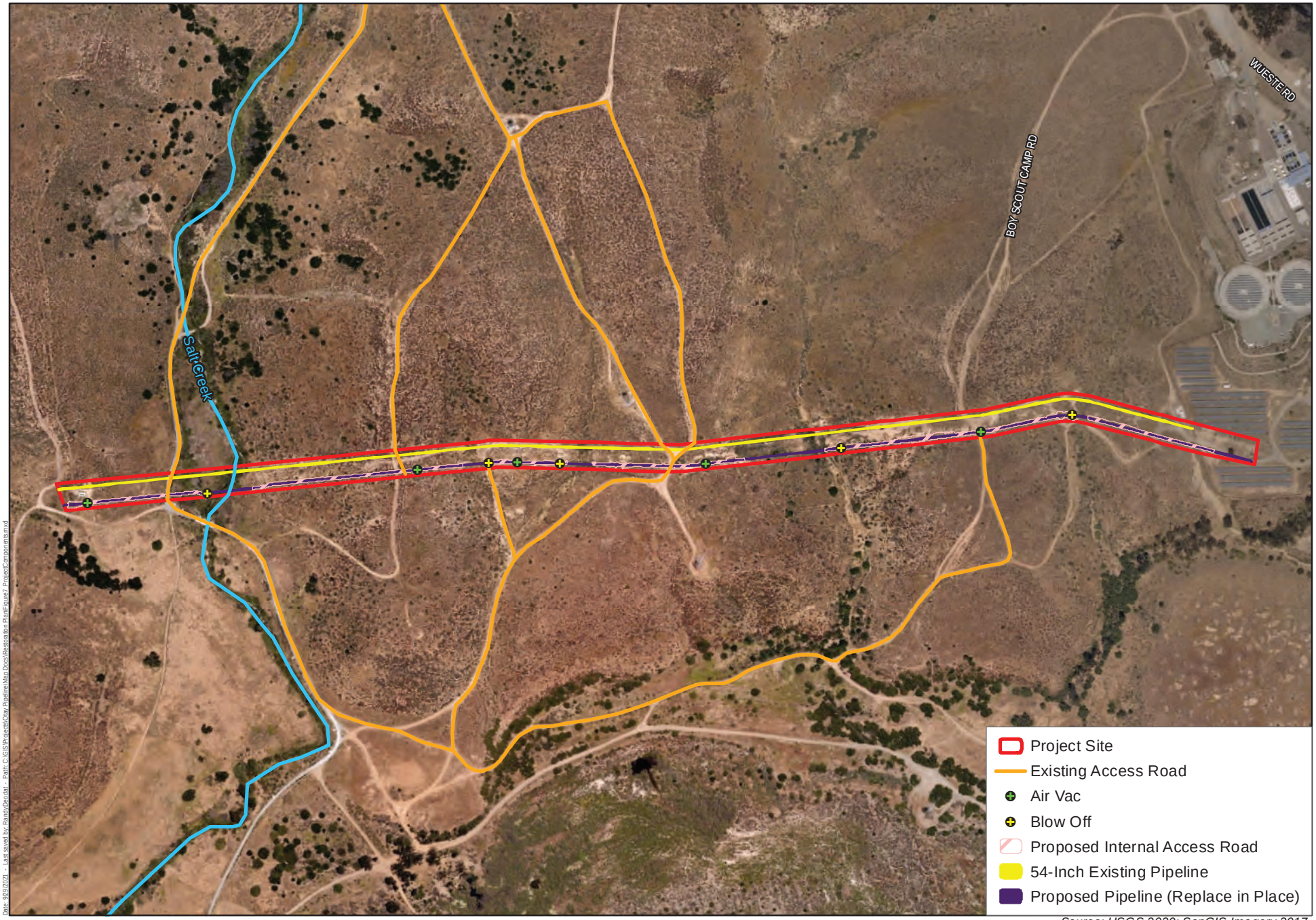
0 250 500

Feet

Figure 6

Soils

Otay Pipeline



Source: USGS 2020; SanGIS Imagery 2017.

Harris & Associates

N

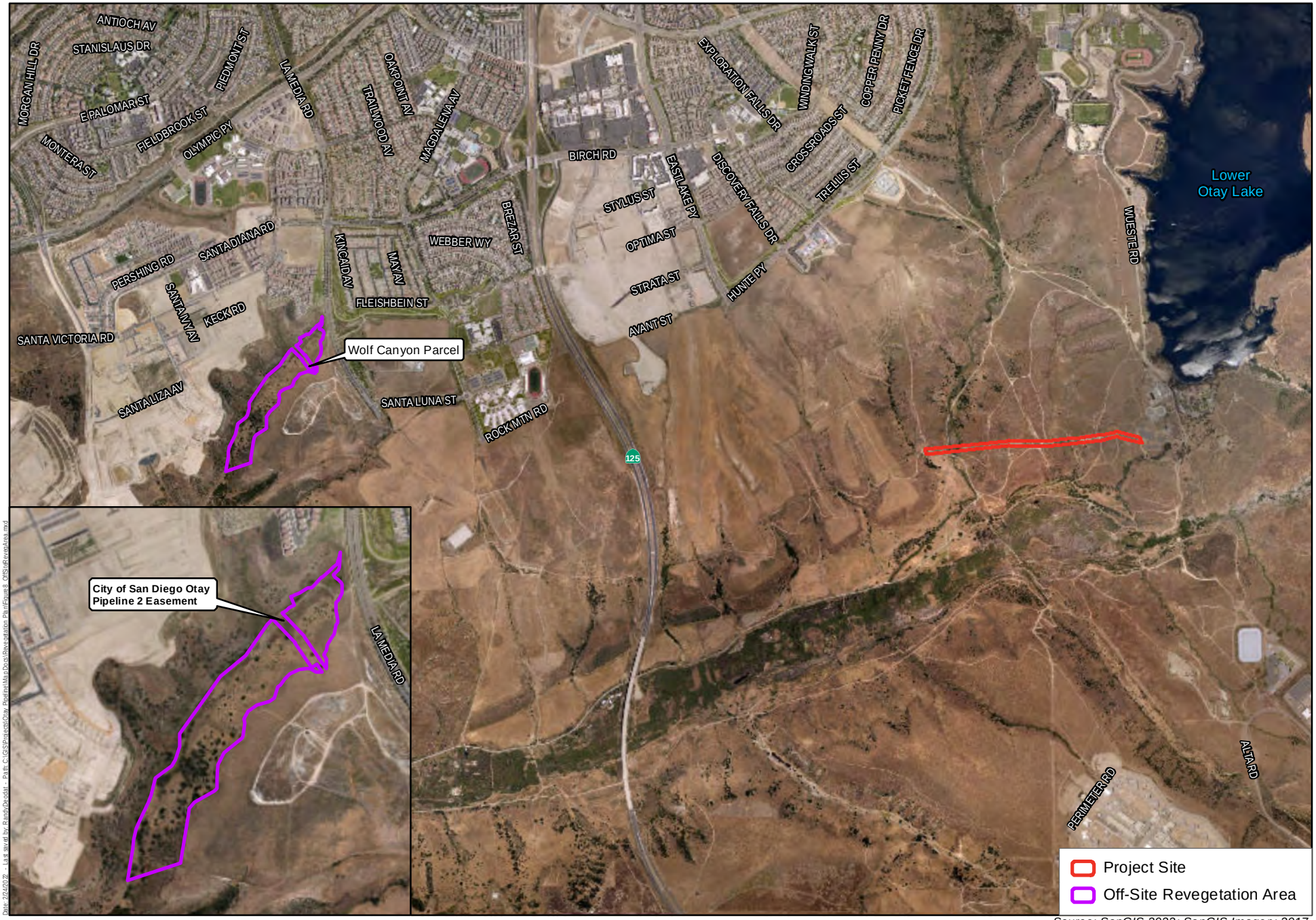
0 250 500

Feet

Figure 7

Project Components

Otay Pipeline Restoration and Revegetation Plan



Source: SanGIS 2022; SanGIS Imagery 2017.

Harris & Associates

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0 1,000 2,000

Feet

Figure 8

Off-Site Revegetation Area

Otay Pipeline

Appendix G. San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan

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DRAFT

San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan

Otay Pipeline 2 Segment A6 Replacement Project

March 2022

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Acronyms and Abbreviations

BRTR	Biological Resources Technical Report
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
ESA	Endangered Species Act
GPS	Global Positioning System
MSCP Subarea Plan	City of Chula Vista MSCP Subarea Plan
MSCP	Multiple Species Conservation Program
Otay Ranch RMP	Otay Ranch Resource Management Plan
PEP	Plant Establishment Period
plan	Salvage and Translocation Plan
POM	Preserve Owner/Manager
Preserve	Otay Ranch Preserve
project	Otay Pipeline 2 Segment A6 Replacement Project

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Section 1 Introduction

This document serves as the San Diego Barrel Cactus and Coastal Cholla Salvage and Translocation Plan (plan) for the Otay Pipeline 2 Segment A6 Replacement Project (project) in the City of Chula Vista, California. This plan describes the methods for implementing the salvage and translocation of San Diego barrel cactus (*Ferocactus viridescens*) individuals and coastal cholla (*Cylindropuntia prolifera*) patches as well as the three-year maintenance, monitoring, and reporting program associated with salvage and translocation activities. At the request of the City of Chula Vista, and as a requirement of the Initial Study/Mitigated Negative Declaration, this plan has been developed in accordance with the City of Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan (MSCP Subarea Plan) and Otay Ranch Resource Management Plan (RMP) (City of Chula Vista 2003). The purpose of the maintenance program is to ensure the successful establishment of the translocated San Diego barrel cactus individuals and coastal cholla patches. The purpose of the monitoring program is to make observations and collect data on survivorship and flowering of the translocated individuals and patches so the progress of the mitigation effort can be assessed. The reporting program is designed to document the implementation of this Salvage and Translocation Plan and report on results of annual monitoring efforts.

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Section 2 Project Location

The project is in the City of Chula Vista, California (Appendix A, Figures; Figure 1, Regional Location). The project lies within a 100-foot corridor owned in fee by the City of San Diego (herein referred to as the "project site") encompassing approximately 10 acres (Assessor's Parcel Number 644-080-24). The project site is within the Otay Ranch Preserve (Preserve) in the Chula Vista MSCP Subarea Plan (Figure 2, Project Site). The project site begins at the Otay Water Treatment Plant on the southwestern side of Lower Otay Lake, extends 4,000 feet west through Salt Creek to the Salt Creek and Village 10 parcel boundary, and ends where it connects to an existing pipeline that has already been replaced (Figure 2).

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Section 3 Project Description

The project includes the replacement in place of approximately 4,000 linear feet of the Otay Pipeline 2 segment A6 40-inch steel pipe with an increased diameter 54-inch steel pipe in the same underground location, except under Salt Creek where the pipe will be replaced directly adjacent to the existing pipe. To avoid impacts to Salt Creek, the jack-and-bore method of horizontal drilling would be used during pipeline replacement. The existing pipeline spans over four non-vegetated channels in the eastern and central portions of the project site and would be replaced by the new pipe in the same locations, avoiding impacts to the four non-vegetated channels. Outside the limits of Salt Creek and the four non-vegetated channels, the pipeline would be replaced underground in the existing pipeline trench using open-trench construction methods. After the pipeline within each trench section is replaced, the trench would be backfilled with the same soils removed from the trench before the next section trench is opened. Upon completion of the pipeline replacement, approximately 10-foot wide internal access roads would be graded to connect the existing external access roads to the five-air vacuum and five blow-off valves for long-term maintenance access.

The A6 segment is currently not in use but is proposed for replacement because it is in poor condition, with several portions of the current pipe exposed and corroded/oxidized. The project would replace the current pipe with a larger pipe to provide a redundant water supply line to handle current and anticipated future water flows from the Otay Water Treatment Plant to users in the City of San Diego.

The existing pipeline infrastructure on the project site is composed of two separate pipelines. Otay Pipeline 3 is an existing adjacent pipeline within the same 100-foot fee ownership corridor that is currently in service. Otay Pipeline 2 provides redundancy for and Otay Pipeline 3. The pipeline is operated and maintained by the City of San Diego.

Project activities will result in direct impacts to three San Diego barrel cactus individuals in the permanent impact area, and has the potential to impact up to 39 additional San Diego barrel cactus individuals in the temporary impact area of the project site (Figure 3, San Diego Barrel Cactus and Coastal Cholla Impacts). There is the potential to impact patches of coastal cholla that occur in the temporary impact area on the project site (Figure 3). These impacts to San Diego barrel cactus and coastal cholla will be mitigated through avoidance, then if avoidance is not possible, through salvage and translocation, as detailed in this plan. The impacted San Diego barrel cactus individuals and coastal cholla patches will be salvaged by the restoration ecologist prior to construction and translocated per the requirements in Section 4.3, Implementation, on-site within suitable Diegan coastal sage scrub revegetation areas (described in Biological Resources Technical Report (BRTR) Appendix F, Revegetation Plan) (Figure 4, San Diego Barrel Cactus and Coastal Cholla Translocation Areas). The San Diego barrel cactus individuals and coastal cholla patches may be temporarily stored per the requirements in Section 4.3, Implementation, by a local qualified native plant nursery if translocation conditions are not suitable at the time of salvage. Additionally, there is the potential to plant nursery-propagated San Diego barrel cacti and coastal cholla container plants to ensure successful mitigation of the individuals impacted in the temporary impact areas.

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Section 4 Environmental Setting

The project site is approximately 10-acres contained within the 100-foot-wide, approximately 4,000-foot-long corridor owned in fee by the City of San Diego.

Topography on the project site ranges in elevation from 275 to 414 feet above mean sea level (Figure 5, USGS Topographic Map). The project site topography is varied with hills and valleys along the length of the pipeline alignment and Salt Creek and the four non-vegetated channels occurring at the bottom of the valleys.

The soils on the project site are characterized as well-drained and include Diablo-Olivenhain complex (9 to 30 percent slopes), Huerhuero loam (two to nine percent slopes), Olivenhain cobbly loam (two to nine percent slopes), and terrace escarpments (no slope percentage information available) (Figure 6, Soils) (USDA 2021). Huerhuero loam is the most widespread in the area and occupies most of the project site (Figure 6). The western portion of the project site east of Salt Creek is mapped as Diablo-Olivenhain complex, the eastern portion of the project site is mapped with terrace escarpments, and the central portion of the project site is mapped as Olivenhain cobbly loam (Figure 6).

A total of six vegetation communities and land cover types occur on the project site and include Diegan coastal sage scrub (including disturbed), non-native grassland, coastal and valley freshwater marsh, non-vegetated channel, disturbed habitat, and urban/developed land. The dominant vegetation communities and land cover types include Diegan coastal sage scrub (including disturbed), disturbed habitat, and urban/developed land occurring throughout the project site. The vegetation communities and land cover types within the project site are shown on Figure 7 and 7a through 7d, Vegetation Communities.

4.1 Translocation Goals and Design

The purpose of this plan is to ensure that project impacts are fully mitigated through the translocation of San Diego barrel cactus individuals and coastal cholla patches into the suitable Diegan coastal sage scrub revegetation areas on the project site. The translocation program is designed to salvage the San Diego barrel cacti and coastal cholla from the permanent and temporary impact areas.

Implementation of the project will require the salvage of three San Diego barrel cacti from the permanent impact area and potential salvaging of up to 39 additional cacti from the temporary impact area (Figure 3). In the event coastal cholla patches cannot be avoided by construction activity, these patches will be salvaged from the temporary impact areas (Figure 3).

4.1.1 Conservation Status

4.1.1.1 San Diego Barrel Cactus

Due to its limited distribution, the San Diego barrel cactus is a sensitive species throughout its range, from northwest Baja California, Mexico, through the southwest of California. San Diego barrel cactus is a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) list 2B.1 and Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. San Diego barrel cactus is also a narrow endemic species under the Chula Vista MSCP Subarea Plan. Species covered by the Cities of Chula Vista and San Diego MSCPs are subject to management actions described in the MSCPs to ensure that they are adequately protected. Species in CRPR List 2 are considered rare, threatened, or endangered in California, but more common elsewhere, and are eligible for state listing as seriously threatened in California (CNPS 2021). Further, List 2 species meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code and are eligible for state listing it is mandatory that they be fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CEQA) (CNPS 2021).

San Diego barrel cactus is on the California Department of Fish and Wildlife's (CDFW) Natural Diversity Data Base Special Vascular Plants, Bryophytes and Lichens List, which meets the criteria for state listing under Section 15380 of CEQA (CDFW 2021).

4.1.1.2 Coastal Cholla

Coastal cholla is not listed as a sensitive plant species, however, they provide nesting habitat for the coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), a U.S. Fish and Wildlife Service bird of conservation concern, CDFW species of special concern, Chula Vista MSCP Subarea Plan- and City of San Diego MSCP Subarea Plan-covered species. Coastal cactus wrens nest almost exclusively in coastal cholla and prickly pear (*Opuntia littoralis* and *Opuntia oricola*) patches in coastal sage scrub vegetation. Coastal cholla is the typical choice for coastal cactus wren in southern San Diego County, where large prickly pears are scarce.

4.1.2 Biology

4.1.2.1 San Diego Barrel Cactus

San Diego barrel cactus is a stemmed perennial succulent in the cactus family (*Cactaceae*) that generally grows wider than tall, usually up to an average of one foot. The plants have 13 to 20 ribs stippled with groups of rigid spines. The three to four stout central spines of each group are brown or reddish, becoming gray or yellow, flattened, slightly curved, and from one to two inches long. The radial spines, 10 to 20 in number, are shorter, acicular, and unequal in length. The flowers are yellow green to reddish, each petal with a faint reddish stripe. Plants generally flower from May

to June. The native habitat for San Diego barrel cactus is on hillsides in openings in coastal sage scrub and within native grasslands. They occur around rock outcrops or surrounded by cobbles on warm dry slopes with a southerly exposure.

Native plant species associated with San Diego barrel cactus on the project site include broom baccharis (*Baccharis sarothroides*), purple needlegrass (*Nassella pulchra*), California sagebrush (*Artemisia californica*), bush sunflower (*Encelia californica*), and San Diego County viguiera (*Bahiopsis laciniata*). These species are typical associates of barrel cactus in coastal sage scrub and grassland communities.

Approximately 43 San Diego barrel cacti were mapped throughout the project site, primarily within the Diegan coastal sage scrub (including disturbed) in the central portion of the project site (Figure 3).

4.1.2.2 Coastal Cholla

Coastal cholla is a stemmed perennial succulent in the cactus family (*Cactaceae*) that can grow to be up to 10 feet in height and approximately five feet wide. Coastal cholla generally bloom from April to June with rounded purple or red blossoms that are approximately one inch in diameter. There are small leaves which appear on new growth but last only a few months. The end joints on the plant's stems dislodge easily and their spines attach to clothing or fur on passersby, which is the primary means of reproduction for the plant. The native habitat for coastal cholla is on slopes in openings in grassland or coastal sage scrub with sandy soils.

Coastal cholla occurs throughout the project site, primarily in the western portion of the site where coastal cactus wren were observed within these patches of coastal cholla (Figure 3).

4.1.3 Translocation Site Selection

The translocation sites will be chosen by the restoration ecologist based on (1) proximity to the donor location, (2) designation as Diegan coastal sage scrub revegetation areas, (3) adjacency to existing San Diego barrel cactus and coastal cholla populations, and (4) location in areas that will not impact existing sensitive biological or native communities.

The translocation site must have specific environmental conditions like the donor site to ensure establishment and persistence of the introduced San Diego barrel cactus individuals and coastal cholla patches. A total of approximately 6.48 acres of available habitat in the Diegan coastal sage scrub and native grassland revegetation areas will be appropriate sites into which San Diego barrel cacti and coastal cholla will be translocated (Figure 4). These areas will be subject to site preparation methods (discussed in Section 4, Maintenance and Monitoring).

Four general factors are used to evaluate potential translocation sites: physical, biological, logistical, and historical (Fiedler and Laven 1996). These general factors are explained in the list

below. Below each general heading, the specific physical, biological, logistical, and historical conditions for the San Diego barrel cactus and coastal cholla at the project site are explained in bold print. This section provides justification for the translocation site selection as it relates to the four factors:

1. **Physical.** These factors include the soil and landscape characteristics of the site.
   San Diego barrel cacti and coastal cholla are typically found in openings on rocky or sandy soils. The translocation sites have the appropriate soils and openings for the cacti and cholla to establish.
2. **Biological.** These factors include the presence of appropriate habitat and susceptibility to weed invasion.
   The Diegan coastal sage scrub and native grassland revegetation areas on the project site will have suitable habitat and will be revegetated with openings planted with common plant associates of San Diego barrel cactus and coastal cholla, and are located on slopes adjacent to natural San Diego barrel cactus and coastal cholla populations. The translocation areas (within the revegetation areas) will be controlled as part of the maintenance activities associated with the plans.
3. **Logistical.** The accessibility of the site for maintenance and monitoring, and site protection from unauthorized use are logistical factors. The site should be easily accessible but protected from off-road vehicle use or heavy bicycle or foot traffic.
   The translocation sites are accessible by existing dirt maintenance access roads and will be made more accessible through the construction of the on-site maintenance access roads constructed as part of the project. The translocation sites are generally inaccessible by bicycle and foot traffic but has the potential to be accessed by unauthorized off-road vehicles within the Preserve. Fencing and signage will be installed to prevent unauthorized off-road vehicle or other traffic into the revegetation areas and translocation sites.
4. **Historical.** This factor considers using currently occupied versus potential habitat and incorporates knowledge of the species' evolutionary history.
   The San Diego barrel cacti and coastal cholla will be translocated near existing populations of San Diego barrel cacti and coastal cholla in suitable habitat within its historic range. The translocation sites will be less than one mile from the donor sites.

4.2 Roles and Responsibilities

The roles and responsibilities of the Property Owner, restoration ecologist, project biologist, and installation contractor are outlined in the following subsections.

4.2.1 Property Owner

The City of San Diego is the in-fee owner of the project site where the translocation sites will occur and will be financially responsible for the salvage and translocation project. The Owner is responsible for management of the project site and will be responsible for contracting with personnel qualified in implementation, maintenance, and monitoring of the revegetation sites and practices described in this plan. Upon contracting with a qualified person or organization to implement this plan, the Owner will designate a person or group as the restoration ecologist(s).

4.2.2 Restoration Ecologist

The restoration ecologist acceptable to the Owner shall be hired to implement this plan. The restoration ecologist can either be an individual or an organization as long as the person(s) actively managing the program meets the qualifications outlined below to the satisfaction of the Owner. If the restoration ecologist is an organization, a project manager shall be designated. The restoration ecologist will be responsible for the day-to-day implementation of this Plan and will carry out the requirements and objectives described herein.

The restoration ecologist(s) shall be responsible for the following:

- Preparation and submittal of this Salvage and Translocation Plan.
- Overseeing the identification of plants to be salvaged from within the limits of the permanent and temporary impact areas.
- Overseeing the coordination and monitoring of the translocation site preparation.
- Supervising plant salvage and installation.
- Supervising the maintenance of the translocation sites as defined herein.
- Overseeing required monitoring in accordance with the procedures established in this plan.

4.2.2.1 Qualifications of the Restoration Ecologist

The individual or project manager identified by the organization contracted to implement this plan must meet the following criteria:

- B.S. or B.A. degree in ecology, botany, biology, landscape maintenance, range management, or a related field.
- At least two years' experience in native or horticultural landscaping including restoration of native habitats in Southern California, preferably San Diego County.
- Demonstrated experience in similar projects or in projects including similar skills.

The restoration ecologist shall submit a letter of verification of experience to the City of San Diego Public Utilities Department. The City of San Diego shall provide a letter to the applicant confirming the qualifications of all City of San Diego-approved people involved in the project.

Prior to the start of work, any personnel changes associated with the implementation of this plan shall obtain approval from the City of San Diego Public Utilities Department.

4.2.3 Project Biologist

The project biologist shall be a qualified individual or team of qualified individuals with at least two years' experience monitoring construction activities. The project biologist shall perform the following tasks and be responsible for monitoring the translocation in accordance with the Salvage and Translocation Plan specifications:

- Consult with the contractor on any activities that may disturb the site.
- Monitor qualified subcontractors in execution of plan implementation and maintenance.
- Provide any required documentation during the installation, maintenance, and/or monitoring activities to the restoration ecologist.
- Immediately report any issues or proposed deviations from the Salvage and Translocation Plan to the restoration ecologist.
- Overseeing required reporting in accordance with the procedures established in this plan.

4.2.4 Installation Contractor

The installation contractor shall have a minimum of five years' experience in native plants and upland habitat revegetation and shall be a firm that specializes in installing and maintaining native plants and habitat. The installation contractor shall be responsible for implementing the tasks outlined in this plan under the supervision of the restoration ecologist and project biologist, including the following:

- Prepare areas for planting.
- Implement Salvage and Translocation Plan.
- Maintain translocation sites as outlined in this plan.

4.3 Implementation

This section details the methods of implementing the Salvage and Translocation Plan.

4.3.1 Site Preparation

The first step in translocation is to remove any non-native weeds and thatch while preserving the native species that may be present. As previously discussed, the San Diego barrel cactus and coastal cholla translocation sites will occur in the Diegan coastal sage scrub and native grassland revegetation areas on the project site. The same site preparation methods and requirements for both the habitat revegetation areas and San Diego barrel cactus and coastal cholla translocation sites will occur in accordance with Section 4.2 of the Revegetation Plan, included as Appendix F in the BRTR for the project.

4.3.2 Salvage and Translocation

4.3.2.1 San Diego Barrel Cactus

Prior to the start of construction, the project biologist will conduct surveys throughout the project impact areas using the construction plans to identify, mark, and flag the locations of each San Diego barrel cactus individual and/or population. Based on the construction plans, all cacti in the permanent impact area and those that cannot be avoided in the temporary impact area, as determined by the project biologist, will be flagged for the installation contractor to salvage. Prior to the start of construction, all cacti flagged for salvage will be salvaged from the ground by the installation contractor using hand tools to successfully remove the plant and the root ball. The barrel cacti will be bare-rooted, root trimmed, and the plants stored on-site or at an approved native plant nursery under shade cloth for one to three weeks, depending on weather conditions and season, to allow the roots to callus. This will prevent rot and encourage protective callus development on freshly exposed surfaces. Once the roots have callused, the barrel cactus will be transplanted by the installation contractor, and overseen by the restoration ecologist.

Care will be taken with each individual to ensure that the cacti are planted only to the depth of the roots. It is important that soil is not allowed to accumulate on the stem of the cacti. Soil accumulation often induces the stems to rot. Following barrel cactus translocation, each translocated barrel cactus will be numbered by the installation contractor. Permanent tags or survey flags will be placed near each cactus so they can be found easily each year by the project biologist. The translocated cactus will also be mapped by the project biologist using a Global Positioning System (GPS) with sub-meter accuracy so they can be relocated if markers are lost. The total number of individuals will be counted by the project biologist during planting. These data will be used as a baseline so survivorship during the three-year maintenance and monitoring period and in subsequent years may be assessed by the project biologist. See Section 4.4, Maintenance and Monitoring, for a detailed description of maintenance and monitoring requirements.

4.3.2.2 Coastal Cholla

Prior to the start of construction, the project biologist will conduct surveys throughout the project impact areas using the construction plans to identify, mark, and flag the locations of coastal cholla patches. Based on the construction plans, all cholla patches in the permanent impact area and those that cannot be avoided in the temporary impact area, as determined by the project biologist, will be flagged by the project biologist for the installation contractor to salvage. Prior to the start of construction, all cacti flagged for salvage by the project biologist will be salvaged by the installation contractor by collecting individual stem segments that are fully grown using pitch forks, tongs or other tools to avoid direct contact with the cholla spines. The installation contractor will take the cholla patches directly to the revegetation areas after collection and the broken ends of the stems will be allowed to dry and callus in place by laying the cuttings on the ground directly where they are

intended to grow. The cholla do not need to be planted in the soil as they can root from any spine cluster that is in contact with the ground (Recon 2008). After being placed on the ground, the stems will bend themselves until they contact the soil surface and then they will form roots.

4.3.3 Timing of Salvage and Planting

Although barrel cacti and cholla can be translocated most of the year with success, the winter rainy season must be avoided to prevent moisture decay and rot in fresh transplants. The optimum timing for transplanting both species of cacti is in mid- to late-spring, when cooler, dry weather is occurring. This type of weather is critical, as it is not conducive to tissue decay or rot (USDA 2009). Planting salvaged barrel cacti and coastal cholla within the revegetation areas on-site may eliminate the need for extended storage of the cacti and cholla at a native plant nursery; however, if environmental conditions are not appropriate for planting at the time of salvage, the installation contractor will store the cacti and cholla under shade cloth on-site or at an approved native plant nursery for one to three weeks, depending on weather conditions and season.

4.3.4 Irrigation

The installation contractor will ensure the roots of the San Diego barrel cactus and coastal cholla are kept dry for a two-week period before and after replanting. They should not be "watered in" (USDA 2009). However, the installation contractor will provide supplemental watering during the first year if the plants appear drought stressed. If the cacti and cholla need to be given supplemental water, the installation contractor will ensure the soil is allowed to dry prior to the next watering. If needed, the installation contractor will provide supplemental watering using the irrigation system installed in the revegetation areas, described in Section 4.5 of the Revegetation Plan (BRTR Appendix F).

4.3.5 Translocation Requirements

The installation contractor will prepare the translocation site in advance and the restoration ecologist will confirm it is ready to receive the transferred individuals. The site will be completely dried from a lack of supplemental irrigation or rain (for two weeks, as previously mentioned) (USDA 2009). When the installation contractor is digging up the individual cacti, as much of the root system as possible will be excavated with the cacti itself. Damaged roots will be cut cleanly and if necessary, treated with sulfur (dust) to assist in preventing fungal growth (USDA 2009). Only the damaged roots will be trimmed to prevent decomposition and entry points for root-rotting pathogens. Healthy or undamaged roots will not be removed. The cacti, regardless of care, will incur some damage when removed, and therefore, will need a two-week healing period before supplemental water is applied. This healing period allows the roots enough time to dry, callus/seal wounds, cuts, and abrasions (USDA 2009). The installation contractor will make sure the roots are air dried after removal and left in the shade or under shade cloth to callus. Adequate padding will

be used to prevent damage to ribs and spines when relocating the cacti. When transplanting the cacti, the installation contractor will orient the cacti in the direction it was previously facing to prevent sunburn damage. Backfilling and tamping the soil around the roots is critical to ensure backfilled soil comes into contact with the cacti's roots and prevents air pockets or uneven settling of soil. The restoration ecologist shall oversee all planting activities.

Immediate transfer after callusing is preferable, but in the event the cacti need to be stored, the installation contractor will make sure the storage area is be open with good air circulation and the cacti will be covered with shade cloth to prevent sunburn. Stored individuals will be positioned upright with roots covered in dry sand for protection (USDA 2009).

4.3.6 Habitat Revegetation

Restoring the habitat by weeding at the translocation sites is necessary to ensure survival and persistence of the introduced San Diego barrel cactus individuals and coastal cholla patches. The translocation sites, within the revegetation areas, will be revegetated, maintained, and weeded in accordance with Sections 4 and 5 of the Revegetation Plan, included as Appendix F in the BRTR for the project.

4.4 Maintenance and Monitoring

The objectives of the maintenance and monitoring program are to ensure successful establishment of the translocated San Diego barrel cacti and coastal cholla patches. To achieve these objectives, the restoration ecologist and project biologist will observe and direct implementation of translocation and site preparation efforts, as well as supervise maintenance and monitoring activities conducted by the installation contractor.

The three-year maintenance and monitoring period will begin following planting. The site will be monitored by the project biologist during the initial 120-day plant establishment period (PEP), following planting, to ensure successful establishment of the translocated individuals. The PEP includes biweekly (once every other week) qualitative monitoring of the translocated individuals conducted by the project biologist to identify and remediate any conditions that would inhibit successful establishment.

4.4.1 Maintenance

Maintenance tasks during the three-year maintenance and monitoring period may include weed control, trash removal, site protection, supplemental watering, and erosion control to be conducted by the installation contractor and monitored by the project biologist. Table 1 outlines the proposed maintenance schedule.

Table 1. Three-Year Maintenance Schedule[1]

Type/Task	Year 1	Year 2	Year 3
Weed Control	Quarterly	Quarterly	Quarterly
Trash Removal	As Needed	As Needed	As Needed
Site Protection	As Needed	As Needed	As Needed
Supplemental Watering	2 Weeks after Planting	As Needed	N/A
Erosion Control	As Needed	As Needed	As Needed

Notes:

[1] This is a suggested maintenance schedule and may be adjusted, if needed, with approval from the restoration ecologist.

4.4.1.1 Weed Removal

Weeds must be removed quarterly by the installation contractor, or more often if directed by the restoration ecologist and/or project biologist, during the three-year maintenance and monitoring period to adequately control weed species and reduce the weed seed bank in the soil. Weed control will be performed by the installation contractor's skilled restoration workers trained to distinguish weeds from native species.

Appropriate weed control measures will be implemented by the installation contractor under the direction of the restoration ecologist. Weeds will be killed and/or removed before they set seeds. Only hand weeding will be allowed within 48 inches of the San Diego barrel cacti and coastal cholla patches. Outside this area, weeds may be treated with an approved herbicide and/or removed using other weeding tools while avoiding native or sensitive vegetation. When herbicide is used, it must be applied by a licensed applicator and there must be little to no wind present, as overspray may potentially harm native plants.

4.4.1.2 Trash Removal

The installation contractor will make sure trash is removed from the translocation sites by hand as needed for the duration of the three-year maintenance period. Trash consists of all human-made materials, equipment, or construction debris left within the translocation areas that are not serving a function related to translocation/revegetation.

4.4.1.3 Site Protection

The translocation sites will be assessed periodically by the project biologist throughout the three-year maintenance period for signs of human disturbance, including off-road vehicle activity and/or the formation of new unauthorized trails. If new trails are observed within the translocation areas, additional temporary signage and/or fencing will be installed by the installation contractor to discourage trail use.

4.4.1.4 Supplemental Watering

San Diego barrel cacti and coastal cholla will be checked by the project biologist for drought stress during the summer dry season. San Diego barrel cactus and coastal cholla are very drought tolerant and will need very little water after translocation. However, if drought stress is observed, supplemental watering will be provided by the installation contractor using the irrigation system installed in the revegetation areas, described in Section 4.5 of the Revegetation Plan (BRTR Appendix F). Signs of drought stress for San Diego barrel cactus include wrinkling and a reddish color on the stems of the plant. Signs of drought stress for coastal cholla include wrinkling or shriveling. If the cacti and cholla need to be given supplemental water, the installation contractor will ensure the soil is allowed to dry prior to the next watering.

4.4.1.5 Erosion Control

The project biologist will assess the San Diego barrel cacti and coastal cholla translocation areas for erosion periodically throughout the three-year maintenance and monitoring period. If erosion is evident, the installation contractor will ensure the affected plantings are reinforced by piling additional cobbles around each planting. This technique will prevent San Diego barrel cacti and coastal cholla from decaying by eliminating direct contact with saturated soils. Cobble pilings also provide ideal germination sites for dispersed seed and divert rain around individual cacti to further minimize the chances of stem rot.

4.4.2 Monitoring

Monitoring of the translocation sites requires the project biologist to conduct frequent site visits and collection of qualitative and quantitative data to ensure the project is progressing toward the stated goals. The success criteria and monitoring methods are described in the following subsections.

4.4.2.1 Success Criteria

The final success criteria of the San Diego barrel cactus and coastal cholla translocation plan are:

- The establishment of a self-sustaining population of San Diego barrel cactus and coastal cholla with a minimum 1:1 survivorship for the translocated individuals salvaged from both the permanent impact area and temporary impact areas as needed.
- Prior to the end of the three-year maintenance and monitoring period, the translocated individuals will have survived without supplemental watering for at least one year.

If in any year significant progress toward the success criteria is not observed, then the restoration ecologist or City of San Diego may recommend remedial actions. In addition, if final success criteria are not met within the three-year maintenance and monitoring period, remedial measures and additional years of monitoring and maintenance may be required by the City of San Diego. Appropriate remedial actions are included in Section 4.4.4, Remedial Measures.

California Invasive Plant Council Listed High, Moderate, and Alert species shall be controlled and no more than 10 percent of the revegetation and translocation areas shall be covered by exotic weeds by two years after the completion of this plan.

4.4.2.2 Monitoring Methods

A monitoring program will be conducted by the project biologist and overseen by the restoration ecologist for three years following initial planting. Monitoring is necessary to determine the survival and performance of the transplanted individuals and to adjust procedures as needed to ensure progress toward the stated goals. Monitoring will be conducted by the project biologist and will include both qualitative and quantitative assessments of the translocated individuals. Table 2 summarizes the monitoring schedule.

Table 2. Three-Year Monitoring Schedule

Type/Task	Year 1	Year 2	Year 3
Qualitative Monitoring	Biweekly/Monthly[1]	Quarterly during the growing season	Quarterly during the growing season
Quantitative Monitoring			
Survivorship Counts	N/A	Winter	Winter
Flowering Counts	Spring	Spring	Spring

Notes:

[1] Qualitative monitoring will occur biweekly during the 120-day PEP and monthly thereafter during the growing season.

Qualitative monitoring will be conducted biweekly during the 120-day PEP. The project biologist and restoration ecologist will review the translocation areas to assess general transplant health, levels of weed competition, erosion, and signs of herbivory.

Quantitative data will be collected by the project biologist by annually counting all surviving and flowering individuals. Qualitative data will be collected by the project biologist by visually comparing the stages of development within the translocated population to the natural populations nearby. Pollinators will be documented through photography and/or notation at the translocation sites and a natural San Diego barrel cactus and coastal cholla populations outside of the project site in the Preserve to use as a reference site for general comparison of the pollinators between the two areas. Monitoring methods are described in detail in the following subsections.

Qualitative Monitoring

Two types of qualitative assessments, general growth assessments and limited pollinator observations, will be conducted by the project biologist and overseen by the restoration ecologist during the translocation effort. Evaluation of plant health and identifying and correcting problems as they arise are necessary for ensuring successful establishment. Following planting, the translocation sites will be monitored biweekly during the initial 120-day PEP. After the PEP, qualitative monitoring will be conducted monthly during the growing season for the remainder of the first year, and quarterly for the remainder of the three-year maintenance and monitoring period.

Growth Assessment. The performance of San Diego barrel cactus and coastal cholla at the translocation sites will be visually assessed by the project biologist to determine the overall plant condition and whether the timing of flower production is similar to the adjacent natural populations. Prior to the start of the three-year maintenance and monitoring period, the restoration ecologist will select one reference population for each species from the surrounding Preserve. Only a healthy, natural population that is not suffering from substantial weed invasion will be selected as a reference population. In addition, the reference site for each species will also have a similar physical and biological setting as the translocation sites. The reference sites will be mapped by the project biologist using a GPS with sub-meter accuracy, and this information will be included in the annual report.

Pollinator Observations. Pollinator observations will be performed by the project biologist to determine if potential San Diego barrel cactus and coastal cholla pollinators are visiting the translocation sites. This will help evaluate the progress of the San Diego barrel cactus and coastal cholla translocations and habitat revegetation efforts. If the habitat surrounding the translocation areas are restored appropriately, it will likely be able to support a sufficiently diverse assemblage of pollinators that will ensure successful pollination of San Diego barrel cactus and coastal cholla. The production of viable San Diego barrel cactus and coastal cholla is crucial in ensuring the long-term persistence of the translocated populations.

Pollinator observations will be conducted by the project biologist at least once each season during the flowering period (approximately May through June). Observations will be done at the same time as other scheduled monitoring visits. The project biologist will stand near the transplanted San Diego barrel cactus and coastal cholla patches and photograph and/or take note of pollinators during the monitoring visit. Both the translocation and the reference populations within the Preserve will be observed. Pollinators that are photographed and/or noted will be identified to family, if possible. The type and number of pollinators observed visiting San Diego barrel cacti and coastal cholla at the translocation sites will be used for a general comparison with that of the reference population.

Quantitative Monitoring

Survivorship Counts. A census of the populations will be conducted by the project biologist at the translocation sites each year for the three-year monitoring period. The timing for survivorship counts is not as critical for San Diego barrel cactus and coastal cholla as it may be for other plants and can occur at any time of year. The first census will occur at least annually for the three-year monitoring period after the initial planting. The individuals will be counted and recorded each monitoring year. This assessment will be used to determine the total number of translocated individuals or patches that have survived over the summer dry season. In addition, the areas immediately around the translocated individuals will be searched carefully for new San Diego

barrel cactus and coastal cholla. All new plants will be counted and mapped by the project biologist and included in the annual report.

Flowering Counts. The second quantitative assessment will be conducted by the project biologist later in the growing season (May through June), when the production of flowers and seed may be observed. Total counts of flowering individuals will be completed at that time. The project biologist will record all observations and include the results in the annual report.

4.4.3 Reporting

The project biologist will submit an as-built report including the translocation sites to the City of San Diego Public Utilities Department documenting the translocation of the San Diego barrel cactus and coastal cholla.

Two copies of the as-built report shall be submitted to the City of San Diego at the end of the 120-day PEP. This report shall include a discussion of weed control, horticulture treatments, erosion control, trash/debris removal, watering, site protection/signage, pest management, and vandalism as applicable to this translocation project. An assessment of the progress of the San Diego barrel cactus and coastal cholla translocation efforts shall be provided by the project biologist at the end of the 120-day PEP.

The project biologist will submit three copies of the annual monitoring reports summarizing monitoring results of the San Diego barrel cactus and coastal cholla translocation effort to the City of San Diego no later than December 1 of each year for the three-year maintenance and monitoring period. The monitoring section will include survey methods, data summary analysis, comparison of performance standards, discussion, reporting remedial actions, recommendations, and photo documentation. The maintenance section will include weeding procedures and plant care activities. Each annual report from Year 2 on will compare findings of the current year with those in previous years.

4.4.4 Remedial Measures

The restoration ecologist or the City of San Diego may recommend remedial measures based on the annual quantitative monitoring results or qualitative observations made in the field so that the San Diego barrel cactus and coastal cholla plantings move toward the success criteria. If the San Diego barrel cactus requirement of 1:1 survivorship for the three individuals salvaged from the permanent impact area or any of the 39 individuals and any coastal cholla patches salvaged from the temporary impact area is not met by Year 3, additional planting of propagated San Diego barrel cacti and coastal cholla will be required. Propagation, planting, monitoring, and maintenance will follow the methods discussed in his plan. Other remedial measures may also include more intensive weeding efforts conducted by the installation contractor within the translocation area which may add additional monitoring years.

4.4.5 Contingency Measures

The contingency measures for the potential loss of San Diego barrel cacti individuals and coastal cholla patches due to herbivory, drought, vandalism, and fire are described in the following subsections.

4.4.5.1 Herbivory/Disease

Supplemental San Diego barrel cactus and coastal cholla planting may be required due to loss of individuals from herbivory or disease. If more than 30 percent of the translocated San Diego barrel cacti and coastal cholla have evidence of herbivory, supplemental planting of San Diego barrel cacti and coastal cholla will be required. A wire-mesh cage may be constructed around newly planted individuals to prevent herbivory.

4.4.5.2 Vandalism

If the measures outlined in Section 4.4.1.3 fail to prevent vandalism due to trespassing, additional measures to prevent trespassing may be required. Additional measures may include, but are not limited to, repairing the fencing, or installing additional fencing or signs, as necessary.

4.4.5.3 Drought

During the first two seasons after translocation, San Diego barrel cacti and coastal cholla patches will be watered by the installation contractor after showing signs of drought stress to ensure survivorship, if necessary. By the third season after translocation, no supplemental water will be given to allow the plants to respond to the natural rainfall pattern, except in the event that new San Diego barrel cactus and/or coastal cholla individuals are planted as replacements.

4.4.5.4 Fire

If San Diego barrel cacti and/or coastal cholla are damaged by a fire, the plants will be replaced by the installation contractor with no additional monitoring or maintenance time added to the original three-year requirement.

4.5 Notification of Completion

After the third-year success criteria are met, the final monitoring report will be submitted by the project biologist to the City of San Diego Public Utilities Department for review. If the project has met the success criteria outlined herein, the restoration ecologist will contact the City of San Diego and recommend final approval of the project. A request for a pre-final inspection shall be submitted by the project biologist with the final monitoring report. The City of San Diego will respond in writing after a 30-day review period or may request an on-site meeting to review the translocation areas. After review, the San Diego barrel cactus and coastal cholla requirement will be deemed

complete when written approval by the City of San Diego has been received. Upon confirmation of project success, the City of San Diego shall release the restoration ecologist, project biologist, and installation contractor of any additional obligations. The City of San Diego understands that failure of any significant portion of the revegetation and transplantation areas may result in a requirement to replace that portion of the site and/or to extend the monitoring and establishment/maintenance period until all success criteria are met.

4.6 References

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USDA. 2022. Web Soil Survey of San Diego County Area, California. Accessed March 2022. http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=CA.

Appendix A. Figures

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Source: ESRI 2019.

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Figure 1

Regional Location

Otay Pipeline

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Source: USGS 2019;, SanGIS Imagery 2017.

Harris & Associates

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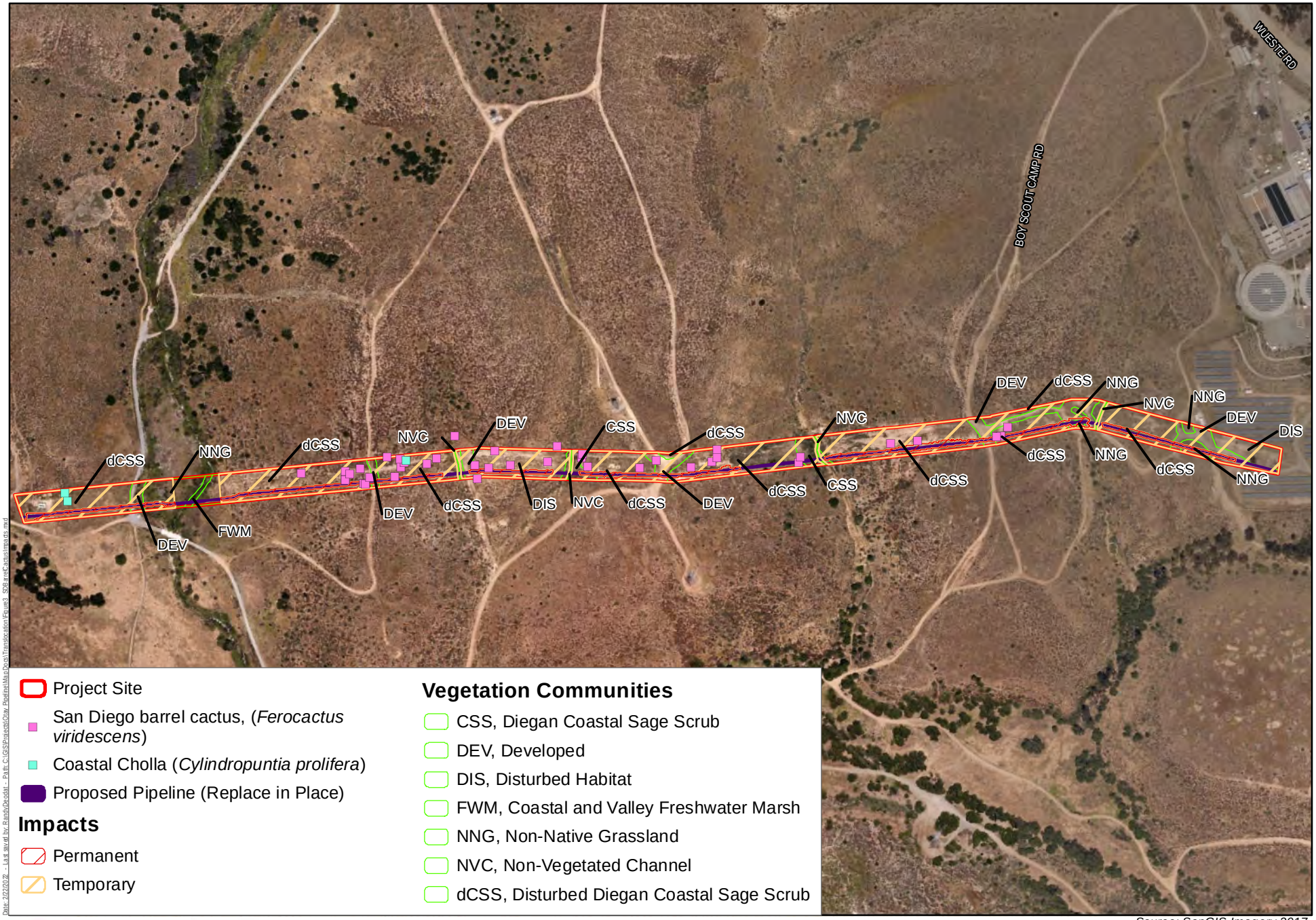
Figure 2

Project Site

Otay Pipeline



Source: SanGIS Imagery 2017.

Harris & Associates

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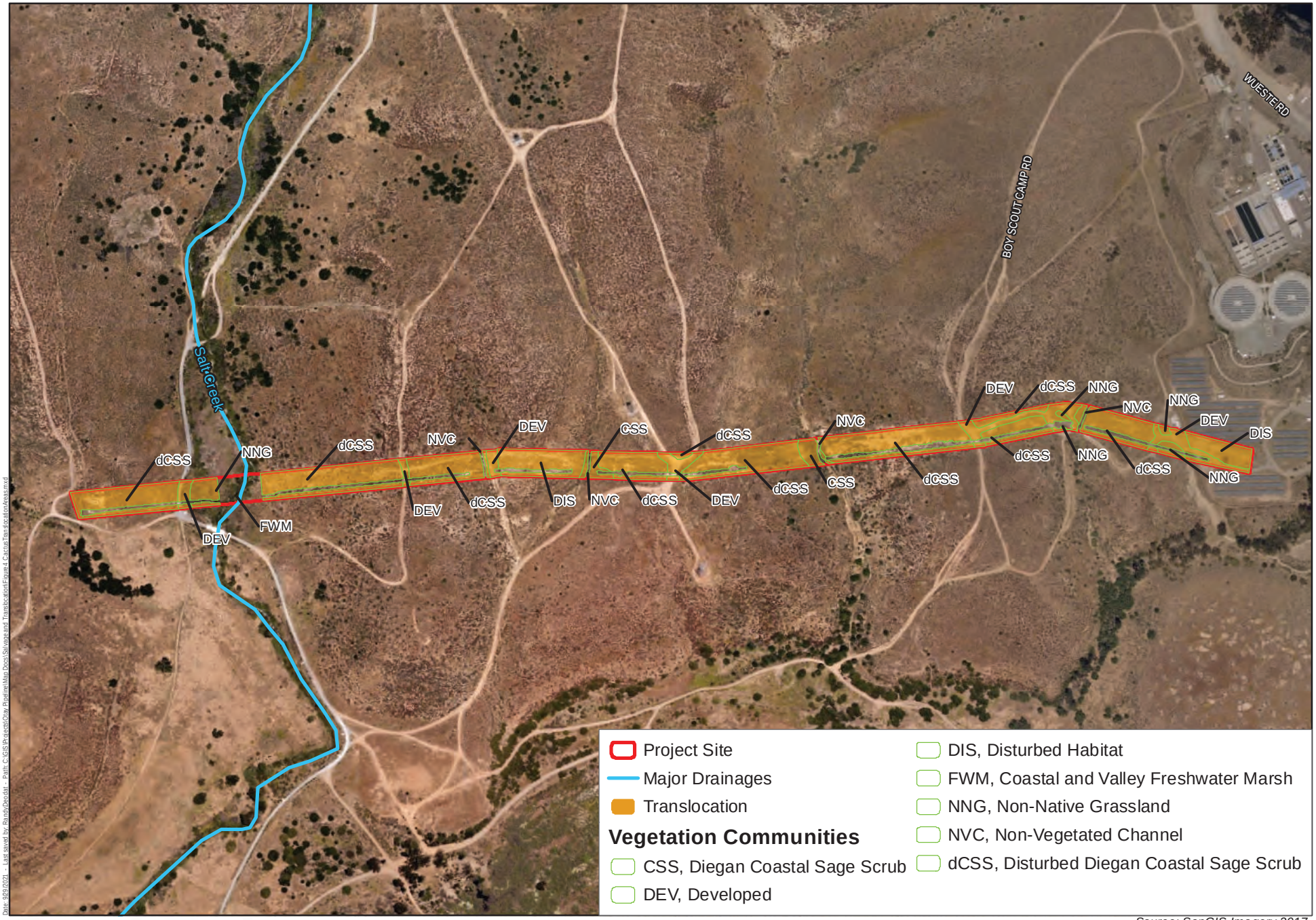
Figure 3

San Diego Barrel Cactus and Coastal Cholla Impacts

Otay Pipeline



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Source: SanGIS Imagery 2017.

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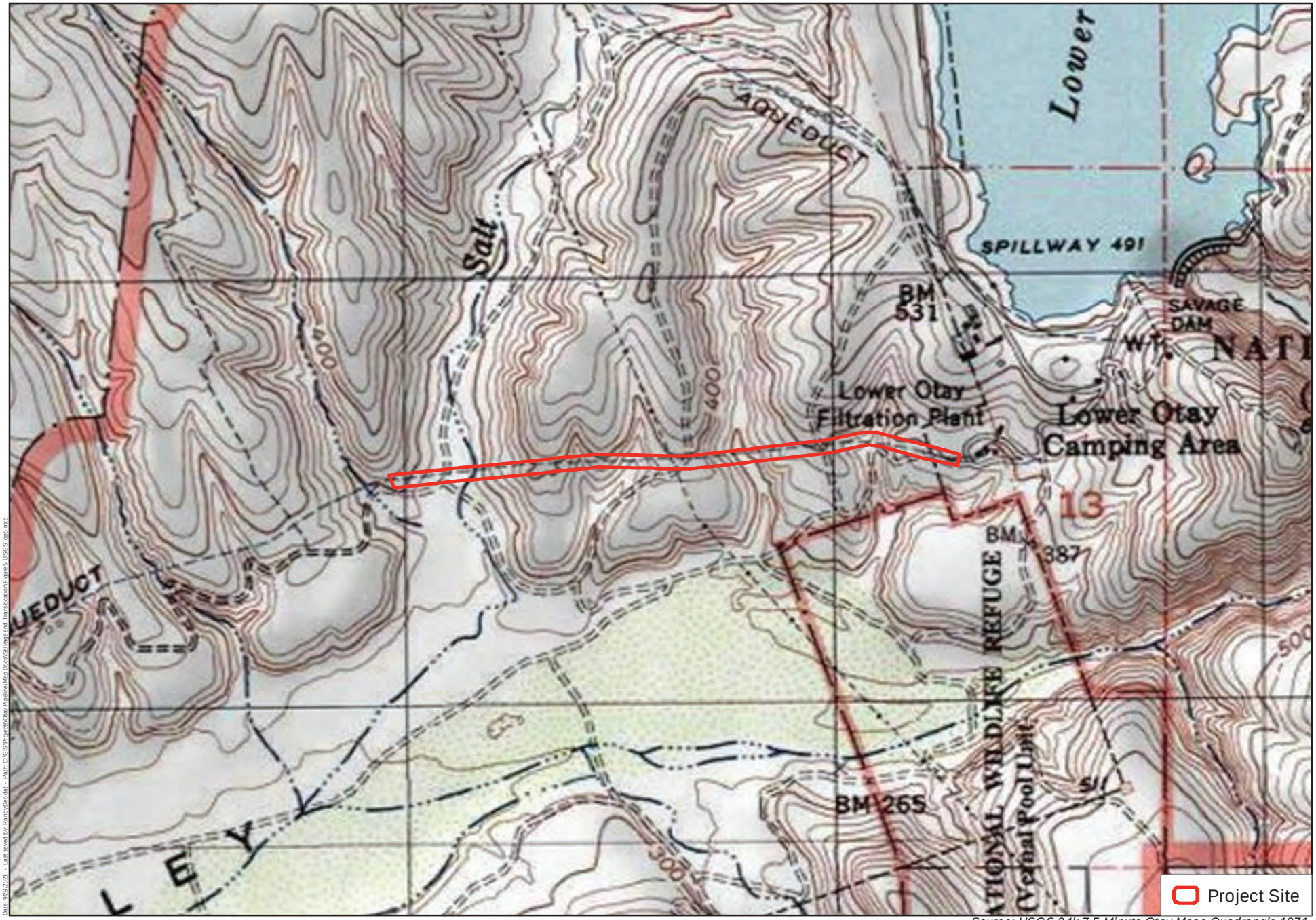
Figure 4

San Diego Barrel Cactus and Coastal Cholla Translocation Areas

Otay Pipeline



Source: USGS 24k 7.5-Minute Otay Mesa Quadrangle 1971.

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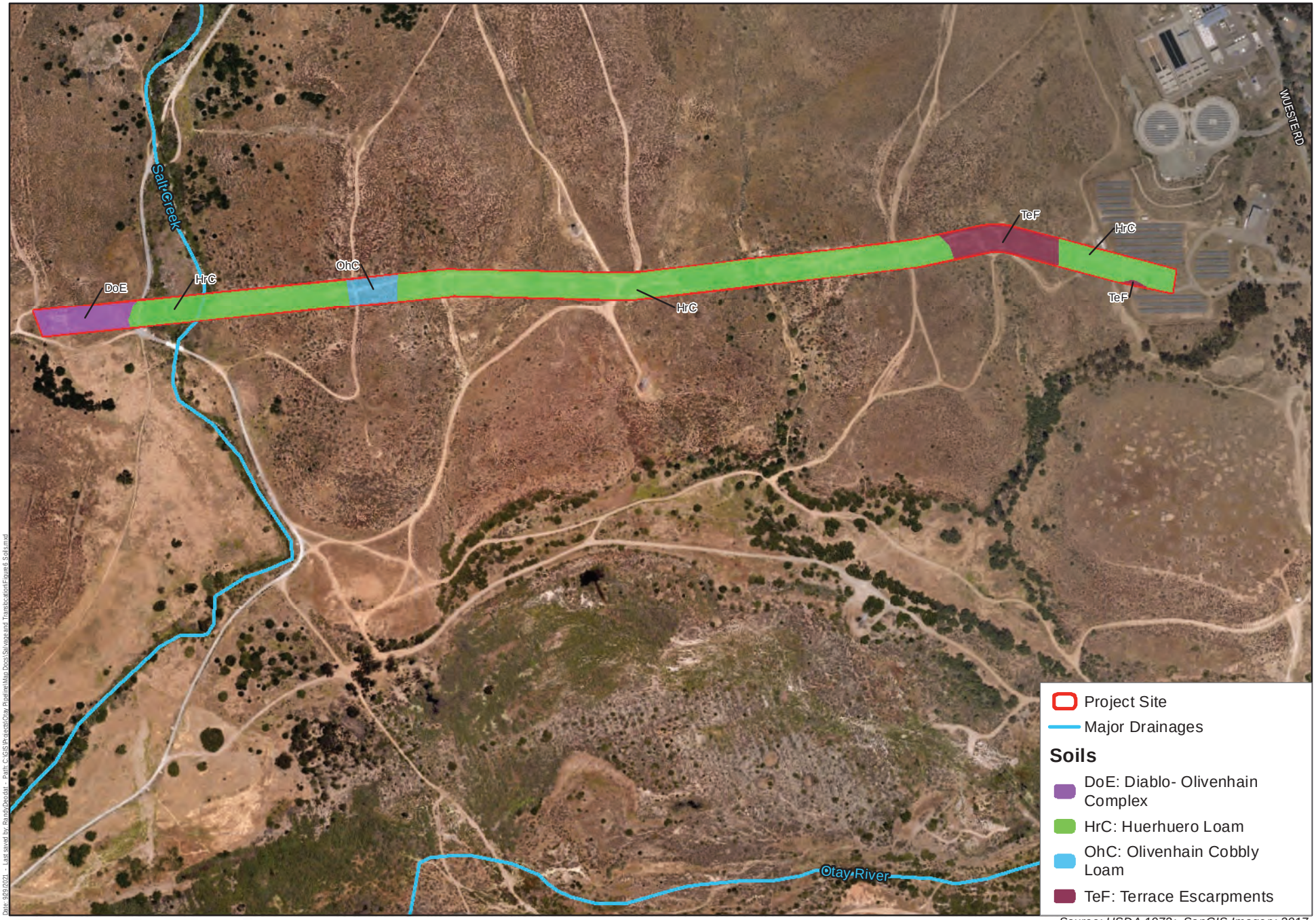
Figure 5

USGS Topographic Map

Otay Pipeline



Source: USDA 1973;, SanGIS Imagery 2017.

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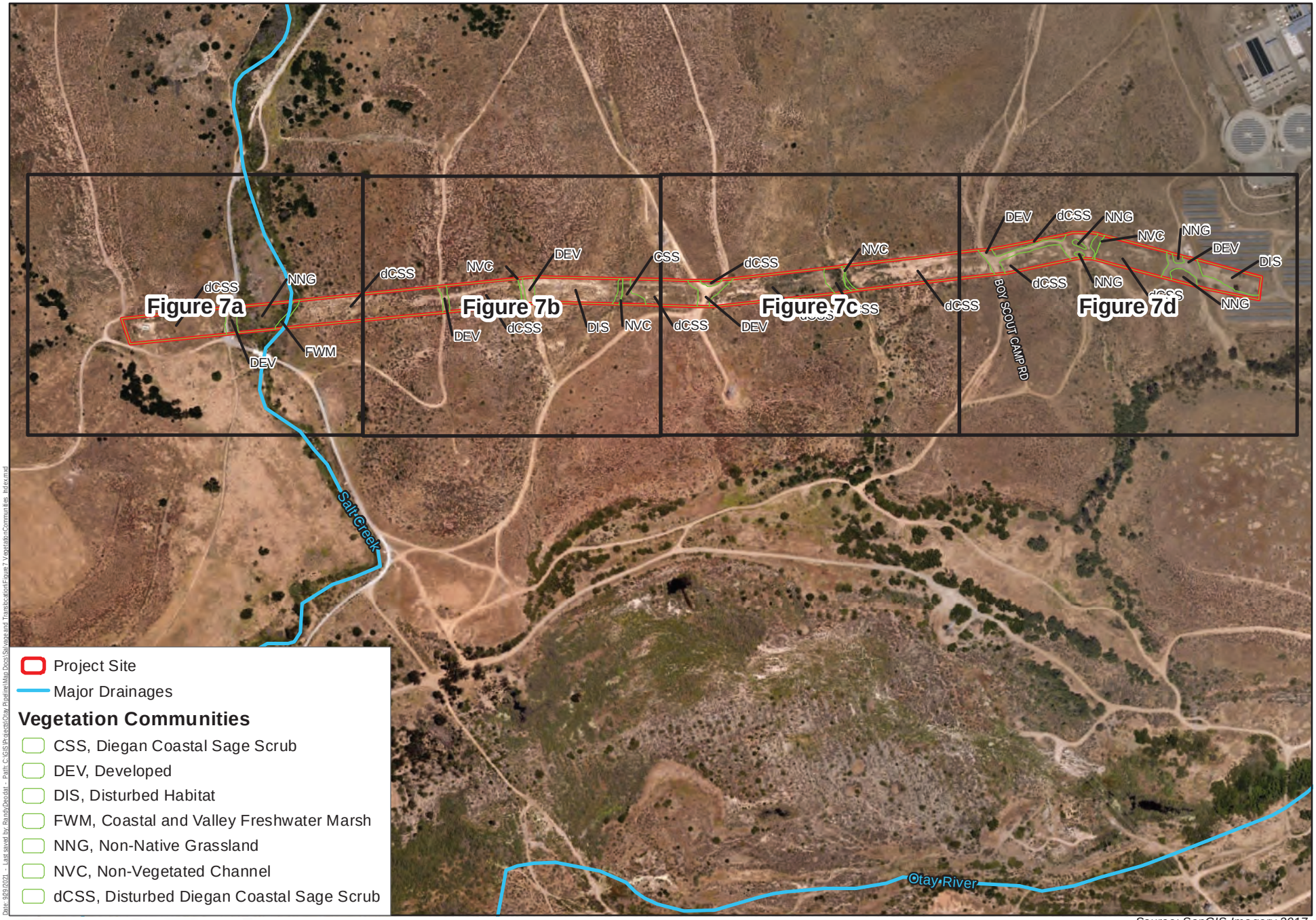
Figure 6

Soils

Otay Pipeline



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Source: SanGIS Imagery 2017.

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Figure 7

Vegetation Communities - Index

Otay Pipeline

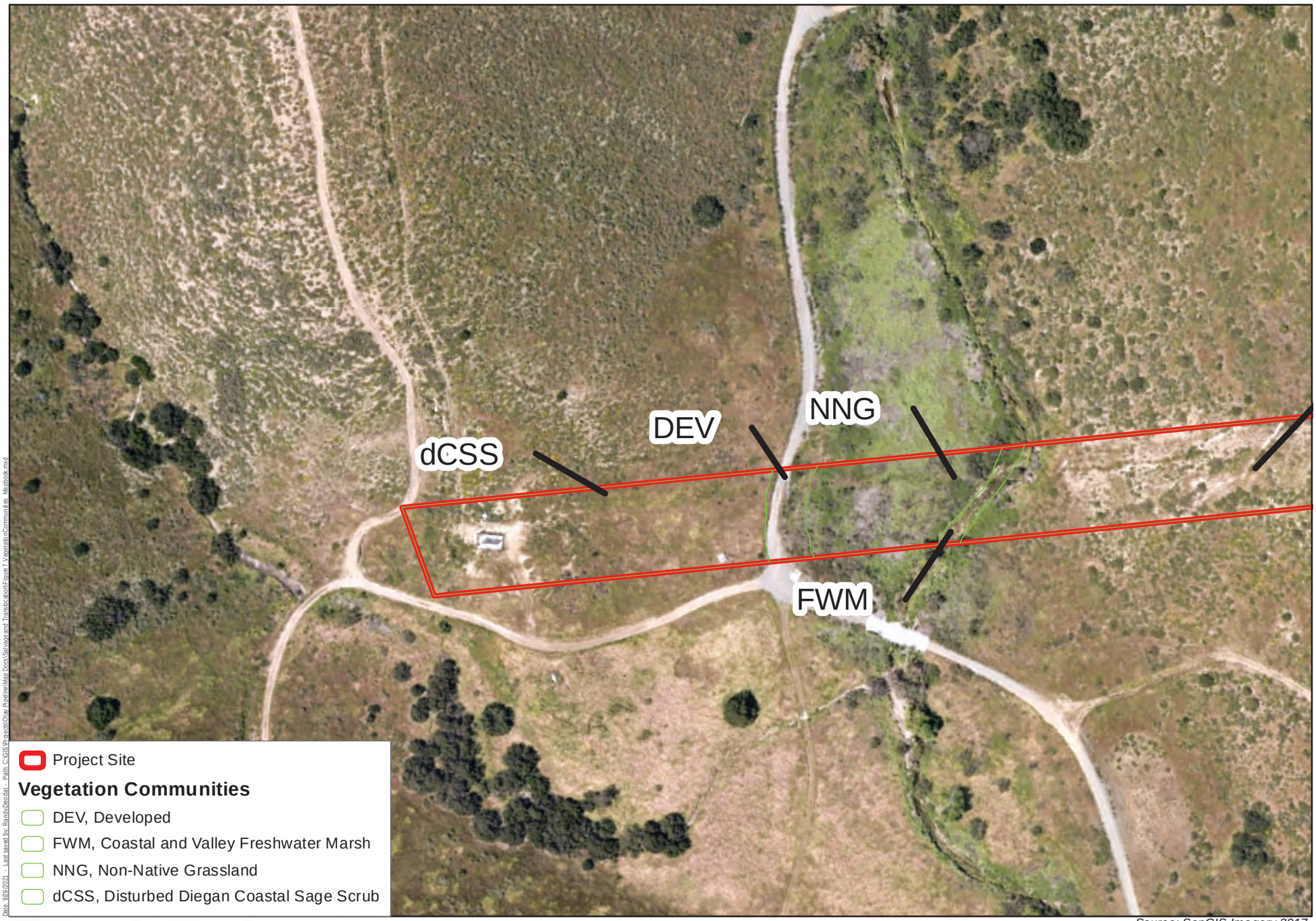

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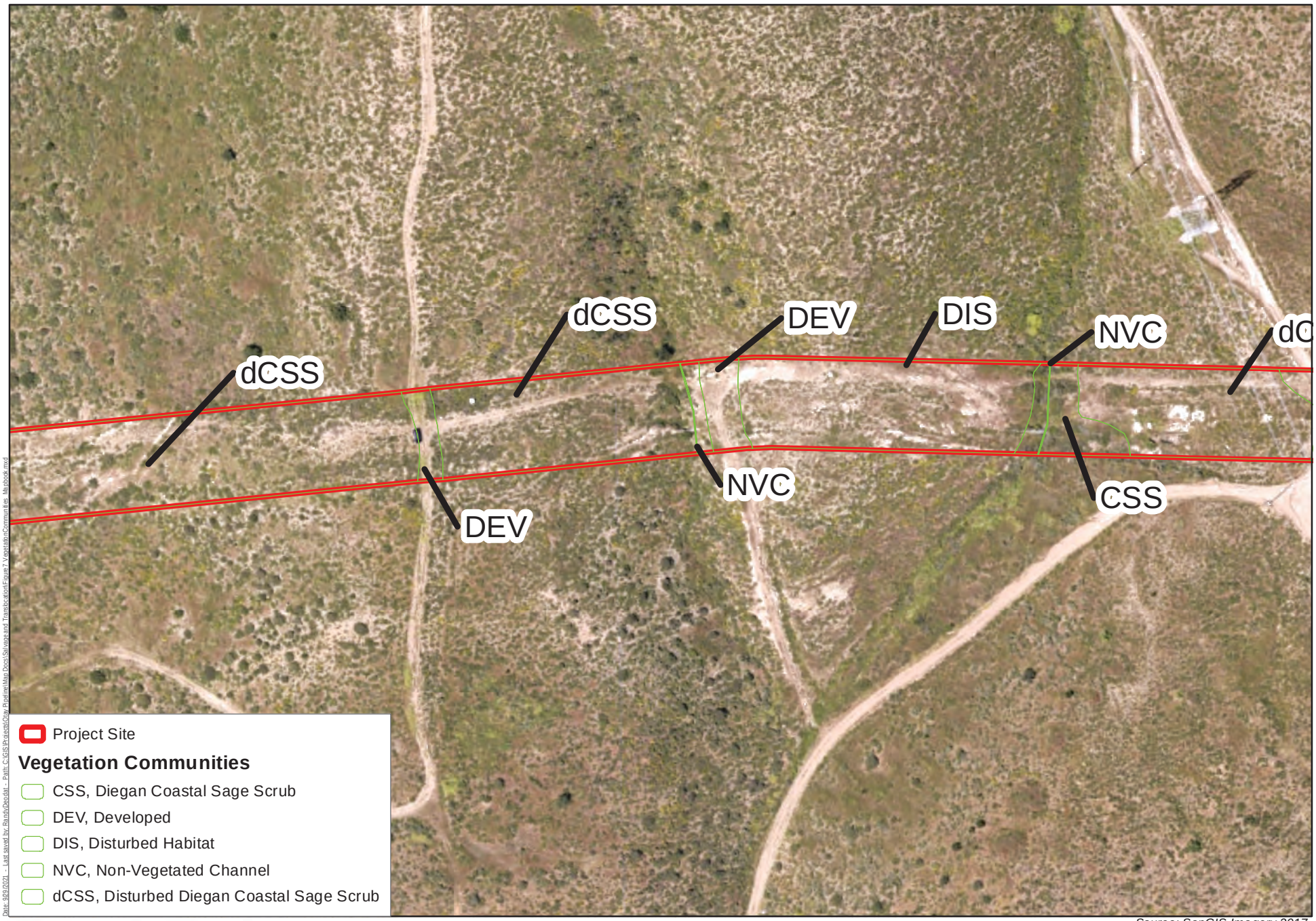
Figure 7a

Vegetation Communities

Otay Pipeline



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Source: SanGIS Imagery 2017.

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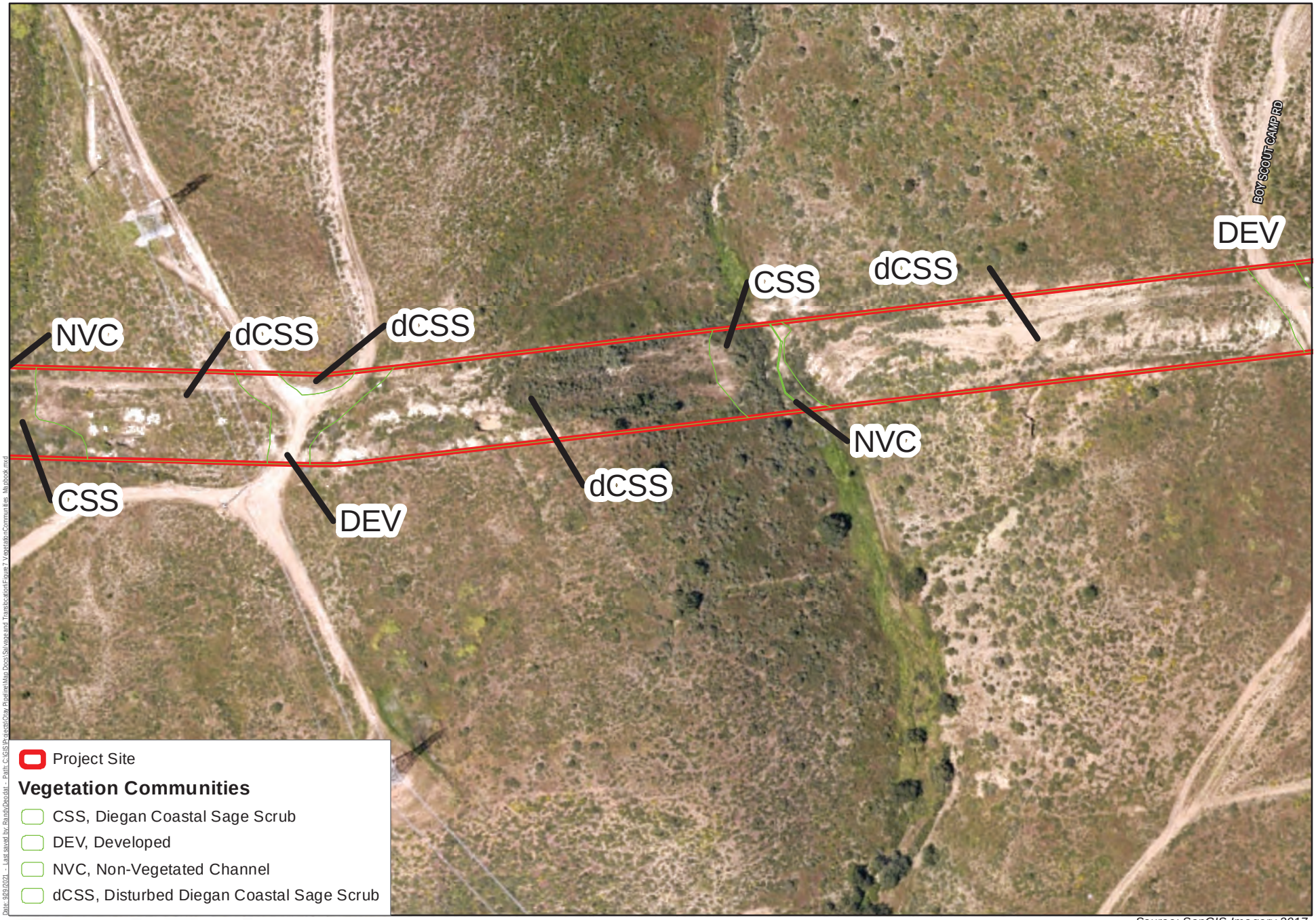
Figure 7b

Vegetation Communities

Otay Pipeline



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Source: SanGIS Imagery 2017.

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Figure 7c

Vegetation Communities

Otay Pipeline

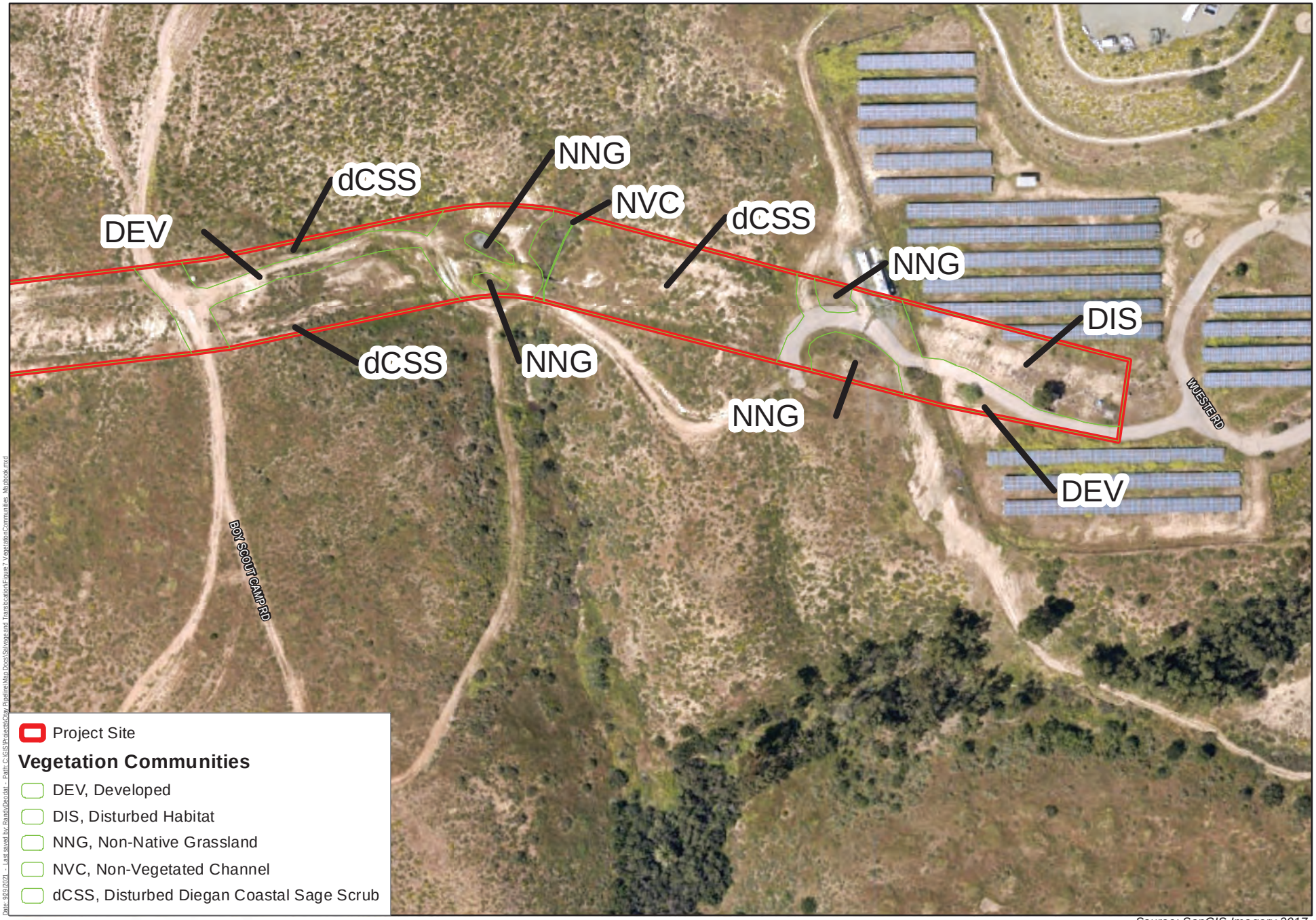

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Figure 7d

Vegetation Communities

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