Draft

EASTERN RECYCLED WATER SYSTEM
PROJECT NO. ENV16-0007

Initial Study/Mitigated Negative Declaration

Prepared for
City of Escondido

November 2018

ESA

CITY OF ESCONDIDO
PLANNING DIVISION
201 NORTH BROADWAY
ESCONDIDO, CA 92025-2798
(760) 839-4671

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR

"Eastern Recycled Water System Project"

City File No. ENV 16-0007

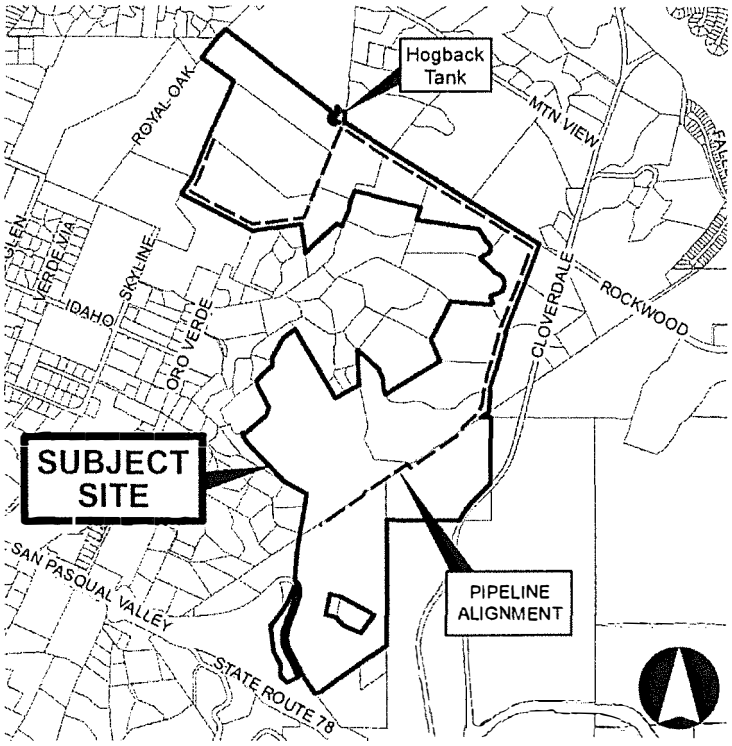
BACKGROUND: The City of Escondido has prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the project described below. A Mitigated Negative Declaration is prepared when an Initial Study identifies project related impacts that might be potentially significant, but revisions in the project plans and/or mitigation measures agreed to by the applicant would provide mitigation to a point where potential impacts to the environment are reduced to less than a significant level. The description of the project is as follows:

PROJECT DESCRIPTION: The proposed project includes the installation of approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline across public and private properties to distribute recycled water to the growers surrounding the City of Escondido's Hogback Reservoir. The Hogback Reservoir is an above-ground tank with a capacity of 1.2 million gallons (mg) that is being converted from potable water to recycled water that will be produced at the City's planned Membrane Filtration/Reverse Osmosis (MFRO) Facility. The piping would be installed below ground, except for seven pipe bridges across various drainages. The proposed distribution system will generally provide new recycled water connections and meters to serve non-potable irrigation demands. Existing potable water connections and meters would be disconnected from the irrigation system but would remain in-place for future uses.

LOCATION: The proposed project is located within unincorporated County land, generally east of the City of Escondido, south of Mountain View Road, northwest of State Route (SR) 78 and Cloverdale Road intersection, west of Cloverdale Road. The various Assessor Parcel Numbers (APNs) for the project area are: 241-081-01-00; 241-041-09-00; 241-041-10-00; 241-121-05-00; 241-121-06-00; 241-120-29-00; 241-120-26-00; 241-120-20-00; 241-120-21-00; 241-120-22-00; 241-140-02-00; 241-080-18-00 and 241-081-10-00 (County of San Diego, 2016). The APNs for Hogback Reservoir are 241-010-28-00 and 241-041-04-00.

APPLICANT: City of Escondido

PUBLIC REVIEW PERIOD: The review and comment period will begin on **November 19, 2018** and **end at 5:00 p.m., on December 18, 2018**. Copies of the Draft Initial Study/Mitigated Negative Declaration are on file and available for public review in the Escondido Planning Division, at 201 N. Broadway, and also posted on the City of Escondido web site at http://www.escondido.org/planning.aspx. Further information may be obtained by contacting **Jay Paul at the Planning Division, telephone (760) 839-4537. Please refer to Case No. ENV 16-0007.** The project/environmental determination is tentatively scheduled for Escondido Zoning Administrator consideration on December 20, 2018.



Bill Martin, Director of Community Development

Dated: November 14, 2018

CITY OF ESCONDIDO
PLANNING DIVISION
201 NORTH BROADWAY
ESCONDIDO, CA 92025-2798
(760) 839-4671

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

CASE NO.: ENV16-0007 "Eastern Recycled Water System Project"

DATE ISSUED: November 15, 2018

PUBLIC REVIEW PERIOD: November 19, 2018 – December 18, 2018

LOCATION: The proposed project is located within unincorporated County land, generally east of the City of Escondido, south of Mountain View Road, northwest of State Route (SR) 78 and Cloverdale Road intersection, west of Cloverdale Road. The various Assessor Parcel Numbers (APNs) for the project area are: 241-081-0100; 241-041-0900; 241-041-1000; 241-121-0500; 241-121-0600; 241-120-2900; 241-120-2600; 241-120-2000; 241-120-2100; 241-120-2200; 241-140-0200; 241-080-1800 and 241-081-0100 (County of San Diego, 2016). The APNs for Hogback Reservoir are 241-010-2800 and 241-041-0400.

PROJECT DESCRIPTION: The proposed project includes the installation of approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline to distribute recycled water to the growers surrounding the City of Escondido's Hogback Reservoir. The Hogback Reservoir is an above-ground tank with a capacity of 1.2 million gallons (mg) that is being converted from potable water to recycled water that will be produced at the City's planned Membrane Filtration/Reverse Osmosis (MFRO) Facility. The piping would be installed below ground, except for seven pipe bridges across various drainages. The proposed distribution system will generally provide new recycled water connections and meters to serve non-potable irrigation demands. Existing potable water connections and meters would be disconnected from the irrigation system but would remain in-place for future uses.

APPLICANT: City of Escondido

An Initial Study has been prepared to assess this project as required by the California Environmental Quality Act and Guidelines, Ordinances and Regulations of the City of Escondido. The Initial Study and Draft Mitigated Negative Declaration are on file in the City of Escondido Planning Division and can be viewed on the City of Escondido web Site at: http://www.escondido.org/planning.aspx. Further information may be obtained by contacting Jay Paul at the Planning Division, telephone (760) 839-4537 or jpaul@escondido.org.

Findings: The findings of this review are that the Initial Study identified effects related to biological, cultural and tribal cultural resources, wildland fire hazards, hydrology and noise, that might be potentially significant. However, revisions in the project plans and/or mitigation measures agreed to by the applicant would provide mitigation to a point where potential impacts are reduced to less than a significant level.

Bill Martin
Director of Community Development

Draft

EASTERN RECYCLED WATER SYSTEM PROJECT NO. ENV16-0007

Initial Study/Mitigated Negative Declaration

Prepared for
City of Escondido

November 2018

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TABLE OF CONTENTS

Eastern Recycled Water System
Project No. ENV16-0007
Initial Study/Mitigated Negative Declaration

Appendices

List of Figures

List of Tables

CHAPTER 1
Project Background, Purpose and Need

1.1 Introduction

The City of Escondido (City) currently produces tertiary-treated recycled water (recycled water), which is used for landscape and industrial purposes (City of Escondido, 2013). Recycled water provided by the City is produced at the Hale Avenue Resources Recovery Facility (HARRF), a recycled water treatment and disposal facility that is owned and operated by the City. The HARRF provides recycled water to other agencies as well as the City and excess recycled water that is not used by the City or sold to other recycled water customers, is disposed of via an ocean outfall (City of Escondido, 2013).

The City has in the past several years expanded the recycled water conveyance system towards the eastern areas of the City (recycled water pipelines, brine disposal pipeline and fiber optic cables, recycled water pump station and recycled water storage tank). The City expanded its recycled water system to result in a more dependable and sustainable water supply and to be less dependent on imported water for the City (City of Escondido, 2013). On November 6, 2013, the City of Escondido adopted the Final Initial Study/Mitigated Negative Declaration for the Recycled Water Easterly Main Extension (City File No. ENV 13-0007), which addressed impacts that would occur from expanding the City's existing recycled water pipeline system to deliver recycled water to customers located east of downtown Escondido (City of Escondido, 2013). The Recycled Water Easterly Main Extension Project was implemented to provide recycled water infrastructure to three large irrigation customers: Oak Hill Memorial Park, Eagle Crest Golf Course, and San Diego Zoo Safari Park (City of Escondido, 2013). The Recycled Water Easterly Main Extension Project MND identified the potential for installation of an advanced water purification (AWP) facility which could be used to improve local water quality and/or to produce purified water for indirect potable reuse purposes (City of Escondido, 2013). The City filed the Notice of Determination on November 14, 2015. The Final MND for the Recycled Water Easterly Main Extension is specifically incorporated by reference into this MND. The Recycled Water Easterly Main Extension Project MND may be downloaded from the City of Escondido's website at: https://www.escondido.org/recycled-water-easterly-main-extension-project.aspx.

As part of the City's Potable Water Reuse Program (Reuse Program) identified in the Recycled Water Master Plan, the City adopted the Final Initial Study/Mitigated Negative Declaration for the Membrane Filtration/Reverse Osmosis (MFRO) Facility (Case No. ENV16-0009) on January 11, 2017. The MFRO Facility was implemented to expedite a new, high-quality water supply to local agricultural growers, utilize existing water resources and help promote and

support the local economy and agriculture. The MFRO Facility will be located at 1201 E. Washington Avenue and provide advanced treatment for Title 22 quality reuse water produced at the HARRF. The facility would utilize membrane filtration (i.e., ultrafiltration (UF) membranes) and reverse osmosis (RO) technologies sized for a total production capacity of 2.0 million gallons per day (mgd). The City filed the Notice of Determination on January 12, 2017.

Agricultural producers are a vital part of Escondido's community and its economy. Avocados are one of the most important crops grown in San Diego County, and water quality for avocado production is important for quantity and quality of production. Growers maintain a high demand for water, specifically low-salinity water. Water must be low in chlorides and other constituents to avoid leaf burn, root rot, and the need for excessive flushing. Salinity management issues take priority due to the drought in California forcing a shift to higher salinity source water. For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production.

The project would also assist in off-loading the City's ocean outfall by reducing the amount of water discharged to the Ocean from the HAARF. The existing land outfall is nearing flow capacity. The MFRO Facility would treat and distribute the recycled water to agricultural users and reusable water to homes. Thereby, redirecting water via reuse and reducing the flow to the existing outfall.

1.2 California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. CEQA Guidelines Section 15367 states that the "lead agency," the City, has the principal responsibility for carrying out or approving a project and is responsible for compliance with CEQA. As lead agency, the City must complete an environmental review to determine if implementation of the proposed project would result in significant adverse environmental impacts. In compliance with CEQA, an Initial Study (IS) has been prepared to assist in making that determination. Based on the nature and scope of the proposed project and the evaluation contained in the IS environmental checklist (contained herein), the City has concluded that a Mitigated Negative Declaration (MND) is the appropriate level of analysis for this project. The MND shows that impacts of the proposed project are either less than significant or significant but mitigable with the incorporation of appropriate mitigation measures.

As stated in CEQA Guidelines Section 15070, an MND can be prepared when "(a) the initial study shows that there is not substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or (b) the initial study identifies potentially significant effects, but (1) revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and (2) there is no substantial evidence, in light of the whole

record before the agency, that the project as revised may have a significant effect on the environment."

1.2.1 CEQA-Plus Requirements

The U.S. Environmental Protection Agency (USEPA) sponsors the State Revolving Fund (SRF) Loan Program to provide funding for construction of publicly-owned treatment facilities and water reclamation projects. This funding for capital improvements to wastewater treatment and water recycling facilities is authorized under the federal Clean Water Act. As a water recycling project, the proposed project is eligible for SRF funding. In order to comply with requirements of the SRF Loan Program, which is administered by SWRCB in California, an IS/MND must fulfill additional requirements known as CEQA-Plus. The CEQA-Plus requirements have been established by the EPA and are intended to supplement the CEQA Guidelines with specific requirements for environmental documents acceptable to the SWRCB when reviewing applications for wastewater treatment facility loans. They are not intended to supersede or replace CEQA Guidelines.

The USEPA's CEQA-Plus requirements have been incorporated into the SWRCB's Environmental Review Process Guidelines for SRF Loan Applicants (SRF Guidelines) (September, 2004). The SWRCB's SRF Guidelines include the following requirements for compliance with CEQA-Plus. Eight copies of the CEQA document must be sent to the SWRCB, which then forwards the copies directly to federally designated agencies. The federal agencies must have at least fifty-one calendar days to review the CEQA document from the date it was mailed to the reviewing agency. Federal consultation must be completed before an SRF funding agreement can be approved by the SWRCB. The proposed project must be in compliance with Section 7 of the federal Endangered Species Act (FESA); must undergo a federal Clean Air Act (FCAA) conformity analysis (if in a nonattainment area or an attainment area subject to a maintenance plan); and must be in compliance with Section 106 of the National Historic Preservation Act (NHPA). The CEQA document must also disclose all project-specific information listed in the outline provided by the SWRCB. This IS/MND has been prepared to comply with CEQA-Plus requirements and can be used to support the required federal consultations as described below.

Federal Clean Air Act

The FCAA requires the USEPA to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10, PM2.5, and lead. Pursuant to the 1990 FCAA Amendments, the USEPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for these criteria air pollutants, based on whether or not the NAAQS had been achieved. The FCAA requires each state to prepare a State Implementation Plan (SIP), which is an air quality control plan that includes pollution control measures for states that violate the NAAQS. For SRF-funded projects, CEQA-Plus requirements include a FCAA general conformity analysis for projects in a federal nonattainment area or an attainment area subject to a

SIP. The proposed project is in a federal nonattainment area for ozone, PM10 and PM2.5, as explained in Impact 3, Air Quality. Refer to **Appendix A** for the air quality emissions calculations. If a FCAA general conformity analysis is required, the information provided in this IS/MND would be used to support the analysis.

Federal Endangered Species Act

The SWRCB Division of Financial Assistance (Division) is the designated non-federal representative under the FESA for water reclamation projects that involve a SRF loan. To ensure compliance with Section 7 of the FESA, the Division reviews all SRF projects to determine the potential effects to federally listed species. This IS/MND includes the documentation required by the Division to disclose the proposed project's effects on sensitive species (see Impact 4 Biological Resources), including a Biological Resources Assessment prepared by ESA (see **Appendix B**). The Division staff will use this information to confer informally (and formally if necessary) with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, as appropriate.

National Historic Preservation Act

CEQA-Plus requires SRF-funded projects to comply with Section 106 of the National Historic Preservation Act. Consultation with the State Historic Preservation Officer (SHPO) is required to demonstrate/confirm that Section 106 compliance has been achieved. The Division's Cultural Resources Officer (CRO) is responsible for the consultation with the SHPO. This IS/MND and the administrative record includes the information and documentation that the Division CRO is required to provide to the SHPO to initiate the Section 106 consultation, including, (1) identification of the proposed project's Area of Potential Effects (APE), (2) cultural records searches for the APE at the appropriate Information Centers, (3) documentation of Native American consultation, (4) cultural resources field surveys of the APE, (4) evaluations of elements of the built environment in and around the APE that are eligible for the National Register of Historic Places, and (5) Determination of Eligibility for any cultural resources that cannot be avoided during project construction (see Impact 5 Cultural Resources and **Appendix C**, Cultural Resources Report).

CHAPTER 2
Project Description

2.1 Project Location

The City of Escondido (City) is located in northern San Diego County (County), approximately 30 miles north of downtown San Diego and 18 miles east of the Pacific Ocean (**Figure 1**). The City is situated in a natural valley at approximately 650 feet above mean sea level (amsl) and surrounded by rolling hills and rugged terrain ranging up to 4,200 amsl.

The project site is located within unincorporated County land and within the City's Sphere of Influence, generally located east of the City of Escondido and south of Mountain View Road, . northwest of the State Route (SR) 78 and Cloverdale Road intersection. The various Assessor Parcel Numbers (APNs) for the project area are: 2410411000; 2411210500; 2411210600; 2411202900; 2411202600; 2411202000; 2411202100; 2411202200; 2411400200; 2410801800 and 2410810100 (County of San Diego, 2016). The APNs for Hogback Reservoir are 2410102800 and 2410410400.

The project site is generally located within existing rural estate residential land uses with several agricultural groves. The project site has hilly terrain with elevations ranging from approximately 430 feet amsl at the eastern project area to 1,150 feet amsl near the Hogback Reservoir Tank.

The project site is generally surrounded by rural residential land uses to the north and west; mining, agricultural and commercial-agricultural land uses to the south; and agricultural and vacant lands to west (**Figure 2**).

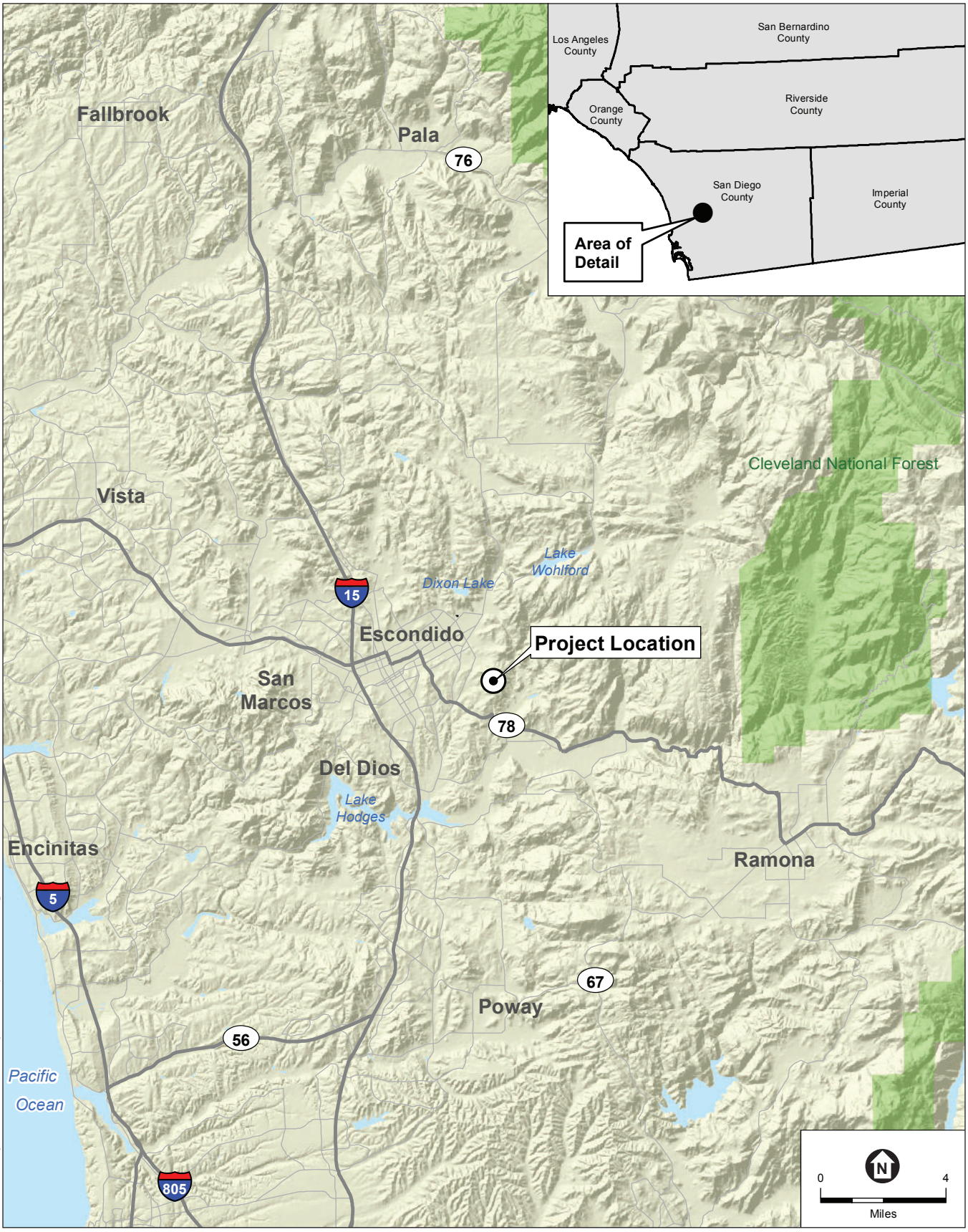
2.2 Project Description

2.2.1 Existing Conditions and Proposed Project

The MF/RO Facility would provide the City of Escondido's Hogback Reservoir recycled water tank with advanced treated recycled water. The MF/RO Facility uses membrane filtration (i.e., microfiltration (MF) or ultrafiltration (UF) membranes) and reverse osmosis (RO) technologies, sized for a total production capacity of 2.0 million gallons per day (mgd). The water is then sent through the recycled water pipelines implemented under the Recycled Water Easterly Main Extension Project so that it can be distributed to growers (**Figure 3**).

The project area is characterized by rural residential and agricultural land uses. The proposed project would include the installation of approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline (**Figure 4**) to distribute recycled water to the growers surrounding City of Escondido's Hogback Reservoir. Hogback Reservoir is an above-ground

tank with a capacity of 1.2 million gallons (mg) that currently is being converted from potable water to recycled water. The piping would be installed below ground, except for seven pipe bridges across drainages. Aboveground-ground segments would include pre-engineered pipe bridges. Prior to construction, it will be necessary for the City to obtain necessary 20-foot easements for the pipeline and access along the pipes for monitoring and routine maintenance.



SOURCE: ESRI

Recycled Water Distribution System

Figure 1
Regional Location Map

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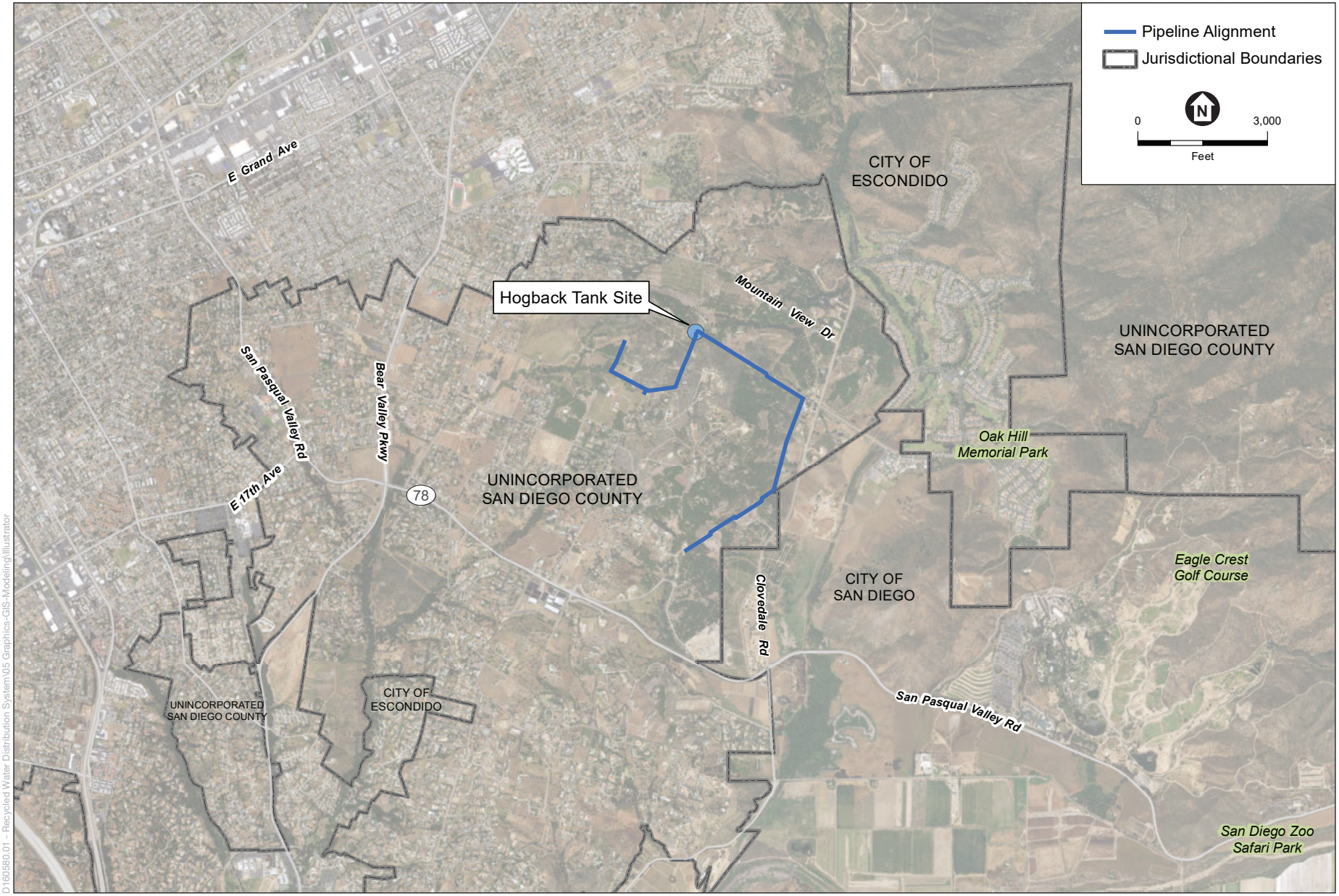

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SOURCE: ESRI

Recycled Water Distribution System

Figure 2
Project Vicinity Map

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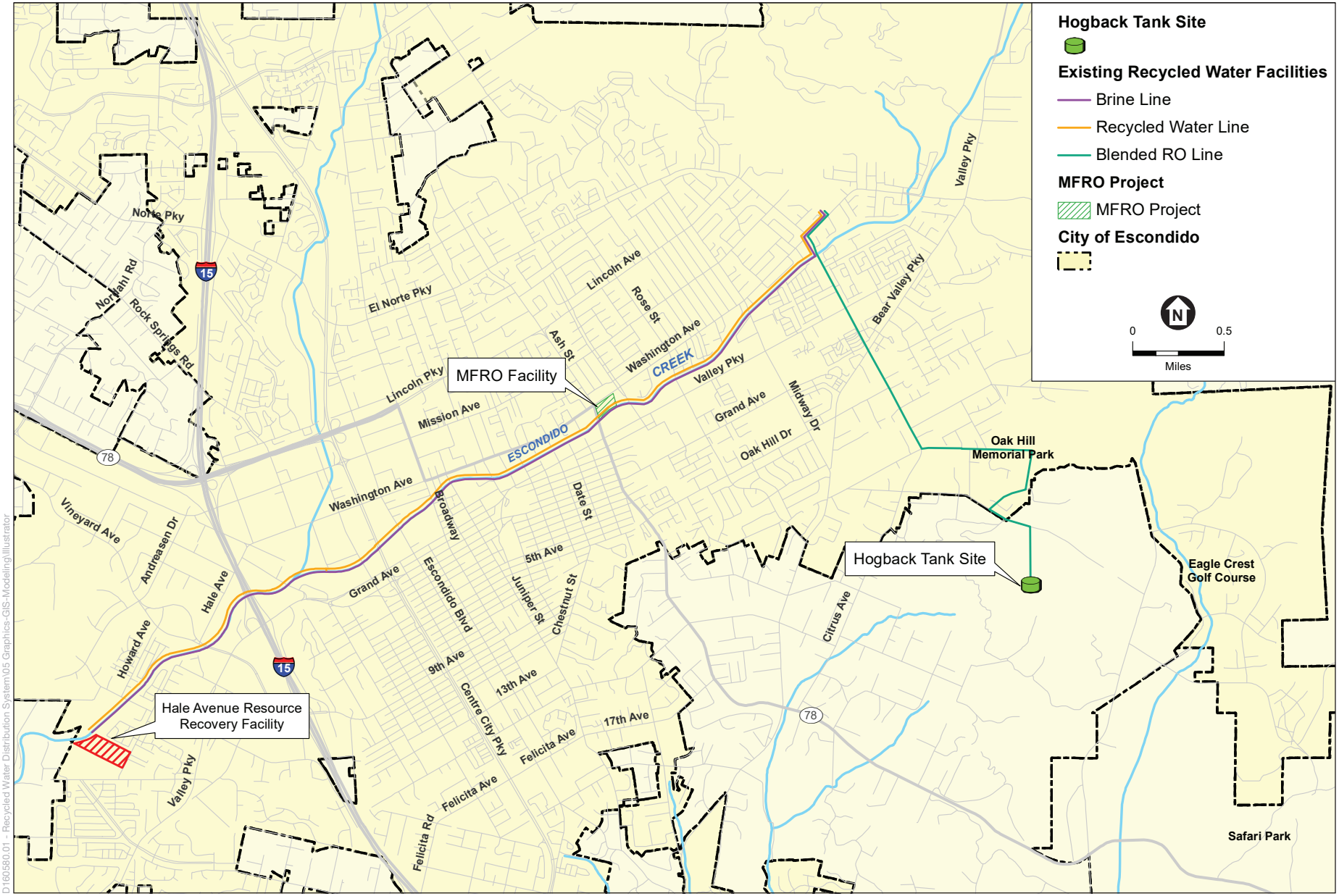

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SOURCE: ESRI

Recycled Water Distribution System

Figure 3
Existing Recycled Water System

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SOURCE: ESRI

Recycled Water Distribution System

Figure 4
Proposed Recycled Water System

ESA

2.2.2 Recycled Water Demand

Table 1 identifies the estimated recycled water flow to the customers. The total proposed flows would be in the range of two mgd to four mgd, which equates to a range of 1,400 gpm to 2,800 gpm.

TABLE 1
ESTIMATED FLOWS

Associated Reach	Estimated Irrigated Acreage	Estimated Annual Demand (acre-feet)	Estimated Peak Flow (gpm)
1	130	455	580
3	101	354	445
2	87	305	385
4	55	193	250
4	40	140	180
4	23	81	105
Total	**436**	**1,528**	**1,945**

SOURCE: Easter Recycled Water System Preliminary Design Report, Water Synergy Inc., 2015

2.2.3 Recycled Water Pipeline Corridor

The proposed project includes approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline. The piping would be black high-density polyethylene (HDPE) fusion welded pipe with a 4-inch purple stripe along its length. The piping would be installed below ground, except for seven pipe bridges across drainages. The below ground sections would have three-foot minimum cover and be installed per the City's standard detail. Aboveground-ground segments would include pre-engineered pipe bridges. The pipe bridge would be anchored by concrete bridge piers at the edge of the drainage. The depth would vary up to one foot deep. Blow-off valves would be small diameter (6-inch or less) and installed at the ends of dead end reaches and at the low points in the system. Air and vacuum valves would be less than 4-inches and installed at the high points in the system. The preliminary layout of the distribution piping is shown on Figure 4. The proposed distribution system will generally provide new recycled water connections and meters to serve non-potable irrigation demands. New recycled water meters matching the size of the existing irrigation meters would be installed as close as practical to replace the existing. New onsite irrigation piping would be installed from the new meters to connect the existing irrigation system to the recycled water supply. Existing potable water connections and meters would be disconnected from the irrigation system but would remain in-place for future uses.

The recycled water pipeline alignment consists of several distinct reaches described below and shown on Figure 4.

Reach 1 consists of stations 9+95.00 through 47+58.01, as shown in **Figures 5** through **8** and would start at the Hogback Reservoir, heading south. This leg of the distribution system would include 3,763 feet of 8-inch HDPE piping. Currently, there are two 2-inch meters and one 4-inch meter existing in the vicinity of Reach 1. The proposed project would include the installation of two new 3-inch recycled water meters to replace the three existing meters.

Reach 2 includes stations 49+12.81 through station 79+01.62, as shown in **Figures 8** through **11** and would start at the Hogback Reservoir, heading southeast to Cloverdale. This leg of the distribution system would include 2,989 feet of 20-inch HDPE piping. This line has been oversize to accommodate future recycled water customers southeast across Cloverdale. Currently, there is one existing 2-inch meter in the vicinity of Reach 2 on a 39-acre parcel that is only half planted with avocado's. The proposed project would include the installation of one 3-inch recycled water meter.

Reach 3 consists of stations 81+50 through 103+77.21, as shown in **Figures 11** through **13** and would continue south from the end of Reach 2. This leg of the distribution system would include 2,228 feet of 12-inch HDPE piping. Currently, there are two 4-inch meters existing in the vicinity of Reach 3. The proposed project would include the installation of two new 4-inch recycled water meters.

Reach 4 begins at station 104+50 and ends at station 130+49.88, as shown in **Figures 13** through **15** and would continue southwest from the end of Reach 3. This final leg of the distribution system would include 2,600 feet of 10-inch HDPE piping. Currently, there are three existing meters in the vicinity of Reach 4, including two 4-inch and one 3-inch meters. The proposed project would include the installation of three new meters, including two 4-inch recycled water meters and one 3-inch recycled water meter.

Table 2 summarizes the pipeline length and size for each reach.

TABLE 2
PIPELINE LENGTH AND SIZE

Reach	Length (feet)	Size (In.)	No. of Proposed Meters
1	3,763	8	2-3"
2	2,989	20	2-2" & 1-3"
3	2,228	12	2-4"
4	2,600	10	2-4" & 1-3"

SOURCE: Water Synergy Inc., 2018

2.2.4 Site Access

Access to each reach would be provided through private gates on various land parcels where the recycled water distribution system is located. Generally, Reach 1 would be accessed from Citrus

Avenue to Birch Avenue, Reach 2 would be accessed from Mountain View Drive, Reach 3 and part of Reach 4 would be accessed from SR-78 to Cloverdale Road, the remainder of Reach 4 would be accessed from SR-78 to Old San Pasqual Road to Diamond Ranch Road. The proposed project would include 20 foot easements along the property lines of the various parcels with the pipeline installed at approximately five feet off the property lines. The 20-foot easement would provide access along the length of the pipeline for both construction and maintenance purposes. In some areas a temporary construction easement 10 feet wider than the permanent 20-foot easement or 30-foot total may be required.

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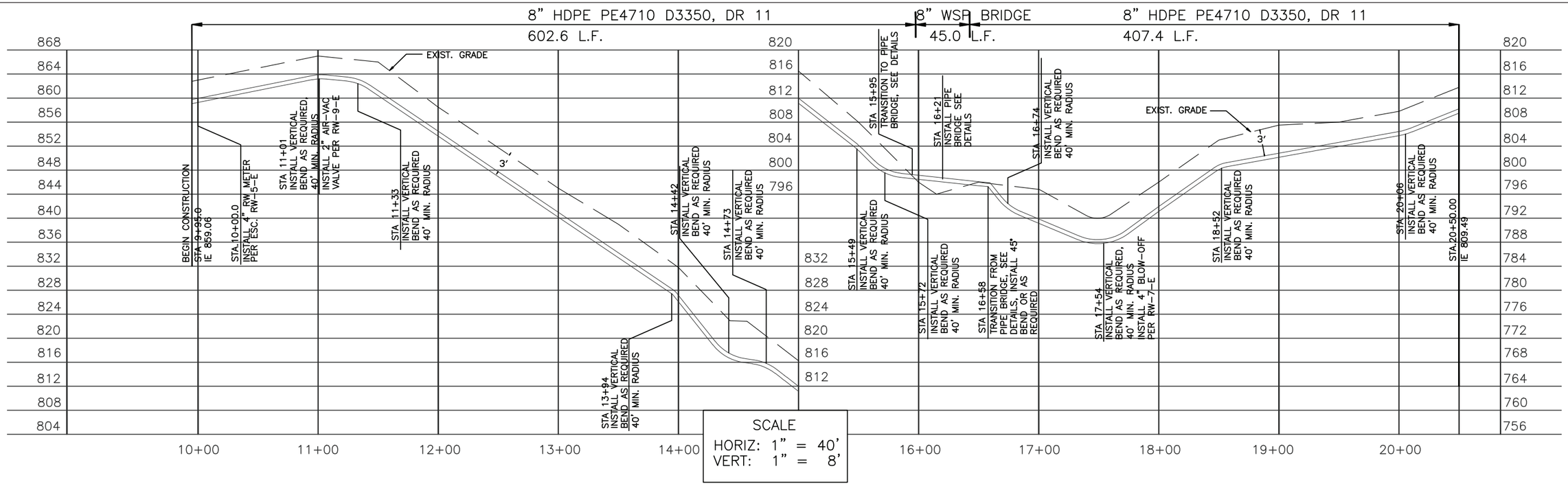
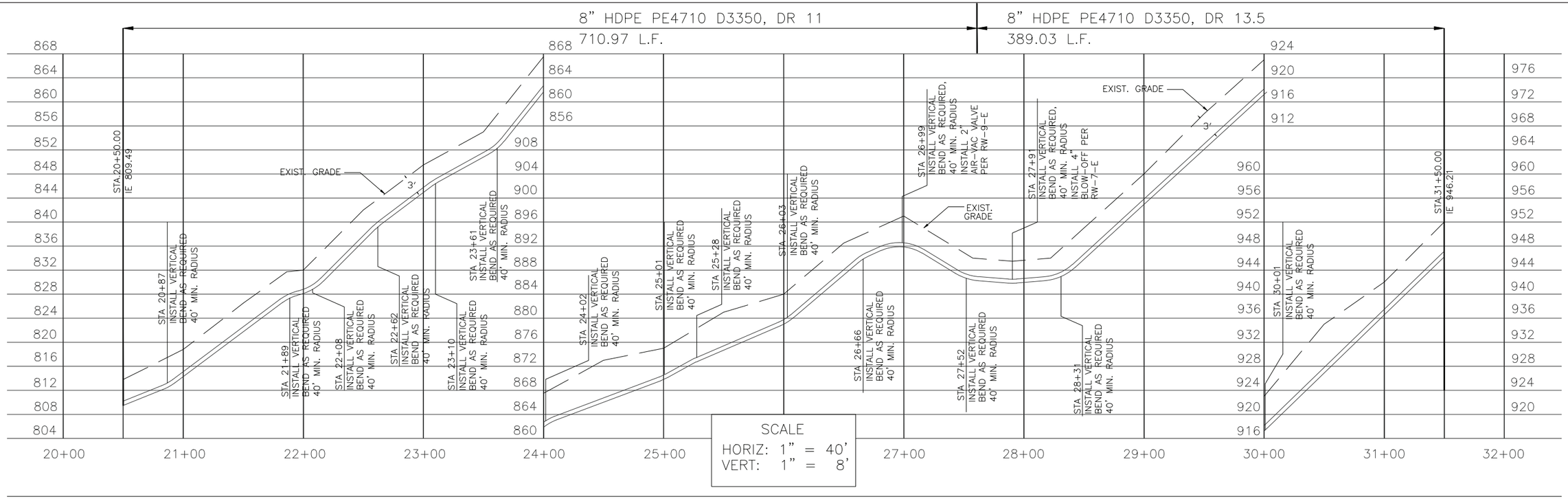


SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 5
Pipeline Plan and Profile STA 9+95 To STA 20+50

ESA



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SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 6
Pipeline Plan and Profile STA 20+50 To STA 31+50

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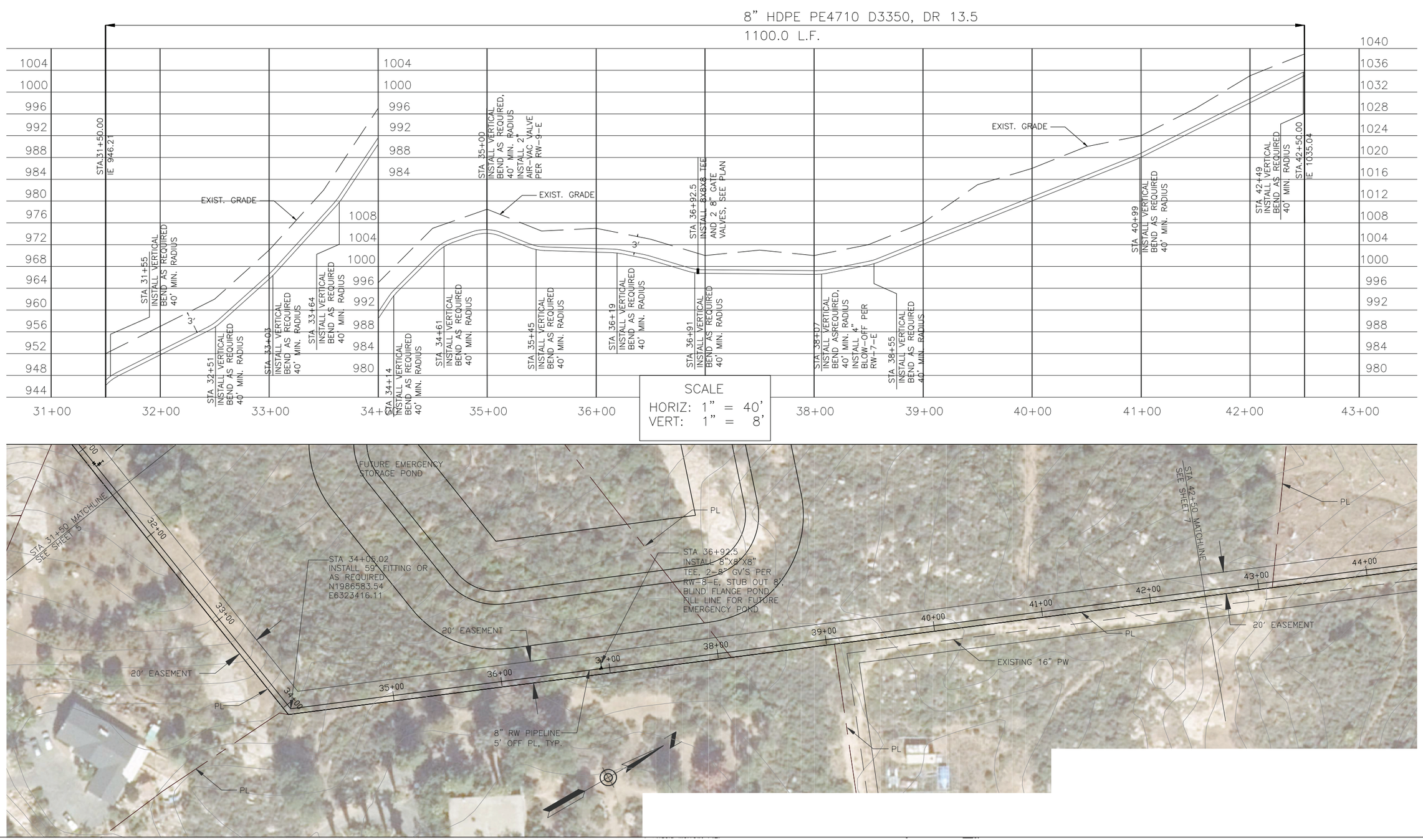

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SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 7
Pipeline Plan and Profile STA 31+50 To STA 42+50

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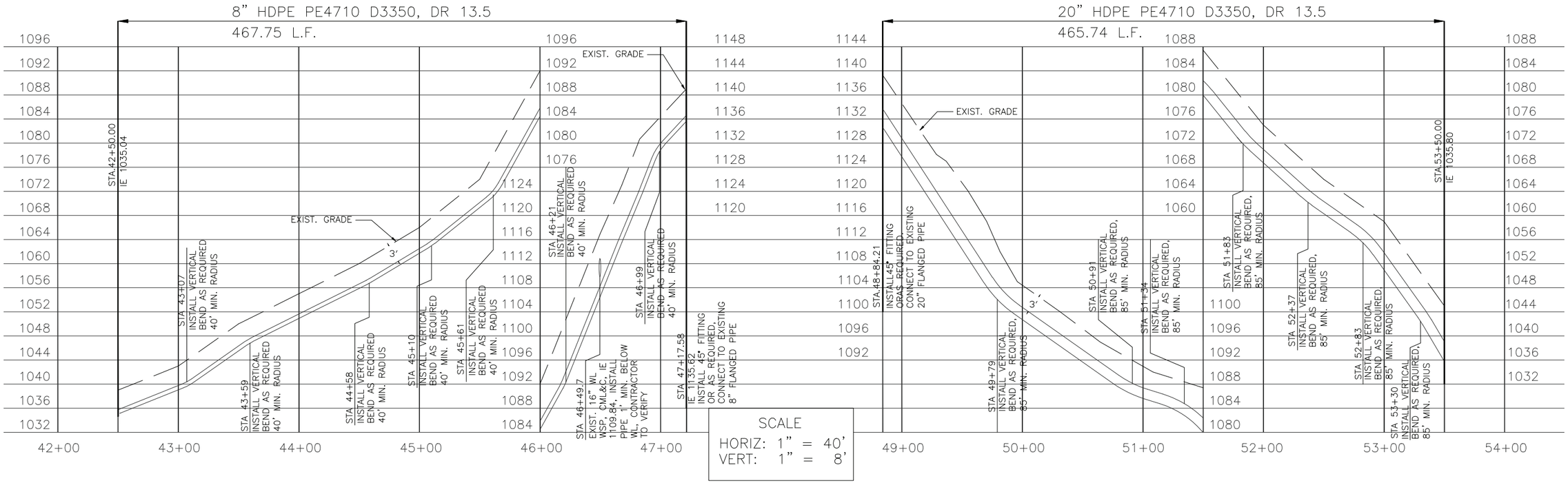

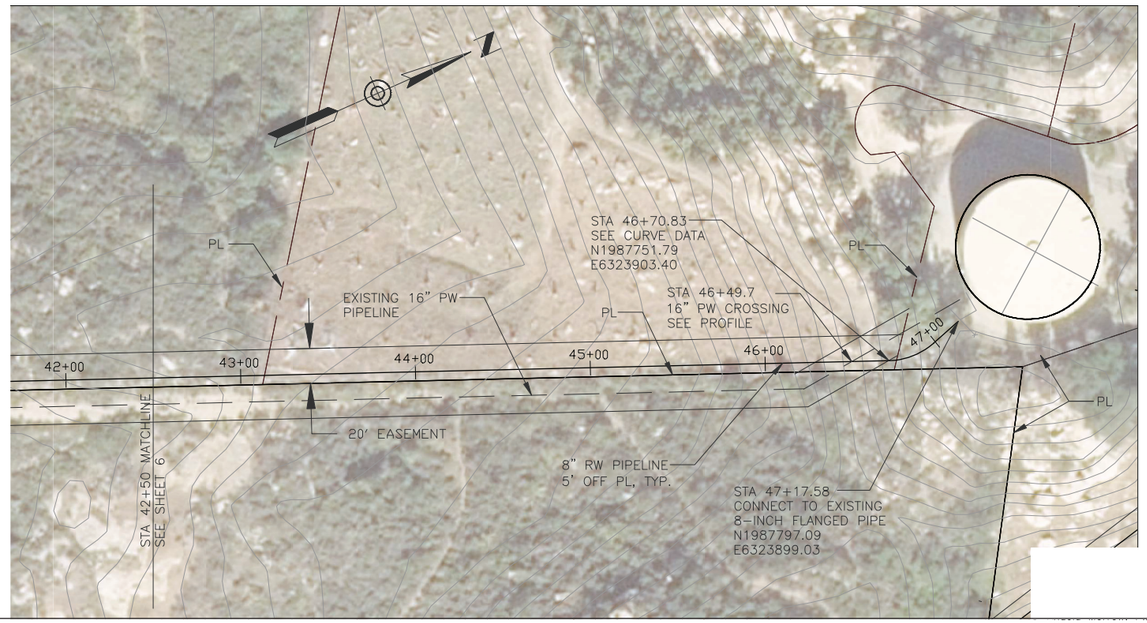

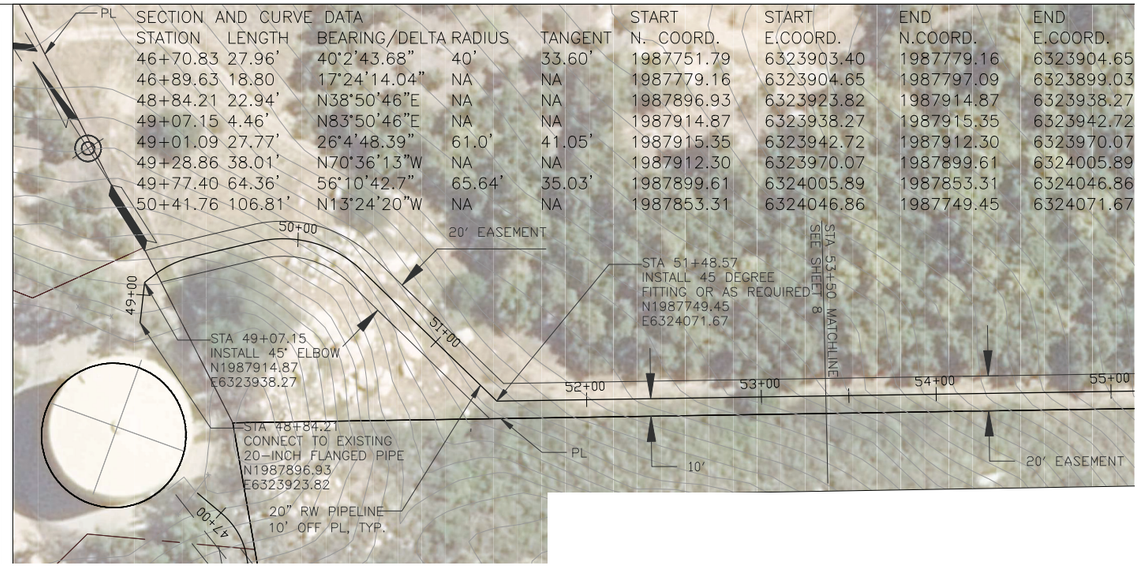

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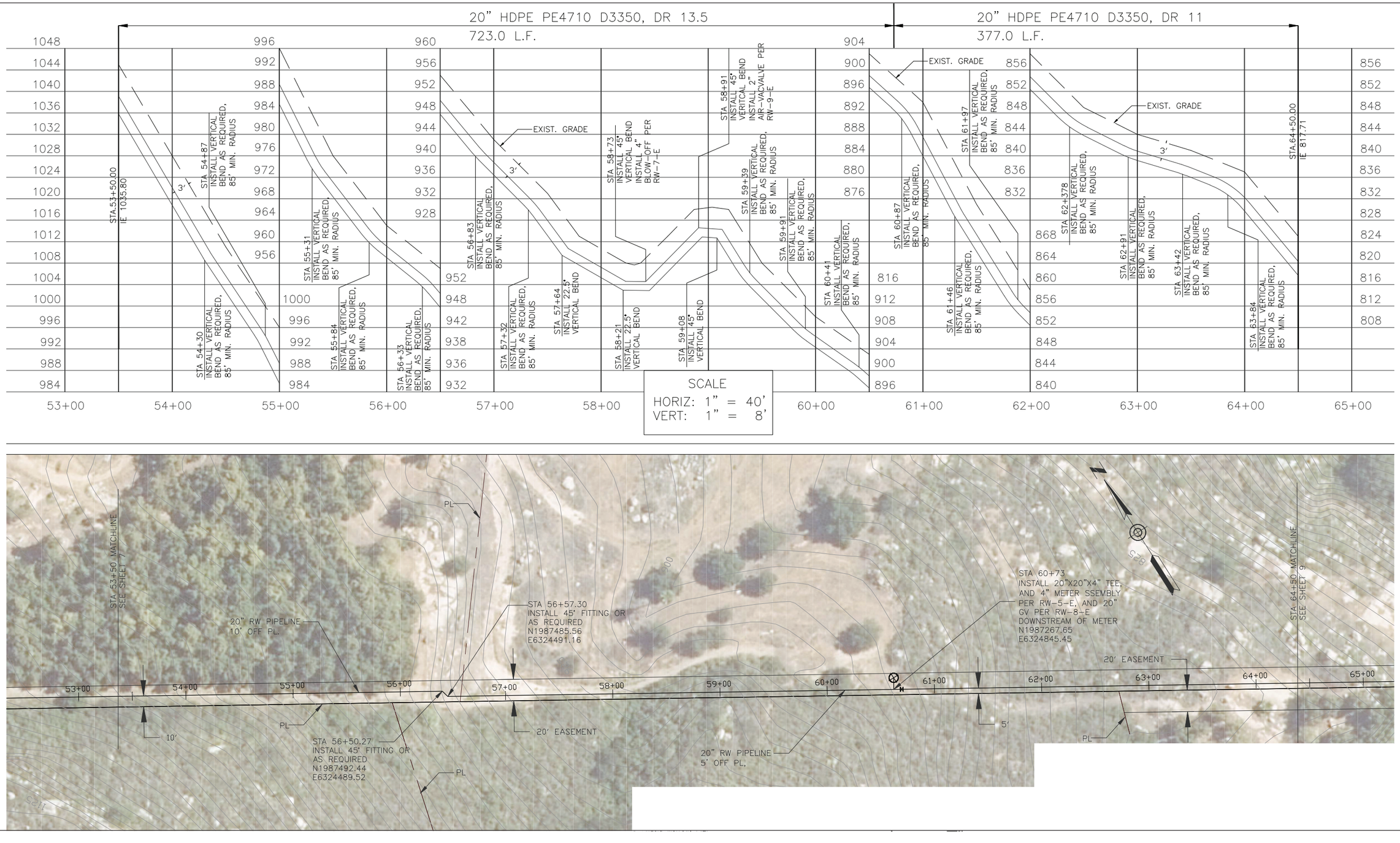
SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 8
Pipeline Plan and Profile STA 42+50 To STA 53+50

ESA



SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 9
Pipeline Plan and Profile STA 53+50 To STA 64+50

ESA

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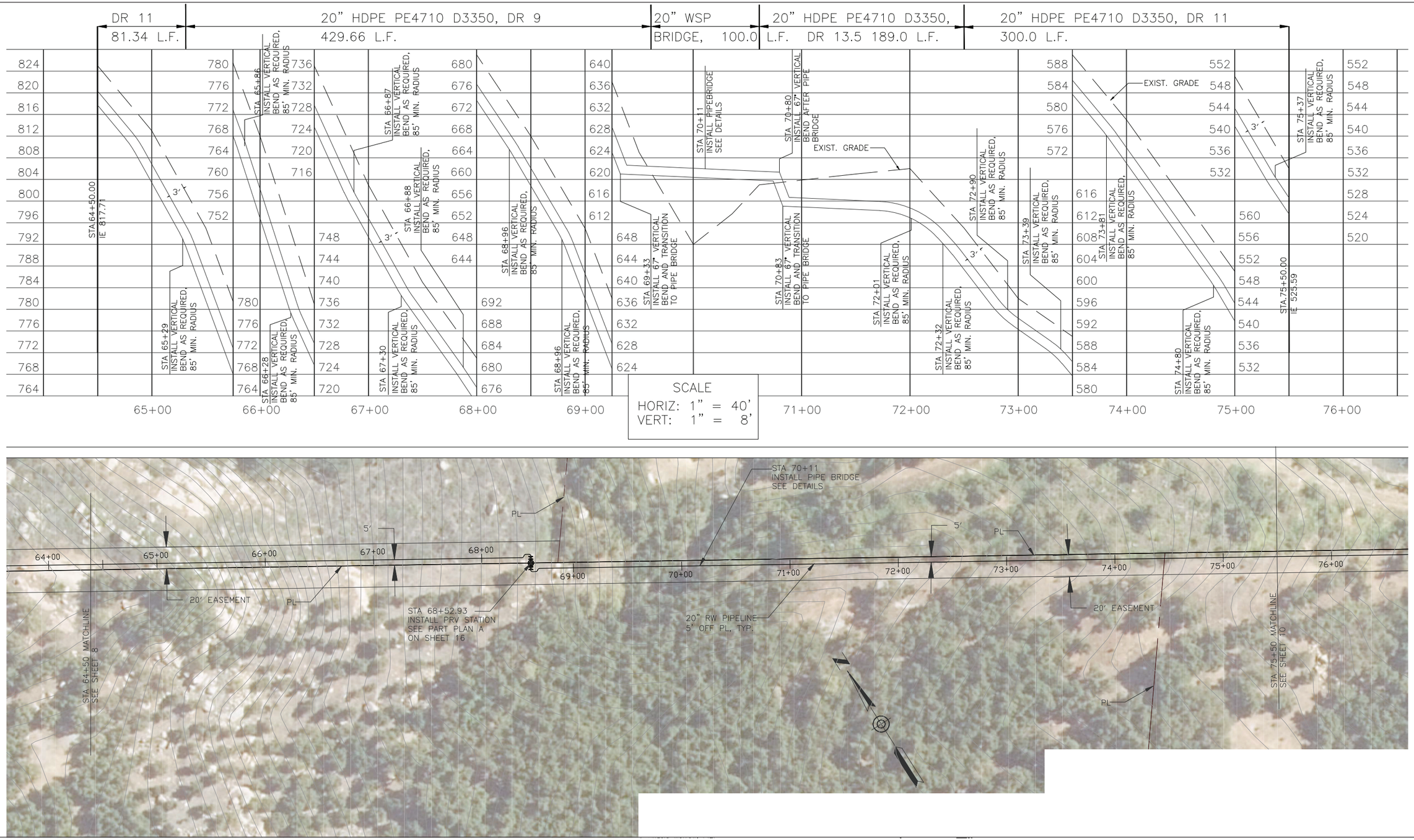

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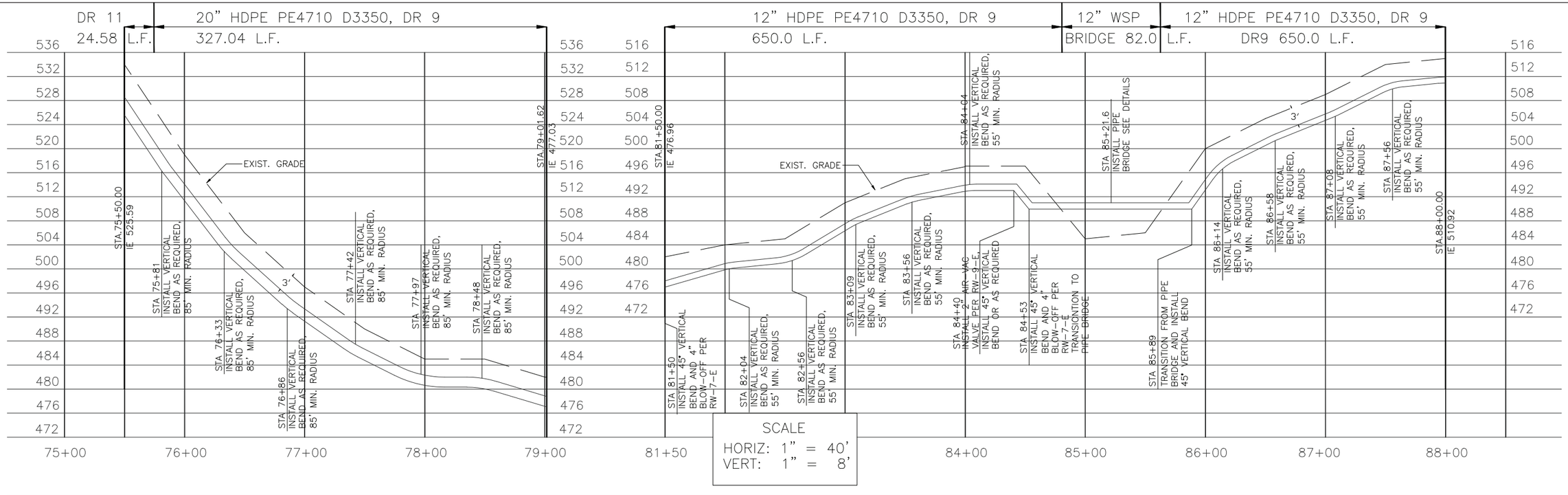
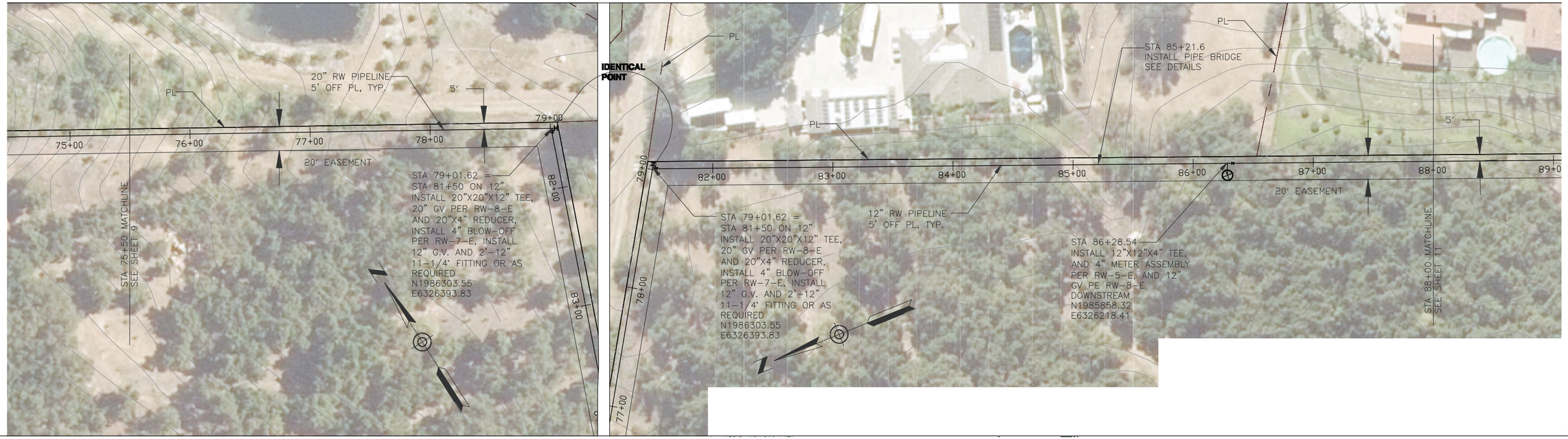
SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 10
Pipeline Plan and Profile STA 64+50 To STA 75+50

ESA



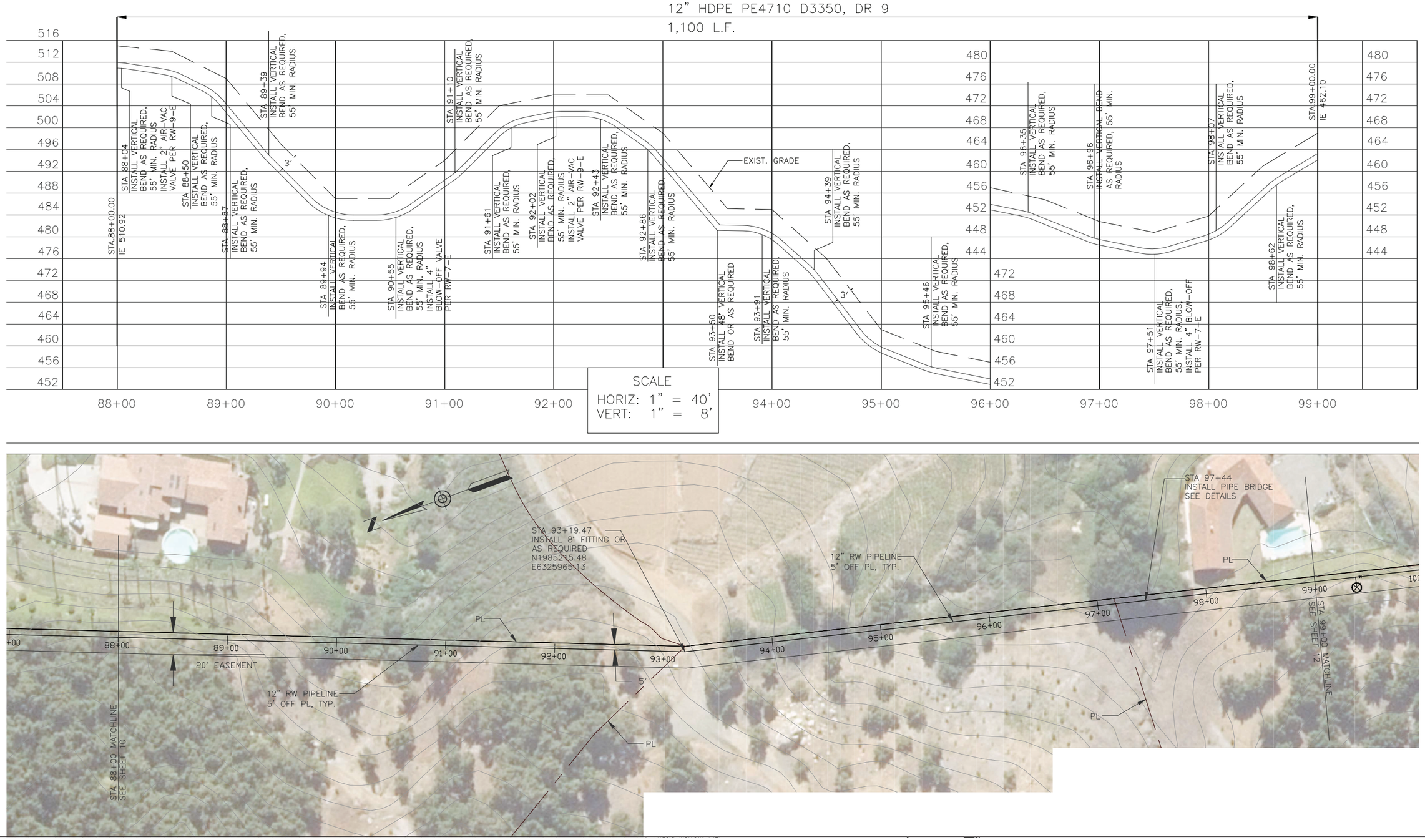


SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 11
Pipeline Plan and Profile STA 75+50 To STA 88+00

ESA



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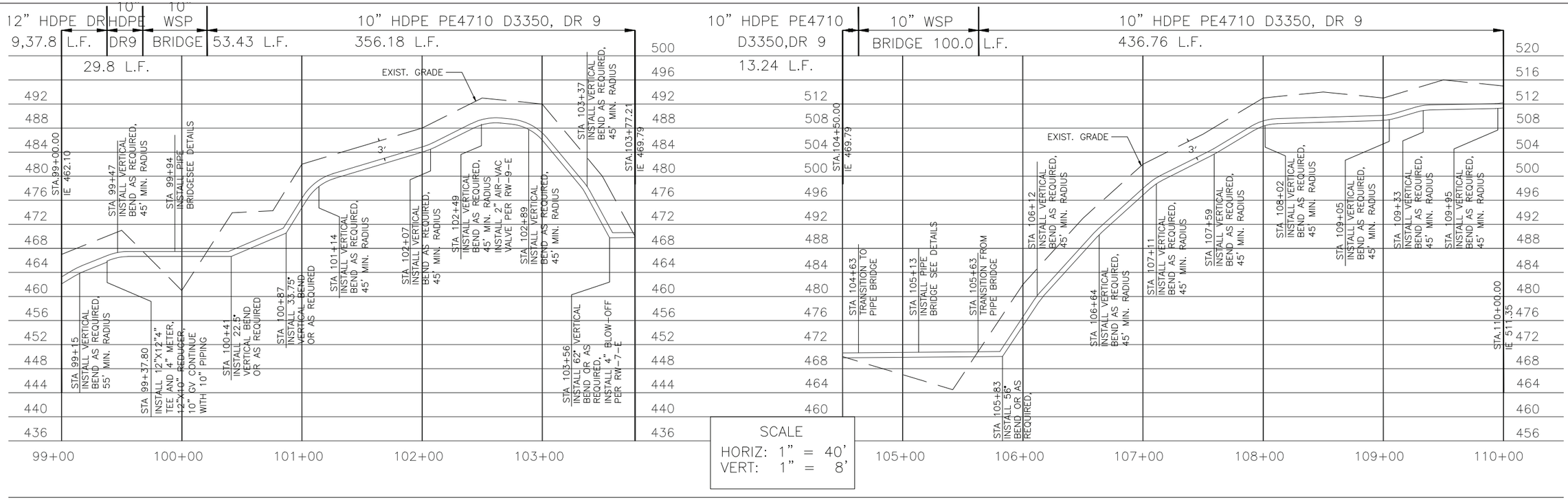
SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 12
Pipeline Plan and Profile STA 88+00 To STA 99+00

ESA

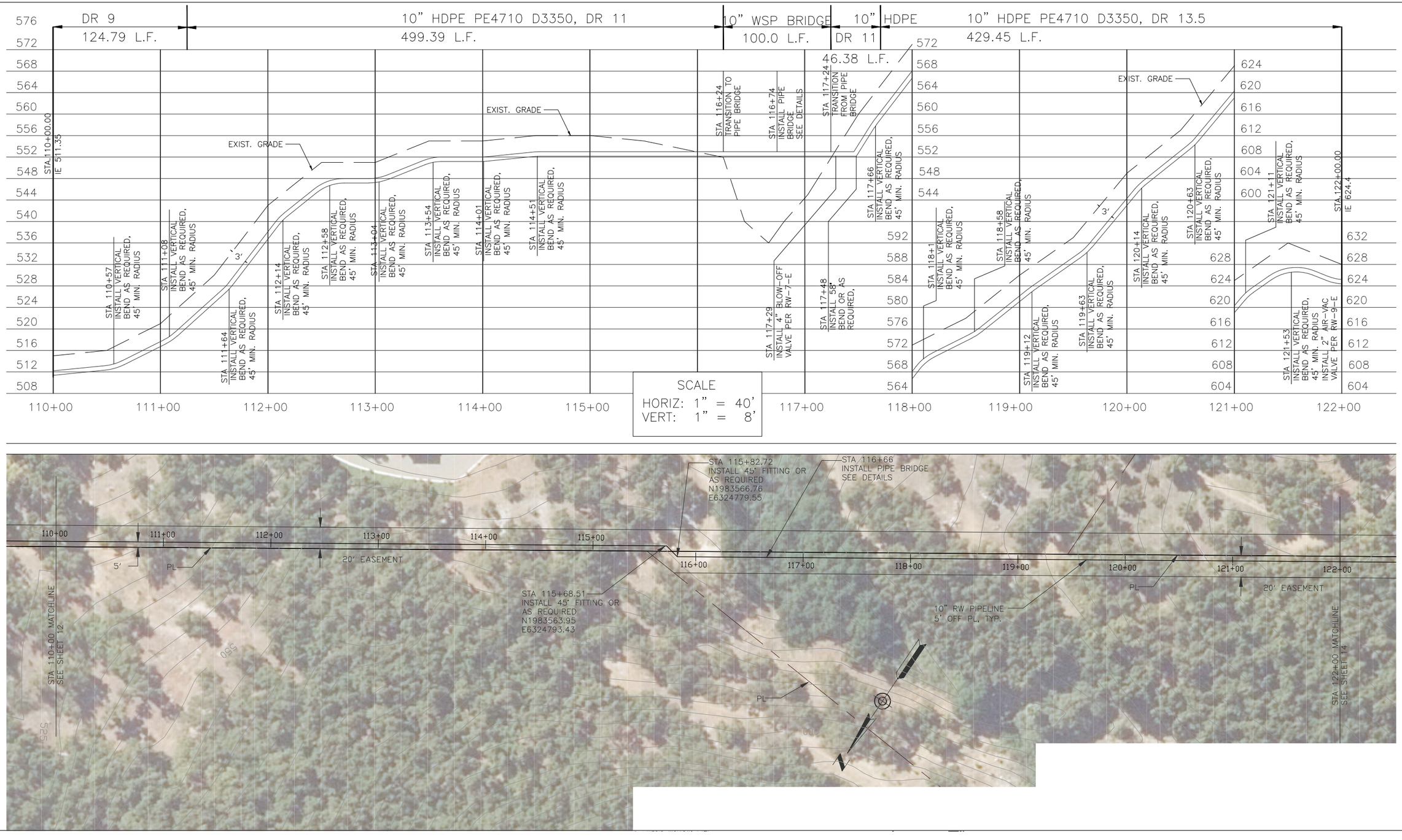


SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 13
Pipeline Plan and Profile STA 99+00 To STA 110+00

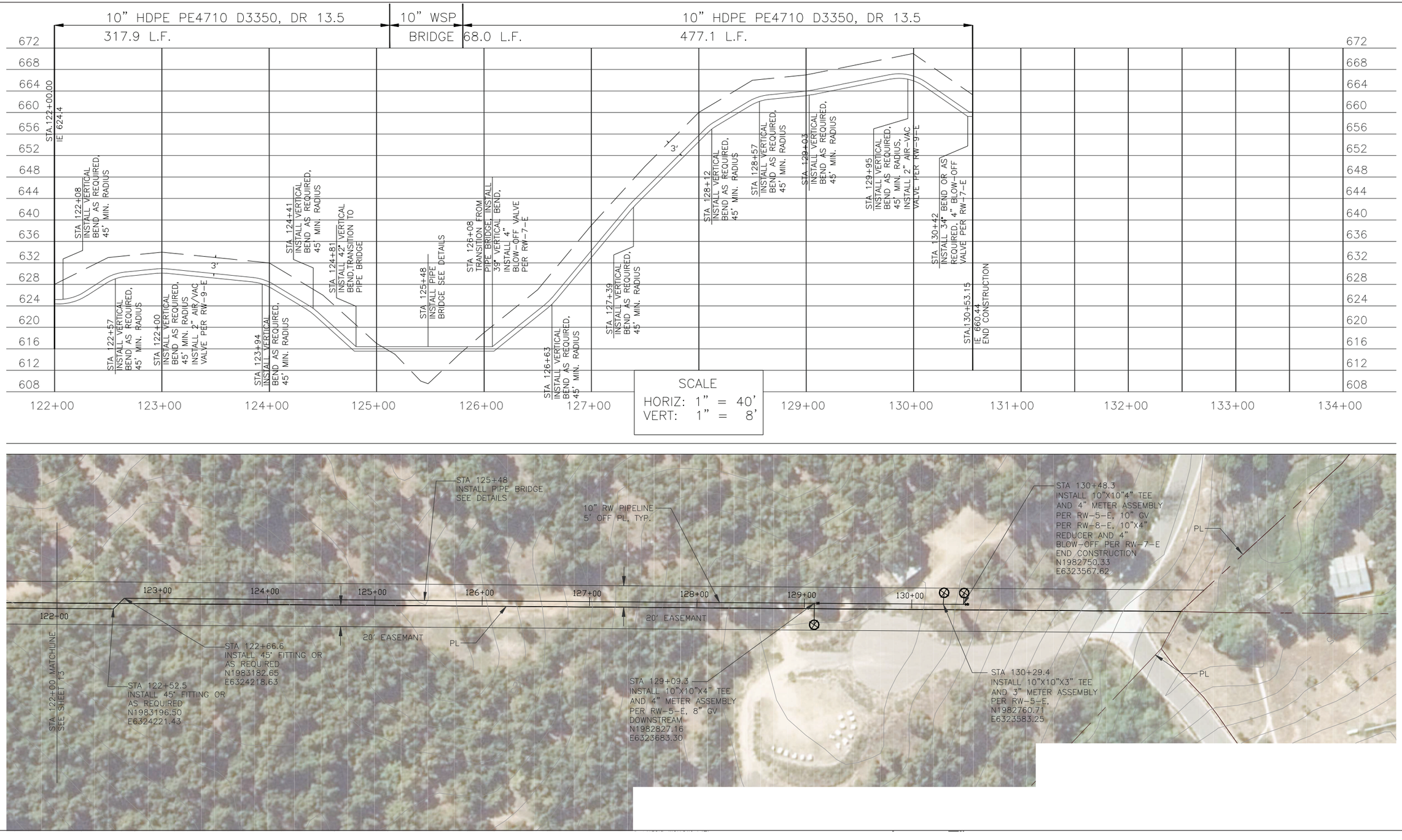
ESA



SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 14
Pipeline Plan and Profile STA 110+00 To STA 122+00



D160580.01 - Recycled Water Distribution System\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 15
Pipeline Plan and Profile STA 122+00 To STA 130+49.88

ESA

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2.2.5 Project Construction

The proposed project is scheduled to commence construction in fall or 3rd quarter of 2019 and be completed by fall or 3rd quarter 2020. This represents a construction duration of approximately 12 months. Construction would occur Monday through Friday; construction hours would be 7:00 a.m. to 4:00 p.m.

The maximum construction crew is expected to be approximately ten workers, but would vary during the course of the proposed project construction in accordance with the means and methods of the contractor.

The proposed project would result in a total excavation of approximately 6,000 cubic yards and 75 cubic yards daily. The goal of the project would be to minimize import or export of soil and use the material excavated onsite. Depending on the soils encountered some import and export may be required. It is assumed that 10 percent of the total excavated materials would be unusable and be exported and replaced with quality import, in addition, importing additional select pipe bedding material may be required.

Construction Equipment

Construction of the proposed new facilities would involve the use of a wide variety of heavy construction equipment onsite. The majority of the equipment and vehicles would be associated with the intensive pipeline installation phase of construction. Large construction equipment, including backhoes, bore/drill rigs, cement mixers, compactors, excavators, generator sets, and loaders, would be used during the construction phase of the proposed project. Construction staging would be located as near as possible to the project construction area.

Pipeline Construction

Preparation of the easement would include vegetation clearing by grubbing and minor grading for surface smoothing. The HDPE pipeline would be fusion welded and installed in buried trenches. The minimum pipe cover would be 3-feet. The maximum trench width would be 4-feet wide. Meters, blow-off valves, air and vacuum vales and other pipeline appurtenances would be installed as required along the pipeline system. Blasting may be necessary for pipeline construction where there are substantial rock outcroppings, and in other areas as rock is encountered. It is assumed that 15 percent of the total excavated materials would require blasting for easier removal. This would result in about 900 cubic yards of material. Surface rock is visible at the stations listed in **Table 3**, below:

TABLE 3
PIPELINE CONSTRUCTION

From Station	To Station	Length (ft.)
22+50	25+00	250
28+50	30+50	200
39+00	41+00	200
46+50	47+18	68
50+00	51+00	100
62+50	64+50	200
66+50	67+25	75
70+00	71+00	100
88+00	90+100	200
	Total	**1,393**

SOURCE: Water Synergy Inc., 2018

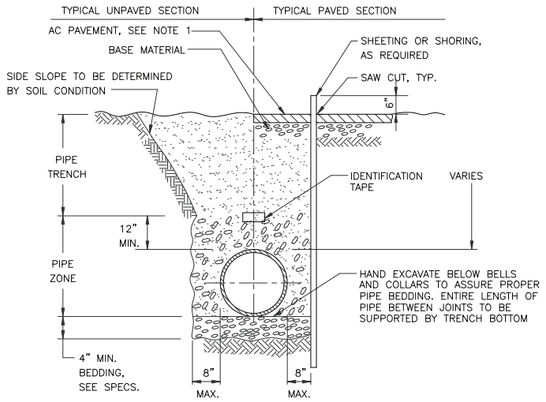
Pipe Bridges

Pipe bridges would be designed to support the pipes within the various stations. The pipe bridge support abutments would be designed to support the bridge and pipe assembly (as shown in **Figure 16**). The pipe size and span are shown below in **Table 4** below. The pipe for the bridge would be welded steel pipe cement mortar lined and coated.

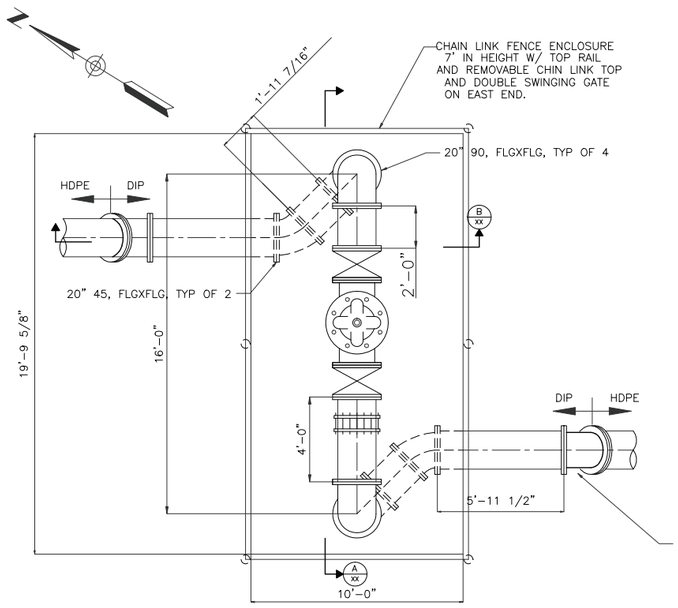
TABLE 4
PIPE BRIDGE SPAN

Bridge (C/L Station)	Pipe Size	Thickness (in.)	Length (ft)
16+21	8”	.406	45
70+11	20”	.594	100
85+22	12”	.406	82
99+94	12”	.406	54
105+13	10”	.365	100
116+74	10”	.365	100
125+48	10”	.365	68

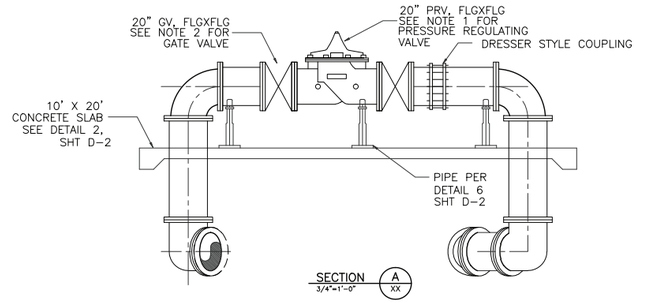
PRV STATION
PLAN

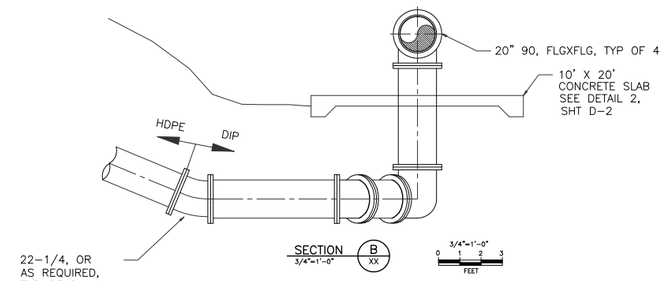


TYPICAL TRENCH SECTION DETAIL 2/C-2
NTS

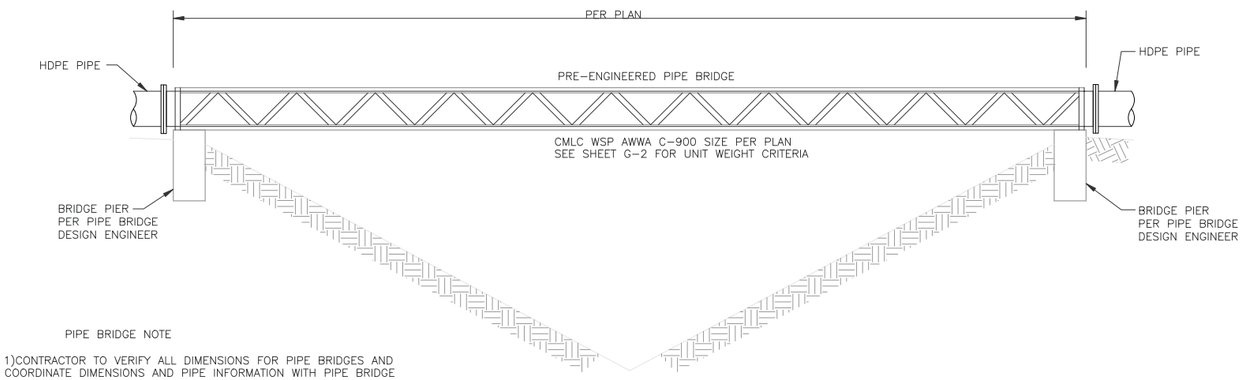


PRV STATION
PLAN





NOTE 1: PRESSURE REGULATING VALVE PER THE CITY OS ESCONDIDO'S APPROVED MATERIALS LIST. VALVE SETTINGS; UPSTREAM PRESSURE APPROXIMATELY 225 PSI, DOWNSTREAM SETTING 102 PSI.
NOTE 2: GATE VALVES PER THE CITY OS ESCONDIDO'S APPROVED MATERIALS LIST.
NOTE 3: CONTRACTOR TO VERIFY REQUIRED ANGLE PRIOR TO ORDERING FITTINGS.
NOTE 4: INSTALL CHAIN LINK FENCE ENCLOSURE W/ REMOVABLE TOP, PER SDRSD M-05, M-06 AND M-20.



PIPE BRIDGE NOTE

1)CONTRACTOR TO VERIFY ALL DIMENSIONS FOR PIPE BRIDGES AND COORDINATE DIMENSIONS AND PIPE INFORMATION WITH PIPE BRIDGE MANUFACTURE.
2)SEE SPECIFICATION 13427.
3)SEE BRIDGE CRITERIA SHEET G-2.

TYP. PIPE BRIDGE CROSS
NTS

SOURCE: Water Synergy Inc., 2018

Recycled Water Distribution System

Figure 16
Pipe Bridge Details

ESA

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The first pipe bridge would be located in Reach 1, as shown in Figure 5 Pipeline Plan and Profile STA 9+95 To STA 20+50, and would be 8-inches in diameter, .406 inches thick and 45 feet long. The second pipe bridge would be located in Reach 2, as shown in Figure 10 Pipeline Plan and Profile STA 64+50 To STA 75+50 and would be 20-inches in diameter, .594 inches thick and 100 feet long. The next pipe bridge would be located at the start of Reach 3, as shown in Figure 11 Pipeline Plan and Profile STA 75+50 To STA 88+00 and would be 12 inches in diameter, .406 inches thick and 82 feet long. The fourth pipe bridge would be located towards the end of Reach 3, as shown in Figure 13 Pipeline Plan and Profile STA 99+00 To STA 110+00 and would be 12 inches in diameter, .406 inches thick and 54 feet long. The fifth pipe bridge would be located in Reach 4, as shown in Figure 13 Pipeline Plan and Profile STA 99+00 To STA 110+00 and would be 10 inches in diameter, .365 inches thick and 100 feet long. The sixth pipe bridge would be located in Reach 4, as shown in Figure 14 Pipeline Plan and Profile STA 110+00 To STA 122+00 and would be 10 inches in diameter, .365 inches thick and 100 feet long. The last pipe bridge would be located in Reach 4, as shown in Figure 15, Pipeline Plan and Profile STA 122+00 To STA 130+49.88 and would be 10 inches in diameter, .365 inches thick and 68 feet long.

2.2.6 Project Operation and Maintenance Details

The proposed project would not require full-time employees onsite. Employees would only be required for intermittent routine facility monitoring and maintenance.

2.2.7 Responsible Agencies, Permits and Approvals

The following potential permits and/or approvals from other agencies that may be required prior to construction of the proposed project include:

- U.S. Fish and Wildlife Service: Federal Endangered Species Act Compliance;
- California Department of Fish & Wildlife (Region 3): State Endangered Species Act Compliance
- California State Water Resources Control Board
- Water Recycling Requirements
- San Diego Regional Water Quality Control Board (Region 9):
- Construction General Permit Stormwater Pollution Prevention Plan
- State Historic Preservation Office: Section 106 National Historic Preservation Act Compliance
- City of Escondido: Approvals including Design Review (as required)
- County of San Diego
  - Building and Grading Permit
  - Construction Staging Plan
  - Construction Stormwater Pollution Prevention Plan

- San Diego County Air Pollution Control District: Authority to Construct and Authority to Operate
- Private Property Owner(s): Easement, Purchase, or Lease Agreement for Alignment

CHAPTER 3
Initial Study Environmental Checklist and Evaluation

3.1 Project Information

1. **Project Title:** Eastern Recycled Water System, Project No. ENV16-0007
2. **Lead Agency Name and Address:** City of Escondido
   201 N Broadway, 92025
3. **Contact Person and Phone Number:** Jay Paul, Senior Planner
   760.839.4537 Jpaul@escondido.org
4. **Project Sponsor's Name and Address:** City of Escondido, 201 N Broadway, 92025
5. **General Plan Designation(s):** County - Semi-Rural Residential (SR-2)
   City of Escondido – Rural 1 and II
6. **Zoning Designation(s):** County - Agriculture
7. **Description of Project**: The proposed project would include the installation of approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline to distribute recycled water to the growers surrounding City of Escondido's Hogback Reservoir.
8. **Location**: Within unincorporated County land, east of the City of Escondido and south of Mountain View Road. The project area is characterized by rural residential and agricultural land uses. The project site is generally northwest of the State Route (SR) 78 and Cloverdale Road intersection. APNs: 2410411000; 2411210500; 2411210600; 2411202900; 2411202600; 2411202000; 2411202100; 2411202200; 2411400200; 2410801800 and 2410810100 (County of San Diego, 2016). The APNs for Hogback Reservoir are 2410102800 and 2410410400
9. **Surrounding Land Uses and Setting**: The project site is generally located within existing rural estate residential land uses with several agricultural groves. The project site has hilly terrain with elevations ranging from approximately 430 feet amsl at the eastern project area to 1,150 feet amsl near the Hogback Reservoir Tank. The project site is generally surrounded by rural residential land uses to the north and west; mining, agricultural and commercial-agricultural land uses to the south; and agricultural and vacant lands to west.
10. **Tribal Consultation**. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? Three Tribes (Rincon, San Luis Rey and Soboba and) were mailed and emailed notification regarding the proposed project in conformance with Assembly Bill AB 52.

3.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☒ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☒ Tribal Cultural Resources	☐ Utilities/Service Systems
		☒ Mandatory Findings of Significance

3.3 Determination

On the basis of this initial study:

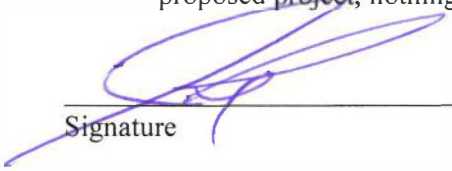
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature — November 15, 2018 (Date)

Jay Paul, Senior Planer (Printed Name) — (For)

3.4 Environmental Checklist

3.4.1 Aesthetics

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1.	**AESTHETICS — Would the project:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Background

Hillsides and ridgelines provide a visual resource and aesthetic value to the City of Escondido that contributes to the community's sense of identity. The City's General Plan Resource Conservation Element identifies the steep slopes, primary and secondary ridgelines, and prominent natural landforms within the planning area (City of Escondido, 2012). Much of the City's planning area that contains steeper terrain at higher elevations has been designated for very low density residential and/or agricultural purposes to preserve viewsheds.

The proposed pipeline alignment would be located in along hills within the eastern portion of the City. Portions of the pipeline alignment would run along a City designated "skyline ridge" and just below a designated "peak and high point" in the City's General Plan Resource Conservation Element, Figure VII-5. Policies in the City's General Plan Resource Conservation Element (Visual Resources 3.1-3.6) prohibit development on skyline ridges and seek preservation of unique landforms, creeks, and open space areas. Hillside development is directed to avoid potentially hazardous or environmentally sensitive areas, minimize grading, and maximize landscaping to minimize visual impacts (City of Escondido, 2012). The proposed pipeline alignment would run through sections of hills that are disturbed by the development of the City's Hogback Reservoir site.

None of the highways in the project area are designated as scenic highways in the California Scenic Highway Mapping System (Caltrans, 2015).

Environmental Evaluation

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The project site is located within rural estate residential land uses with several agricultural groves. Once constructed, most of the proposed pipeline would be below ground and would not alter the surrounding visual character of the environment. The project alignment is not designated a scenic vista. The nearest documented scenic resource, Dixon Lake, is located approximately three miles north of the project site, and is surrounded by open space. The lake is separated from the project site by elevation, open space and single family homes. The immediate surrounding area has not been designated as a scenic vista; therefore, construction and operation of the project would not have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated state scenic highways in the vicinity of the project site. The nearest designated state scenic highway is SR-78 through Anza-Borrego Desert State Park, approximately 35 miles east of the project site. The nearest eligible state scenic highway-not officially designated is SR-76 approximately 15 miles north of the project site (DOT, 2015). The project site is not within a scenic roadway identified in the City's General Plan. Therefore, impacts related to scenic resources within a state scenic highway would not occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. The project area is characterized by hilly terrain with elevations ranging from 430 feet amsl at the eastern portion of the project area and 1,150 feet amsl near the existing Hogback Reservoir Tank. The project site is generally surrounded by rural residential land uses to the north and east; mining, agricultural and commercial land uses to the south; and agricultural and vacant lands to the west. These surrounding land uses can be seen in Figures 3 and 4.

Construction activities would require the use of heavy equipment and storage of materials on site. During construction, excavated areas, stockpiled soils, and other materials at the construction site and staging areas would constitute negative aesthetic elements in the visual landscape. However, these effects would be temporary during project construction and would not significantly impact the long term visual character in the area.

Once constructed, most of the proposed pipeline would be below ground and would not alter the surrounding visual character of the environment. Portions of the pipeline would be a maximum of 5 feet above ground surface and consist of a maximum 20-inch black piping with a 4-inch purple stripe along the length. The proposed pipeline would potentially alter the visual character of the project site and its surroundings as the project site currently consists of agricultural and vacant land. Aboveground-ground segments would also include pre-engineered pipe bridges. The pipe bridge would be anchored by concrete bridge piers at the edge of the drainages. While some blasting of rock outcrops could be required, they would not substantially alter the site character as

they would not remove large expanses of outcrops. or ridges. However, the proposed project site consists of varying topography and thick brush, which would further reduce the potential for the above ground pipeline being visible. Additionally, portions of the ridgeline have been previously disturbed by existing single-family residential development, paved driveways, grove development, and unpaved grove access roads/paths. Therefore, while implementation of the proposed project would include new above ground development, it would not substantially degrade the project's setting or character, and the impact would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

Less than Significant Impact. Construction activities would occur Monday through Friday during permitted daylight hours between 7:00 a.m. and 4:30 p.m. No nighttime construction is planned. Operation of the proposed project would not include lighting. Therefore, no new sources of light would be created and no impacts regarding lighting would occur.

Construction of the proposed project would include additional cars within the project site, which could increase glare. However, the proposed project would not include a substantial number of cars visiting the project site. Operation of the proposed above ground pipeline would not introduce a substantial source of glare to the project site because the pipeline would be constructed out of high-density polyethylene (HDPE), which is not a reflective material. As a result, impacts related to glare would be less than significant.

References

Department of Transportation, California Scenic Highway Mapping System. 2015. Accessed at http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/cahisys.htm on November 2, 2015.

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Aesthetics.pdf.

3.4.2 Agricultural and Forest Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Background

In 1982, the State of California created the Farmland Mapping and Monitoring Program (FMMP) within the California Department of Conservation (DOC) to monitor the conversion of the State's farmland to and from agricultural use. Based on FMMP maps prepared by DOC for San Diego County, the project area is classified as Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (FMMP, 2014).

The California Land Conservation Act (LCA) of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. According to maps prepared by the DOC's Division of Land Resource Protection, there are no Williamson Act contracted lands within the project boundaries (DOC 2013).

Environmental Evaluation

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site is currently developed and supports some agricultural uses. The project site has a land use designation of Semi-Rural Residential and is zoned as Agriculture. (County of San Diego, 2016). The DOC's Important Farmland Map for San Diego County identifies the project site as Unique Farmland and Farmland of Local Importance (DOC, 2014). Areas of Prime Farmland, Unique Farmland, and Farmland of Statewide importance would not be affected by the project because they would not be converted to non-agricultural use. The proposed project would benefit the agricultural land by providing a greater amount of recycled water for irrigation. Therefore, no impacts would occur regarding the conversion of agricultural land to non-agricultural uses.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site has a land use designation of Semi-Rural Residential and is zoned as Agriculture (County of San Diego, 2016). The project site is located on Non-Williamson Act – Non-Enrolled Land as defined by the latest Farmland Mapping and Monitoring Program Important Farmland Maps (DOC, 2013). As discussed above in impact 2. a), the proposed project would be beneficial by providing recycled water for irrigation, and therefore would not conflict with the designated Residential Agriculture zone. Therefore, no impacts would occur regarding existing zoning or conflicts with a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The project site has a land use designation of Semi-Rural Residential and is zoned as Agriculture (County of San Diego, 2016). The project boundaries are not designated or zoned as forest or timberland, or timberland production. Therefore, no impact would occur regarding forest land or timberland zoning conflicts.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site has a land use designation of Semi-Rural Residential and is zoned as Agriculture (County of San Diego, 2016). The project boundaries are not designated or zoned as forest land or forest resources. Therefore, no impacts would occur regarding the loss or conversion of forest land.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. As discussed in Impact 2. (a) and (d) above, the proposed project would be partially located on land zoned for agricultural use. The proposed project would benefit agricultural land by providing higher amounts of water for agricultural uses. In addition, the proposed project is located outside of forest resources. The proposed project would not convert farmland or forest land to non-agriculture or non-forestry use. Therefore, no impacts would occur to agriculture or forestry resources.

References

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3.4.3 Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Background

The project site, located in the County of San Diego, is within the San Diego Air Basin (SDAB). The 4,260 square mile SDAB covers the entire San Diego region. The State Implementation Plan (SIP) is the document that sets forth the State's strategies for attaining Ambient Air Quality Standards (AAQS). The SDAB is currently designated as an attainment area for carbon monoxide (CO), nitrogen oxides (NOx), lead (Pb), and sulfur oxides (SOx), but is a non-attainment area for ozone (O_3), federal and state, and particulate matter (PM_{10} and $PM_{2.5}$), state.

The San Diego Air Pollution Control District (SDAPCD) has jurisdiction over San Diego County for the administration and enforcement of air quality regulations. In order to meet the AAQS, the SDAPCD has adopted a series of Regional Air Quality Strategy (RAQS) Plans. The 2009 RAQS, the most recent plan, employs the most up-to-date science, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes and new air quality modeling tools. Policies and measures to achieve AAQS for healthful air quality in the air basin are outlined in the 2009 RAQS. It also incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the San Diego Association of Governments (SANDAG). The SIP and the SDAPCD's RAQS were developed in conjunction with each other to reduce regional emissions.

The City of Escondido has established daily thresholds of significance for construction and operation in the City's Municipal Code, Chapter 33 Article 47, Coordination of CEQA (Sec. 33-924). These thresholds are based on the County of San Diego and South Coast Air Quality

Management District thresholds and have been adopted for the purpose of determining significance under CEQA. The established screening level thresholds can be used to demonstrate that a project's emissions would not result in a significant impact as defined by CEQA. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's air quality impacts are below the AAQS. The air quality significance thresholds, mass daily thresholds, for criteria pollutants are presented in **Table 5**.

TABLE 5
AIR QUALITY SIGNIFICANCE THRESHOLDS (MASS DAILY THRESHOLDS)

Pollutant	Construction (pounds/day)	Operation (pounds/day))
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NOx)	250	250
Sulfer Dioxide (SO2)	250	250
Carbon Monoxide (CO)	550	550
Particulate Matter <10 microns (PM10)	100	100
Particulate Matter <2.5 microns (PM2.5)	55	55

SOURCE: Article 47 of the City of Escondido Municipal Code, SDAPCD Rule 1501, SCAQMD 2015

Environmental Evaluation

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The SDAPCD and the SANDAG develop and implement the RAQS for attainment and maintenance of the AAQS in the SDAB. The RAQS relies on information from the California Air Resources Board (CARB) and SANDAG, including projected growth and mobile, area, and all other source emissions, to project future emissions and develop appropriate strategies necessary for the reduction of source emissions through regulatory controls. CARB's mobile source emission projections and SANDAG's growth projections are based on population and vehicle trends and land use plans developed by incorporated cities, such as the City of Escondido, and the County of San Diego. Development projects within the County of San Diego that are shown to be consistent with growth projections in the County's General Plan would be consistent with the growth accounted for in the RAQS and SIP. Therefore, proposed developments that are consistent with the General Plan would not obstruct or conflict with the RAQS or SIP and would not have a significant impact on air quality.

The project site has a land use designation of Semi-Rural Residential and is zoned as Agriculture (County of San Diego, 2016). The proposed project would provide recycled water infrastructure for agricultural users in the area. The project would be consistent with growth projections of the

General Plan because it would not directly, or indirectly, induce population growth. In addition, development of the proposed project would not require any new permanent employment positions on a daily basis. However, employees would be required for intermittent routine facility maintenance. The proposed project would not exceed the General Plan growth assumptions and would, therefore, not conflict with or obstruct implementation of the applicable air quality plans. Impacts would be less than significant and no mitigation is required.

As stated above, the SDAPCD is also responsible for the development of the SDAB's portion of the SIP, which is required under the federal Clean Air Act for areas that are in nonattainment for criteria pollutants. The project is a Federal action and therefore, under the Clean Air Act, would be subject to a SIP conformity determination as the project is in a marginal nonattainment area for 8-hour ozone National AAQS. **Table 6** shows the attainment status for each criteria air pollutant and the *de minimis* levels for ozone pre-cursors that the project's emissions are compared to for the SIP conformity determination. If project emissions are below the *de minimis* levels then the project is determined to be in conformity with the SIP. As shown in Table 6, ozone precursors are below the *de minimis* thresholds for both construction and operational activities. Therefore, the project is consistent with the SIP and impacts would be less than significant.

TABLE 6
SIP CONFORMITY EVALUATION

Pollutant	Federal Status	Nonattainment Rates	Threshold of Significance (tons/year)	Construction Emissions (tons/year)	Operational Emissions (tons/year)[1]
Ozone (O_3)	Nonattainment	Marginal	——— See VOC & NO_X ———		
Carbon Monoxide (CO)	Attainment	N/A	N/A	3.8	0
Oxides of Nitrogen (NO_X)	N/A	N/A	100	5.0	0
Volatile Organic Compounds (VOC)	N/A	N/A	50	0.5	0
Lead (Pb)	Attainment	N/A	N/A	N/A	0
Particulate matter less than 2.5 microns ($PM_{2.5}$)	Attainment	N/A	N/A	0.3	0
Particulate matter less than 10 microns (PM_{10})	Unclassifiable*	N/A	N/A	0.9	0
Sulfur Dioxide (SO_2)	Attainment	N/A	N/A	<0.1	0

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. Construction emissions from the project are anticipated to result from the use of onsite equipment and the disturbance of soil resulting in fugitive emissions. Blasting may be necessary for pipeline construction within Reach 1, which may increase fugitive

dust emissions. However, best management practices would be implemented during blasting activities. In addition, blasting is anticipated to be on a small scale basis, and would not violate daily emission thresholds. As was used in the City of Escondido Recycled Water Easterly Main Extension Final Mitigated Negative Declaration, the Roadway Construction Emissions Model (Version 8.1.0, 2016) was utilized for this project to quantify construction emissions. For purposes of this analysis, the estimated acreage that the proposed project pipeline would cover is 5.3 acres. It was assumed, that 0.44 acres of pipeline would be installed per month (over the 12 month period), disturbing at worst-case no more than 0.5 acres per day (provided by the client). During project construction, the proposed project would generate trips associated with the construction crew as well as from delivery activities. For analysis purposes, it was assumed that the City of Escondido Traffic Impact Analysis (TIA) trigger point is based on passenger car equivalents (PCE). PCE, which for traffic congestion purposes, counts passenger vehicles as a single vehicle and heavy-duty trucks as three passenger car equivalents, was assumed for the proposed project. Based off of the assumptions for the City of Escondido Recycled Water Easterly Main Extension Final Mitigated Negative Declaration, an average crew size of 6 workers for each phase was assumed, generating up to 12 trips per day. Haul trips could include soil import/export and other deliveries of materials as needed. As a worst-case, it was estimated that 8 soil import/export trips (48 PCE trips) and one delivery trip per day (6 PCE trips) would be required, resulting in a total maximum of 54 PCE trips per day for haul trips. Total worst-case project trips would be 66 PCE trips per day. Detailed assumptions, calculations, and modeling outputs are included in Appendix A of this IS/MND. **Table 7** shows the unmitigated criteria pollutant construction emissions for the proposed project. As shown, project emissions would not exceed regulatory thresholds, therefore emissions from construction activities would be less than significant and no mitigation is required.

TABLE 7
UNMITIGATED CONSTRUCTION EMISSIONS (POUNDS PER DAY)

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	3.5	35.7	27.8	0.1	6.7	2.6
Grading/Excavation	3.9	40.1	30.3	0.1	6.8	2.7
Paving	0.8	7.7	8.0	<0.1	0.4	0.4
Maximum Project Emissions	**3.9**	**40.1**	**30.3**	**<0.1**	**6.8**	**2.7**
Significance Thresholds	75	250	550	250	100	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

SOURCE: ESA Road Construction Emissions Model modeling 2018.

As the project is the construction of a recycled water pipeline, there would be no on-going operational emissions from the pipeline associated with this project. Occasionally, a few vehicle trips would be required for maintenance activities. However, these would occur infrequently and emissions generated from this activity would not have the potential to exceed regulatory

thresholds. Therefore, emissions from operational activities would be less than significant and no mitigation is required.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. As the SDAB is currently in non-attainment for the federal and State O_3 standards and the State PM_{10} and $PM_{2.5}$ standards, the generation of these pollutants by the proposed project during construction activities could result in a cumulative significant impact associated with the cumulative net increase of any criteria pollutant for which the region is in non-attainment. However, the approach for assessing the project's contribution to cumulative impacts is based on the RAQS forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. The proposed project would not be growth inducing and as such, would be consistent with the RAQS and SIP as discussed above under Impact 3.(a). In addition, the project would not conflict with plans for the attainment and maintenance of criteria air pollutants as discussed under Impact 3.(b) and shown in Table 9. Maximum daily emission levels for ozone precursors (NOx and VOC) and particulate matter (PM_{10} and $PM_{2.5}$) that would result from construction of the project are well below significant thresholds and would not result in a cumulatively considerable increase of any criteria air pollutant for which the SDAB is in non-attainment. Operational emissions would also be well below significance thresholds and would not result in a cumulatively considerable increase of criteria air pollutants. Therefore, the Project's contribution to cumulative air quality impacts would be less than significant and no mitigation is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are people that have an increased sensitivity to air pollution or environmental contaminants. Some population groups, such as children, the elderly, and acutely and/or chronically ill persons, especially those with cardio-respiratory diseases, are considered more sensitive to air pollution than others. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. The two primary emissions of concern regarding health effects for land development projects are CO and toxic air contaminants (TACs).

CO hotspots, areas of high concentrations of CO, occur in areas with high vehicle density, such as congested intersections and parking garages. A CO air quality impact is considered significant if CO emissions exceed either the California one-hour standard of 20 parts per million (ppm) or the federal and State eight-hour standard of 9.0 ppm. This typically occurs at severely congested intersections (level of service [LOS] E or worse). According to the City of Escondido TIA Guidelines, a project would require a TIA if the proposed project generates and adds more than 2 percent of the average daily trips for LOS C to any street segment within the preliminary study area. For local collector and other roads the TIA trigger point is 200 trips, the smallest trigger available. The project would generate at most 66 trips as described above under Impact 3. b). This

is well below the trigger point of 200 trips. Therefore, the project would not substantially increase the amount of vehicles in the project area and the majority would be only for a short duration during construction. The proposed project would not include a parking garage, and a garage would not be utilized during project construction. Most of the construction would be conducted on uninhabited land away from intersections and roadways. Therefore, CO impacts to sensitive receptors would be less than significant and no mitigation is required.

According to the San Diego County Guidelines for Determining Significance – Air Quality, for typical land use projects that do not propose stationary sources of emissions regulated by SDAPCD, Diesel Particulate Matter (DPM) is the primary TAC of concern. Construction activities would generate diesel emissions from the operation of onsite equipment. The California Air Pollution Control Officers' Association (CAPCOA) evaluates the impacts from carcinogens based on a lifetime exposure to the pollutant 24 hours per day, 365 days per year for up to 70 years. Construction activities for the project would result in temporary emissions, estimated for an eight-hour work day over a six month period. The majority of the construction would occur away from residences and would be constantly moving as the pipeline is constructed. Construction around residences would be for a very short duration. Therefore, as exposure to DPM from construction activities is short-term, exposure of sensitive receptors during construction would not be significant. The short duration of project construction would not contribute to an excessive cancer or non-cancer risk for nearby sensitive receptors. Therefore, potential impacts to sensitive receptors from TAC impacts would be less than significant and no mitigation is required.

Because the project is the construction of a pipeline, there would be no on-going operational emissions associated with the proposed project. In addition, project operation would not require the storage or handling of chemicals. Therefore, the project would not result in the exposure of sensitive receptors to CO or TAC emissions and. As a result, operational TAC impacts would be less than significant and no mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Construction of the proposed project could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. Potential receptors would include single-family residents near the project site. However, construction would only take place near a particular receptor for short time, and all diesel equipment would not be operating simultaneously. Therefore, construction related impacts associated with objectionable odors would not affect a substantial number of people and would be less than significant.

Land uses that are associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project, a pipeline network to transport recycled water for use by agricultural users, would not generate objectionable odors that would affect neighboring uses. Therefore, impacts associated with objectionable odors during project operations would be less than significant.

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3.4.4 Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4.	**BIOLOGICAL RESOURCES — Would the project:**				
a)	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?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d)	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?	☐	☐	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Background

ESA conducted a reconnaissance-level field survey in January 2015 and prepared a biological letter report of findings in April 2016 to evaluate biological resources within the project site and surrounding vicinity. The letter report included a summary of the field surveys and literature review conducted for the site, as well as recommendations to avoid and minimize impacts to biological resources. The biological letter report is provided in **Appendix B-1**. Field surveys were conducted in August 2016 and consisted of focused protocol surveys for rare plants, special-status wildlife, and the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*), as well as a jurisdictional delineation survey. The individual reports for each focused survey effort are included in Appendix B-2, B-3, and B-4. The biological resources documented in the *Biological Resources Assessment report and Final Initial Study/Mitigated Negative Declaration* (IS/MND) for the MFRO Facility Project (ESA 2017), the Final MND for the Recycled Water Easterly Main Extension Project (RMC 2013), and the Final MND for the Cemetery Area Water Pipeline Replacement Project (Helix 2012), were also reviewed to

determine the sensitive biological resources that may occur in the local area and may be impacted by other projects in the City of Escondido.

The project site is within the area covered by the County of San Diego Subarea Plan of the Multiple Species Conservation Program (MSCP) and partially within the Draft North County Subarea Plan of the MSCP, which is a comprehensive long-term habitat conservation plan document under the Natural Community Conservation Planning (NCCP) program that addresses the needs of multiple species and the preservation of natural vegetation communities in northern San Diego County. The goal of the MSCP is to establish conservation goals and criteria for habitat and individual species, based on the needs of the 85 covered species and an analysis of their habitats in the MSCP study area. The City of Escondido (City) is the lead agency for the project and is a signatory to the Implementing Agreement of the Multiple Habitat Conservation Program (MHCP). However, because the entire project site is located within the MSCP boundaries, the project will be required to demonstrate consistency with the MSCP regarding sensitive biological resources and mitigating impacts. Additionally, since the Draft North County Subarea Plan of the MSCP has not been approved to date, the portions of the project that occur within these areas will be evaluated according to the County Subarea Plan guidelines.

The project site is generally located north of State Route 78 and east of Interstate 15, approximately 17 miles from the coast in northern San Diego County. The project site is specifically located east of the intersection of Cloverdale Road and Rockwood Road, within a proposed City easement. The majority of the City is developed with urban infrastructure; however, larger blocks of native habitat occur at its edges adjacent to unincorporated areas of the County in which regionally important biological resources occur; the project site is located within this type of undeveloped area.

The project site occurs on foothills that gradually ascend to the northeast with a varied topography that is at an elevation range of approximately 450 feet above mean sea level (AMSL) to 1,150 feet AMSL. Surrounding land uses consist of scattered residential development and orchards in all directions. Vegetation within and immediately adjacent to the pipeline alignment is dominated by a mix of native Diegan coastal sage scrub habitat and orchards comprised of a monoculture of avocado (*Persea americana*) trees (**Figure 17**). The project site also contains areas of non-native grasslands, disturbed and developed habitats. The native habitats on the project site are relatively undisturbed and are located on coarse sandy loam soils and granitic substrate. Disturbances to the project site include agricultural activities, and recreational activities such as hiking and trail use. Several small drainages and agricultural ponds are located within and immediately adjacent to the project site.

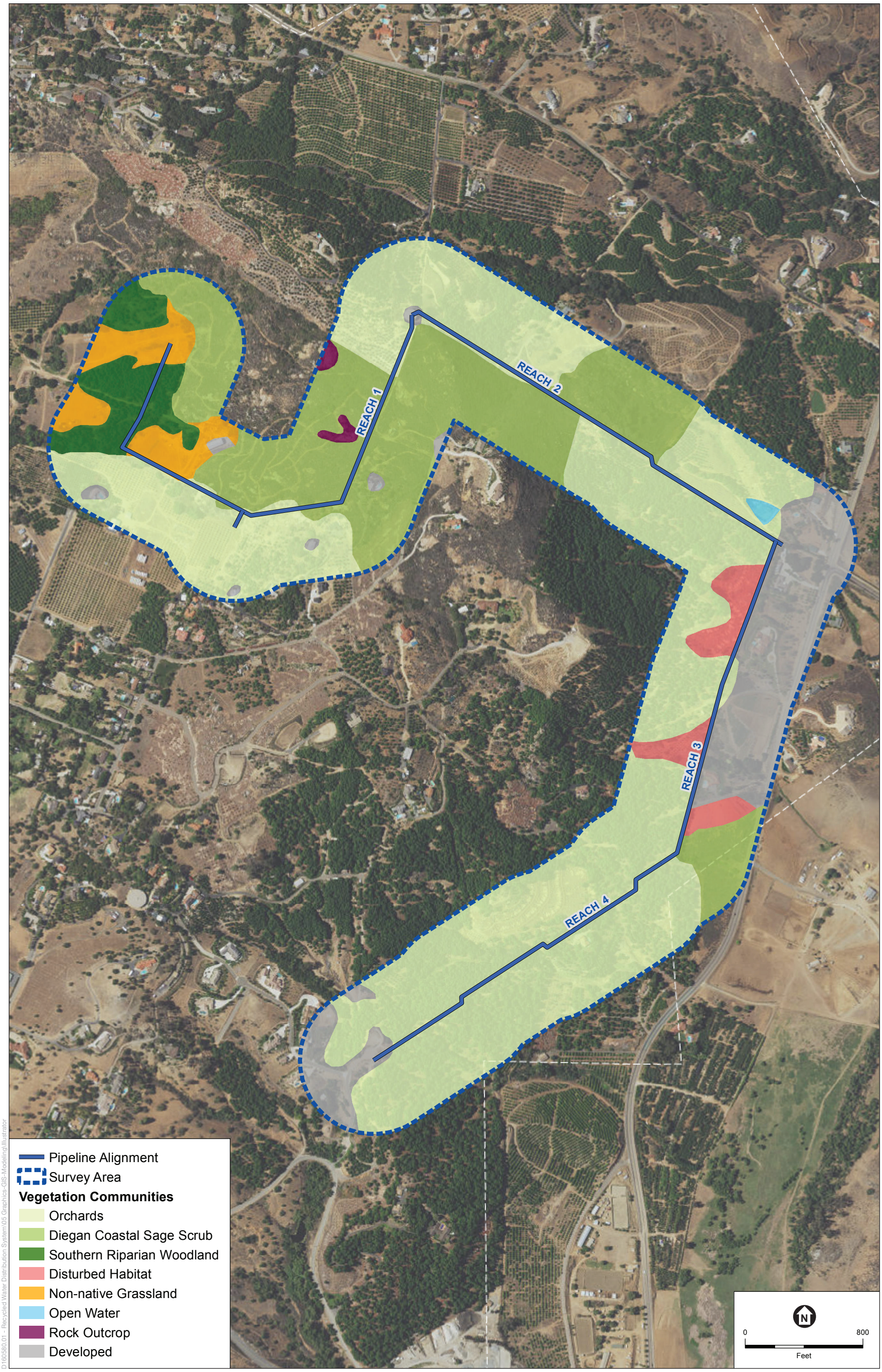
The proposed project is a 2.2 mile-long pipeline that consists of four (4) reaches that will be constructed at grade and/or in a trench using blasting techniques. Reach 1 is the western most reach of the project and would primarily run through non-native grassland, riparian woodland, Diegan coastal sage scrub, and disturbed habitats. Reach 2 primarily runs along the boundary between avocado orchard and Diegan coastal sage scrub. Reach 3 and Reach 4 are restricted to primarily avocado orchards and disturbed areas associated with agricultural activities.

a) 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 Wildlife or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation. Table 1 of Attachment A in Appendix B-1 of this IS/MND lists the special-status species with the potential to occur in the survey area based on the suitability of the habitat. "Special-status" species analyzed in this report include plants and animals that are listed and protected as "Endangered" or "Threatened" under the California Endangered Species Act (CESA) or the Federal Endangered Species Act (FESA), as well as non-listed species that may be considered sufficiently rare or sensitive by the California Department of Fish and Wildlife (CDFW), other recognized conservation organizations (e.g., California Native Plant Society (CNPS)) and/or by the Lead Agency with authority under the California Environmental Quality Act (CEQA) to warrant conservation and protection.

Special-Status Plants

The project site has the potential to support special-status plant species due to its location, size, relatively limited disturbance in some areas, and moderate to high quality habitat. Although the disturbed areas and orchards provide lower quality habitat to support special-status plants, the remainder of the native habitat on and immediately adjacent to the project site provide suitable habitat for a number of special-status plants. Special-status plant species determined to have a moderate or high potential to occur include the following 17 plant species: San Diego thorn-mint (*Acanthomintha ilicifolia*), San Diego ambrosia (*Ambrosia pumila*), San Diego sagewort (*Artemisia palmeri*), western spleenwort (*Asplenium vespertinum*), San Diego goldenstar (*Bloomeria clevelandii*), Lewis' evening primrose (*Camissoniopsis lewisii*), Payson's jewelflower (*Caulanthus simulans*), southern tarplant (*Centromadia parryi* ssp. *australis*), paniculate tarplant (*Deinandra paniculata*), sticky dudleya (*Dudleya viscida*), San Diego barrel cactus (*Ferocactus viridescens*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), mesa horkelia (*Horkelia cuneata* ssp. *puberula*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), Nuttall's scrub oak (*Quercus dumosa*), Parry's tetracoccus (*Tetracoccus dioicus*), and San Diego County viguiera (*Viguiera laciniata*). Special-status plant species were not detected within the project site during the focused survey effort conducted in August 2016 within the blooming period for these species. Therefore, these rare plants are considered absent from the project site and will not be impacted as a result of constructing the proposed project.



SOURCE: ESRI

Recycled Water Distribution System

Figure 17
Vegetation Communities and Land Use Types

ESA

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Special-Status Wildlife

Coastal California Gnatcatcher

A focused protocol survey for the federally-threatened coastal California gnatcatcher was conducted by an ESA USFWS-permitted biologist within all suitable habitat on the project site according to USFWS survey protocol for areas within a NCCP/HCP (Appendix B-2). An adult pair of coastal California gnatcatchers were observed during each survey visit near the center of the project site south of Hogback Reservoir and to the west of Reach 1. The breeding territory for this pair of gnatcatchers overlaps the eastern portion of Reach 1. Construction of the project will result in the removal of Diegan coastal sage scrub habitat along Reach 1, which is considered occupied habitat for resident coastal California gnatcatcher. Therefore, construction of the project would result in direct and indirect impacts to coastal California gnatcatcher, particularly if construction occurs during the species' breeding season of February 15 through August 30. Although coastal California gnatcatcher is a covered species under the County of San Diego MSCP, potential impacts to this species are still considered significant and require mitigation. Project implementation of **Mitigation Measures BIO-1a** and **BIO-1b** would reduce potential impacts to a less than significant level.

California Species of Special Concern

The project site occurs within native Diegan coastal sage scrub and orchards that provide suitable habitat for a number of special-status wildlife species known to occur in the area. The project site traverses flat and steep topography with granitic and sandy soils, containing a mix of native and disturbed habitats. Most of the special-status species with a moderate or high potential to occur on the project site may inhabit native vegetation areas along Reach 1 and Reach 2. Special-status wildlife species with a moderate or high potential to occur on the project site include the following 9 species: orange-throated whiptail (*Aspidoscelis hyperythra*), red-diamond rattlesnake (*Crotalus ruber*), coast horned lizard (*Phrynosoma blainvillii*), coastal cactus wren (*Campylorhynchus brunneicapillus* ssp. *sandiegensis*), Dulzura pocket mouse (*Chaetodipus californicus* ssp. *femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*), San Diego black-tailed jackrabbit (*Lepus californicus* ssp. *bennettii*), and San Diego desert woodrat (*Neotoma lepida* ssp. *intermedia*). None of these special-status species were observed during the focused survey effort conducted in August 2016, and therefore, these species are currently considered absent from the project site. However, due to the presence of suitable habitat on the project site and potential for these species to occur in the surrounding vicinity, there is still a potential for these species to move onto the project site prior to construction. Potential project impacts to these species during construction would be considered significant if the impact resulted in the overall population of the species to drop below self-sustaining levels. Based on the location of the proposed project within suitable habitat for these special-status wildlife species, the proposed project may result in significant direct and/or indirect impacts from direct mortality to individuals or indirect effects such as noise during construction or through the removal of occupied habitat, which would be a significant impact. Implementation of **Mitigation Measure BIO-2** would reduce potential impacts to less than significant.

Lastly, the project site is located within a relatively undisturbed area adjacent to active orchards, and does not lie within USFWS designated Critical Habitat for any special-status plant or wildlife species. Critical Habitat for coastal California gnatcatcher is mapped within 0.5 mile to the northeast of the project site, and Critical Habitat for arroyo toad (*Anaxyrus californicus*) is mapped 2 miles to the southeast (DOI 2011). Both designated Critical Habitats would not be impacted by the proposed project.

Mitigation Measures

BIO-1a: Coastal California gnatcatcher occupied habitat on the project site will be flagged and avoided where possible. Construction activities within and adjacent to occupied habitat should be conducted outside of the gnatcatcher breeding season (February 15 through August 30) to avoid potential impacts to this species. Additionally, per the stipulations in the MSCP, no clearing of occupied habitat shall occur between March 1 through August 15.

If construction is planned to take place during the breeding season, a pre-construction survey to confirm the presence of breeding coastal California gnatcatcher within the project site and adjacent 500-foot buffer will be conducted at least 72 hours prior to construction activities. If coastal California gnatcatcher is not detected, construction may be initiated. If a break in construction longer than three days occurs, another pre-construction survey to confirm if gnatcatchers have moved into the site will be conducted.

If coastal California gnatcatcher are detected during a pre-construction survey, the location of the sighting will be recorded and confirmation if breeding gnatcatcher are present will be determined. If nesting is determined, a 500-foot buffer will be placed around the nest and no work will take place within 500 feet of the active nest. If work is required to take place, a nesting bird management plan will be prepared to specify the conditions for which work may occur without impacting the nests.

BIO-2: To determine if the proposed project may result in significant impacts to any of the eight special-status wildlife species listed as California Species of Special Concern (SSC), pre-project surveys should be conducted within 7 days prior to the start of construction activities to determine the presence/absence of special-status wildlife species within or adjacent to the project site.

- If any special-status wildlife species listed as SSC are determined to occur on the project site and may be impacted by construction of the proposed project, additional avoidance measures such as temporary fencing and biological monitoring during construction will be required to reduce potential impacts to a less than significant level.
- If it is determined that a significant population of a special-status wildlife species may be impacted by the project, consultation with CDFW may be required to determine if additional mitigation or relocation is warranted.
- Additionally, a Worker Environmental Awareness Program (WEAP) Training should be implemented for all construction workers on the project site to reduce potential impacts to SSC species that could move onto the site during

construction. The WEAP Training includes best management practices to be implemented such as: limiting disturbance to delineated disturbance areas on the project site, removing trash daily, covering all holes and trenches at the end of each day, and limiting onsite vehicle speeds to under 15 miles per hour. A qualified biologist or monitor should be contacted to move any SSC species off the site prior to any potential impact.

Native and Nesting Birds

The native scrub habitat and existing trees on the project site provide suitable nesting habitat for avian species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3500. Depending on the timing of construction, project activities could have the potential to disrupt nesting activity if conducted during the general avian breeding season of February through August, including causing the abandonment of nests and/or direct impacts to eggs and nestlings, which would violate the MTBA and Fish and Game Code. Potential impacts to nesting birds would result from disturbances such as habitat clearing, tree and earth removal, grading, digging, and equipment movement. Implementation of the **Mitigation Measures BIO-3a** and **BIO-3b** would reduce the potential for injury or mortality of nesting birds during construction through construction timing, preconstruction nesting bird surveys, establishment of nesting buffers, and worker environmental training.

Mitigation Measure

BIO-3a: Proposed project activities (including, but not limited to, staging and disturbances to native and non-native vegetation, structures, and substrates) should occur outside of the avian breeding season, which generally runs from February 1st through August 15th, to avoid take of nesting birds, eggs, chicks, or fledglings.

BIO-3b: If avoidance of the avian breeding season is not feasible a qualified biologist, with experience in conducting breeding bird surveys, shall conduct a preconstruction clearance survey for active nests no more than 3 days prior to the initiation of project construction activities.

- If a protected native bird is found, flagging, stakes, and/or construction fencing and noise attenuation shall be used to demarcate a buffer zone of 300 feet (or 500 feet for raptors) between the project construction activities and the nest. Project construction personnel, including all contractors working on site, will be instructed on the sensitivity of the area. The project proponent shall delay all project construction activities within the 300- (or 500-) foot buffer area until August 15th or until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of a second attempt at nesting.
- If the biological monitor determines that a wider buffer between the project construction activities and observed active nests is warranted, or a narrower buffer could support impact avoidance, the biologists shall submit a written explanation as to why (e.g., species-specific information; ambient conditions and birds' habituation to them; and the terrain, vegetation, and birds' lines of sight between the project activities and the nest and foraging areas) to the City. Based

on the submitted information the City will determine whether to widen the buffer or allow a narrower buffer.

- The qualified biological monitor shall be present on site during all grubbing and clearing of vegetation to ensure that these activities remain within the project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project construction activities. The biological monitor will send weekly monitoring reports to the City during the grubbing and clearing of vegetation, and will notify the City immediately if project activities damage active avian nests.

Indirect Impacts

Indirect impacts to biological resources consist of secondary effects of a project including (but not limited to) edge effects, introduction of non-native species, or increased lighting. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent. Although biological resources may not initially be impacted directly, over time they may be affected indirectly due to the relative proximity of development. Potential indirect impacts from project construction are discussed below.

Water Quality: Water quality in riparian areas can be adversely affected by potential surface runoff and sedimentation during construction. The use of petroleum products such as fuels, oils, and/or lubricants, and erosion of cleared land during construction could potentially contaminate surface water on site and/or downstream. Temporarily diminished water quality could adversely affect vegetation, aquatic animals, and terrestrial wildlife that depend upon these resources. During construction, project design measures would be implemented to control erosion, sedimentation, and pollution that could impact water resources and indirectly impact dependent biological resources, within the project impact area and downstream off site. The project also would comply with Sections 87.414 and 87.417 of Division 7 (Excavation and Grading) of the San Diego County Zoning and Land Use Regulations, which require erosion control measures for construction areas within the County. Prior to the commencement of grading, a Notice of Intent would be filed with the Regional Water Quality Control Board (RWQCB) for a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. Specific NPDES Construction General Permit requirements include implementation of an approved Storm Water Pollution Prevention Plan (SWPPP), which require best management practices (BMPs) for construction-related water quality concerns including erosion/sediment control, hazardous material use/storage, debris generation, and disposal of extracted groundwater.

Fugitive Dust: Dust produced by construction could disperse onto native vegetation adjacent to construction areas. A continual cover of dust could reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This in turn could affect animals dependent on these plants (e.g., seed-eating rodents). Dust also could make plants unsuitable as habitat for insects and birds.

Dust dispersal during project construction would be controlled by standard measures such as applications of water three times per day or use of chemical palliatives, covering haul vehicles (if any), replanting disturbed areas as soon as practical, and restricting vehicle speeds on unpaved roads up to 25 miles per hour or less. Because active construction areas and unpaved surfaces would be watered pursuant to City and County grading permit requirements to minimize dust generation, related impacts to biological resources would be less than significant.

Colonization of Non-native Plant Species: Non-native plants could colonize areas disturbed by construction and could potentially spread into adjacent native habitats along the pipeline alignments. Many non-native plants are highly invasive and can displace native vegetation, potentially increase flammability and fire frequency, change ground and surface water levels, and adversely affect native wildlife dependent on the native plant species. Non-native plant colonization is already a significant issue as a result of existing agricultural activities and residential uses within the project site. To prevent potential spread of nonnative species, best management practices including silt fencing and straw wattles will be placed as appropriate, around the perimeter of work areas. As such, impacts to native habitat from invasive plants within the project site would be less than significant.

Habitat Fragmentation/Edge Effects: Removal of existing native habitats within the project site would result in some habitat fragmentation and an increase in associated edge effects. Fragmentation is the breaking up of larger, contiguous parcels of habitat into smaller, discontinuous patches. Potential edge effects from such fragmentation could include the invasion of non-native plant species into newly fragmented areas, and access by predators (native and non-native) to prey that would otherwise be protected in an unfragmented parcel of habitat. Although implementation of the proposed project would impact 2.62 acres of sensitive habitats, these impacts would occur along narrow corridors, with the majority of the impacts occurring along existing agricultural areas, and native habitats to a lesser extent. As such, impacts resulting from habitat fragmentation/edge effects would be less than significant.

Construction Noise: Noise from such construction-related sources as grubbing, clearing, and grading, as well as construction-related vehicular traffic, would impact local wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatchers or raptors) were displaced from their nests and failed to breed. Birds nesting within any area impacted by noise exceeding 60 dB Leq or ambient levels (if ambient is greater than 60 dB Leq) may be significantly impacted.

Nighttime Lighting: Nighttime lighting has the potential to spill over into adjacent native habitats, which could both interfere with wildlife movement and provide nocturnal predators with an unnatural advantage over their prey, thereby potentially causing an increased loss in native wildlife. Existing outdoor lighting sources within the project site includes those associated with adjacent residential uses and generally are of low wattage. The proposed pipeline is not expected to require night lighting for its operations; however, if emergency or other conditions require temporary night lighting along the pipeline alignment, associated impacts would be short term and less than significant. Should the project require permanent lighting, that lighting would be required to adhere to Division 9 of the San Diego County Light Pollution Code. Accordingly, impacts associated with operational night lighting, should it be necessary, would be less than significant.

Project construction generally would be conducted during daylight hours; however, some activities may occur after dark and limited night lighting may be required. In the unlikely event of emergency conditions that would require extended (nighttime) construction hours, artificial lighting could be required for a short time. Short-term construction lighting within the project footprint adjacent to preserved habitat would be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat. Based on this and because of the short-term duration associated with such potential scheduled or emergency lighting conditions, impacts from construction-related night lighting, should it occur, would be less than significant.

Human Activity: Increases in human activity in the area could result in degradation of sensitive species through the creation of unauthorized roads or trails, removal of native vegetation, and illegal dumping. Based on the nature of the project (mainly construction, minimal operations/maintenance), increased human activity in adjacent undeveloped areas is not anticipated during project operations. Impacts from human activity during construction, should they occur, could potentially result in a significant project-related indirect impact.

Mitigation Measure

> **BIO-4:** In areas adjacent to sensitive vegetation, the construction and staging area limits shall be clearly demarcated with temporary construction (orange blaze) fencing under the supervision of a qualified biologist to ensure that construction activity remains within the defined limits of work. This fencing shall be erected prior to commencement of brushing or grading activities and shall demarcate areas where human and equipment access and disturbance from grading are prohibited adjacent to sensitive habitats. All site preparation near these interfaces shall be monitored by a qualified biologist during construction activities. A qualified biologist also shall inspect the fenced areas during regularly scheduled construction monitoring visits.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation. Sensitive natural communities are natural communities that are considered rare in the region by regulatory agencies, known to provide habitat for sensitive animal or plant species, or known to be important wildlife corridors. The proposed project will primarily occur within upland scrub habitat and orchards on slopes with minor ravines and several drainage features.

Riparian habitats are those occurring along the banks of rivers and streams. The western extent of Reach 1 will occur within southern riparian woodland habitat as the pipeline crosses a small drainage feature. Project-related impacts to Tier I Habitat under the County Subarea Plan are considered a significant impact that requires mitigation. Potential impacts to these riparian habitats will be mitigated for through implementation of **Mitigation Measure BIO 5a and Mitigation Measure BIO-6** discussed in the next section. **Table 8** summarizes the various vegetation communities and their impact and mitigation ratio.

TABLE 8
MITIGATION SUMMARY FOR IMPACTS TO VEGETATION COMMUNITIES

Vegetation Community	Habitat Tier*	Impact	Mitigation Ratio**	Mitigation
Diegan Coastal Sage Scrub	II	0.96	1.5:1	1.44
Southern Riparian Woodland	I	0.31	3:1	0.93
Orchard	IV	3.06	--	--
Non-Native Grassland	III	0.25	1:1	0.25
Disturbed Habitat	IV	0.29	--	--
Developed	IV	0.51	--	--

*Habitat Groups taken from the County's Biological Mitigation Ordinance (BMO).
**Mitigation ratio assumes that impacts within the County are outside the Biological Resource Core Area (BRCA) and that mitigation would occur within areas outside the BRCA criteria (see Attachment M of the County's BMO for more information).

The project will also be constructed (Reach 1 and Reach 2) within native Diegan coastal sage scrub habitat that is considered a sensitive natural community and Tier II Habitat under the County Subarea Plan. Diegan coastal sage scrub is the dominant vegetation community in the eastern area that encompasses the project site, and protection of this habitat is important as it is suitable to support the coastal California gnatcatcher. Therefore, potential impacts to coastal sage scrub habitat is considered a significant impact under the County Subarea Plan of the MSCP, and implementation of **Mitigation Measure BIO-5b** will reduce project impacts to a less than significant level.

Additionally, the western extent of the project site (Reach 1) will be constructed within non-native grassland habitat which is considered sensitive and is listed as a Tier III Habitat under the

County Subarea Plan. Implementation of **Mitigation Measure BIO-5c** will reduce project impacts to a less than significant level.

Mitigation Measures

BIO-5a: Riparian habitats are those occurring along the banks of rivers and streams. The western extent of Reach 1 would occur within southern riparian habitat as the pipeline crosses a small drainage feature. Potential impacts to Tier I riparian habitats would be mitigated for through replacement of habitat either onsite in-place or purchase of habitat credits at a County-approved mitigation bank at a 3:1 ratio for a total of 0.93 acre of riparian mitigation. If habitat is to be replaced onsite, a Habitat Restoration Plan would be prepared to specify how restoration would be implemented onsite. The Habitat Restoration Plan would identify plant palette, irrigation requirements, monitoring needs, and success standards. Additional measures to reduce potential impacts to riparian habitat will be addressed in the Jurisdictional Resources section below.

BIO-5b: To reduce potential impacts to Diegan coastal sage scrub habitat, the project would be required to mitigate for the loss of habitat through compensatory mitigation. The mitigation ratio for impacts to Tier II Coastal Sage Scrub habitat is 1.5:1 for impacts in habitat that does not meet the criteria for biological resource core area, as defined in Attachment M of the Biological Mitigation Ordinance. Therefore, the Applicant will be required to mitigate 1.44-acres of coastal sage scrub habitat either in-place onsite or purchase of habitat credits at a County-approved mitigation bank. If habitat is to be replaced onsite, a Habitat Restoration Plan would be prepared to specify how restoration would be implemented onsite. The Habitat Restoration Plan would identify plant palette, irrigation requirements, monitoring needs, and success standards.

BIO-5c: To reduce potential impacts to non-native grassland habitat, the Applicant would be required to mitigate for the loss of habitat through compensatory mitigation. The mitigation ratio for impacts to Tier III non-native grassland habitat is 1:1 for impacts in habitat that does not meet the criteria for biological resource core area, as defined in Attachment M of the Biological Mitigation Ordinance. Therefore, the Applicant would be required to mitigate 0.25-acre of non-native grassland habitat either in-place onsite, or purchase of habitat credits at a County-approved mitigation bank. If habitat is to be replaced onsite, a Habitat Restoration Plan would be prepared to specify how restoration would be implemented onsite. If mitigated on-site, impacts to non-native grassland may be achieved by enhancement and removal of non-native species or transition to coastal sage scrub habitat. The Habitat Restoration Plan would identify plant palette, irrigation requirements, monitoring needs, and success standards.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Mitigation. Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. The project site and

surrounding area includes native scrub habitat and orchards, with disturbed and developed areas. Several drainages are located on and adjacent to the project site. A jurisdictional delineation survey was conducted in August 2016 (Appendix B-4) to identify and map wetlands and potentially jurisdictional drainage features on the project site. The survey identified four upland ephemeral drainage features and one man-made freshwater pond on the project site that cross or are located immediately adjacent to the pipeline alignment, specifically that cross Reach 1 (Feature 1), Reach 2 (Feature 2), and Reach 3 (Feature 3; the pond occurs within Feature 3) (Appendix B-4). All four drainage features and the pond may be subject to regulatory jurisdiction by the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and/or County of San Diego. The results of the jurisdictional delineation survey are provided in **Table 9** below.

TABLE 9
POTENTIAL EXISTING JURISDICTIONAL FEATURES WITHIN THE SURVEY AREA

Map ID	Type of Feature	Habitat Type	Non-Wetland Waters (acres) [ab]	Wetland Waters (acres)
Potential Waters of the U.S.				
Feature 1	Ephemeral Channel	Southern Riparian Woodland	0.17	0.0
Feature 2	Incised Channel	Orchards and Diegan Coastal Sage Scrub	0.30	0.0
Feature 3	Ephemeral Channel	Orchards, Disturbed Habitat and Developed	0.29	0.0
Pond	Freshwater Pond	Open Water	0.23	0.0
Total Area of Potential Waters of the U.S.			**0.99**	**0.0**
Potential Waters of the State and County of San Diego Wetlands				
Feature 1	Ephemeral Channel	Southern Riparian Woodland	1.67	0.0
Feature 2	Incised Channel	Orchards and Diegan Coastal Sage Scrub	0.45	0.0
Feature 3	Ephemeral Channel	Orchards, Disturbed Habitat and Developed	0.86	0.0
Feature 4	Ephemeral Channel	Orchards	1.71	0.0
Pond	Freshwater Pond	Open Water	0.23	0.0
Total Area of Potential Waters of the State and Local Waters			4.92	0.0
Total Area of Potentially Jurisdictional Features [c]			**5.91**	**0.0**

[a] Jurisdictional waters acreage was determined by using ArcGIS. All acreages are rounded to the nearest hundredth if the areas of the potentially jurisdictional features were less than 0.01 acre (which may account for any minor rounding errors).
[b] These acreages represent potential jurisdiction features within the survey area and not project impacts. Project impacts to jurisdictional features would be determined once project design is finalized.
[c] The total area of potentially jurisdictional features on the survey area is summarized from the total of Waters of the U.S. and State. County of San Diego wetlands are delineated in the same manner as Waters of the State, but are not counted as wetland waters in this table.

Potential project impacts to a jurisdictional feature would be considered significant if these features cannot be avoided. Project implementation of **Mitigation Measure BIO 6** would reduce impacts to less than significant.

Mitigation Measure

BIO-6: If it is determined that the proposed project cannot avoid the jurisdictional features on the project site and would result in significant impacts to jurisdictional waters, regulatory permits will be required to be obtained prior to project construction. To comply with the state and federal regulations for impacts on jurisdictional wetland features/resources, the following permits will required to be obtained, or verified that they are not required: USACE 401 Permit, RWQCB 404 Permit (in accordance with Section 404 and 401 of the Clean Water Act [CWA]), and a CDFW Streambed Alteration Agreement under Section 1600 of California Fish and Game Code (CFGC). Mitigation to offset the impacts to Waters of the U.S. and State will be implemented in accordance with these regulatory permit conditions. Impacts to County of San Diego wetlands would be required to comply with the provisions of the County Resource Protection Ordinance (RPO).

d) 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?

Less than Significant Impact. Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site and surrounding area does not function as a significant wildlife movement corridor, but the undeveloped native habitat areas on the project site do allow for local wildlife movement particularly for birds and mammals moving through the region. Additionally, the project site allows connectivity to Cloverdale Creek to the east, which is an important wildlife movement corridor in the City of Escondido, County of San Diego and the region, as well as a riparian corridor to the southwest. However, project construction-related impacts to movement would be temporary, and are thus not expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. The proposed project will install an 8-inch to 20-inch diameter recycled water pipeline above and below grade, allowing the continued use of wildlife to move through the area by passing over or under the pipeline. Additionally, no other infrastructure, buildings, or structures are proposed for the project that would significantly alter the existing landscape preventing wildlife from continuing to move through the general area. Mitigation measures to address indirect impacts to native/nesting birds (BIO-3a through BIO-3b and BIO-4) would also address temporary impacts as a result of construction to wildlife movement. Therefore, impacts would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant with Mitigation. The proposed project occurs within the boundaries of the County of San Diego MSCP and may result in impacts to a number of biological resources protected by the Resource Protection Ordinance (RPO) and other MSCP guidelines. The project would adhere to the stipulations of the RPO through project implementation of Mitigation Measures BIO-1 through BIO-6, which would reduce potential impacts to the RPO to a less than significant level.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant with Mitigation. The project site occurs within the County of San Diego Subarea Plan of the MSCP and partially within the Draft North County Subarea Plan of the MSCP. The project site is not located within a biological resource core area of the MSCP or any other mapped preserve areas. Although the proposed project may result in take of special–status species and may result in the loss of sensitive habitat or jurisdictional resources, the proposed project would be consistent with the conservation measures defined in the County and Draft North County Subarea Plans of the MSCP, particularly through implementation of Mitigation Measures BIO-1 through BIO-6.

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3.4.5 Cultural Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5.	**CULTURAL RESOURCES — Would the project:**				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Background

The information in this section is based on the following sources: *Eastern Recycled Water System Project Phase I Cultural Resources Study* (ESA, 2016) and a paleontological database review conducted for the property by the San Diego Natural History Museum (SDNHM) (Anderson, 2015) included as **Appendix C**.

Environmental Evaluation

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant Impact with Mitigation. A records search at the South Coastal Information Center (SCIC), a historic map review, Native American contact, a geoarchaeological review, and a pedestrian cultural resources survey were conducted to identify cultural resources within the Project Area (ESA, 2016). The records search indicated that 23 cultural resources studies have been conducted within a ½-mile radius of the project area including four studies that included portions of the project area. Furthermore, the records search indicated that total of 24 cultural resources have been previously recorded within a ½-mile radius of the project area and include 22 prehistoric archaeological sites (CA-SDI -11047, -11048, -11159, -016184, -14463, -14464, -14465, -14466, -14468, -14472, -14473, -14474, -15818, -15983, -15984, P-37-019062, -019063, -005662, -005663, -005664, -005665, -005666) and two historic-period built resources (P 37-015936 and -019064). Of the 24 resources, four are located within the project boundaries and include two prehistoric archaeological sites (CA-SDI-011048 [bedrock milling station] and -015818 [bedrock milling station]), one historic-period built resource (P-37-019064 Escondido Gravity Float Line), and one prehistoric isolate (P-37-19062 flake).

The available historic maps and aerial photographs indicate that the project area and surrounding area remained largely undeveloped from the late 19th century through the mid-20th century. From the mid-20th century onward the project area became increasingly developed for agricultural purposes, specifically for orchards. With the exception of structures associated with agriculture, the project area has remained largely undeveloped and is currently used for avocado production.

A Sacred Lands File (SLF) search for the project site was performed by the California Native American Heritage Commission (NAHC) on October 01, 2015. The SLF search results indicated that no tribal cultural resources are known to be located within the vicinity of the project site. Follow-up contact with Native American groups and/or individuals identified by the NAHC as having affiliation with the project site vicinity was conducted via certified mail on October 27, 2015 and via phone on November 19, December 03, and December 04, 2015. To date, two responses have been received. Mr. Clint Linton, Director of Cultural Resources, Lipay Nation of Santa Ysabel (Diegueno/Kumeyaay) requested that a Kumeyaay Native American monitor be present. In addition, Mr. Steve Banegas, Chairman, Kumeyaay Cultural Repatriation Committee (Diegueno/Kumeyaay) also requested the presence of a Native American monitor.

A geoarchaeological review of the project area and vicinity was conducted in order to evaluate the potential for buried archaeological resources. Geologically, the project area is located within the Peninsular Ranges geomorphic province, which is dominated by granitic bedrock outcrops. The existence of exposed bedrock outcroppings with evidence for grinding/milling suggests relative landform stability and a general absence of deposition capable of deeply burying any archaeological remains. The geoarchaeological review indicates that the potential for surface archaeological sites is considered high, but the potential for buried archaeological sites is considered low.

A cultural resources field survey of the project area was conducted on January 13 and 28, 2016. All accessible portions of the project site with visible ground surface were surveyed in a systematic manner with transect intervals spaced no greater than 5 meters (approximately 16.5 feet) apart. The natural setting of the project area and its surrounding environment is dominated by agricultural land including cattle grazing areas and orchards. In addition, the terrain in portions of the project area is characterized by flat areas and steep hills. Due to variable amounts of avocado leaf litter and dense natural vegetation, ground surface visibility varied (less than 10 percent) throughout the project area, but averaged less than 10 percent. During the field survey, site CA-SDI-011048 (bedrock milling station) was relocated and a Department of Parks and Recreation 523 form update completed. Sites CA-SDI-015818 (bedrock milling station) and P-37-019062 (prehistoric isolate) could not be relocated due to extensive vegetation cover obscuring ground visibility despite diligent attempts, and P-37-019064 is buried beneath the ground surface. No new cultural resources were identified during the current study.

Resource CA-SDI-011048 (P-37-11048)

This resource is a prehistoric archaeological site that was originally recorded in 1976 as consisting of one bedrock milling feature containing eight milling slicks (Smith 1988). The site was subject to testing which included the excavation of a 1 meter by 1-meter Test Excavation

Unit (TEU) and the site was found to contain no subsurface deposits. This resource is located in the northwestern portion of the project area.

Based on the prior investigation (Smith 1988) along with the absence of associated surface artifacts or features identified, the site does not appear to meet any of the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) eligibility criteria. Resource CA-SDI-011048 is not known to represent a property "associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage" (Criterion A of the NRHP or Criterion 1 or CRHR); nor one "associated with the lives of persons important in our past" (Criterion B of the NRHP or Criterion 2 of the CRHR); nor a resource that embodies "the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possess high artistic values" (Criterion C of the NRHP or Criterion 3 of the CRHR).

Due to the lack of subsurface features or artifacts identified at CA-SDI-011048 along with the absence of artifacts within the boundaries of the site, resource CA-SDI-011048 is unlikely to yield information important to the prehistory of California and therefore does not appear to meet Criterion D of the NRHP or Criterion 4 of the CRHR, the most common criteria used for evaluating prehistoric archaeological sites, which focuses on the known data potential for a site.

Resource CA-SDI-015818 (P-37-19061)

This resource is a prehistoric archaeological site that was originally recorded in 2000 as consisting of one bedrock milling feature that includes one milling slick and has no associated artifacts (Pigniolo 2000). This resource is mapped as being located in the northwestern portion of the Project Area.

Despite diligent attempts, this resource was not relocated during the current field survey due to dense vegetation, and was not subject to NRHP or CRHR eligibility evaluation.

Resource P-37-019062

Resource P-37-19062 was recorded in 2000 by Andrew Pigniolo and consists of a prehistoric isolated flake located along the northwestern portion of the Project area (Pigniolo, 2000).

By definition, an isolate does not qualify as an archaeological site due to the lack of contextual integrity. As such, Isolate P-37-019062 is not considered eligible for listing in the NRHP or CRHR.

Resource P-37-019064

Resource P-37-019064 is the Escondido Gravity Float Line, a water conveyance system that was constructed in 1932 (Pigniolo and Baksh 2000). The majority of the system consists of a 24-inch-wide pipeline constructed of cinder blocks that have been lined and capped with cement, although in some places it is simply a concrete pipe. Resource P-37-019064 runs most of the length of Carrol Lane, between Quail Ridge Road at its south end to just east of Citrus Avenue at its north

end. It is approximately 1.4 miles (2.3 kilometers) long and is located in the northwestern portion of the Project Area. The researchers who originally recorded P-37-019064 concluded that it "is not unique or significant as an historic resource" (Pigniolo and Baksh 2000:3).

The water conveyance system is not known to represent a property "associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage" (Criterion A of the NRHP or Criterion 1 or CRHR); nor one "associated with the lives of persons important in our past" (Criterion B of the NRHP or Criterion 2 of the CRHR). This conveyance system is similar to other water conveyance systems in the area; therefore, it is not a resource that embodies "the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possess high artistic values" (Criterion C of the NRHP or Criterion 3 of the CRHR). Further examination of this resource is unlikely to yield information important to history (Criterion D of the NRHP or Criterion 4 of the CRHR).

Based on the current study, of the three resources and one isolate documented within the project area, the Escondido Gravity Float Line (P-37-019064) was previously recommended not significant and is therefore not eligible for listing in the CRHR or the NRHP and is also not eligible for City of Escondido local listing. Resource CA-SDI-11048 was relocated and evaluated as a part of this study and is recommended not eligible for listing in the NRHP, CRHR, or for local listing. The prehistoric isolate (P-37-019062), based on its lack of context is not considered eligible for NRHP or CRHR listing, nor is it eligible for local listing. Resource CA-SDI-015818 could not be relocated and has not been evaluated for its significance. None of the resources identified qualify as historical resources under CEQA.

The proposed project includes ground-disturbing activities that could potentially impact unknown archaeological resources qualifying as historical resources under CEQA. This potential impact to unknown archaeological resources is considered significant. Although the NAHC SLF search results indicate that no Native American cultural resources are known to be present within the vicinity of the Project Area, Tribal representatives have nonetheless requested that monitoring of the project be conducted.

Impacts to historical resources would be reduced to a less-than-significant level with the incorporation of Mitigation Measures CUL-1 through -6.

Mitigation Measures

CUL-1: It is recommended the City of Escondido Planning Division ("City") enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe(s) that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the City and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a

monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

CUL-2: Prior to issuance of a grading permit, the City shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008), and a Native American monitor(s) associated with a TCA Tribe(s) to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor(s). This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor(s) is associated with a TCA Tribe(s). The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

CUL-3: The qualified archaeologist and a Native American monitor(s) shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

CUL-4: During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist, or an archaeological monitor working under the direct supervisor of the qualified archaeologist, and the Native American monitor(s) shall be on site full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources.. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor(s), shall be responsible for determining the duration and frequency of monitoring.

In addition, all ground disturbance within 100 feet of resources CA-SDI- 011048 and CA-SDI-015818 shall be monitored full time regardless of depth of excavation or soil observations.

CUL-5: In the event that previously unidentified cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor(s) shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

CUL- 6: If a cultural resource is discovered that may qualify as a historical, unique archaeological, and/or tribal cultural resource, the qualified archaeologist shall notify the City of said discovery, and shall conduct consultation with TCA tribe(s) to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor(s), shall determine the significance of the discovered resource. Recommendations for the resource's treatment and disposition

shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor(s) and be submitted to the City for review and approval.

CUL-7: The avoidance and/or preservation of significant cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources must first be considered and evaluated as required by CEQA. Where any significant resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor(s), and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor(s), shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

CUL-8: If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions.

The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows:

1.) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

2.) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated T5ribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ researchers for further study. The collection and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter form the curation facility stating the prehistoric archaeological materials have been received and that all fees have been paid.

CUL-9: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor(s) shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant Impact with Mitigation Incorporated. As discussed above, three archaeological resources (CA-SDI-011048, CA-SDI-015818, and P-37-019064) were identified within the project alignment boundaries as part of the cultural resources study. Neither CA-SDI-011048 nor P-37-019064 qualifies as unique archaeological resources as defined by CEQA. Resource, CA-SDI-015818, could not be relocated and has not been evaluated. The proposed project includes ground-disturbing activities that could potentially impact unknown archaeological resources qualifying as unique archaeological resources under CEQA. This potential impact to unknown archaeological resources is considered significant.

With the implementation of Mitigation Measures CUL-1 through -9, project implementation would result in a less than significant impact involving an adverse change in the significance of an archaeological resource.

Mitigation Measures

Implement Mitigation Measures CUL-1 through -9.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation Incorporated. A paleontological records search was conducted by the San Diego Natural History Museum (SDNHM) on September 8, 2015 (Anderson, 2015). The results indicate that no fossil localities are located within a 1-mile radius of the project alignment, and the project alignment is underlain by middle Cretaceous (approximately 90 to 120 million years ago) plutonic granodiorites of the Woodson Formation. Because plutonic igneous rocks are not known to yield significant paleontological resources due to the high temperatures and/or pressures the rocks undergo before and during crystallization, they are considered to have no paleontological sensitivity, and thus, require no paleontological mitigation during earth moving activities (Anderson, 2015).

Construction activities could result in the discovery of unknown paleontological resources. Construction activities could result in indirect or direct impacts to unique paleontological resources. This potential impact to unknown paleontological resources is considered significant. With the implementation of Mitigation Measures CUL-10, project implementation would result in

a less than significant impact involving an adverse change in the significance of a unique paleontological resource.

Mitigation Measure

> **CUL-10:** In the event of unanticipated discovery of paleontological resources, the City shall cease ground-disturbing activities within 100 feet of the find until it can be assessed by a qualified paleontologist. The qualified paleontologist shall assess the find, implement recovery measures if necessary, and determine if paleontological monitoring is warranted once work resumes.

d) Disturb any human remains, including those interred outside of formal cemeteries.

Less than Significant Impact with Mitigation Incorporated. No human remains are known to exist within or adjacent to the Project Area and it is unlikely that the Project would disturb unknown human remains. However, because the Project involves ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains.

Impacts to human remains would be reduced to a less-than-significant level with the incorporation of **Mitigation Measure CUL-11**, which requires compliance with California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

Mitigation Measures

> **CUL-11:** As specified by California Health and Safety Code Section 7050.5, if human remains are found on the Project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

References

Anderson, Nikki,

2015 *Paleontological Record Search – Eastern Water System Project – D150245.00*, letter report to Arabesque Said-Abdelwahed, Environmental Science Associates, from Nikki Anderson, Lead Fossil Preparator, Department of Paleo Services, San Diego Natural History Museum, September 8, 2015.

ESA

2016 *Eastern Recycled Water System Project: Phase I Cultural Resources Study*, in preparation by Environmental Science Associates, January 2016.

Pigniolo, Andrew

2000 CA-SDI-15818. Archaeological Site Record. Prepared by Tierra Environmental Services. Site Record on file at the South Coastal Information Center.

Pigniolo, Andrew, R., Michael Baksh

2001 *Cultural Resource Survey of the Gravity Float Line Replacement Project, City of Escondido, California*

Smith, Brian F.

1988 CA-SDI-11048. Archaeological Site Record. Prepared by Keller Environmental. Site Record on file at the South Coastal Information Center.

3.4.6 Energy

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
19. ENERGY — Would the project:				
a) Result in a substantial increase in overall or per capita energy consumption?	☐	☐	☒	☐
b) Result in wasteful or unnecessary consumption of energy?	☐	☐	☒	☐
c) Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Conflict with applicable energy efficiency policies or standards?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Result in a substantial increase in overall or per capita energy consumption?

Less than Significant Impact. The proposed project involves construction and operation of a pipeline to transport recycled water for local agricultural uses. While energy would be used to transfer recycled water from the MF/RO facility through the pipeline to local agricultural uses, the amount of energy used would not be substantial. In addition, given the current drought conditions and need to increase use of recycled water, the overall amount of energy used is less than significant when compared to the amount of energy required to import that same amount of water from areas outside of Southern California. The impacts to energy use would remain less than significant.

b) Result in wasteful or unnecessary consumption of energy?

Less than Significant Impact. As discussed above in Impact 18 (a), the amount of energy used for the proposed project would not be substantial. In addition, the use of energy for the proposed project would not be considered wasteful or unnecessary. Agricultural producers are a vital part of Escondido's community and its economy. Avocados are one of the most important crops grown in San Diego County, and water quality for avocado production is important for quantity and quality of production. Growers maintain a high demand for water, specifically low-salinity water. Water must be low in chlorides and other constituents to avoid leaf burn, root rot, and the need for excessive flushing. Groundwater in the project area is generally very high in salts (Escondido, 2012). For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production. Therefore, impacts regarding wasteful consumption of energy would be less than significant.

c) Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?

Less than Significant Impact. The proposed project would not require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity. The proposed project does not include pump stations or facilities that would require electricity. Therefore, impacts regarding construction of new sources of energy supply would be less than significant.

c) Conflict with applicable energy efficiency policies or standards?

No Impact. The proposed project would comply with all applicable energy efficiency policies and standards, including the California Green Building Standards Code (City of Escondido, 2015). The project would not conflict with applicable energy efficiency policies or standards; therefore no impacts would occur.

References

City of Escondido, Municipal Code Chapter 6, Article 1. http://www.qcode.us/codes/escondido/

3.4.7 Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

No Impact. Seismically induced surface or ground rupture occurs when movement on a fault deep within the earth breaks through to the surface as a result of seismic activity. Fault rupture almost always follows preexisting faults, which are zones of weakness. Sudden displacements are more damaging to structures because they are accompanied by shaking. Under the Alquist-Priolo

Earthquake Fault Zoning Act (Act), which was passed in 1972, the California State Geologist identifies areas in the State that are at risk from surface fault rupture. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. That requires the State Geologist to establish regulatory zones, known as Alquist-Priolo Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps that identify these zones.

The nearest fault to the proposed project is the Rose Canyon Fault, located approximately 18 miles to the southwest (City of Escondido, 2012). Therefore, the project site would not be located within the vicinity of an earthquake fault, and would not be impacted by a state-designated Alquist-Priolo Earthquake Fault Zone. Thus, project implementation would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault.

ii) Strong seismic ground shaking?

Less than Significant Impact. As with all of southern California, the project site is within a seismically active area and could potentially be subject to strong seismic ground motion. The nearest fault to the proposed project is the Rose Canyon Fault, located approximately 18 miles to the southwest (City of Escondido, 2012). A major earthquake could result in moderate to severe ground shaking, which could potentially damage the proposed above ground and subsurface pipeline. However, the proposed project would comply with the seismic design parameters contained in the California Building Code (CBC) seismic requirements which contain provisions for earthquake safety based on factors including the types of soil onsite, and the probable strength of ground motion (City of Escondido, 2012). Compliance with these construction and safety design standards would be required prior to construction permit approval, which would reduce potential impacts associated with ground shaking at the project site to a less than significant level.

iii) Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction occurs in saturated and loose soils in areas where the groundwater table is 50 feet or less below ground surface (bgs). During an earthquake, a sudden increase in high water pressure can cause soils to lose strength and behave as a liquid. According to the City of Escondido's General Plan EIR, the proposed project would not be on a liquefaction hazard area (Escondido, 2012). Therefore, significant impacts associated with liquefaction are not anticipated from project implementation.

iv) Landslides?

Less than Significant Impact. Landslides are characterized as deep-seated ground failures, in which a large section of a slope detaches and slides downhill. The proposed project is located in an area with soils subject to potential landslides, and is located on land that slopes greater than 25 percent according to the City of Escondido General Plan EIR (Escondido, 2012). However, a portion of the proposed pipeline would be contained underground. In addition, the proposed above ground pipeline does not include housing or commercial development, and would not

expose people to the risk of loss, injury, or death. Therefore, impacts related to landslides are considered less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Soil exposed by construction activities including excavation could be subject to erosion if exposed to heavy rain, winds, or other storm events. However, the proposed project would require a National Pollution Discharge Elimination System (NPDES) Construction General Permit, as the project would disturb one or more acres of soil (SWRCB, 2015). A Stormwater Pollution Prevention Plan (SWPPP) would be prepared in compliance with the Construction General Permit. The SWPPP would identify erosion control and sediment control best management practices (BMPs) that would be implemented to minimize the occurrence of soil erosion or loss of topsoil, as described in impact discussion 9, Hydrology and Water Quality. Once constructed, no stockpiles would remain on the project site. Therefore, impacts related to soil erosion or the loss of topsoil would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. As discussed above in Impact 6 a. iii), there are no potential impacts related to liquefaction. As discussed above in Impact 6 a. iv), the project site is located in an area with soils subject to potential landslides. However, a portion of the project would be located underground, and the above ground portion would not expose people to landslide hazards. Therefore, impacts regarding liquefaction and landslides would be less than significant. Subsidence occurs when a void is located or created underneath the ground surface causing the surface to collapse. Underground voids that potentially cause subsidence include tunnels, wells, covered quarries, and caves beneath a surface. In addition, subsidence usually occurs as a result of excessive groundwater pumping or oil extraction. The proposed project does not include any groundwater pumping or oil extraction. According to the 2004 Multi-jurisdictional Hazard Mitigation Plan (URS), the underlying geologic formations in the project area are mostly granitic and have a very low potential of subsidence (City of Escondido, 2012). Therefore, the proposed project would result in less than significant impacts involving unstable geologic units or soils.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. Expansive behavior in soils is attributable to the water holding capacity of clay materials, which can adversely affect structural integrity through shifting of foundations or supporting materials during the expansive process. Based on information from the City of Escondido's General Plan EIR, the project site would not be located on or near expansive soils. Therefore, there are no impacts related to expansive soils.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. No septic tanks or alternative wastewater disposal systems exist or are proposed on the project site. Therefore, there are no impacts associated with septic tanks or alternative wastewater disposal systems would occur.

References

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Geology and Soils, 2012. Accessed at: https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Geology.pdf on October 21, 2015.

City of Escondido, Municipal Code Chapter 6, Article 1. Accessed at: http://www.qcode.us/codes/escondido/view.php?topic=6-1-6_1_2&frames=on on October 21, 2015.

City of Escondido, General Plan, May 2012.

SWRCB. 2015. Construction Storm Water Program. Accessed at: http://www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml on October 21, 2015.

3.4.8 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. Gases that trap heat in the atmosphere are called Greenhouse Gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long term global temperature increases.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different warming potentials and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, SF_6 is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF_6, while comprising a small fraction of the total GHGs emitted annually world-wide, is a much more potent GHG with 22,800 times the global warming potential as CO_2. Therefore, an emission of one metric ton (MT) of SF_6 could be reported as an emission of 22,800 MT of CO_2e. Large emission sources are reported in million metric tons (MMT) of CO_2e.[1]

The City of Escondido has established an annual threshold of significance for GHG emissions of 2,500 $MTCO_2e$ in the City's Municipal Code, Chapter 33 Article 47, Coordination of CEQA (Sec. 33-924). This threshold is based on the County of San Diego District's thresholds and the City's Climate Action Plan; therefore the proposed project would be in compliance with the

[1] A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

County. This threshold has been adopted for the purpose of determining significance under CEQA.

Quantification of GHG for the Proposed Project was based on the CO_2 metric outputs generated using the Roadway Construction Emissions Model for construction. Construction-related GHG emissions for the project were estimated using the same assumptions as the air quality analysis and assumptions and modeling output are included in Appendix A to this document. The total GHG emissions for construction of the proposed recycled water pipeline, are estimated to be 846.8 $MTCO_2e$. This would equal approximately 28.2 $MTCO_2e$ per year after amortization over a 30-year project lifetime as per standard methodology.[2]

The proposed project is the construction of a recycled water pipeline. As such, there would be no operational emissions associated with the proposed project. GHG emissions associated with water transport are indirect emissions resulting from the energy required to transport water from its source and are not part of this project. Project operations would generate a minimal amount of emissions from mobile sources generated by occasional maintenance activities, however these would occur infrequently and emissions generated from this activity would not have the potential to exceed regulatory thresholds.

The estimated GHG emissions resulting from project implementation are shown in **Table 10**. As shown in Table 10, the total annual emissions of GHGs from the construction and operation of the project would be less than the City's adopted threshold. Therefore, the net increase in GHG emissions resulting from project implementation is considered to be less than significant and no mitigation is required.

TABLE 10
ESTIMATED EASTERN RECYCLE WATER SYSTEM GHG EMISSIONS

Emission Source	Estimated Emissions CO2e (MT/yr)
Construction	
Annual Construction (Amortized over 30 years)	28.2
Operational	
Operation emissions	0.0
Total Project Emissions	**28.2**
City Threshold	**2,500**
Significant?	**No**

CO_2e= carbon dioxide equivalent; MT/yr = metric tons per year; %=percent.

SOURCE: ESA Road Construction Emissions Model Modeling 2016

[2] South Coast Air Quality Management District (SCAQMD), Board Letter - Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, December 8, 2008. Accessed online at http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. Out of the Recommended Actions contained in CARB's Scoping Plan, the action most applicable to the proposed project would be Action W-2 (water recycling) which promotes the increased use of recycled water. Therefore, the project would be consistent with the Scoping Plan measures by increases the availability of recycled water to end users.

The City of Escondido adopted their Climate Action Plan (CAP) on December 4, 2013. As part of the CAP the City established an annual threshold of 2,500 $MTCO_2e$ for smaller project as well as screening tables by which larger project can implement reduction strategies and determine compliance with the CAP. As discussed under Impact 8. (a) above, the project's emissions would not exceed the 2,500 $MTCO_2e$ annual emissions threshold and therefore is consistent with the CAP without the implementation of mitigation measures.

As both the Scoping Plan and the CAP are designed to help the region and the City, respectfully, comply with AB 32, compliance with these plans ensures that the project would be in compliance with AB 32. Therefore, as implementation of the project would not hinder or adversely affect the statewide attainment of GHG emission reduction goals of AB 32, this impact would be less than significant and no mitigation is required.

References

Escondido, City of. 2015. *Escondido Municipal Code. Sec. 33-214. Coordination of CEQA, quality of life standards, and growth management provisions.* March.

Escondido, City of. 2013a. *City of Escondido Adopted Climate Action Plan.* December 4.

Escondido, City of. 2013b. *City of Escondido Greenhouse Gas Emissions Adopted CEQA Thresholds and Screening Tables.* December 4.

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3.4.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

Background

A hazardous material is defined as any material that, due to its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material that a business or the local implementing agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment.

A limited regulatory agency records search was performed for the project area. The records search included a review of the SWRCB GeoTracker database and the California Department of Toxic Substances Control (DTSC) EnviroStor database. These lists include detailed information regarding hazardous waste and hazardous substances sites including cleanup sites and permitted sites. A review of the "Cortese List" was also completed for the project area. The "Cortese List"

lists hazardous waste facilities subject to corrective action pursuant to Section 251587.5 of the Health and Safety Code. These lists were reviewed in March 2016.

Environmental Evaluation

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. Construction activities required for implementation of the proposed project would involve trenching, excavation, and other ground-disturbing activities. The proposed construction activities would require the use of equipment, such as trucks, excavators, and other powered equipment, and would therefore use fuels (gasoline or diesel) and lubricants (oils and greases). Construction activities would occur for approximately six months within the project site. The routine use or reasonably foreseeable spills and accident conditions could occur involving the release of hazardous materials during the construction of the pipeline, which could be an adverse impact to workers during construction or operation activities, or the environment both during construction activities. The use of hazardous materials and substances during construction would be subject to federal, state, and local health and safety requirements for handling, storage, and disposal. As a result, hazardous material impacts related to the transport, use, or disposal of hazardous materials during construction would be less than significant.

Operation of the proposed project would distribute recycled water, which would not involve the use of hazardous materials. Therefore, operational activities would have no impacts to the public or the environment through routine transport, use, or disposal of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact. As discussed above in Impact 8.(a), limited quantities of hazardous materials such as gasoline, diesel, oils, and lubricants may be required to operate the construction equipment. Construction activities would be short-term, and the use of these materials would cease once construction is complete. The hazardous substances used during construction would be required to comply with existing federal, state and local regulations regarding the use and disposal of these materials. In the event of an accidental release during construction, containment and clean up would be in accordance with existing applicable regulatory requirements. Therefore, impacts regarding the accidental release of hazardous materials during construction of the proposed project would be less than significant. As discussed above in Impact 8.(a), operation of the proposed project would not involve the use of hazardous materials. Therefore, no impacts would occur regarding accidental release of hazardous materials during operation of the proposed project.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The proposed project is not located within one-quarter mile of an existing or proposed school. The nearest school to the project site is San Pasqual Union Elementary School approximately one mile southeast of the project site. No impacts would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. A review of DTSC's Hazardous Waste and Substances List – Site Cleanup (Cortese List) indicates that identified hazardous material sites are not located within the project site (DTSC, 2007). In addition, a review of the DTSC EnviroStor and the SWRCB GeoTracker online databases did not indicate any open cleanup sites or hazardous waste facilities within the vicinity of the project area. Therefore, since the project is not located on a list associated with hazardous materials. No impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The proposed project is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is the Ramona Airport, located approximately nine miles to the southeast from the project site. No impact would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The proposed project is not located within the vicinity of a private airstrip. The nearest private airport is Lake Wohlford Resort Airstrip located approximately five miles northeast of the project area. No airstrip related hazard impacts would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. The closest emergency evacuation route identified in the City's General Plan is Bear Valley Parkway approximately 1.3 miles west of the project site. Construction of the proposed project would temporarily increase local traffic due to the transport and delivery of construction equipment and materials as well as from daily worker trips. However, because proposed project construction trips would be minimal and short-term, they are not anticipated to impact the existing circulation system performances. All roads would remain passable to emergency service vehicles at all times. Therefore, impacts regarding emergency response plans or emergency evacuation during construction of the proposed project would be less than significant. Operation of the proposed project would only require intermittent employee

trips to maintain the pipeline and would not cause an impact to the emergency evacuation routes. Therefore, operation of proposed project would not impair implementation of or physically interfere with adopted emergency response plans or emergency evacuation plans, and impacts would be less than significant.

h) Expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?

Less than Significant Impact with Mitigation Incorporated. According to the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone (FHSZ) maps, the proposed project is located within a Very High FHSZ (City of Escondido, 2012). The project site is located in a rural residential/agricultural environment, and is surrounded by residential neighborhoods and commercial areas. There are wildlands and open spaces immediately adjacent to the project site, which significantly increases the risk of wildland fire damage to people and structures in the area.

The use of spark-producing construction machinery within or adjacent to areas of High or Very High Fire Hazard could potentially create hazardous fire conditions and expose people to wildlife risks. As such, the proposed project has the potential to generate wildland fire-related hazards due to the location of project components in FHSZs which could result in a potentially significant impact.

Mitigation Measure

> **HAZ-1:** During construction of the proposed pipeline within a Very High FHSZ, the staging and construction areas should be cleared of dried vegetation or other material that could ignite. Construction equipment that includes a spark arrestor should be equipped in good working order. In addition, construction crews should include a spotter during welding activities to look out for potentially dangerous situations, such as accidental sparks. Other construction equipment, including those with hot vehicle catalytic converters, shall be kept in good working order and used only within cleared construction zones. The City of Escondido shall require the creation and maintenance of approved fire access to work areas, in accordance with local fire regulations. During construction of the proposed project, contractors shall require vehicles and crews working at the project site to have access to functional fire extinguishers.

Implementation of Mitigation Measure HAZ-1 would ensure that fire safety construction measures are implemented during construction of the proposed project that are within Very High FHSZs. With the implementation of Mitigation Measure HAZ-1, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. Therefore, impact would be less than significant.

References

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City of Escondido, Municipal Code Chapter 11. Accessed at http://www.qcode.us/codes/escondido/ on October 21, 2015.

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Department of Toxic Substances Control (DTSC) , EnviroStor, Accessed at http://www.envirostor.dtsc.ca.gov/public/ on October 22, 2015.

State Water Resources Control Board (SWRCB), GeoTracker, Accessed at http://geotracker.waterboards.ca.gov/ on October 22, 2015.

3.4.10 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☒	☐	☐

Environmental Evaluation

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. The proposed project includes the construction of a recycled water pipeline to provide water for agricultural activities. Soil exposed by construction activities, including excavation, could be subject to erosion if exposed to heavy rain, winds, or other storm events, potentially resulting in water quality standard violations. Additionally, the storm water

passing through the construction site has the potential to pick up any chemicals from the staging site (such as fuels or oils from construction equipment), which may pass into the local storm water collection system, impacting water quality. However, a SWPPP would be prepared in compliance with the NPDES Construction General Permit. The SWPPP would identify site specific BMPs to control soil erosion and other potential construction-related pollutants. Compliance with the SWPPP would maintain water quality in accordance with the RWQCB standards such that construction of the proposed project would not violate any water quality standards. Implementation of the SWPPP would ensure erosion control and construction impacts would be considered less than significant.

Operation of the proposed project would be subject to conditions imposed by the State Water Resources Control Board (State Water Board). The State Water Board adopted General Order WQ 2014-0090-DWQ on June 3, 2014 to streamline permitting for recycled water use. Recycled water is often an underutilized resource, and the General Order allows the use of tertiary disinfected, secondary disinfected, and in some cases secondary undisinfected recycled municipal wastewater for Title 22 approved non-potable uses such as agricultural irrigation, landscape irrigation, dust control, and cooling tower make-up water. Recycled water use for irrigation is limited to agronomic application rates; therefore, the amount of recycled water that could potentially reach groundwater would be limited. Operation of the proposed project would be in accordance with the State Water Board, which would ensure that water quality standards are met and that water quality would not be degraded. Therefore, operational impacts in regards to water quality standards would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?

No Impact. The proposed project includes the construction of a recycled water pipeline to provide water for agricultural activities. The proposed project would not result in any increased use or extraction of local groundwater. The proposed project would have a positive impact to the groundwater table, since the recycled water would off-set existing potable water uses which do include groundwater extraction. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. No adverse impact to groundwater supplies would occur.

c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off-site?

Less than Significant Impact. Construction of the proposed project may temporarily alter the localized drainage pattern at the proposed project site due to ground-disturbing activities, such as excavation and trenching. Such alterations in the drainage pattern may temporarily result in erosion or siltation if substantial drainage is rerouted. However, implementation of the project

specific SWPPP would minimize the potential for erosion or siltation through the implementation of BMPs. Therefore, impacts associated with substantial erosion and temporary drainage alterations during construction would be less than significant.

Once construction is completed, a portion of the proposed pipeline would be located underground and the area would be returned to pre-construction conditions. The portion of the proposed pipeline that would be located above ground would be elevated off the ground and the area would be revegetated to allow drainage patterns to return to pre-construction conditions. In addition, adherence to all SWPPP regulations, including applicable BMPs, would ensure operation does not result in erosion impacts. Therefore, operation of the proposed project would not alter the existing drainage pattern of the project site or area and substantial erosion of siltation would not occur. Impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

Less Than Significant Impact. Construction of the proposed project would temporarily alter the localized drainage pattern at the proposed project site due to ground-disturbing activities, such as excavation and trenching. Such alterations in the drainage pattern may temporarily increase the rate or amount of surface runoff if substantial drainage is rerouted. However, implementation of the project specific SWPPP would minimize the potential for flooding through the implementation of BMPs. Therefore, impacts associated with substantial drainage alterations, including flooding, during construction would be less than significant.

Once construction is complete, a portion of the proposed pipeline would be located underground and the area would be returned to pre-construction conditions. The portion of the proposed pipeline that would be located above ground would be elevated off the ground to allow drainage patterns to return to pre-construction conditions. In addition, adherence to all SWPPP regulations, including applicable BMPs, would ensure operation does not result in increased runoff or flooding impacts. Therefore, operation of the proposed project would result in less than significant impacts regarding the rate or amount of surface runoff and flooding.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. As discussed above in Impact 9 (d), construction of the proposed project would temporarily alter flow at the project site due to ground disturbing activities. However, with implementation of the required SWPPP and project specific BMPs, construction of the proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The proposed project would not include the development of impervious surfaces. Impacts would remain less than significant.

f) Otherwise substantially degrade water quality?

Less than Significant Impact. As discussed above in Impact 9(a), the proposed project would not substantially degrade water quality, as construction activities would comply with a SWPPP and implement BMPs to minimize impacts to water quality. Impacts related to the degradation of water quality would remain less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed project is a recycled water pipeline and does not include the construction of housing. Therefore, no housing would be placed within a 100-year flood hazard area and there would be no impact.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The proposed project is not located within a 100-year flood plain as mapped on a federal Flood Insurance Rate Map or other flood hazard delineation map (FEMA, 2015). No impacts related to impedance or redirection of flood flows would occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. The project site is not located within a dam failure inundation area (City of Escondido, 2012). No impacts would occur relating to loss, injury, or death involving flooding as a result of the failure of a levee or dam.

j) Inundation by seiche, tsunami, or mudflow?

Less than Significant Impact with Mitigation Incorporated. Tsunamis are usually caused by displacement of the ocean flood causing large waves and are typically generated by seismic activity. The proposed project is located approximately 18 miles from the Pacific Ocean; therefore, a tsunami hazard is not present for the project site. A seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by earthquake activity, and can affect harbors, bays, lakes, rivers, and canals. The nearest body of water, Lake Dixon, is approximately three miles north, which is too far to present impacts by a seiche event. A mudflow occurs naturally as a result of heavy rainfall on a slope that contains loose soil or debris. Human activity can also induce a slide, such as when soil becomes saturated from a broken water pipe or incorrect diversion of runoff concentrated from developed areas saturates soil (Escondido, 2012). The above-ground pipeline would comply with all building codes and the likelihood of a pipe rupturing is very unlikely. Further, the project would not include habitable structures.

Construction workers could be at risk of being caught in a mudflow in the event of heavy rainfall. This could result in a potentially significant impact.

Mitigation Measure

> **HYD-1:** The construction contractor, in coordination with the City of Escondido, shall implement a Safety Plan to monitor the weather forecast. In the event of heavy rainfall forecast, construction workers shall not work in the steeply sloped areas of reach 2 where there is a high potential for mudflow.

Implementation of Mitigation Measure HYD-1 would reduce risks to construction workers from potential mudflows during heavy rainfall. Therefore, Impacts relating to tsunamis, seiches, or mudflow would be less than significant.

References

City of Escondido, General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Hydrology and Water Quality, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Hydrology.pdf

Federal Emergency Management Agency, Flood Map Service Center, 2015. Accessed at https://msc.fema.gov/portal/search?AddressQuery=Escondido%2C%20ca on November 4, 2015.

State Water Resources Control Board, Order WQ 2014-0090-DWQ General Waste Discharge Requirements for Recycled Water Use, June 3, 2014.

3.4.11 Land Use and Land Use Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10. LAND USE AND LAND USE PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒	☐	☐

Environmental Evaluation

Would the project:

a) Physically divide an established community?

No Impact. The physical division of an established community typically refers to the construction of a linear feature, such as an interstate highway or railroad tracks, or removal of a means of access, such as a local road or bridge that would impact mobility within an existing community or between a community and outlying area. The project site is within an area with agricultural and rural residential uses with paved and dirt access roads. The proposed project would include a recycled water pipeline to distribute recycled water to the agricultural growers surrounding Hogback Reservoir. The water pipelines would not create a barrier or divide the existing community. No changes to land uses would occur with the proposed project, and the proposed project would not change roadways or areas outside of the project site. Thus, the proposed project would not physically divide an established community and no impacts would occur.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. The project site has a land use designation of Semi-Rural Residential and is zoned as Agriculture (County of San Diego, 2016). The project site lies within the community of San Dieguito, which is located within the Sphere of Influence of the City of Escondido. While not incorporated, the project area was accounted for within the City of Escondido General Plan.

The proposed pipelines would be installed within proposed City easements, and would not conflict with land use designations or be incompatible with neighboring land uses. The pipeline

installation would not conflict with applicable land use plans, policies or regulations of an agency with jurisdiction over the project. Thus, no impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less than Significant with Mitigation. The project area occurs within the City's Draft Subarea Plan under the MHCP. The Draft Subarea Plan identifies core conservation areas, of which the project site is in the southwestern portion of the Eastern Habitat Area; however, the project site is not within a Focused Planning Area in which preserve areas may be designated. The proposed project may result in take of special–status species and may result in the loss of sensitive habitat or jurisdictional resources. The project would be consistent with the conservation measures defined in the MHCP Implementation of Mitigation Measures BIO-1 through BIO-6 and impacts would be less than significant.

References

California Department of Fish and Wildlife (CDFW). 2016. California Natural Diversity Database (CNDDB) Commercial version, Information dated February, 2016. Rarefind 5 query results for Escondido and surrounding USGS 7.5-minute quadrangles.

California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants (online edition v8-01a). California Native Plant Society, Sacramento, CA. Available at: www.cnps.org.

California Natural Diversity Data Base (CNDDB). 2016. State of California Resources Agency, Natural Heritage Division, Department of Fish and Game. Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities.

City of Escondido. 2001. Public Review Draft Escondido Subarea Plan – Implementing the Multiple Habitat Conservation Program. June 2001.

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Environmental Science Associates (ESA), *City of Escondido MFRO Facility for Agriculture Project: Biological Resources Assessment*, prepared by Environmental Science Associates, January 2015.

San Diego Association of Governments (SANDAG). 2003. Final Multiple Habitat Conservation Plan (MHCP), Volume I (MHCP Plan), Volume II (Biological Analysis and Permitting Conditions), and Volume III (MHCP Monitoring and Management Plan).

3.4.12 Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. According to United States Geological Survey's (USGS) Mineral Resources Data System, the project site is not identified as a known mineral resource area and does not have a history of mineral extraction uses. In addition, according to the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, no oil well exists on the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource and no impacts would occur.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project area is not used for mineral extraction and is not known as a locally important mineral resource recovery site. Further, the project area is not delineated on any plan for mineral resource recovery uses, and therefore no impacts would occur.

References

United States Geological Survey, Mineral Resources Data System, 2015. http://mrdata.usgs.gov/mineral-resources/mrds-us.html.

California Department of Conservation, Division of Oil, Gas & Geothermal Resources Well Finder, 2015. http://maps.conservation.ca.gov/doggr/index.html#close.

3.4.13 Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
12. NOISE — Would the project:				
a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) Result in A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) Result in A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Background

Noise is generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner

corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency deemphasis and is typically applied to community noise measurements.

An individual's noise exposure is a measure of noise over a period of time. While a noise level is a measure of noise at a given instant in time, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The L_{eq}, or equivalent sound level, is L_{eq} is the energy-mean dBA during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the acoustic energy contained in the fluctuating sound level measured.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_{dn}: Also termed the DNL, the L_{dn} is defined as the A-weighted average sound level for a 24-hour day with a 10-dB penalty added to nighttime sound levels (10:00 p.m. to 7:00 a.m.) to compensate for increased sensitivity to noise during usually quieter evening and nighttime hours.

CNEL: CNEL, or Community Noise Equivalent Level, is defined as the A-weighted average sound level for a 24-hour day. It is calculated by adding a 5-dB penalty to sound levels in the evening (7:00 p.m. to 10:00 p.m.) and a 10-dB penalty to sound levels at night (10:00 p.m. to 7:00 a.m.) to compensate for increased sensitivity during such time periods when a quiet environment is expected.

An important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

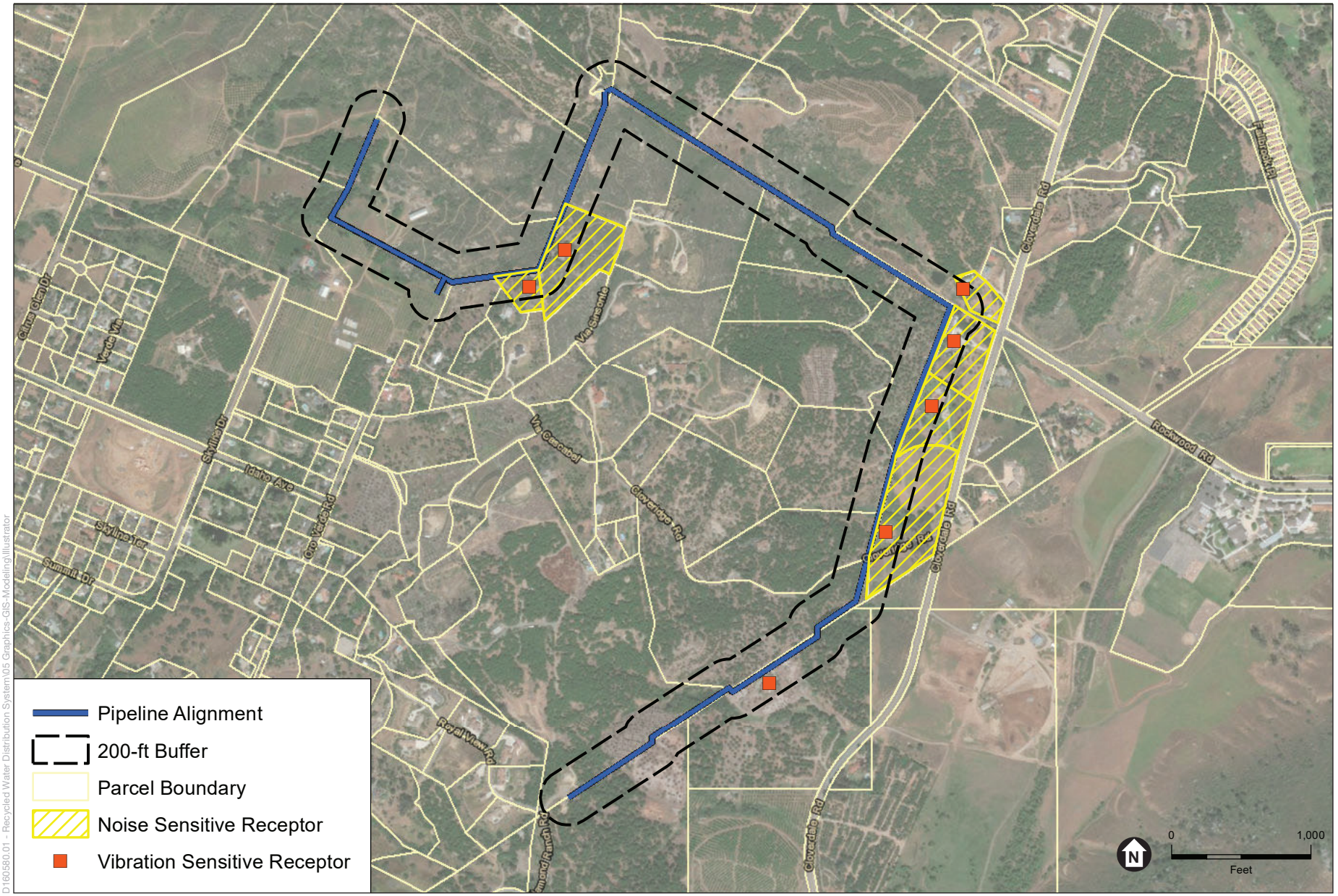
- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change in noise levels is considered to be a barely perceivable difference;
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference; and
- A change in noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion, hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflecting or barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact with Mitigation. The following analysis evaluates the potential noise impacts at noise-sensitive land uses resulting from construction and operation of the project. Implementation of the proposed project, which consists of approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline, would generate noise levels that could affect nearby noise-sensitive land uses during the construction period. **Figure 18**includes potential noise sensitive land uses along the pipeline alignment.



D160580.01 - Recycled Water Distribution System\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESRI; SanGIS; ESA

Recycled Water Distribution System

Figure 18
Noise Analysis

ESA

Construction

Construction of the proposed project would use a variety of heavy construction equipment on site, and would generally involve the following construction phases: pipeline site preparation, pipeline grading/excavation/demolition, and paving. Project construction would occur daily from 7:00 a.m. to 4:00 p.m., Monday through Friday. Blasting may be necessary for pipeline construction near the Hogback Reservoir where there are substantial rock outcroppings, and in other areas as rock is encountered. Construction activities occurring under each of these phases would require the use of heavy equipment (e.g., excavators, backhoes, loaders, haul trucks) along with the use of smaller power tools, generators, and other sources of noise. During each construction phase there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of each activity. As such, construction activity noise levels at the site would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment. **Table 11** presents the list of construction equipment, maximum noise levels at 50 feet, usage factor, and hourly maximum equipment quantity.

TABLE 11
CONSTRUCTION EQUIPMENT DETAILS

Construction Equipment	Maximum Noise Level (dBA) at 50 feet	Usage Factor	Hourly Maximum Equipment Amount		
			Site Preparation	Grading Excavating Demolition (rock removal)	Paving
Backhoes	80	40%	2	2	0
Blasting	94	5%	0	1	0
Bore/Drill Rigs	79	20%	0	1	0
Cement and Mortar Mixer	79	40%	0	1	0
Compactor	80	20%	0	1	0
Excavator	85	40%	2	2	0
Generator Sets	82	50%	1	1	0
Haul Trucks	84	40%	2	2	0
Loader	80	25%	1	1	0
Paver	77	50%	0	0	1
Paving Equipment	90	20%	0	0	1
Roller	80	20%	0	0	1
Rubber Tired Loaders	80	40%	1	1	0

NOTE: Hourly maximum equipment amount were based on the daily equipment amount provided by the designer.

SOURCE: Federal Highway Administration Roadway Construction Noise Model User's Guide, 2006.

The hourly average noise levels at 50 feet from each construction phase are presented in **Table 12**.

TABLE 12
HOURLY AVERAGE NOISE LEVEL AT 50 FEET

Construction Phase	Hourly Average Noise Level at 50 feet (dBA)
Site Preparation	85
Grading/Excavation/Demolition (Rock Removal)	87
Paving	84

SOURCE: ESA, 2018.

With regards to construction-related activities, Section 36.409 of the San Diego County Code stipulates that except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received. It should be noted that the County's construction noise impact threshold is an average sound level of 75 decibels for an eight-hour period. Table 12 presents the hourly average sound level. It is assumed that the presented hourly average noise level would be consistent throughout the construction period and equivalent to an eight-hour average noise level.

Table 13 presents the minimum distances at which the construction noise would attenuate to 75 dBA during each construction phase. Note that the noise propagation rate of 6 dBA per doubling the distance was used for this purpose with the construction equipment considered as a point source.

TABLE 13
ESTIMATED DISTANCE AT WHICH 75 dBA IS ACHIEVED

Construction Phase	Distance (feet)
Site Preparation	155
Grading/Excavation/Demolition (rock removal)	200
Paving	140

SOURCE: ESA, 2018.

The project's construction activities are scheduled to occur between 7 A.M. to 4:00 P.M. Monday through Friday, which would be in compliance with the County's permitted construction hours. Although the project's construction hours would comply with the construction noise regulations in the County Code, nearby noise-sensitive land uses would still be subject to noise levels exceeding 75 dBA. Figure 18 presents noise sensitive land uses within 200 feet of the pipeline alignment construction areas.

Haul truck trips would operate throughout the construction period. Trucks traveling to and from the project site would be required to travel along the haul route(s) approved by the City. Haul trucks would take the most direct route to the appropriate freeway ramp. The grading/excavation/demolition phase would generate the highest vehicle trips in the construction phases. An estimated maximum of approximately 8 haul truck trips (8 inbound and 8 outbound) would occur per day during the grading/excavation phase. The project's truck trips would generate noise levels of approximately 59 dBA L_{eq} along the haul route, which would not exceed the 75 dBA significance threshold. Therefore, noise impacts from haul truck trips would be less than significant. No mitigation measures are required.

Mobile sources would result in varied noise levels at the closest residence. As shown in Table 13, the closest residence to the construction activities would experience noise levels in excess of 75 dBA during periods when heavy equipment is operated near adjacent residences. However, Mitigation Measures NOI-1 through NOI-5 would ensure that stationary noise sources are not operated near the residence. Implementation of the mitigation measures would ensure that average noise levels over an eight-hour period would not be in excess of 75 dBA.

With implementation of Mitigation Measures NOI-1 through NOI-5, which would require the implementation of noise reduction devices and techniques during project construction, the construction-related noise levels at the off-site sensitive receptors would be reduced to below the significance threshold of 75 dBA. Furthermore, while pile driving is not considered to be necessary for project construction, other high-impact construction equipment (e.g., jackhammers) that generates high noise levels may be required to be used at the site under the condition where rocks or boulders are encountered during the excavation activities. As such, Mitigation Measure NOI-4 would specifically require the construction contractor to obtain a variance in advance from the County prior to the prolonged use of such equipment at the project site. In addition, blasting may be necessary for pipeline construction within Reach 1. However, blasting would occur infrequently, and the duration of blast events are expected to last for less than five seconds. Blasting is a short term noise event, while other construction noise would be more continuous. Nevertheless, Mitigation Measure NOI-6 would require a Blasting Plan, including public notifications and best management practices, reducing impacts related to blasting to less than significant levels. As such, with implementation of the mitigation measures, the project's construction noise impacts would be reduced to a less than significant level.

Mitigation Measures

NOI-1: All construction equipment operating at the project site shall be equipped with properly operating mufflers.

NOI-2: Noise and groundborne vibration construction activities whose specific location on the project site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest noise- and vibration-sensitive land uses.

NOI-3: All stationary construction noise sources used at the project site shall be located away from adjacent receptors, to the extent feasible, and be muffled and/or enclosed within temporary sheds or other insulation barriers to the extent feasible, if necessary.

NOI-4: Under conditions where excessively loud equipment (e.g., jackhammers) that generate high noise levels are required to be used continuously for an hour or more at the project site within 180 feet of an off-site noise-sensitive receptor, the construction contractor(s) must obtain a variance in advance from the County prior to the use of such equipment.

NOI-5: A construction relations officer shall be designated for the proposed project to serve as a liaison with surrounding residents and property owners and be responsible for responding to any concerns regarding construction noise and vibration. The liaison's telephone number(s) shall be prominently displayed at the project site. Signs shall also be posted that include permitted construction days and hours at the project site.

NOI-6: A Blasting Plan for construction shall be prepared and followed. Primary components of the Blasting Plan shall include

- Identification of blast officer;
- Scaled drawings of blast locations, and neighborhood buildings, streets, or other locations which could be inhabited;
- Blasting notification procedures, lead times, and list of those notified. Public notification to potentially affected vibration and nuisance noise receptors describing the expected extent and duration of the blasting;
- Description of means for transportation and on-site storage and security of explosives in accordance with local, state, and federal regulations;
- Minimum acceptable weather conditions for blasting and safety provisions for potential stray current (if electronic detonation);
- Traffic control standards and traffic safety measures (if applicable);
- Required personal protective equipment;
- Minimum standoff distances and description of blast impact zones and procedures for clearing and controlling access to blast danger;
- Procedures for handling, setting, wiring, and firing explosives. Also procedures for handling misfires per Federal code;
- Type and quantity of explosives and description of detonation device. Sequence and schedule of blasting rounds, including general method of excavation, lift heights, etc.;
- Methods of matting or covering of blast area to prevent flyrock and excessive air blast pressure;
- Description of blast vibration and air blast monitoring programs;
- Dust control measures in compliance with applicable air pollution control regulations
- Emergency Action Plan to provide emergency telephone numbers and directions to medical facilities. Procedures for action in the event of injury;

- Material Safety Data Sheets for each explosive or other hazardous materials to be used;
- Evidence of licensing, experience, and qualification of blasters;
- Description of insurance for the blasting work.

Operations

Long-term operations of the project would have a negligible effect on the community noise environment in the proximity of the project site. The existing noise environment in the project area is dominated by traffic noise from nearby roadways, as well as nearby agricultural and residential activities. The project would not result in any substantial change in noise sources along the recycled water pipeline. It is also anticipated that required monitoring and routine maintenance activities would generate intermittent routine vehicular trips as a result of implementation of the project. As such, the project would not create a substantial permanent increase in ambient noise levels above those noise levels existing without the project. A less than significant impact would occur in this regard.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures. These energy waves generally dissipate with distance from the vibration source. Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment (FTA, 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA, 2006). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly

with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV (FTA, 2006).

With regards to the proposed project, groundborne vibration would be generated from the operation of heavy construction equipment along the pipeline alignment, which could potentially affect the existing sensitive land uses surrounding the site. Once completed the proposed project, there would be no operational sources causing groundborne vibration.

Construction

Groundborne vibration levels resulting from construction activities at the project site were estimated using following documents: 1) County of San Diego Guideline for Determining Significance (2009) and 2) Caltrans' Transportation and Construction Vibration Guidance Manual (2013). The County's document includes the impact threshold for ground-borne vibration for transportation projects. Attachment D of the County's document states that non-transportation vibration sources such as construction equipment and other activities may be reviewed on a site specific basis by the County using criteria developed by the aforementioned Caltrans' document for structures and potential annoyance. Tables 19 and 20 in the Caltrans' document include criteria related to continuous and transient sources, which are presented in **Tables 14** and **15** below.

TABLE 14
GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

Structure and Condition	PPV (in/sec)
Extremely fragile historic buildings, ruins, ancient monuments	0.08
Fragile buildings	0.1
Historic and some old buildings	0.25
Older residential structures	0.3
New residential structures	0.5
Modern industrial/commercial buildings	0.5

SOURCE: Caltrans, Transportation and Construction Vibration Guidance Manual, September 2013.
Note: PPV values are based on continuous/frequent intermittent sources.

In addition, Caltrans has also developed standards associated with human annoyance for groundborne vibration impacts. Some individuals may be annoyed at barely perceptible levels of vibration, depending on the activities in which they are participating.

TABLE 15
GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA

Human Response	PPV (in/sec)
Barely perceptible	0.01
Distinctly perceptible	0.04
Strongly perceptible	0.1
Severe	0.4

NOTE: PPV values are based on continuous/frequent intermittent sources.

SOURCE: Caltrans, Transportation and Construction Vibration Guidance Manual, September 2013.

Construction activities that would occur within the project site would include grading and excavation, which would have the potential to generate low levels of groundborne vibration. As such, the existing noise sensitive land uses located in the vicinity of the project could be exposed to the generation of excessive groundborne vibration related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels. Site ground vibrations from construction activities very rarely reach the levels that can damage structures, but they may be perceived in buildings very close to a construction site. No pile-driving activities would be required for construction of the proposed project, although other high-impact equipment (e.g., jackhammers) may be used at the site under the scenario where rocks or boulders are encountered during the excavation activities.

The various PPV levels for the general types of construction equipment that would operate during the construction of the proposed project are identified in **Table 16**. Based on the information presented in Table 16, vibration velocities could reach as high as approximately 0.089 inch-per-second PPV at 25 feet from the source activity, depending on the type of construction equipment in use.

TABLE 16
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate PPV (in/sec) at 25 feet
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

SOURCE: FTA 2006

Construction activities associated with the proposed project would have the potential to impact the surrounding off-site sensitive receptors to the project site. In terms of groundborne vibration impacts associated with structural damage, this analysis uses the vibration impact thresholds of 0.3 inches per second for Old Residential Structures. In terms of groundborne vibration impacts associated with human annoyance, this analysis uses the vibration impact thresholds of 0.1 inches per second as Strongly Perceptible. It would be considered a potentially significant impact if any residential structures are located within the distances presented in **Table 17**. Note that the distances included in Table 17 are based on a large bulldozer, which is the highest vibration impact equipment.

TABLE 17
ESTIMATED DISTANCES FOR GROUNDBORNE VIBRATION IMPACTS

Construction Phase	Potential Structural Damage (feet)	Potential Human Annoyance (feet)
Site Preparation	12	24
Grading/Excavation	12	24
Installation	12	24

SOURCE: ESA, 2016.

There would be no structures within 12 feet or 24 feet of pipeline alignment construction area. Therefore, project implementation would result in no significant risk for structural damage and human annoyance and impacts would be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Long-term operations of the project would have a negligible effect on the community noise environment in the proximity of the project site. The existing noise environment in the project area is dominated by traffic noise from nearby roadways, as well as nearby agricultural and residential activities. The project would not result in any substantial

change in noise sources at the recycled water pipeline site. It is also anticipated that required monitoring and routine maintenance activities would generate intermittent routine vehicular trips as a result of implementation of the project. As such, the project would not create a substantial permanent increase in ambient noise levels above those noise levels existing without the project. A less than significant impact would occur in this regard.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact with Mitigation Incorporated. As discussed in Question 12(a) above, the proposed project's construction activities would comply with the construction hours permitted by the County's Municipal Code. However, despite compliance with the County's allowable construction hours, the proposed project would still expose the existing sensitive receptors (i.e., single-family residential uses) located directly adjacent to the project site to increased exterior noise levels above their respective existing ambient noise levels. It should be noted, however, that any increase in noise levels at the off-site sensitive receptors during project construction would be temporary in nature. Because the temporary noise nuisance generated by the project's construction activities would constitute a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, this noise impact is considered to be potentially significant.

Implementation of Mitigation Measures NOI-1 through NOI-6, which would require the implementation of noise reduction devices and techniques during construction at the project site, would reduce the noise levels associated with construction of the proposed project to the maximum extent that is technically feasible. Therefore, with implementation of Mitigation Measures NOI-1 through NOI-6, the temporary noise impacts associated with project construction would be reduced to a less-than-significant level.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest public airports are approximately nine miles away from the project site. No impact would occur.

f) For a project within the vicinity of a private airstrip, heliport or helistop, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest private airport is Lake Wohlford Resort Airstrip located approximately 3 miles northeast of the project area. No airstrip related noise impacts would occur.

References

Caltrans, 2013. Transportation and Construction Vibration Guidance Manual.

County of San Diego, 2009. Guideline for Determining Significance.

Federal Highway Administration, 2006. Roadway Construction Noise Model User's Guide. January.

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May.

3.4.14 Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project is a recycled water system expansion project, and it is intended to provide recycled water to meet current irrigation demands for agricultural users. Provision of recycled water would not directly induce population growth as the proposed project would not include the construction of new homes and businesses.

The proposed project would provide recycled water to meeting existing demands, and therefore, would not increase the capacity of or otherwise expand the recycled water system in direct support of new population or economic expansion. The proposed project would not result in any substantial change to the existing land use pattern or trigger substantial growth in the area. Therefore, no impacts are expected, and no mitigation measures are required.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project area is located within semi-rural residential and agricultural land. The proposed pipeline alignment would not require removal, replacement, or alterations to existing housing. Therefore, the proposed project would not displace people or housing, and there would be no impact.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would not remove housing and would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. Therefore, no impacts would occur.

3.4.15 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire protection?

No Impact. The San Diego County Fire Authority in correspondence with CAL FIRE provides fire protection services in the project area. The proposed project does not include new homes or businesses that would require any additional services or extended response times for fire protection services. Furthermore, the proposed project would not substantially alter the existing fire service demands associated with the current onsite uses and therefore, the San Diego County Fire Authority/ CAL FIRE would not be required to expand or construct new fire station locations to serve the project site. Therefore, no impacts would occur with the proposed project.

ii) Police protection?

No Impact. The San Diego County Sheriff provides law enforcement services in the project area. The proposed project includes the construction of a water pipeline to provide additional recycled water to agricultural growers in the area. Construction activities would be short-term (6 months) and limited to a maximum of approximately 10 construction workers per day. Maintenance workers would conduct intermittent maintenance visits. The proposed project would

operate as an unmanned facility and would not include new housing or businesses to the area that would require any additional services or extended response times for police protection service beyond those required with the existing uses. Therefore, the San Diego County Sheriff would not be required to expand or construct new police stations to serve the project site. No impacts would occur with the proposed project.

iii) **Schools?**

No Impact. The proposed project would not change existing demand for schools because population growth would not result from construction of the project. Therefore, the proposed project would have no impact.

iv) Parks?

No Impact. The project would not interfere with or have adverse impacts on parks. The project would not involve new housing or employment opportunities that would prompt the need for new parks. No impacts are anticipated.

v) Other public facilities?

No Impact. The proposed project includes the construction of a water pipeline to provide additional recycled water to agricultural growers in the area. Construction activities would be short-term (6 months) and limited to a maximum of approximately 10 construction workers per day. Maintenance workers would conduct intermittent maintenance visits. The proposed project would operate as an unmanned facility and would not include new housing or businesses to the area that would require any additional services or public facilities. The proposed recycled water pipeline would not adversely impact libraries or other public facilities. Therefore, no impact would occur.

References

San Diego County Fire Authority, 2017. About the San Diego county Fire Authority. Available at: http://www.sandiegocounty.gov/content/sdc/sdcfa/sdcfa/about.html , accessed July 26, 2017.Escondido Police Department, 2015. Accessed at: http://police.escondido.org/home.aspx on October 21, 2015.

3.4.16 Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. RECREATION — Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

No Impact. The proposed project consists of construction of a recycled water pipeline. The City of Escondido offers 29 recreational facilities and parks including East Valley Community Center and Washington Park, which are within 2 miles of the project site. The project site is just south of Mountain View Park. Provision of recycled water for agricultural purposes would not increase the use of existing parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The proposed project would not result in physical deterioration of an existing open space area or any recreation facilities, and no impacts would occur.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The proposed project consists of construction of a recycled water pipeline. The proposed project would not include the construction or expansion of recreational facilities. Therefore, no impacts would occur.

References

City of Escondido, Escondido General Plan, Downtown Specific Plan and Climate Action Plan EIR, Recreation, 2012. Accessed at: http://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Recreation.pdf on October 22, 2015.

3.4.17 Transportation and Traffic

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. TRANSPORTATION AND TRAFFIC — Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than Significant Impact. Construction of the proposed project would temporarily increase local traffic due to the transport and delivery of construction equipment and materials as well as from daily worker trips. Project site access would be provided from SR-78 and Cloverdale Road. Access to each reach would be provided through gates. Twenty-one maximum daily truck trips are anticipated for delivery of construction materials. The proposed pipeline alignment is undeveloped with groves. Due to the proposed location of the pipeline alignment, it is not anticipated to impact traffic and transportation during construction.

Traffic related to operation of the unmanned pipeline would be minimal and limited to inspection, maintenance, and/or repair activities that would occur infrequently. Therefore, operation of the proposed project would not result in significant operational traffic increases, and conflicts with applicable plans would be less than significant.

b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than Significant Impact. Project site access would be provided from SR-78 and Cloverdale Road. Access to each reach would be provided through gates. Traffic along SR-78 and Cloverdale Road would be limited to equipment and materials deliveries during construction phases, and minimal traffic in and out of the project site would occur during operation. The proposed project would not include construction along any public roadway right-of-ways, and would not interfere with local traffic. The intermittent operational traffic and the short-term construction traffic resulting from the proposed project would not adversely affect level of service standards and travel demand measures for designated roads or highways. Therefore, impacts related to conflicts with congestion management would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?

No Impact. The proposed project is not located within the Airport Influence Area of any nearby airports (City of Escondido, 2012). The nearest airport to the project site is Lake Wohlford Resort Airstrip, a private airstrip approximately 4 miles northeast of the project area. The proposed project does not involve any aviation components or structures at heights that would potentially pose an aviation concern. No project activities would alter the existing air traffic patterns, levels, or locations that result in safety risks. No impact would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed project would install infrastructure necessary for a recycled water pipeline and would not be located within any public roadway right-of-way. The proposed project would not alter existing roadways and would not include any hazardous design features such as sharp curves or dangerous intersections. No incompatible uses are proposed. As such, no impacts would occur.

e) Result in inadequate emergency access?

Less than Significant Impact. Project site access would be provided from SR-78 and Cloverdale Road. Access to each reach would be provided through gates. Construction activities would not be located within any public roadway right-of-way, and are not anticipated to interfere with traffic flow or emergency response access to the project area. Onsite operational activities would

involve minimal traffic in and out of the project site and would not result in interference with emergency response access. Impacts would be less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The proposed project would not be located within any public roadway right-of-ways. As such, once implemented, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. No impacts would occur.

References

City of Escondido, General Plan Mobility and Infrastructure Element, 2012. https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/GeneralPlanChapterIII.pdf

City of Escondido, General Plan Transportation and Traffic. 2012. Accessed at https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Traffic.pdf on November 4, 2015.

3.4.18 Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
17. Tribal Cultural Resources — Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

On June 28, 2016, the City of Escondido sent AB 52 notification letters related to the proposed project to the following Native American Tribes who have requested to be informed on activities conducted by the City of Escondido, under PRC Section 21080.3.1: Soboba Band of Luiseño Indians, San Luis Rey Band of Mission Indians and Rincon Band of Luiseño Indians. The AB 52 letters were sent to the Tribes pursuant to Public Resources Code Section 21080.3.1 and included a description of the proposed project, a map depicting the project area, and contact information for the City of Escondido. In a letter dated July 21, 2016, the San Luis Rey Band of Mission Indians formally requested tribal consultation with the City regarding the proposed project. In a letter dated July 27, 2017, the Rincon Band of Luiseño Indians did not request formal consultation, but recommended Native American monitoring and requested to be informed of any cultural resources discoveries. The Soboba Band of Luiseño Indians did not respond to the notification letter.

The City of Escondido formally met with representatives from the San Luis Rey Band of Mission Indians on Thursday, July 11, 2017 to discuss the proposed project. The City of Escondido indicated that tribal cultural mitigation measures recommended by the San Luis Rey Band of Mission Indians would be included in the IS/MND to address potential impacts. The City of Escondido met with the San Luis Rey Band of Mission Indians a second time on Thursday, March 9, 2017 to provide an update on the proposed project.

Environmental Evaluation

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(l)?

Less than Significant Impact with Mitigation Incorporated. Consultation between the City of Escondido and the San Luis Rey Band of Mission Indians did not identify known tribal cultural resources within the project site. Although no tribal cultural resources have been identified within the proposed project site, there is a potential for buried unknown archaeological resources that may qualify as tribal cultural resources eligible for the California Register of Historical Resources. Implementation of **Mitigation Measures CUL-1** through **CUL-9, and CUL-11**, as provided by the San Luis Rey Band of Mission Indians during consultation and outlined in Section 5 under (a) historical resources, would reduce impacts to archaeological resources that also qualify as tribal cultural resources to less than significant.

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-9 and CUL-11.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant Impact with Mitigation Incorporated. As indicated above, no known tribal cultural resources have been identified within the proposed project site, but there is a potential to impact buried archaeological resources that may also be considered tribal cultural resources. Implementation of Mitigation Measures CUL-1 through CUL-9, and CUL-11, as provided by the San Luis Rey Band of Mission Indians during consultation and outlined in Section 5 under (a) historical resources, would reduce impacts to archaeological resources that also qualify as tribal cultural resources to less than significant.

Mitigation Measures

Implementation of Mitigation Measures CUL-1 through CUL-9 and CUL-11.

3.4.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The proposed project would not conflict with wastewater treatment requirements of the San Diego RWQCB. The proposed project would include a recycled water pipeline to provide water for agricultural activities. Construction and operation of the proposed project would not generate wastewater. The SWRCB adopted General Order WQ 2014-0090-DWQ on June 3, 2014 to streamline permitting for recycled water use. The General Order allows the use of tertiary disinfected, secondary disinfected, and in some cases secondary undisinfected recycled municipal wastewater for title 22 approved non-potable uses such as agricultural irrigation. Recycled water use for irrigation is limited to agronomic application rates; therefore, the amount of recycled water that could potentially reach groundwater will be limited. To obtain coverage under the Order, the City would be required to submit a Notice of Intent and an application fee to the San Diego Regional Water Quality Control Board. The operation phase of the proposed project would comply with the treatment requirements of the San Diego Regional Water Quality Control Board.

No substantial adverse impacts to water quality would occur; therefore, impacts would be less than significant.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project would not require or result in the construction of new or expanded water or wastewater treatment facilities, or expansion of existing facilities. There would be no impact and no mitigation is required.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. The proposed project would not require the expansion of any offsite stormwater drainage facilities. Construction of the proposed project would temporarily alter flow at the project site due to ground disturbing activities. However, implementation of BMPs would minimize the potential for flooding, reducing water flow to stormwater drainage systems. Therefore, construction of the proposed project would not require construction of new stormwater facilities. The project would not result in a significant increase in impervious surfaces. Once construction is complete, a portion of the proposed pipeline would be located underground and similar to pre-construction topographic conditions. The proposed drainage pattern would be similar to the existing condition. The portion of the proposed pipeline that would be located above ground would be elevated off the ground to allow drainage patterns to return to pre-construction conditions. Therefore, no new storm water drainage facilities would be required; therefore, impacts would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. The proposed project is a recycled water system expansion project. No potable water supplies would be delivered to customers as part of the proposed project. The provision of recycled water would offset existing potable water usage. As such, the proposed project would not require new or expanded entitlements. No impact would occur.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. As discussed above in Impact 17 (a), construction and operation of the proposed project would not generate wastewater. Therefore, no impacts related to available wastewater treatment capacity would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. Construction and implementation of the proposed project is not anticipated to generate a significant amount of solid waste. To the extent possible, excavated soil would be reused onsite for fill. The construction contractor would be required to dispose of excavated soil and solid wastes in accordance with local solid waste disposal requirements. The solid waste would be taken to Sycamore Landfill in Santee, California, owned and operated by a private company, Allied Waste Industries. Sycamore Landfill has a remaining capacity (as of December 31, 2014) of 39,608,998 cubic yards (CalRecycle 2014). As the solid waste from the proposed project is only anticipated to be less than one percent of the remaining capacity, the landfill would have sufficient capacity to accommodate the proposed project's solid waste disposal needs. Impacts would be less than significant.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less than Significant Impact. The project would be required to be in compliance with all federal, state, and local statutes related to solid waste. These regulations include the U.S. Environmental Protection Agency's Resource Conservation and Recovery Act (RCRA), which provides the federal government with "cradle to grave" authority over the disposal of solid waste and hazardous materials. The project would also be required to comply with Assembly Bills 939 and 1327, which require measures to enhance recycling and source reduction. Thus, impacts related to compliance with regulations related to solid waste would be less than significant.

References

City of Escondido, General Plan, Downtown Specific Plan and Climate Action Plan EIR, Utilities and Service Systems, 2012. Accessed at: https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/GPUpdate/Vol1Utilities.pdf on October 22, 2015.

California Department of Resources Recycling and Recovery (CalRecycle), Facility Database, Sycamore Landfill, 2014. Accessed at: http://www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0023/Detail/ on October 22, 2015.

3.4.20 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
20. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental Evaluation

a) **Less than Significant with Mitigation.** The proposed project involves construction of a pipeline to provide recycled water to agriculture in the San Diego County area. The proposed pipeline would be built on residential and agricultural land, and is not anticipated to substantially reduce the habitat of fish or wildlife species, cause fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The proposed project would incorporate mitigation measures related to biological resources and cultural resources as described in this IS/MND to reduce impacts related to the proposed project. With implementation of said mitigation measures, impacts would be less than significant.

b) **Less than Significant Impact.** A cumulative impact could occur if the project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present and reasonably foreseeable future projects for each resource area. Because the project impacts are generally construction related, the cumulative study area is generally confined to the immediate vicinity or within a mile radius.

There are several past, present, and reasonably foreseeable projects identified in the City of Escondido that are listed in **Table 18** below. The closest projects are the water pipeline replacement project near the North County Cemetery District approximately one mile north of the proposed project and the future proposed Emergency/Recycled Water Storage (pond) project that would be located in the area of this project. The projects

identified in Table 18 are characterized as residential, school, industrial, and retail in nature.

TABLE 18
CUMULATIVE PROJECTS LIST

Project	Location / Distance from Project Site	Land Use	Quantity
Cemetery Area Water Pipeline Replacement Project	Located near the North County Cemetery District / .70 miles north	Potable water pipeline	12,6000 linear feet of new pipeline
Channel maintenance Activities Project	Various sites throughout Escondido	Flood control	63 maintenance sites
Lindley Reservoir Tank Replacement Project	720 Hubbard Avenue / 3.95 miles northwest	Infrastructure	Two 1.5 million-gallon buried water tanks
Recycled Water Easterly Main Project	Adjacent to MF/RO Facility	Infrastructure	7.4 miles of pipeline
MF/RO Recycled Water Facility	1201 East Washington Avenue / 2.24 miles northwest	Residential	Advanced Water Treatment (AWT) Facility
Emergency/Recycled Water Storage (Pond)		Infrastructure	10 million gallon emergency storage pond
Safari Highlands Ranch	Unincorporated San Diego County, 5 miles southeast	Residential	550 single-family residences, a 1.9 acre Fire Station, over 9 miles of trails, and a 5-acre private recreation center
Bear Valley Parkway	661 Bear Valley Parkway/ 2.8 miles northwest	Residential	55 single-family residential lots, 7 open space lots, and 1 recreational lot
Westminster Seminary Graduate Student Housing	1725 Bear Valley Parkway / 2 miles north	Residential	72 graduate housing units on 9.28 acres of vacant land

SOURCE: City of Escondido, 2015.

Implementation of the proposed project would not impact any scenic vistas, state scenic highways, or generate any light and glare. Impacts related to visual character would be less than cumulatively considerable. Cumulative aesthetic impacts would not occur. The project does not include any agricultural or mineral resources that could be impacted, and the project would have no effect on land use, population, housing, public services, and utilities. As a result, cumulative impacts related to these resources would not occur.

In addition, air quality, greenhouse gas, noise, hazardous material, water quality and traffic impacts that are generated by construction activities would be short-term and limited by minimal construction workers traveling to the site, and a short construction period. The minimal emissions, noise, traffic and water pollutants generated by the project would also be less than cumulatively considerable due to the location of the project and limited construction activities and duration occurring at the same time. The chemicals used onsite during project construction would comply with existing federal,

state and local regulations pertaining to hazardous materials use, treatment, storage and disposal. Furthermore, impacts related to biological resources and cultural resources would be less than cumulatively considerable with implementation of Mitigation Measures. Therefore, the proposed project would not result in any impacts that would be individually limited, but cumulatively considerable resulting from the proposed project.

c) **Less than Significant with Mitigation.** Based on the analysis, the proposed project would have potentially significant environmental effects on biological resources, cultural resources, tribal cultural resources, and hydrology. Potential fire hazards and noise impacts could cause substantial adverse effects on human beings, either directly or indirectly. However, implementation of mitigation measures, as provided within each of these resource topic sections of this environmental checklist, would reduce project-related potentially significant impacts to less than significant. Therefore, after implementation of mitigation measures, the proposed project would result in a less than significant environmental impact to human beings.

APPENDIX A

Air Quality and Greenhouse Gas Emissions Data

APPENDIX B

Biological Resources Information

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Eastern Recycle Water System

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	3.54	27.78	35.66	6.68	1.68	5.00	2.59	1.55	1.04	0.06	6,165.18	1.69	0.06	6,224.78
Grading/Excavation	3.92	30.32	40.11	6.83	1.83	5.00	2.71	1.67	1.04	0.08	7,531.64	1.97	0.08	7,604.93
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.77	7.99	7.74	0.44	0.44	0.00	0.39	0.39	0.00	0.01	1,457.66	0.36	0.02	1,471.83
Maximum (pounds/day)	3.92	30.32	40.11	6.83	1.83	5.00	2.71	1.67	1.04	0.08	7,531.64	1.97	0.08	7,604.93
Total (tons/construction project)	0.49	3.77	4.97	0.85	0.23	0.62	0.34	0.21	0.13	0.01	924.40	0.24	0.01	933.39

Notes:

Project Start Year ->	2019
Project Length (months) ->	12
Total Project Area (acres) ->	5
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	240	40
Grading/Excavation	103	0	120	0	240	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	40
Paving	0	0	0	0	240	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Eastern Recycle Water System

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.05	0.42	0.53	0.10	0.03	0.07	0.04	0.02	0.02	0.00	92.23	0.03	0.00	84.48
Grading/Excavation	0.43	3.34	4.41	0.75	0.20	0.55	0.30	0.18	0.11	0.01	828.48	0.22	0.01	758.91
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.69	0.00	0.00	3.38
Maximum (tons/phase)	0.43	3.34	4.41	0.75	0.20	0.55	0.30	0.18	0.11	0.01	828.48	0.22	0.01	758.91
Total (tons/construction project)	0.49	3.77	4.97	0.85	0.23	0.62	0.34	0.21	0.13	0.01	924.40	0.24	0.01	846.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix B-1

Biological Resources
Assessment Report

ESA

2121 Alton Parkway
Suite 100
Irvine, CA 92606
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

April 22, 2016

Jim Rasmus
Black and Veatch
300 Rancheros Drive, Suite 250
San Marcos, CA 92069

Subject: Biological Technical Letter Report for the Eastern Recycled Water System Project, City of Escondido, San Diego County, California

Dear Mr Rasmus:

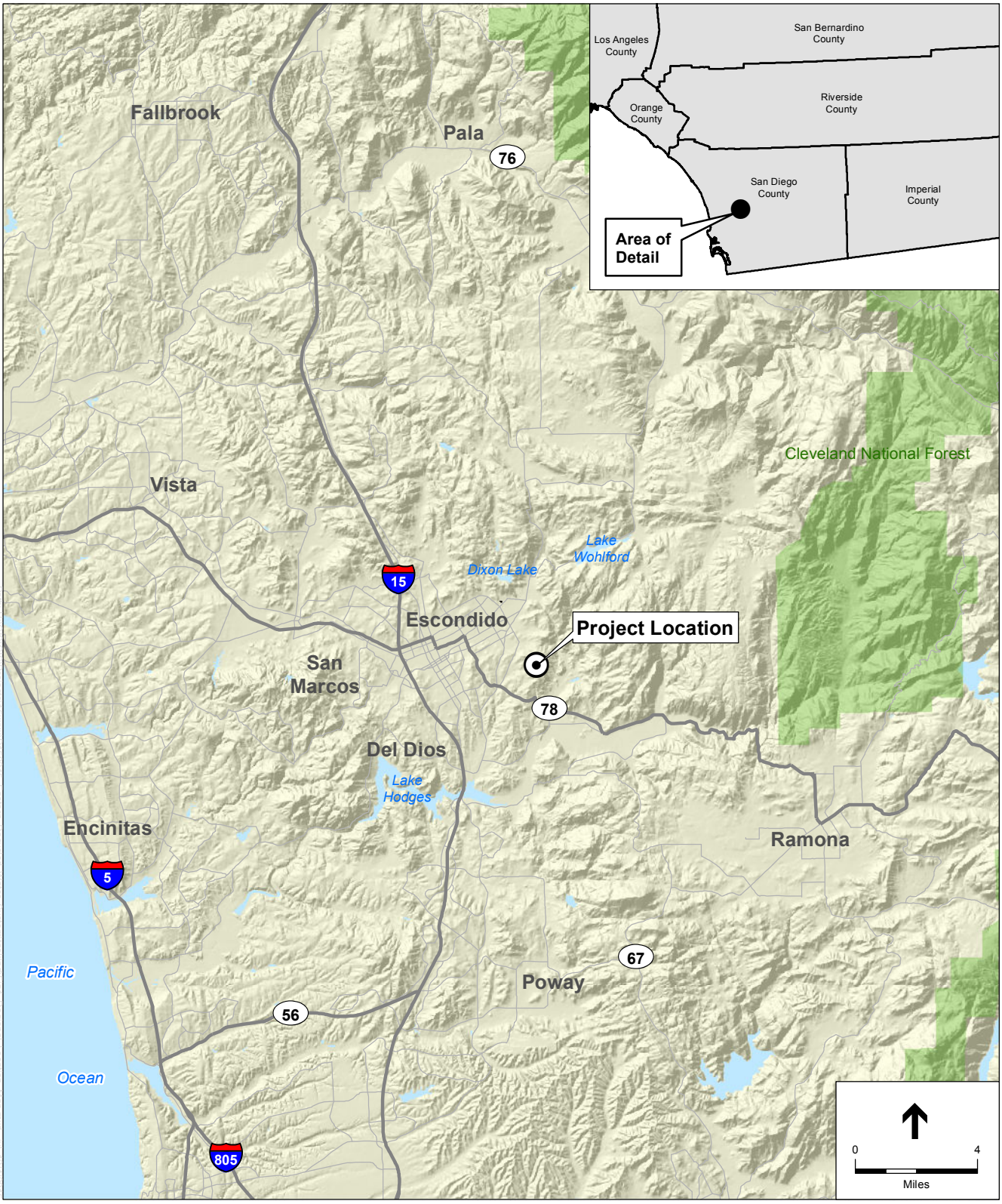
Environmental Science Associates (ESA) is pleased to provide to you this Biological Technical Letter Report for the Eastern Recycled Water System Project (project). This report documents the existing biological conditions including species observed, a discussion of the potential to occur for sensitive biological resources, and potential impacts to biological resources as a result of project implementation. The information used to support this report includes the results of a field reconnaissance survey for the project site and research of available literature and databases. This report also provides a discussion of biological resource impacts and recommendations to reduce impacts below a level of significance. This report comprehensively documents existing biological resources within the project site and surrounding lands in order to assist the City of Escondido (City) in project planning and permitting.

Project Location

The project site is generally located north of State Route 78 and east of Interstate 15, approximately 17 miles from the coast in northern San Diego County (County) (**Figure 1**). The project site is specifically located east of the intersection of Cloverdale Road and Rockwood Road, within a City easement (**Figure 2**). The majority of the City is developed with urban infrastructure; however, larger blocks of native habitat occur at its edges adjacent to unincorporated areas of the County in which regionally important biological resources occur; the project site is located within this type of undeveloped area. Although the project site is included in the sphere of influence for the City of Escondido, a majority of the project site occurs within the County Multiple Species Conservation Program (MSCP) Subarea (County of San Diego, 1997), with a small portion at the western end that occurs within the draft North County MSCP (County of San Diego, 2009).

Project Description

The MF/RO Facility would provide the converted Hogback Reservoir with advanced treated recycled water. The MF/RO Facility uses membrane filtration (i.e., microfiltration (MF) or ultrafiltration (UF) membranes) and reverse osmosis (RO) technologies, sized for a total production capacity of 2.0 million gallons per day (mgd). The water is then sent through the recycled water pipelines implemented under the Recycled Water Easterly Main Extension Project so that it can be distributed to growers.

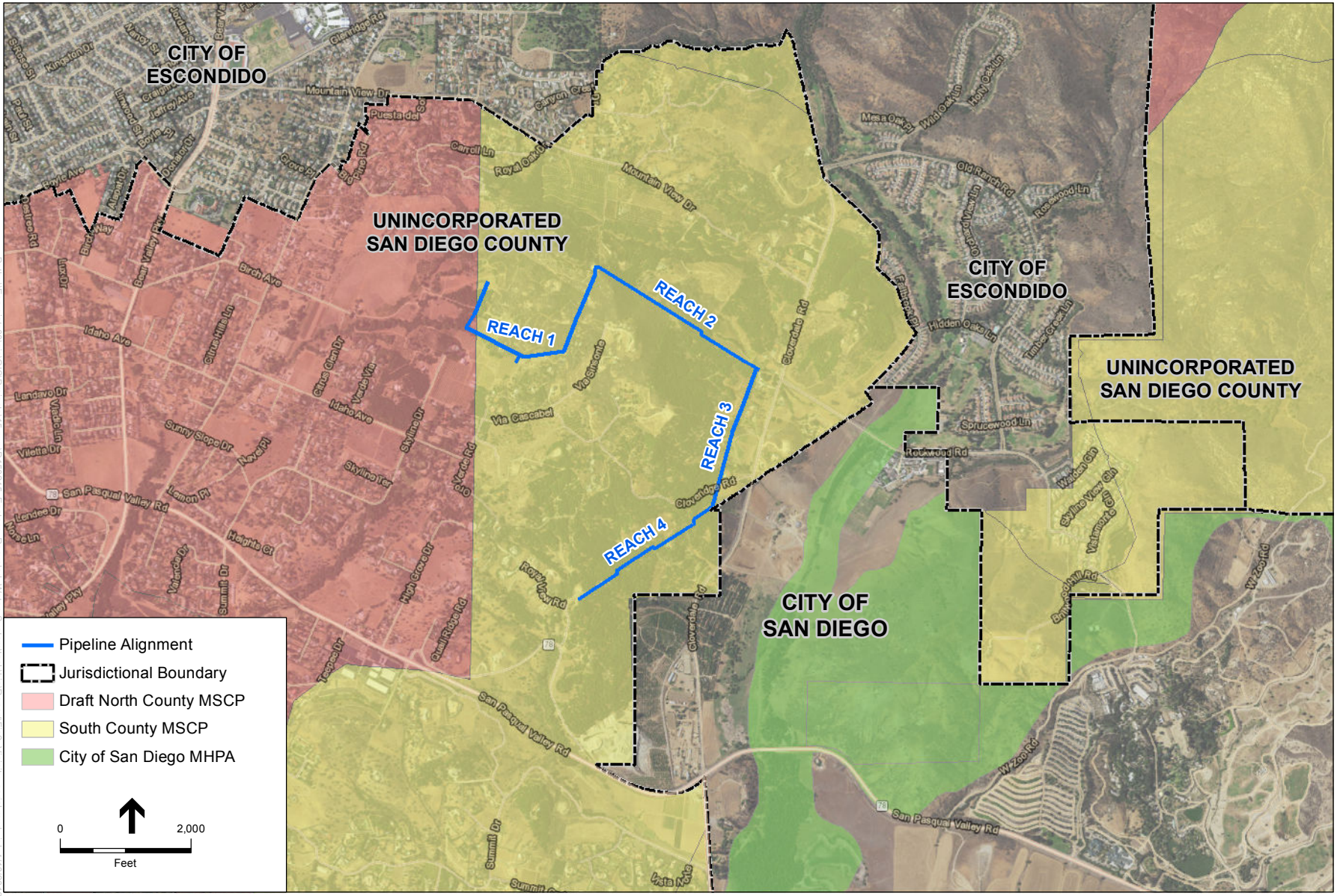


SOURCE: ESRI.

Escondido Eastern Recycled Water System. 150245

Figure 1

Regional Location Map



SOURCE: ESRI; SanGIS 2015

Escondido Eastern Recycled Water System. 150245

Figure 2

Project Vicinity Map

The proposed project would include a recycled water pipeline to distribute recycled water to the growers surrounding Hogback Reservoir. Prior to construction, the City would obtain 20-foot easements for the pipeline and access along the pipes for monitoring and routine maintenance.

The proposed project includes approximately 2.20 linear miles of 8-inch to 20-inch diameter recycled water pipeline. The piping would be black high-density polyethylene (HDPE) fusion welded pipe with a 4-inch purple stripe along its length. Portions of the piping would be installed below ground and above ground. Underground segments of the pipeline would be placed in swales up to 3 feet deep and 4 feet wide. The pipeline would be supported by plastic risers. Blow-off valves would be small diameter (6-inch or less).

The recycled water pipeline alignment consists of several distinct reaches described below and shown on Figure 2.

Reach 1 would start at the Hogback Reservoir, heading south. This leg of the distribution system would include 3,010 feet of 8-inch HDPE piping. Currently, there are two 2-inch meters and one 4-inch meter existing in the vicinity of Reach 1. The proposed project would include the installation of an additional two 3-inch meters.

Reach 2 would start at the Hogback Reservoir, heading southeast to Cloverdale. This leg of the distribution system would include 2.230 feet of 20-inch HDPE piping. Currently, there are four existing meters in the vicinity of Reach 3, including one 3-inch, two 2-inch, and one less than 2-inch meters. The proposed project would include the installation of an additional three meters, including two 2-inch meters and one 3-inch meter.

Reach 3 would continue south from the end of Reach 2. This leg of the distribution system would include 2,600feet of 12-inch HDPE piping. Currently, there are two 4-inch meters existing in the vicinity of Reach 3. The proposed project would include the installation of an additional two 4-inch meters.

Reach 4 would continue southwest from the end of Reach 3. This final leg of the distribution system would include 3,760 feet of 10-inch HDPE piping. Currently, there are three existing meters in the vicinity of Reach 4, including two 4-inch and one 3-inch meters. The proposed project would include the installation of an additional three meters, including two 4-inch meters and one 3-inch meter.

Methodology

Literature Review

Prior to conducting the field survey, ESA biologists conducted a database search and review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW 2016) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2016) (Attachment D) for recorded occurrences of special-status plant and wildlife species within the Escondido, California 7.5-minute USGS topographic quadrangle and the eight surrounding USGS quadrangles. The U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource Report for federally-sensitive biological resources known to occur in the vicinity of the Project site (Attachment C) was also reviewed. In addition, regional floral and faunal field guides, such as the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986, and Oberbauer update 2008) and *The Jepson Manual* (2012), were utilized in the classification of vegetation communities and identification of plant species and suitable habitats (see References Section). Combined, the sources reviewed provided a comprehensive baseline from which to inventory the biological resources potentially occurring on the project site and within the general area.

Field Surveys

Field surveys including vegetation mapping, assessment for potential wetlands, and habitat suitability assessment for special-status species was conducted by ESA biologist Tommy Molioo on January 13, 2015, from the hours of 8:00 AM to 12:00 PM. Weather conditions during the survey consisted of an average temperature of 65° Fahrenheit, winds of 1-2 miles per hour, and overcast skies. The survey consisted of walking the entire project site to characterize and map vegetation communities within the project site, and within a 500-foot buffer of the project site. All areas within and adjacent to the project site were assessed for their potential to support sensitive plant or wildlife species. The potential for sensitive species to occur by the proposed project was based on the presence of suitable habitat, including soils, vegetation, previously recorded occurrences, topography and elevation, and existing land uses. Representative photographs of the survey area are included in **Attachment B**.

Existing Conditions

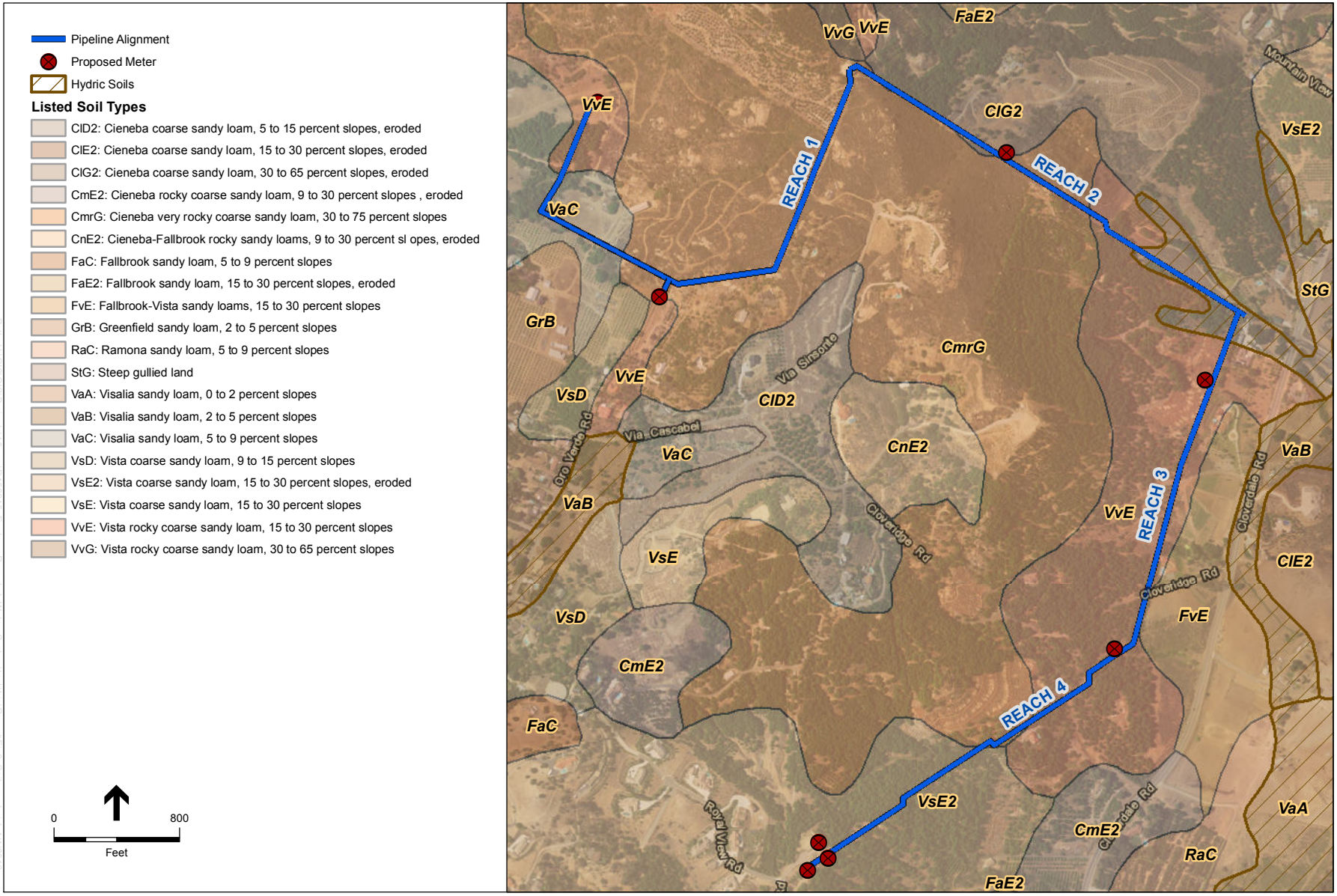
The project site is located within developed and undeveloped areas in unincorporated San Diego County on sloping hillsides adjacent to agricultural areas. The project site occurs on foothills that gradually ascend to the northeast with a varied topography that is at an elevation range of approximately 450 feet above mean sea level (AMSL) to 1,150 feet AMSL. Surrounding land uses consist of scattered residential development and orchards. Vegetation within and immediately adjacent to the pipeline alignment is dominated by a mix of native Diegan coastal sage scrub habitat and orchards comprised of a monoculture of avocado (*Persea americana*) trees. The project site and surrounding area also contains areas of non-native grasslands, disturbed and developed habitats. The native habitats on the project site are relatively undisturbed and are located on sandy loam soils and granitic substrate. Disturbances to the project site include agricultural activities, and recreational activities such as hiking and trail use. Several small drainages and agricultural ponds are located within and immediately adjacent to the study area.

Soils

Based on a review of the USDA Soils Map for the area, the project site consists of sandy loam soils with granitic rock outcrops (**Figure 3**). Soils mapped within the project site include soils belonging to the Cieneba, Fallbrook, Visalia, and Vista soil series, as well as steep gullied land. Specific soil mapping units mapped on the project site include Cieneba coarse sandy loam, Cieneba very rocky coarse sandy loam, Visalia sandy loam (0 to2 percent slopes), Vista coarse sandy loam (15 to 30 percent slopes, eroded), and Vista rocky coarse sandy loam (15 to 30 percent slopes). Cieneba soils are shallow and excessively drained that formed in material weathered from granitic rock. These soils typically occur on hills and mountains with slopes ranging from 9 to 85 percent (NRCS 2015). Visalia soils consist of coarse and fine sandy loams that have grayish brown horizons. Vista soils are moderately deep, well-drained soils that formed in material weathered from decomposed granitic rocks and occur on hills and mountainous uplands. However, based on the field assessment, the soils are compacted and rocky due to previous disturbances on the site. No hydric soils or soils capable of supporting wetland species are mapped for the project site.

Plant Communities and Land Use Types

The plant communities and land use types that occur observed on the project site were mapped in the field and characterized using the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986; Oberbauer 2008). The vegetation on the site is depicted in **Figure 4**. The observed plant species and potential to support sensitive species is discussed in detail below. Additionally, the tier levels per the County MSCP Subarea Plan are provided, which characterize the sensitivity of vegetation communities.

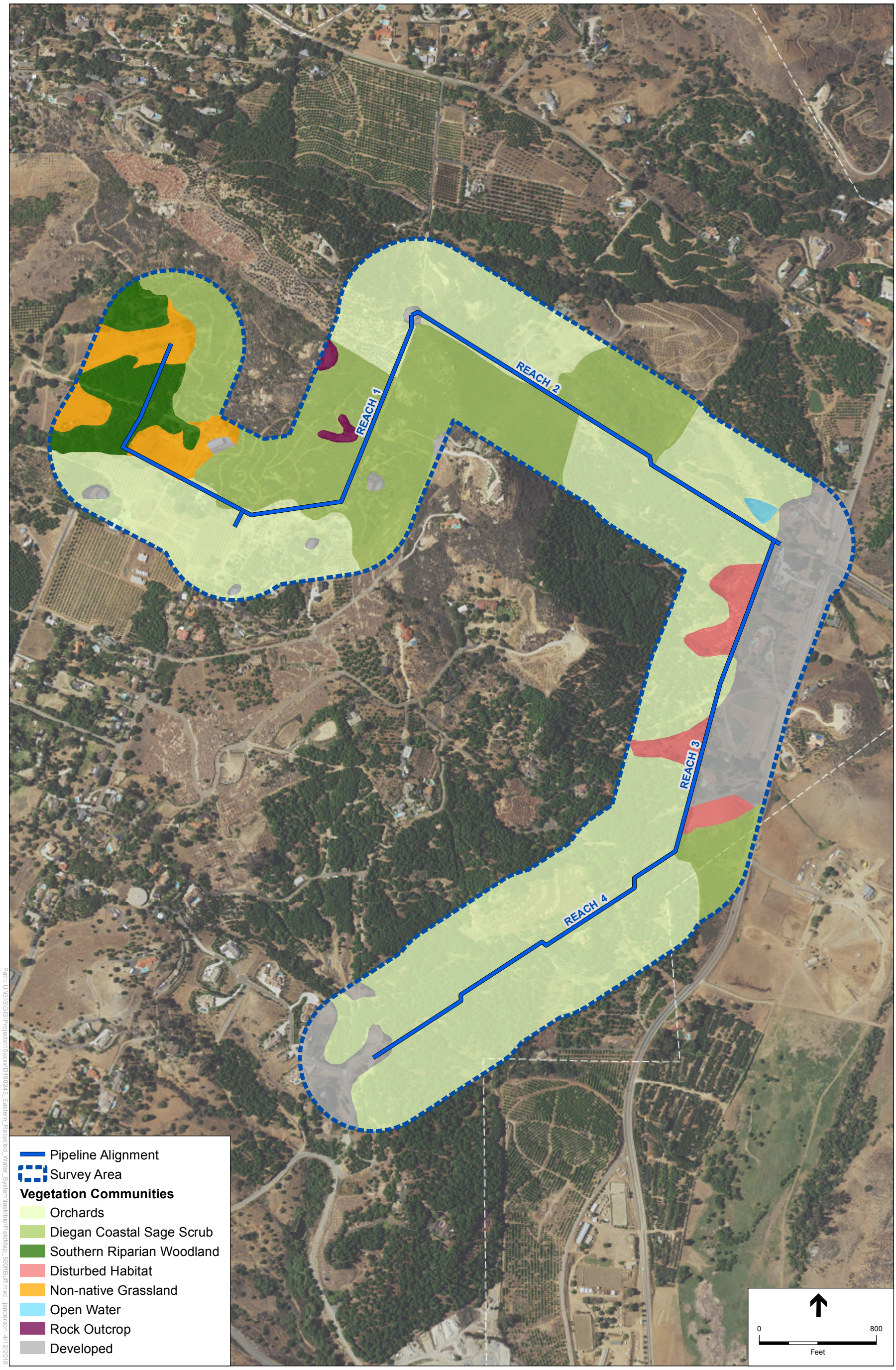


SOURCE: ESRI

Escondido Eastern Recycled Water System . 150245

Figure 3

Soils



SOURCE:

Eastern Recycled Water System . 150245

Figure 4

Vegetation Communities and Land Use Types

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Diegan Coastal Sage Scrub

Diegan coastal sage scrub is typically composed of a predominance of aromatic, drought deciduous perennial shrubs and subshrubs typically growing to no more than three feet high, with a diverse understory of herbaceous species and annual and perennial grasses. It is usually located on dry, south-facing slopes and intermingles with chaparral, non-native grassland, and other local vegetation communities. It had been widely distributed in the region in the past; however, Diegan coastal sage scrub has lost much of its historic range to residential development and agricultural conversion.

The majority of the natural undisturbed areas on the project site and immediate surroundings are characterized as a Diegan coastal sage scrub. A total of 0.96 acre of Diegan coastal sage scrub is mapped for the project site. An additional 65.75 acres was mapped for the 500-foot buffer area outside the project site alignment. Dominant species observed within the Diegan coastal sage scrub community include California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and deerweed (*Acmispon glaber*). Other less dominant native species observed include California buckwheat (*Eriogonum fasciculatum*), tarragon (*Artemisia dracunculus*), brittlebush (*Encelia farinosa*), prickly pear (*Opuntia littoralis*), chaparral yucca (*Hesperoyucca whipplei*), stinging nettle (*Urtica dioica*), scarlet monkeyflower (*Mimulus cardinalis*), and scalebroom (*Lepidospartum squamatum*). Taller woody shrubs were also observed throughout the Diegan coastal sage scrub but do not function as a separate chaparral community. These species include ceanothus (*Ceanothus* sp.), mountain mahogany (*Cercocarpus betuloides*), laurel sumac (*Malosma laurina*), and scrub oak (*Quercus berberidifolia*). Scattered trees such as coast live oak (*Quercus agrifolia*), Mexican elderberry (*Sambucus mexicana*), arroyo willow (*Salix lasiolepis*), and Mexican fan palm (*Washingtonia filifera*) were also observed throughout the Diegan coastal sage scrub. Portions of this community, particularly along Reach 1 are segmented due to the presence of and continued use of trails. Diegan coastal sage scrub is a Tier II habitat under the County Subarea Plan.

Southern Riparian Woodland

Southern riparian woodlands consist of a moderately dense woodland dominated by small trees or shrubs, with scattered taller riparian trees. This vegetation community is distributed throughout the County, and typically associated with major river systems where flood scour occurs and with smaller major tributaries. The southern riparian woodland habitat on the project site and surrounding buffer is associated with two relatively small drainage features in the western portion of the project site. This habitat includes a mix of native and non-native trees and is dominated by arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus mexicana*), and California fan palm (*Washingtonia filifera*). Scattered salt cedar (*Tamarix* sp.) trees were observed throughout the southern riparian woodland. A total of 0.31 acre of southern riparian woodland are mapped for the project site and 10.76 acres are mapped for the surrounding buffer. Southern riparian woodland is a Tier I habitat under the County Subarea Plan.

Orchard

Orchards typically consist of monocultures of agricultural crops planted in rows and artificially irrigated. Orchards on the project site and surrounding area are comprised solely of avocado trees, which is typical of the agricultural areas in the region. Because of the topography of the project site, the orchards are located on sloped hillsides, along ridgelines, and adjacent to minor ravines. Orchards were mapped on 3.06 acres of the project site and 147.06 acres of the surrounding 500-foot buffer. Other species observed in the orchards include scattered ground cover species that are not native to California such as prickly sow-thistle (*Sonchus asper*), short-podded

mustard (*Hirschfeldia incana*), Sahara mustard (*Brassica tournefortii*), castor bean (*Ricinus communis*), Russian thistle (*Salsola tragus*), and tree tobacco (*Nicotiana glauca*).

Non-Native Grassland

As shown on Figure 4, non-native grassland occurs in the western portion of the project site within relatively flat areas that have been disturbed from previous and ongoing agricultural uses. This area now contains a dominance of low-growing non-native grasses. This community accounts for 0.25 acre of the project site and 9.54 acres of the surrounding survey buffer. Non-native species observed include a dominance of rip-gut brome (*Bromus diandrus*), red brome, and wild oats (*Avena barbata*), with scattered short-podded mustard, artichoke thistle (*Cynara cardunculus*), and star thistle (*Centaurea* sp.). Non-native grassland is a Tier III Habitat under the County Subarea Plan.

Disturbed Habitat

Disturbed habitat consists of areas that have been previously disturbed from a number of human-related causes that have significantly altered and degraded the previous native habitat. Disturbed areas are typically devoid of vegetation except for non-native ruderal species along the periphery and scattered throughout. Soils in these areas are generally compacted as continued uses further degrade the habitat such as hiking, biking, and off-road vehicle use. Species observed in this land use type include scattered non-native species such as red brome, ripgut brome, and short-podded mustard. Disturbed habitat is mapped for 0.29 acre of the project site and 7.03 acres of the surrounding buffer. Disturbed habitat is a Tier IV Habitat under the County Subarea Plan.

Developed

Developed land includes areas that have been significantly altered from previous actions and now consist predominately of impermeable surfaces such as concrete and asphalt for roads, or contain buildings and structures with no naturally-occurring vegetation. Additionally, areas mapped as developed land include rural residences and associated landscaping, as well as areas on the residential property that are used for storage, access, and recreation. No native vegetation was observed in developed areas, and the only vegetation that occurs included non-native ornamental species planted for landscaping purposes. Developed land occurs on 0.51 acre of the project site and 32.02 acres of the surrounding survey buffer, and are listed as a Tier IV Habitat under the County Subarea Plan.

Wildlife Observed

The project site is located within a relatively undeveloped area surrounded by rural residential development and agricultural land consisting mainly of orchards. These areas provide suitable habitat for a number of common wildlife species known to occur in native scrub habitats as well as urban environments. Wildlife observed during the field reconnaissance include mainly avian species such as mourning dove (*Zenaida macroura*), California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), American goldfinch (*Spinus tristis*), lesser goldfinch (*Carduelis psaltria*), western scrub jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), northern mockingbird (*Mimus polyglottos*), yellow-rumped warbler (*Setophaga coronata*), American crow (*Corvus brachyrhynchos*), California quail (*Callipepla californica*), and turkey vulture (*Cathartes aura*). Mammal species observed include California ground squirrel (*Otospermophilus beecheyi*), and mountain lion (*Puma concolor*) scat and paw prints were observed in a drainage to the north of the Reach 2 pipeline. No amphibian or reptile species were observed, however, species expected to occur onsite include Pacific tree frog (*Pseudacris regilla*) and western fence lizard (*Sceloporus occidentalis*).

Discussion of Impacts to Biological Resource Issues

The following section includes a discussion of biological resource issues for the project site that may be impacted by the proposed project. Biological resource issues include special-status plant and wildlife species[1], sensitive natural communities, and other biological resources considered sensitive under CEQA such as wildlife corridors, jurisdictional resources, local policies and ordinances, and habitat conservation plans. Special-status species evaluated for their potential to occur on the project site are provided in the table included in Attachment A. Additional measures to reduce potential project-related impacts to sensitive biological resources are provided in the Recommendations section.

Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are considered rare in the region by regulatory agencies, known to provide habitat for sensitive animal or plant species, or known to be important wildlife corridors. Sensitive vegetation communities in San Diego County are considered Tier I to III habitats. Project-related impacts to these sensitive vegetation communities require restoration or compensatory mitigation per County Guidelines.

The project will also be constructed (Reach 1 and Reach 2) within Diegan coastal sage scrub habitat that is considered a Tier II Habitat under the County's Biological Mitigation Ordinance (BMO). Diegan coastal sage scrub is the dominant natural vegetation community on the project site, and protection of this habitat is important as it is suitable to support the federally threatened coastal California gnatcatcher (*Polioptila californica californica*). Therefore, potential impacts to Diegan coastal sage scrub habitat is considered a significant impact under the County Subarea Plan, and implementation of the measures discussed in the Recommendations section below reduce potential impacts to a less than significant level.

Riparian habitats are those occurring along the banks of rivers and streams and are listed as Tier I Habitat and are considered sensitive under the County Subarea Plan. The western extent of Reach 1 will occur within southern riparian woodland habitat as the pipeline crosses a small drainage feature. Impacts to riparian habitat are considered significant and require mitigation per the County Guidelines. Measures discussed in the Recommendations section will reduce potential impacts to a less than significant level.

Special-Status Plants

Special-status plants were not detected during the field survey, though the site visit was conducted outside of the blooming period for these species and a focused rare plant survey was not conducted. The project site has the potential to support special-status plant species due to its location, size, relatively limited disturbance in some areas, and moderate to high quality habitat. Although the disturbed areas and orchards provide lower quality habitat to support special-status plants, the remainder of the native habitat on and immediately adjacent to the project site provide suitable habitat for a number of special-status plants. Special-status plant species determined to have a moderate or high potential to occur include the following 17 plant species: San Diego thorn-mint (*Acanthomintha ilicifolia*), San Diego ambrosia (*Ambrosia pumila*), San Diego sagewort (*Artemisia palmeri*),

[1] "Special-status" species analyzed in this report include plants and animals that are listed and protected as "Endangered" or "Threatened" under the California Endangered Species Act (CESA) or the Federal Endangered Species Act (FESA), as well as non-listed species that may be considered sufficiently rare or sensitive by the California Department of Fish and Wildlife (CDFW), other recognized conservation organizations (e.g., California Native Plant Society (CNPS)) and/or by the Lead Agency with authority under the California Environmental Quality Act (CEQA) to warrant conservation and protection.

western spleenwort (*Asplenium vespertinum*), San Diego goldenstar (*Bloomeria clevelandii*), Lewis' evening primrose (*Camissoniopsis lewisii*), Payson's jewelflower (*Caulanthus simulans*), southern tarplant (*Centromadia parryi* ssp. *australis*), paniculate tarplant (*Deinandra paniculata*), sticky dudleya (*Dudleya viscida*), San Diego barrel cactus (*Ferocactus viridescens*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), mesa horkelia (*Horkelia cuneata* ssp. *puberula*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), Nuttall's scrub oak (*Quercus dumosa*), Parry's tetracoccus (*Tetracoccus dioicus*), and San Diego County viguiera (*Viguiera laciniata*). San Diego thorn-mint and San Diego ambrosia are considered Narrow Endemic Plant under the County Subarea Plan. If any of these species are determined to occur on site and may be impacted by the proposed project these impacts may be considered significant. Measures included in the Recommendations section will reduce potential impacts to a less than significant level.

Special-Status Wildlife

Special-status wildlife species were not observed during the site visit, however, this site visit was conducted outside of the optimal time to detect these species and focused protocol surveys for special-status species were not conducted. The project site occurs within Diegan coastal sage scrub and orchards that provide suitable habitat for a number of special-status wildlife species known to occur in the area. The project site traverses flat and steep topography with granitic and sandy soils, containing a mix of native and disturbed habitats. Most of the special-status species with a moderate or high potential to occur on the project site may inhabit native vegetation areas along Reach 1 and Reach 2. Special-status wildlife species with a moderate or high potential to occur on the project site include the following 9 species: orange-throated whiptail (*Aspidoscelis hyperythra*), red-diamond rattlesnake (*Crotalus ruber*), coast horned lizard (*Phrynosoma blainvillii*), coastal cactus wren (*Campylorhynchus brunneicapillus* ssp. *sandiegensis*), coastal California gnatcatcher (*Polioptila californica* ssp. *californica*), Dulzura pocket mouse (*Chaetodipus californicus* ssp. *femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*), San Diego black-tailed jackrabbit (*Lepus californicus* ssp. *bennettii*), and San Diego desert woodrat (*Neotoma lepida* ssp. *intermedia*).

Nesting and Native Birds

The native scrub habitat and existing trees on the project site provide suitable nesting habitat for avian species, particularly ones observed on the project site, protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3500.

Depending on the timing of construction, project activities could have the potential to disrupt nesting activity if conducted during the general avian breeding season of February through August, including causing the abandonment of nests and/or direct impacts to eggs and nestlings, which would violate the MTBA and California Fish and Game Code (CFGC). The CFGC also affords protection of native birds outside of the nesting season. Construction-related impacts to native birds that are foraging or roosting on or near the project site would be negligible, because of the extensive amount of suitable habitat that is adjacent. Some native bird species may temporarily disperse and forage in adjacent areas during construction; however, this is not expected to have a detrimental effect on their population or distribution in the region. Potential direct and indirect impacts to nesting birds could occur if construction activities take place during the nesting season (February through August). Potential impacts from construction activities and associated noises and vibrations could impact birds that are nesting on or adjacent to the project site. Avoidance measures are included in the Recommendations Section to mitigate potential project-related impacts to nesting birds.

Wildlife Corridors

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site and surrounding area does not function as a significant wildlife movement corridor, but the undeveloped native habitat areas on the project site do allow for local wildlife movement particularly for birds and mammals moving through the region. Additionally, the project site allows connectivity to Cloverdale Creek to the east, which is an important wildlife movement corridor in the City of Escondido and the region, as well as a riparian corridor to the southwest. However, impacts to movement would be temporary, and are thus not expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. The proposed project will install an 8-inch to 20-inch diameter recycled water pipeline above and below grade that will still allow wildlife to move over or under the pipeline when moving through the area. Additionally, no other infrastructure, buildings, or structures are proposed for the project that would significantly alter the existing landscape preventing wildlife from continuing to move through the general area. Therefore, direct impacts would be less than significant. However, indirect/temporary impacts to the movement of wildlife species may occur through the use of nighttime lighting during nighttime construction activities during the construction phase of the project. This potential indirect effect may be considered a significant impact if best management practices are not implemented into the construction phase of the project.

Jurisdictional Resources

Wetlands are defined under the federal Clean Water Act, as accepted by the USACE and CDFW, as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. A jurisdictional delineation is required to confirm the presence of federal and state and wetlands and waters within the project site. The project site and surrounding area includes native scrub habitat and orchards, with disturbed and developed areas. Several drainages are located on and adjacent to the project site. Reach 3 of the proposed project crosses a small creek with observed surface water that contains associated habitat. This small creek appears to continue downstream and potentially connects with Cloverdale Creek that may demonstrate a significant nexus with the Pacific Ocean. Additionally, Reach 1 crosses over a blue-line stream that may also demonstrate a significant nexus with the Pacific Ocean. Therefore, the proposed project may result in significant impacts to at least two federally and state regulated drainage features.

Local Policies and Ordinances

Implementation of the proposed project may remove some trees located on the project site. Section 33-1066, -1068, and -1069 of Article 55 (Grading and Erosion Control) of the City of Escondido Zoning Code regulates impacts to historically significant and/or mature trees, with a focus on oak tree protection. Protected trees are defined as “any oak (*Quercus* sp.) which has a ten (10) inch or greater trunk diameter at breast height (DBH), or any other species or individual specimen listed on the historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code (2001).”

The project site contains several species of *Quercus* sp. that may have a 10 inch or greater trunk diameter that may be removed as part of the proposed project. These include scrub oaks (*Quercus berberidifolia*) within the Diegan coastal sage scrub community throughout Reach 1 and Reach 2. There may also be other species that are listed on the historic register that may be within or immediately adjacent to the project site that may be impacted

by the proposed project. Therefore, the project may result in significant impacts to trees protected in accordance with Article 55 of the City's Zoning Code based on their size.

Habitat Conservation Plans

The project site occurs predominantly within the County of San Diego MSCP Subarea Plan and partially within the Draft North County MSCP Subarea Plan. The project site is not located within a biological resource core area of the MSCP. Unincorporated County lands within the project site are located within the Metro-Lakeside-Jamul Segment of the County Subarea Plan of the MSCP. Although impacts to Diegan coastal sage scrub would occur during construction of the proposed project, these impacts would occur in the unincorporated County and would not exceed the County's five-percent habitat loss threshold as defined by the NCCP. Mitigation for Diegan coastal sage scrub impacts is proposed, as discussed above. As such, the project would mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the NCCP Guidelines, and in accordance with the standards of the County's approved MSCP.

Since the project site occurs on MSCP designated land, the project would be required to conform to the goals and requirements as outlined in the County Subarea Plan of the MSCP. Project implementation would not result in impacts to any conservation areas or lands mapped in the Pre-Approved Mitigation Area (PAMA). Additionally, construction and maintenance of public facilities such as a water pipeline are covered activities under the County's MSCP. The proposed project would be consistent with the conservation measures defined in the County Subarea Plan of the MSCP and Draft North County Subarea Plan of the MSCP, particularly through implementation of the recommendations discussed below.

Recommendations

Based on the results of the habitat assessment, the following measures are recommended to reduce any potential impact to sensitive biological resources from construction of the proposed project.

Sensitive Natural Communities

Project-related impacts to natural communities considered sensitive under the County Subarea Plan of the MSCP (Tier I-III Habitats) are listed in Table 1 and further discussed below.

TABLE 1
MITIGATION SUMMARY FOR IMPACTS TO VEGETATION COMMUNITIES

Vegetation Community	Habitat Tier*	Impact	Mitigation Ratio**	Mitigation
Diegan Coastal Sage Scrub	II	0.96	1.5:1	1.44
Southern Riparian Woodland	I	0.31	3:1	0.93
Orchard	IV	3.06	--	--
Non-Native Grassland	III	0.25	1:1	0.25
Disturbed Habitat	IV	0.29	--	--
Developed	IV	0.51	--	--

*Habitat Groups taken from the County's Biological Mitigation Ordinance (BMO).
**Mitigation ratio assumes that impacts within the County are outside the Biological Resource Core Area (BRCA) and that mitigation would occur within areas outside the BRCA criteria (see Attachment M of the County's BMO for more information).

Riparian habitats are those occurring along the banks of rivers and streams. The western extent of Reach 1 will occur within southern riparian woodland habitat as the pipeline crosses a small drainage feature. Potential impacts to Tier I riparian habitats will be mitigated for through replacement of habitat either onsite or at a County-approved mitigation bank at a 2:1 ratio for a total of 0.62 acre of riparian mitigation. Additional measures to reduce potential impacts to riparian habitat will be addressed in the Jurisdictional Resources section below.

To reduce potential impacts to Diegan coastal sage scrub habitat, the project will be required to mitigate for the loss of Tier II Habitat which is considered sensitive under the County Subarea Plan through compensatory mitigation. The mitigation ratio for impacts to Tier II Habitat is 1.5:1 for impacts on land that does not meet the criteria for a biological resource core area. Therefore, the Applicant will be required to mitigate for 1.44-acre of coastal sage scrub habitat either onsite or at a County-approved mitigation bank.

Non-native grassland is considered a Tier III Habitat and is considered sensitive under the County Subarea Plan and requires mitigation for project-related impacts at a 1:1 ratio for impacts on land that does not meet the criteria for a biological resource core area. Therefore, the Applicant will be required to mitigate for 0.25 acre of non-native grassland habitat either onsite or at a County-approved mitigation bank.

Special-Status Plants

In order to determine the presence or absence of special-status plant species, focused surveys must be conducted by a qualified biologist during the appropriate blooming season for these species, generally between April through June. If special-status plants are observed on the project site, flagging, stakes, and/or construction fencing shall be used to demarcate the areas in which the plants are growing and these areas will be avoided, where feasible. Project personnel, including all contractors working on site, will be instructed on the sensitivity of these areas. If preservation onsite is not feasible, the project biologist will consult with the City, County and agencies to determine appropriate mitigation for the loss of any special-status plants, which is anticipated to include plant/seed salvage and relocation, or habitat-based mitigation (for which a restoration plan would be required).

Special-Status Wildlife

Coastal California Gnatcatcher

To determine if the federally threatened coastal California gnatcatcher occurs on or adjacent to the project site, protocol surveys should be conducted by a USFWS-permitted biologist according to accepted 1997 protocol. Because the project site is located within the MSCP boundaries, three surveys will be conducted between February 15 and August 30, spaced a minimum of one week apart.

If coastal California gnatcatcher is observed on the project site during the protocol survey occupied habitat will be flagged and avoided where possible. Construction activities within and adjacent to occupied habitat should be conducted outside the gnatcatcher breeding season of February 15 through August 30 to avoid potential impacts to this species. If avoidance of occupied habitat and/or constructing outside the breeding season is not feasible, and it is determined that the proposed project may result in direct or indirect impacts to gnatcatcher, incidental take of this species has been authorized through the participation in the MSCP. To permit incidental take of coastal California gnatcatcher the Applicant will be required to apply for a Habitat Loss Permit (HLP) from the County to authorize incidental take of this species.

California Species of Special Concern

To determine if the proposed project may result in significant impacts to any of the 8 special-status wildlife species listed as California Species of Special Concern (SSC), pre-project surveys should be conducted within the spring or summer to determine the presence/absence of any special-status wildlife species on the project site. If any special-status wildlife species listed as SSC are determined to occur on the project site and may be impacted by construction of the proposed project, additional avoidance measures such as temporary fencing and biological monitoring during construction will be required to reduce potential impacts to a less than significant level. If it is determined that a significant population of a special-status wildlife species may be impacted by the project, consultation with CDFW may be required to determine if additional mitigation or relocation is warranted.

Additionally, a Worker Environmental Awareness Program (WEAP) Training should be implemented for all construction workers on the project site to reduce potential impacts to Species of Special Concern that could move onto the site during construction. The WEAP Training includes best management practices to be implemented such as: limiting disturbance to delineated disturbance areas on the project site, removing trash daily, covering all holes and trenches at the end of each day, and limiting onsite vehicle speeds to under 15 miles per hour. A qualified biologist should be contacted to move any sensitive reptile species off the site prior to any potential impact.

Nesting Birds

Proposed project activities (including, but not limited to, staging and disturbances to native and non-native vegetation, structures, and substrates) should occur outside of the avian breeding season, which generally runs from February through August, to avoid take of nesting birds, eggs, chicks, or fledglings.

If avoidance of the avian breeding season is not feasible a qualified biologist, with experience in conducting breeding bird surveys, shall conduct a preconstruction clearance survey for active nests no more than 3 days prior to the initiation of project construction activities. If a protected native bird is found, flagging, stakes, and/or construction fencing and noise attenuation shall be used to demarcate a buffer zone of 300 feet (or 500 feet for raptors) between the project construction activities and the nest. Project construction personnel, including all contractors working on site, will be instructed on the sensitivity of the area. The project proponent shall delay all project construction activities within the 300- (or 500-) foot buffer area until August 15th or until a qualified biologist has determined that the juveniles have fledged, the nest is vacated, and there is no evidence of a second attempt at nesting.

If the biological monitor determines that a wider buffer between the project construction activities and observed active nests is warranted, or a more narrow buffer could support impact avoidance, the biologists shall submit a written explanation as to why (e.g., species-specific information; ambient conditions and birds' habituation to them; and the terrain, vegetation, and birds' lines of sight between the project activities and the nest and foraging areas) to the City. Based on the submitted information the City will determine whether to widen the buffer or allow a narrower buffer.

The qualified biological monitor shall be present on site during all grubbing and clearing of vegetation to ensure that these activities remain within the project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project construction activities. The biological monitor will send weekly monitoring reports to the City

during the grubbing and clearing of vegetation, and will notify the City immediately if project activities damage active avian nests.

Jurisdictional Resources

Prior to the start of construction, a jurisdictional delineation survey should be conducted to determine the extent of potential Waters of the United States and Waters of the State that occur on and immediately adjacent to the project site. The jurisdictional delineation survey will allow the City to determine if the proposed project will result in potentially significant impacts to potentially regulated features. If it is determined that the proposed project will result in significant impacts to jurisdictional waters, regulatory permits will be required to be obtained prior to project construction. Regulatory permits must be obtained from the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB) in accordance with Sections 404 and 401 of the Clean Water Act (CWA) and Section 1600 of California Fish and Game Code (CFGC). Mitigation to offset the impacts to Waters of the U.S. and State will be implemented in accordance with the regulatory permit conditions.

Local Policies and Ordinances

Prior to construction, a qualified biologist shall conduct a tree survey to identify protected oak trees on the project site. The biologist shall document qualifying data for each oak tree on the site, including location, height, diameter of dripline, number and size of trunks, and health characteristics. Because the project site falls within the Sphere of Influence of the City of Escondido, the project biologist shall obtain a vegetation removal permit as required by Sec. 33-1068.B of the City's Zoning Code.

If feasible, the affected oak trees may be salvaged and relocated to a location to be determined through consultation with the City. Per Sec. 33-1068.C of the City's Zoning Code, at the City's request, the applicant may "prepare[] a tree replacement… plan as well as a report by a professional which estimates the health of and the significance of the impacts to the tree(s) to be… removed or relocated, and includes specifications for transplanting and maintenance of the affected tree(s). The report shall also include feasible mitigation measures to reduce potential impacts to the tree(s). The professional may also be required to supervise the relocation of any tree(s)." Transplanted oak trees will be monitored and maintained to ensure the success of the relocation effort.

The qualified project biologist shall consult with the City to determine appropriate mitigation for the loss of protected trees. According to Sec. 33-1069 of the City's Zoning Code, "Protected trees shall be replaced at a minimum 2:1 ratio," though "The number, size and species of replacement trees shall be determined on a case-by-case basis by the director, based on the specific circumstances of each request, the characteristics and condition (size, age and location) of the individual trees involved, and any professional report." Replacement oak trees will be monitored and maintained to ensure the success of the mitigation effort.

Habitat Conservation Plans

In order to comply with the biological goals and guidelines stipulated in the County Subarea Plan of the MSCP, the recommendations discussed above will be implemented to reduce any potential project-related impact to a less than significant level. Habitat-based compensatory mitigation, special-status species mitigation, and mitigation to reduce impacts to nesting birds, jurisdictional resources, and local policies protecting oak trees will ensure project compliance with the MSCP.

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Prepared by

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Barbra Calantas – Director, Biological Resources

Attachments

A. Special-Status Species Table

B. Site Photographs

C. Species Compendium

D. CNDDB, CNPS, and IPaC Lists

ATTACHMENT A

Special-Status Species Table

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
PLANTS			
Red sand verbena *Abronia maritima*	CRPR 4.2	Coastal strand, < 100 m elevation	**Low.** Suitable habitat for this perennial is not present within the project site.
San Diego thorn-mint *Acanthomintha ilicifolia*	FT, SE, CRPR 1B.1	Clay soils within chaparral, coastal scrub, valley and foothill grassland and vernal pools. 10-960 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
California adolphia *Adolphia californica*	CRPR 2B.1	Clay soils within chaparral, coastal scrub and valley and foothill grassland. 45-740 meters.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
San Diego ambrosia *Ambrosia pumila*	FE, CRPR 1B.1	Sandy loam or clay soils within chaparral, coastal scrub, valley and foothill grassland and vernal pools. This species is commonly found in disturbed areas. 20-415 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site..
Aphanisma *Aphanisma blitoides*	CRPR 1B.2	Coastal sage scrub along coast and coastal strand, saline sand, < 200 m elevation	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site. The project site is outside of the range of this species.
Del Mar manzanita *Arctostaphylos glandulosa* ssp. *crassifolia*	FE, CRPR 1B.1	Sandy substrate within chaparral. 0-365 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
Rainbow manzanita *Arctostaphylos rainbowensis*	CRPR 1B.1	Chaparral. 205-670 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
San Diego sagewort *Artemisia palmeri*	CRPR 4.2	Sandy substrate within chaparral, coastal scrub, riparian forest, scrub and woodland.	**Moderate.** Coastal scrub habitat is present with in the project site and this species is known to occur in chaparral and coastal scrub habitat.
Western spleenwort *Asplenium vespertinum*	CRPR 4.2	Rocky substrate within chaparral, cismontane woodland and coastal scrub. 180-1,000 m elevation.	**Moderate.** Suitable habitat for this perennial rhizomatous herb is present within the project site.
San Diego milk-vetch *Astragalus oocarpus*	CRPR 1B.1	Chaparral and cismontane woodland. 305-1,524 m elevation.	**Low.** Suitable habitat for this perennial herb is not present.
Coulter's saltbush *Atriplex coulteri*	CRPR 1B.2	Alkaline or clay soils within coastal bluff scrub, dunes, coastal scrub and valley and foothill grassland. 3-460 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
South Coast saltscale *Atriplex pacifica*	CRPR 1B.2	Coastal bluff scrub, dunes, coastal scrub and playas. 0-140 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Parish's brittlescale *Atriplex parishii*	CRPR 1B.1	Alkaline soils within chenopod scrub, playas and vernal pools. 25-1,900 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Encinitas Baccharis *Baccharis vanessae*	FT, SE, CRPR 1B.1	Sandstone soils within chaparral and cismontane woodland. 60-720 m elevation.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
Nevin's barberry *Berberis nevinii*	FE, SE, CRPR 1B.1	Sandy or gravelly substrate within chaparral, cismontane woodland and coastal and riparian scrub. 274-825 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present.
San Diego goldenstar *Bloomeria clevelandii*	CRPR 1B.1	Clay soils within chaparral, coastal scrub, valley and foothill grassland and vernal pools. 50-465 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Thread-leaved brodiaea *Brodiaea filifolia*	FT, SE, CRPR 1B.1	Often clay soils within chaparral, cismontane woodland, coastal scrub, playas, valley and foothill grassland and vernal pools. 25-1,120 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Orcutt's brodiaea *Brodiaea orcuttii*	CRPR 1B.1	Often clay, sometimes serpentinite soils within closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland and vernal pools.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Round-leaved filaree *California macrophylla*	CRPR 1B.1	Clay soils within cismontane woodland and valley and foothill grassland. 15-1200 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Dunn's mariposa lily *Calochortus dunnii*	SR, CRPR 1B.2	Rocky substrate within closed-cone coniferous forest, chaparral and valley and foothill grassland. 185-1,830 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present within the project site.
Lewis' evening primrose *Camissoniopsis lewisii*	CRPR 3	Sandy or clay soils within coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub and valley and foothill grassland. 0-300 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
Payson's jewelflower *Caulanthus simulans*	CRPR 4.2	Sandy or granitic substrate within chaparral and coastal scrub. 90-2,200 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Wart-stemmed ceanothus *Ceanothus verrucosus*	CRPR 2B.2	Chaparral. 1-380 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Southern tarplant *Centromadia parryi* ssp. *australis*	CRPR 1B.1	Disturbed areas along the margins of marshes and swamps and within chaparral, coastal scrub, valley and foothill grassland and vernal pools. 0-480 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Smooth tarplant *Centromadia pungens* ssp. *laevis*	CRPR 1B.1	Alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland and valley and foothill grassland. 0-640 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Orcutt's pincushion *Chaenactis glabriuscula* var. *orcuttiana*	CRPR 1B.1	Coastal bluff scrub and coastal dunes. 0-100 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Southern mountain misery *Chamaebatia australis*	CRPR 4.2	Gabbroic or metavolcanic chaparral. 300-1020 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present and the project site is located outside of the elevation range for the species.
Peninsular spineflower *Chorizanthe leptotheca*	CRPR 4.2	Granitic substrate in alluvial fans within chaparral, coastal scrub and lower montane coniferous forest. 300-1,900 m elevations.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Orcutt's spineflower *Chorizanthe orcuttiana*	FE, SE, CRPR 1B.1	Sandy openings within closed-cone coniferous forest, chaparral and coastal scrub. 3-125 m elevations.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Delicate clarkia *Clarkia delicata*	CRPR 1B.2	Gabbroic substrate within chaparral and cismontane woodland. 235-1,000 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Summer holly *Comarostaphylis diversifolia* ssp. *diversifolia*	CRPR 1B.2	Chaparral and cismontane woodland. 30-790 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.

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SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Small-flowered morning-glory *Convolvulus simulans*	CRPR 4.2	Clay soils within serpeninite seeps, coastal scrub and valley and foothill grassland. 3-115 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
San Diego sand aster *Corethrogyne filaginifolia* var. *incana*	CRPR 1B.1	Coastal bluff scrub, chaparral and coastal scrub.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Del Mar sand aster *Corethrogyne filaginifolia* var. *linifolia*	CRPR 1B.1	Sandy substrate within coastal bluff scrub, chaparral and coastal scrub. 15-150 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site and the project site is not within the elevation range of the speices.
Paniculate tarplant *Deinandra paniculata*	CRPR 4.2	Usually sandy substrate within coastal scrub, valley and foothill grassland and vernal pools. 25-940 m elevation.	**Moderate.** Coastal scrub habitat is present with in the project site and this species is known to occur in coastal scrub habitat.
Cuyamaca larkspur *Delphinium hesperium* ssp. *cuyamacae*	SR, CRPR 1B.2	Mesic areas within lower montane coniferous forest, meadows and seeps and vernal pools. 1,220-1,631 m elevations.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.
Western dichondra *Dichondra occidentalis*	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. 50-500 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Banner dudleya *Dudleya alainae*	CRPR 3.2	Rocky substrate within chaparral, lower montane coniferous forest and Sonoran desert scrub. 740-1,200 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present and the project site is located outside of the elevation range for the species.
Variegated dudleya *Dudleya variegata*	CRPR 1B.1	Clay soils within chaparral, cismontane woodland, coastal scrub, valley and foothill grassland and vernal pools. 3-580 m elevation.	**Low.** Suitable habitat is present in the coastal scrub habitat within the project site, however, no clay soils are present.
Sticky dudleya *Dudleya viscida*	CRPR 1B.2	Rocky substrate within coastal bluff scrub, chaparral, cismontane woodland and coastal scrub. 10-550 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Palmer's goldenbush *Ericameria palmeri* var. *palmeri*	CRPR 1B.1	Mesic areas within chaparral and coastal scrub. 30-600 m elevations.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
San Diego button-celery Eryngium aristulatum *var.* parishii	FE, SE, CRPR 1B.1	Mesic areas within coastal scrub, valley and foothill grassland and vernal pools. 20-620 m elevations.	**Low.** Suitable habitat is present in the coastal scrub habitat within the project site, however, the conditions on the project site are generally described as xeric. .

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Species	Status[1]	Habitat	Potential for Occurrence[2]
San Diego barrel cactus *Ferocactus viridescens*	CRPR 2B.1	Chaparral, coastal scrub, valley and foothill grassland and vernal pools. 3-450 m elevations.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Palmer's grapplinghook *Harpagonella palmeri*	CRPR 4.2	Clay soils in grassy openings within chaparral, coastal scrub and valley and foothill grassland. 20-955 m elevation.	**Low.** Suitable habitat is present in the coastal scrub habitat within the project site, however, the site lacks clay soils.
Orcutt's hazardia *Hazardia orcuttii*	FC, ST, CRPR 1B.1	Clay soils within chaparral, coastal scrub. 80-85 m elevation.	**Low.** Suitable habitat is present in the coastal scrub habitat within the project site, however, the site lacks clay soils.
Beach goldenaster *Heterotheca sessiliflora* ssp. *sessiliflora*	CRPR 1B.1	Chaparral, coastal dunes and coastal scrub. 0-1,225 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Graceful tarplant *Holocarpha virgata* ssp. *elongata*	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. 60-1,100 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Vernal barley *Hordeum intercedens*	CRPR 3.2	Coastal dunes, coastal scrub, valley and foothill grassland and vernal pools. 5-1,000 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	CRPR 1B.1	Sandy or gravelly substrate within chaparral, cismontane woodland and coastal scrub. 70-810 m elevations.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Ramona horkelia *Horkelia truncata*	CRPR 1B.3	Clay or gabbroic substrate within chaparral and cismontane woodland. 400-1,300 m elevations.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.
San Diego sunflower *Hulsea californica*	CRPR 1B.3	Openings and burned areas within chaparral, lower montane coniferous forest, upper montane coniferous forest. 915-2,915 m elevations.	**Low.** Suitable habitat for this perennial herb is not present and the project site is located outside of the elevation range for the species.
Decumbent goldenbush *Isocoma menziesii* var. *decumbens*	CRPR 1B.2	Often disturbed areas within chaparral and coastal scrub. 10-135 m elevation.	**Moderate.** Coastal scrub habitat is present within the project site and this species is known to occur in coastal scrub habitat.
San Diego marsh-elder *Iva hayesiana*	CRPR 2B.2	Marshes and swamps and playas. 10-500 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Southwestern spiny rush *Juncus acutus* var. *leopoldii*	CRPR 4.2	Coastal dunes, alkaline meadows and seeps, and coastal marshes and swamps. 3-900 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
Heart-leaved pitcher sage *Lepechinia cardiophylla*	CRPR 1B.2	Closed-cone coniferous forest, chaparral and cismontane woodland. 520-1,370 m elevation.	**Low.** Suitable habitat for this perennial shrub is not present within the project site.
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	CRPR 4.3	Chaparral and coastal scrub. 1-885 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Large-flowered leptosiphon *Leptosiphon grandiflorus*	CRPR 4.2	Usually sandy substrate within coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub and valley and foothill grassland. 5-1,220 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Sea dahlia *Leptosyne maritima*	CRPR 2B.2	Coastal bluff scrub and coastal scrub. 5-150 m elevations.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
Lemon lily *Lilium parryi*	CRPR 1B.2	Mesic areas within lower montane coniferous forest, meadows and seeps, riparian forest and upper montane coniferous forest. 1,220-2,745 m elevation.	**Low.** Suitable habitat for this perennial bulbiferous herb is not present and the project site is located outside of the elevation range for the species.
Orcutt's linanthus *Linanthus orcuttii*	CRPR 1B.3	Openings within chaparral, lower montane coniferous forest and pinyon and juniper woodland. 915-2,145 m elevation.	**Low.** Suitable habitat for this annual herb is not present and the project site is located outside of the elevation range for the species.
Small-flowered microseris *Microseris douglasii* ssp. *platycarpha*	CRPR 4.2	Clay soils within cismontane woodland, coastal scrub, valley and foothill grassland and vernal pools. 15-1,070 m elevation.	**Low.** Coastal scrub habitat is present within the project site and this species is known to occur in coastal scrub habitat, however, the site lacks clay soils to support this species.
Cleveland's bush monkeyflower *Mimulus clevelandii*	CRPR 4.2	Gabbroic and rocky soils in disturbed areas within chaparral, cismontane woodland and lower montane coniferous forest. 450-2,000 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Palomar monkeyflower *Mimulus diffusus*	CRPR 4.3	Sandy or gravelly substrate within chaparral or lower montane coniferous forest. 1,220-1,830 m elevation.	**Low.** Suitable habitat for this annual herb is not present and the project site is located outside of the elevation range for the species.
Intermediate monardella *Monardella hypoleuca* ssp. *intermedia*	CRPR 1B.3	Chaparral, cismontane woodland and lower montane and coniferous forest. 400-1,250 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
Felt-leaved monardella *Monardella hypoleuca* ssp. *lanata*	CRPR 1B.2	Chaparral and cismontane woodland. 300-1,575 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Hall's monardella *Monardella macrantha* ssp. *hallii*	CRPR 1B.3	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grassland. 730-2,195 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
San Felipe monardella *Monardella nana* ssp. *leptosiphon*	CRPR 1B.2	Chaparral and lower montane coniferous forest. 1,200-1,855 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Willowy monardella *Monardella viminea*	FE, SE, CRPR 1B.1	Coastal rocky drainages, just outside o the streambed on the sandy bench. < 400 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Little mousetail *Myosurus minimus* ssp. *apus*	CRPR 3.1	Valley and foothill grassland and vernal pools. 20-640 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Spreading navarretia *Navarretia fossalis*	FT, CRPR 1B.1	Chenopod scrub, marshes and swamps, playas and vernal pools. 30-655 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Chaparral nolina *Nolina cismontana*	CRPR 1B.2	Sandstone or gabbro substrate within chaparral. 140-1,275 m elevation.	**Low.** Suitable habitat for this perennial evergreen shrub is not present within the project site.
California Orcutt grass *Orcuttia californica*	FE, SE, CRPR 1B.1	Vernal pools, freshwater wetlands, riparian. < 700 m elevation.	**Low.** Suitable habitat for this annual grass is not present within the project site.
California's adder's-tongue *Ophioglossum californicum*	CRPR 4.2	Mesic areas within chaparral, valley and foothill grassland and vernal pools. 60-525 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Golden-rayed pentachaeta *Pentachaeta aurea* ssp. *aurea*	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland and. 80-1,850 m elevation.	**Low.** Moderate suitable habitat for this annual herb is present within the scrub areas of project site however, the project site is outside of the geographic range of the species.
South coast branching phacelia *Phacelia ramosissima* var. *austrolitoralis*	CRPR 3.2	Sandy, sometimes rocky substrate within chaparral, coastal dunes, coastal scrub and marshes and swamps near the coast. 5-300 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.

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Species	Status[1]	Habitat	Potential for Occurrence[2]
Fish's milkwort *Polygala cornuta* var. *fishiae*	CRPR 4.3	Chaparral, cismontane woodland and riparian woodland. 100-1,000 m elevation.	**Low.** Suitable habitat for this perennial deciduous shrub is not present within the project site.
Delta woolly-marbles *Psilocarphus brevissimus* var. *multiflorus*	CRPR 4.2	Vernal pools. 10-500 m elevation.	**Low.** Suitable habitat for this annual herb is not present within the project site.
Nuttall's scrub oak *Quercus dumosa*	CRPR 1B.1	Sandy and clay loam soils within closed-cone coniferous forest, chaparral and coastal scrub. 15-400 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Engelmann oak *Quercus engelmannii*	CRPR 4.2	Chaparral, cismontane woodland, riparian woodland and valley and foothill grassland. 50-1,300 m elevation.	**Low.** Suitable habitat for this perennial deciduous tree is not present within the project site.
Caraway-leaved woodland gilia *Saltugilia caruifolia*	CRPR 4.3	Sandy substrate within chaparral and lower montane coniferous forest. 840-2,300 m elevation.	**Low.** Suitable habitat for this annual herb is not present and the project site is located outside of the elevation range for the species.
Southern mountains skullcap *Scutellaria bolanderi* ssp. *austromontana*	CRPR 1B.2	Mesic areas within chaparral, cismontane woodland and lower montane coniferous forest. 425-2,000 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present and the project site is located outside of the elevation range for the species.
Purple stemodia *Stemodia durantifolia*	CRPR 2B.1	Sonoran desert scrub. 180-300 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
San Bernardino aster *Symphyotrichum defoliatum*	CRPR 1B.2	Near ditches, stream and springs within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps and valley and foothill grassland. 2-2,040 m elevation.	**Low.** Suitable habitat for this perennial rhizomatous herb is not present within the project site.
Parry's tetracoccus *Tetracoccus dioicus*	CRPR 1B.2	Chaparral and costal scrub. 165-1,000 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
San Diego County viguiera *Viguiera laciniata*	CRPR 4.2	Chaparral and coastal scrub. 60-750 m elevation.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Golden violet *Viola purpurea* ssp. *aurea*	CRPR 2B.2	Sandy substrate within Great Basin scrub and pinyon and juniper woodland. 1,000-2,500 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Rush-like bristleweed *Xanthisma junceum*	CRPR 4.3	Chaparral and coastal scrub. 240-1,000 m elevation.	**Low.** Suitable habitat for this perennial herb is not present within the project site.
WILDLIFE			
Invertebrates			
San Diego fairy shrimp *Branchinecta sandiegoensis*	FE	Vernal pools within chaparral and coastal scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Monarch butterfly *Danaus plexippus*		Generally closed-cone coniferous forest; however, this species is known to roost in many different species of ornamental trees, most notably *Eucalyptus* spp.	**Low.** While the western population of this species has been known to overwinter in coastal sites along central and southern California, it requires specific microclimactic conditions to survive the winter and prefers groves of trees, rather than the sparse tree cover found on the project site. It has a low potential of occurring as a transient.
Laguna Mountains skipper *Pyrgus ruralis* ssp. *lagunae*	FE	Subalpine coniferous forest.	**Low.** Suitable habitat for this species is not present within the project site.
Riverside fairy shrimp *Streptocephalus woottoni*	FE	Coastal scrub, valley and foothill grassland and wetlands.	**Low.** Suitable habitat for this species is not present within the project site because there are no vernal pools present.
California brackishwater snail *Tryonia imitator*		Generally associated coastal marshes.	**Low.** Suitable habitat for this species is not present within the project site.
Fish			
Arroyo chub *Gila orcuttii*	SSC	South coast flowing waters.	**Low.** Suitable habitat for this species is not present within the project site.
Reptiles and Amphibians			
Arroyo toad *Anaxyrus californicus*	FE, SSC	Sandy substrate within desert wash, riparian scrub or riparian woodland associated with south coast slow-moving and pooling waters.	**Low.** Suitable habitat for this species is not present within the project site.
Orangethroat whiptail *Aspidoscelis hyperythra*	SSC	Chaparral, cismontane woodland and coastal scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Coastal whiptail *Aspidoscelis tigris* ssp. *stejnegeri*		Generally found within chaparral, cismontane woodland and coastal scrub; however, this species can be found in heavily disturbed areas within the general vicinity of intact habitat.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Northern three-lined boa *Lichanura orcutti*		Desert and chaparral from the coast to the Mojave and Colorado Deserts. Prefers moderate to dense vegetation and rocky cover.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Red-diamond rattlesnake *Crotalus ruber*	SSC	Chaparral, Mojavean desert scrub and Sonoran desert scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Southern Western pond turtle *Actinemys pallida*	SSC	Riparian scrub or riparian woodland associated with perennial flowing water sources.	**Moderate.** Suitable habitat is present in the small pond adjacent to the project site.
Large-blotched salamander *Ensatina klauberi*	SSC	Mesic areas within a variety of forest, woodland scrub and chaparral communities.	**Low.** Suitable habitat for this species is not present within the project site.
Coast horned lizard *Phrynosoma blainvillii*	SSC	A variety of dry and mesic habitats generally associated with chaparral and coastal scrub communities.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Coronado island skink *Plestiodon skiltonianus* ssp. *interparietalis*	SSC	Chaparral, cismontane woodland and pinyon and juniper woodland.	**Low.** Suitable habitat for this species is not present within the project site.
Southern mountain yellow-legged frog *Rana muscosa*	FE, SE, SSC	Riparian scrub or riparian woodland associated with perennial flowing water sources.	**Low.** Suitable habitat for this species is not present within the project site.
Coast patch-nosed snake *Salvadora hexalepis* ssp. *virgultea*	SSC	Coastal scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Two-striped garter snake *Thamnophis hammondii*	SSC	Riparian scrub or riparian woodland associated with perennial flowing water sources.	**Low.** Suitable habitat for this species is not present within the project site.
Birds			

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Cooper's hawk *Accipiter cooperi*	WL	Open, uninterrupted or marginal woodland. Nests primarily in riparian deciduous trees and live oaks.	**Low. T**he trees present along the perimeter of the project site may be used temporarily for roosting and this species may forage on the site based on the local bird and rodent population; however, it would only be expected to occur as a transient due to the surrounding urbanization and the availability of higher-quality habitat in the vicinity.
Tricolored blackbird *Agelaius tricolor*	BCC, SC, SSC	Cattail and bulrush thickets, open water.	**Low.** Suitable habitat for this species is not present within the project site.
Southern California rufous-crowned sparrow *Aimophila ruficeps* ssp. *canescens*	WL	Chaparral and coastal scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Golden eagle *Aquila chrysaetos*	BEPA, SFP, WL	Rolling foothill mountain areas.	**Low.** Suitable habitat for this species is not present within the project site.
Bell's sage sparrow *Artemisiospiza belli* ssp. *belli*	BCC, WL	Chaparral and coastal scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Burrowing owl *Athene cunicularia*	BCC, SSC	Flat, open, dry annual or perennial grasslands, deserts or scrublands. This species is known to occur in heavily disturbed areas.	**Low.** The project site does not contain the open flat areas preferred by this species.. No sign of burrowing owl occupation was observed during the field reconnaissance survey.
Swainson's hawk *Buteo swainsoni*	BCC, ST	Great Basin grassland, riparian forest and woodland and valley and foothill grassland.	**Low.** Suitable habitat for this species is not present within the project site.
Coastal cactus wren *Campylorhynchus brunneicapillus* ssp. *sandiegensis*	BCC, SSC	Coastal scrub.	**Moderate.** Suitable habitat for this species is not present within the project site due to the lack of stands of cactus There is a stand of cactus to the east of the site that contains suitable habitat and recorded occurrences of coastal cactus wren. However, no cactus stands are located on the project site, just interspersed in the Diegan coastal sage scrub community.
Western snowy plover *Charadrius alexandrinus nivosus*	FT, BCC, SSC	Sandy beaches, salt pond levees, and shores of large alkali lakes.	**Low**. Suitable habitat for this species is not present within the project site.
Southwestern willow flycatcher *Empidonax traillii* ssp. *extimus*	FE, SE	Dense riparian forest, generally dominated by *Salix* spp.	**Low**. Suitable habitat for this species is not present within the project site.

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Yellow-breasted chat *Icteria virens*	SSC	Riparian forest, scrub and woodland.	**Low**. Suitable habitat for this species is not present within the project site.
Least bittern *Ixobrychus exilis*	BCC, SSC	Wetlands.	**Low**. Suitable habitat for this species is not present within the project site.
California balck rail *Laterallus jamaicensis*	BCC, SFP	Wetlands.	**Low**. Suitable habitat for this species is not present within the project site.
Belding's savannah sparrow *Passerculus sandwichensis* ssp. *beldingi*	SE	Coastal salt marsh and coastal scrub.	**Low**. Suitable habitat for this species is not present within the project site.
White-faced ibis *Plegadis chihi*	WL	Marsh and swamp communities.	**Low**. Suitable habitat for this species is not present within the project site.
Coastal California gnatcatcher *Polioptila californica* ssp. *californica*	FT, SSC	Coastal bluff scrub and coastal scrub.	**High**. The project site contains suitable CSS habitat to support breeding and foraging habitat for this species. Additionally, several occurrences have been recorded within 1-3 miles from the project site.
Light-footed clapper rail *Rallus longirostris* ssp. *levipes*	FE, SE, SFP	Generally associated coastal marshes.	**Low**. Suitable habitat for this species is not present within the project site.
Yellow warbler *Setophaga petechia*	BCC, SSC	Riparian forest, scrub and woodland.	**Low**. Suitable habitat for this species is not present within the project site. It may utilize the nearby orchards for foraging.
Western spadefoot *Spea hammondii*	SSC	Cismontane woodland, coastal scrub, valley and foothill grassland and wetland communities.	**Low**. Suitable habitat for this species is not present within the project site.
California least tern *Sternula antillarum* ssp. *browni*	FE, SE, SFP	Alkali playas and wetlands; generally coastal.	**Low**. Suitable habitat for this species is not present within the project site.
Least Bell's vireo *Vireo bellii* ssp. *Pusillus*	FE, SE	Riparian forest, scrub and woodland.	**Low.** Suitable habitat for this species is not present within the project site.
Mammals			

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Pallid bat *Antrozous pallidus*	SSC, WBWG-H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	**Low.** Suitable roosting habitat for this species is not present within the project site.
Dulzura pocket mouse *Chaetodipus californicus* ssp. *femoralis*	SSC	Chaparral, coastal scrub, and valley and foothill grassland.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Northwestern San Diego pocket mouse *Chaetodipus fallax* ssp. *fallax*	SSC	Chaparral and coastal scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, SC, WBWG-H	Roosting: caves, mine shafts or other open cavities. Foraging: woodlands, coastal scrub, grasslands and chaparral.	**Low.** Suitable roosting habitat for this species is not present within the project site.
Stephens' kangaroo rat *Dipodomys stephensi*	FE, ST	Coastal scrub and valley and foothill grassland with friable soils for digging and often associated with washes.	**Low.** The project site is outside the geographic range of this species.
Western mastiff bat *Eumops perotis* ssp. *californicus*	SSC, WBWG-H	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland.	**Moderate.** Suitable habitat is present in the coastal scrub habitat and adjacent orchards within the project site.
Silver-haired bat *Lasionycteris noctivagans*	WBWG-M	Lower montane coniferous and riparian forest.	**Low.** Suitable habitat for this species is not present within the project site.
Western red bat *Lasiurus blossevillii*	SSC, WBWG-H	Cismontane woodland, lower montane coniferous forest and riparian forest and woodland.	**Low.** Suitable habitat for this species is not present within the project site.
Hoary bat *Lasurius cinereus*	WBWG-M	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest and north coast coniferous forest.	**Low.** Suitable habitat for this species is not present within the project site.
Western yellow bat *Lasiurus xanthinus*	SSC, WBWG-H	Desert wash.	**Low.** Suitable habitat for this species is not present within the project site.
San Diego black-tailed jackrabbit *Lepus californicus* ssp. *bennettii*	SSC	Coastal scrub; however, this species is known to utilize heavily disturbed areas for foraging and roosting.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
Western small-footed myotis *Myotis ciliolabrum*	WBWG-M	Riparian, scrub, and forest habitats near a source of water.	**Moderate.** Suitable habitat is present in the coastal scrub habitat and orchards within the project site. There is a source of water in the adjacent small pond..

TABLE 1
SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING OR DOCUMENTED IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]	Habitat	Potential for Occurrence[2]
Long-eared myotis *Myotis evotis*	WBWG-M	Riparian, scrub, and forest habitats near a source of water.	**Moderate.** Suitable habitat is present in the coastal scrub habitat and orchards within the project site. There is a source of water in the adjacent small pond..
Yuma myotis *Myotis yumanensis*	SSC, WBWG-LM	Riparian, scrub, and forest habitats near a source of water.	**Moderate.** Suitable habitat is present in the coastal scrub habitat and orchards within the project site. There is a source of water in the adjacent small pond..
San Diego desert woodrat *Neotoma lepida* ssp. *intermedia*	SSC	Coastal scrub.	**High**. The project site contains suitable CSS habitat to support breeding and foraging habitat for this species. A woodrat nest was observed on the site during the survey.
Pocketed free-tailed bat *Nyctinomops femerosaccus*	SSC, WBWG-M	Joshua tree woodland, pinyon and juniper woodland, riparian scrub and Sonoran desert scrub.	**Low.** Suitable habitat for this species is not present within the project site.
Big free-tailed bat *Nyctinomops macrotis*	SSC, WBWG-MH	A variety of scrub, forest and woodland communities.	**Moderate.** Suitable habitat is present in the coastal scrub habitat and orchards within the project site. There is a source of water in the adjacent small pond..
Pacific pocket mouse *Perognathus longimembris* ssp. *pacificus*	SSC	Coastal scrub.	**Moderate.** Suitable habitat is present in the coastal scrub habitat within the project site.
American badger *Taxidea taxus*	SSC	Grassland, open shrubland, forest or desert habitats with friable soils.	**Low.** Suitable habitat for this species not present in small patches. This species required large areas to range. It is unlikely it would be found in an area of fragmented habitat and agriculture.

Notes

Status Codes:
Federal: FE Federal Endangered; FT Federal Threatened; FC Federal Candidate (USFWS); BEPA Bald Eagle and Golden Eagle Protection Act (USFWS); BCC Birds of Conservation Concern (USFWS)
State: SE State Endangered , ST State Threatened, SR State Rare; SFP Fully protected (CDFW); SC State Candidate (CDFW); SSC California Species of Special Concern (CDFW); WL Watch List (CDFW)
California Rare Plant Rank (CRPR)
CRPR 1B Plants considered rare, threatened or endangered in California and elsewhere;
CRPR 2B Plants considered rare, threatened or endangered in California, more common elsewhere;
CRPR 3 Plants for which more information is needed, review list;
CRPR 4 Limited distribution, watch list.
CRPR Threat Ranks:
0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat);
0.2 Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat);
0.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Other: WBWG Western Bat Watch Group List (H, M, L: high, medium, low priority)

ATTACHMENT B

Site Photographs

Site Photograph 1: Taken from the eastern project boundary, facing northwest towards Reach 2. Note the surrounding orchard and native Diegan coastal sage scrub habitat.

Site Photograph 2: Taken from the central portion of the project alignment, facing north towards the confluence of Reach 1 and Reach 2. Note orchards, rock outcrops, and native Diegan coastal sage scrub habitat. Hogback Reservoir is at the top of the hill in the background (not pictured).

Site Photograph 3: Taken from Reach 1, facing southwest towards the proposed pipeline alignment. Note moderately dense native Diegan coastal sage scrub habitat, even in previously disturbed areas.

Site Photograph 4: Taken from Reach 1, facing northeast near the proposed pipeline route. Note large rock outcrop.

SOURCE: ESA

ATTACHMENT C

Species Compendium

Attachment C: Plant Species Compendia

Scientific Name	Common Name	Special Status
MAGNOLIIDS		
Lauraceae - Laurel family		
* *Persea americana*	Avocado	
EUDICOTS		
Adoxaceae - Muskroot family		
Sambucus nigra ssp. caerulea	Blue elderberry	
Anacardiaceae - Sumac Or Cashew family		
Malosma laurina	Laurel sumac	
Asteraceae - Sunflower family		
Artemisia californica	California sagebrush	
Artemisia dracunculus	Tarragon	
Baccharis sarothroides	Broom baccharis	
Encelia farinosa	Brittlebush	
Erigeron canadensis	Horseweed	
* *Sonchus asper ssp. asper*	Prickly sow thistle	
Brassicaceae - Mustard family		
* *Hirschfeldia incana*	Shortpod mustard	
* *Sisymbrium irio*	London rocket	
Cactaceae - Cactus family		
Opuntia basilaris	Beavertail pricklypear	
Chenopodiaceae - Goosefoot family		
* *Salsola tragus*	Russian thistle, tumbleweed	
Convolvulaceae - Morning-glory family		
Cuscuta californica	Chaparral dodder	
Cucurbitaceae - Gourd family		
Marah watsonii	Taw man-root	
Euphorbiaceae - Spurge family		
* *Ricinus communis*	Castorbean	
Fabaceae - Legume family		
Acmispon glaber	Deerweed, California broom	
Fagaceae - Oak family		
Quercus agrifolia	Coast live oak, encina	
Quercus berberidifolia	Scrub oak	
Geraniaceae - Geranium family		
* *Erodium botrys*	Longbeak stork's bill	
* *Erodium malacoides*	Mediterranean stork's bill	

Scientific Name	Common Name	Special Status
Lamiaceae - Mint family		
* *Marrubium vulgare*	Horehound	
Salvia mellifera	Black sage	
Phrymaceae - Lopseed family		
Mimulus guttatus	Small-leaved monkeyflower	CRPR 4.3
Polygonaceae - Buckwheat family		
Eriogonum fasciculatum	California buckwheat	
Rhamnaceae - Buckthorn family		
Ceanothus sp.	Ceanothus	
Rosaceae - Rose family		
Adenostoma fasciculatum	Chamise, greasewood	
Cercocarpus sp.	Mountain mahogany	
Salicaceae - Willow family		
Salix lasiolepis	Arroyo willow	
Solanaceae - Nightshade family		
* *Nicotiana glauca*	Tree tobacco	
Tamaricaceae - Tamarisk family		
* *Tamarix ramosissima*	Saltcedar	
Urticaceae - Nettle family		
Urtica dioica	Stinging nettle	
MONOCOTS		
Agavaceae - Century Plant family		
Hesperoyucca whipplei	Chaparral yucca	
Arecaceae - Palm family		
Washingtonia filifera	California fan palm	

Scientific Name	Common Name	Special Status

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened

CRPR – California Rare Plant Rank
1A. Presumed extinct in California
1B. Rare or Endangered in California and elsewhere
2. Rare or Endangered in California, more common elsewhere
3. Plants for which we need more information - Review list
4. Plants of limited distribution - Watch list

Threat Ranks
.1 - Seriously endangered in California
.2 – Fairly endangered in California

Attachment C: Wildlife Species Detected

Scientific Name	Common Name	Special Status
VERTEBRATES		
Birds		
Callipepla californica	California Quail	
Cathartes aura	Turkey Vulture	
Calypte anna	Anna's Hummingbird	
Aphelocoma californica	Western Scrub-Jay	
Corvus brachyrhynchos	American Crow	
Chamaea fasciata	Wrentit	
Mimus polyglottos	Northern Mockingbird	
Dendroica coronata	Yellow-rumped Warbler	
Melozone crissalis	California Towhee	
Carpodacus mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	
Carduelis tristis	American Goldfinch	
Mammals		
Spermophilus beecheyi	California Ground Squirrel	
Puma concolor	Mountain Lion	

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened
CSC = California Species of Special Concern
CFP = California Fully Protected Species

ATTACHMENT D

CNDDB, CNPS, and IPaC Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Del Mar (3211782) or Escondido (3311711) or Poway (3211781) or Rancho Santa Fe (3311712) or Rodriquez Mtn. (3311628) or San Marcos (3311722) or San Pasqual (3311618) or San Vicente Reservoir (3211688) or Valley Center (3311721))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acanthomintha ilicifolia San Diego thorn-mint	PDLAM01010	Threatened	Endangered	G1	S1	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Acmispon prostratus Nuttall's acmispon	PDFAB2A0V0	None	None	G1G2	S1	1B.1
Adolphia californica California adolphia	PDRHA01010	None	None	G3	S2	2B.1
Agave shawii var. shawii Shaw's agave	PMAGA010P1	None	None	G2G3T2T3	S1	2B.1
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S2S3	WL
Ambrosia pumila San Diego ambrosia	PDAST0C0M0	Endangered	None	G1	S1	1B.1
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos glandulosa ssp. crassifolia Del Mar manzanita	PDERI040E8	Endangered	None	G5T2	S2	1B.1
Arctostaphylos rainbowensis Rainbow manzanita	PDERI042T0	None	None	G2	S2	1B.1
Artemisia palmeri San Diego sagewort	PDAST0S160	None	None	G3G4	S3?	4.2
Artemisiospiza belli belli Bell's sage sparrow	ABPBX97021	None	None	G5T2T4	S2?	WL
Aspidoscelis hyperythra orangethroat whiptail	ARACJ02060	None	None	G5	S2	SSC
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T3T4	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Astragalus oocarpus San Diego milk-vetch	PDFAB0F6B0	None	None	G3	S3	1B.2
Astragalus tener var. titi coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G2	S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G3G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Baccharis vanessae Encinitas baccharis	PDAST0W0P0	Threatened	Endangered	G1	S1	1B.1
Bergerocactus emoryi golden-spined cereus	PDCAC11010	None	None	G2	S2	2B.2
Bloomeria clevelandii San Diego goldenstar	PMLIL1H010	None	None	G2	S2	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Brodiaea orcuttii Orcutt's brodiaea	PMLIL0C0B0	None	None	G2	S2	1B.1
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
Ceanothus cyaneus Lakeside ceanothus	PDRHA04070	None	None	G2	S2	1B.2
Ceanothus verrucosus wart-stemmed ceanothus	PDRHA041J0	None	None	G3	S2	2B.2
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1T2	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	SSC
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
Charina trivirgata rosy boa	ARADA01020	None	None	G4G5	S3S4	
Choeronycteris mexicana Mexican long-tongued bat	AMACB02010	None	None	G4	S1	SSC
Chorizanthe orcuttiana Orcutt's spineflower	PDPGN040G0	Endangered	Endangered	G1	S1	1B.1
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S1	
Cicindela senilis frosti senile tiger beetle	IICOL02121	None	None	G2G3T1T3	S1	
Clarkia delicata delicate clarkia	PDONA050D0	None	None	G3	S3	1B.2
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G2	S2	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Corethrogyne filaginifolia var. incana San Diego sand aster	PDAST2M025	None	None	G4T1Q	S1	1B.1
Corethrogyne filaginifolia var. linifolia Del Mar Mesa sand aster	PDAST2M027	None	None	G4T1T2Q	S1S2	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Cylindropuntia californica var. californica snake cholla	PDCAC0D2Y1	None	None	G3T2	S1	1B.1
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Diadophis punctatus similis San Diego ringneck snake	ARADB1001A	None	None	G5T2T3	S2?	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dudleya brevifolia short-leaved dudleya	PDCRA04053	None	Endangered	G2T1	S1	1B.1
Dudleya variegata variegated dudleya	PDCRA040R0	None	None	G2	S2	1B.2
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T3Q	S3	WL
Ericameria palmeri var. palmeri Palmer's goldenbush	PDAST3L0C1	None	None	G4T2?	S1	1B.1
Eryngium aristulatum var. parishii San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Euphorbia misera cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
Ferocactus viridescens San Diego barrel cactus	PDCAC08060	None	None	G3	S3	2B.1
Geothallus tuberosus Campbell's liverwort	NBHEP1C010	None	None	G1	S1	1B.1
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Githopsis diffusa ssp. filicaulis Mission Canyon bluecup	PDCAM07023	None	None	G5T2T3	S1	3.1
Grindelia hallii San Diego gumplant	PDAST470D4	None	None	G2	S2	1B.2
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Hazardia orcuttii Orcutt's hazardia	PDAST4H070	None	Threatened	G1	S1	1B.1
Heterotheca sessiliflora ssp. sessiliflora beach goldenaster	PDAST4V0K2	None	None	G4T2T3	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Horkelia truncata Ramona horkelia	PDROS0W0G0	None	None	G3	S3	1B.3
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Iva hayesiana San Diego marsh-elder	PDAST580A0	None	None	G3?	S2	2B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepechinia cardiophylla heart-leaved pitcher sage	PDLAM0V020	None	None	G3?	S2S3	1B.2
Lepechinia ganderi Gander's pitcher sage	PDLAM0V040	None	None	G3?	S3	1B.3
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Leptosyne maritima sea dahlia	PDAST2L0L0	None	None	G2	S1	2B.2
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Maritime Succulent Scrub Maritime Succulent Scrub	CTT32400CA	None	None	G2	S1.1	
Melitta californica California mellitid bee	IIHYM74010	None	None	G4?	S2?	
Monardella hypoleuca ssp. lanata felt-leaved monardella	PDLAM180A2	None	None	G4T3	S3	1B.2
Monardella viminea willowy monardella	PDLAM18140	Endangered	Endangered	G1	S1	1B.1
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Myotis ciliolabrum western small-footed myotis	AMACC01140	None	None	G5	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Nemacaulis denudata var. denudata coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Orcuttia californica California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Orobanche parishii ssp. brachyloba short-lobed broomrape	PDORO040A2	None	None	G4?T4	S3	4.2
Packera ganderi Gander's ragwort	PDAST8H1F0	None	Rare	G2	S2	1B.2
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Pinus torreyana ssp. torreyana Torrey pine	PGPIN04152	None	None	G1T1	S1	1B.2
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Plestiodon skiltonianus interparietalis Coronado Island skink	ARACH01114	None	None	G5T2T3Q	S1S2	SSC
Pogogyne abramsii San Diego mesa mint	PDLAM1K010	Endangered	Endangered	G1	S1	1B.1
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G3T2	S2	SSC
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rallus longirostris levipes light-footed clapper rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	FP
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
San Diego Mesa Claypan Vernal Pool San Diego Mesa Claypan Vernal Pool	CTT44322CA	None	None	G2	S2.1	
San Diego Mesa Hardpan Vernal Pool San Diego Mesa Hardpan Vernal Pool	CTT44321CA	None	None	G2	S2.1	
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3?	S2	2B.2
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Maritime Chaparral Southern Maritime Chaparral	CTT37C30CA	None	None	G1	S1.1	
Southern Riparian Forest Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Riparian Scrub Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Sphaerocarpos drewei bottle liverwort	NBHEP35030	None	None	G1	S1	1B.1
Stemodia durantifolia purple stemodia	PDSCR1U010	None	None	G5	S2	2B.1
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S1S2	
Suaeda esteroa estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tetracoccus dioicus Parry's tetracoccus	PDEUP1C010	None	None	G3?	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Texosporium sancti-jacobi woven-spored lichen	NLTEST7980	None	None	G3	S1	3
Thamnophis hammondii two-striped garter snake	ARADB36160	None	None	G4	S3S4	SSC
Torrey Pine Forest Torrey Pine Forest	CTT83140CA	None	None	G1	S1.1	
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 151

Plant List

108 matches found. *Click on scientific name for details*

Search Criteria
Found in 9 Quads around 33117A1

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Abronia maritima	red sand-verbena	Nyctaginaceae	perennial herb	4.2	S3S4	G4
Acanthomintha ilicifolia	San Diego thorn-mint	Lamiaceae	annual herb	1B.1	S1	G1
Acmispon prostratus	Nuttall's acmispon	Fabaceae	annual herb	1B.1	S1	G1
Adolphia californica	California adolphia	Rhamnaceae	perennial deciduous shrub	2B.1	S2	G3
Agave shawii var. shawii	Shaw's agave	Agavaceae	perennial leaf succulent	2B.1	S1.2	G2G3
Ambrosia pumila	San Diego ambrosia	Asteraceae	perennial rhizomatous herb	1B.1	S1	G1
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	1B.2	S2	G3G4
Arctostaphylos glandulosa ssp. crassifolia	Del Mar manzanita	Ericaceae	perennial evergreen shrub	1B.1	S2	G5T2
Arctostaphylos rainbowensis	Rainbow manzanita	Ericaceae	perennial evergreen shrub	1B.1	S2	G2
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	4.2	S3?	G3G4
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	4.2	S4	G4
Astragalus oocarpus	San Diego milk-vetch	Fabaceae	perennial herb	1B.2	S3	G3
Astragalus tener var. titi	coastal dunes milk-vetch	Fabaceae	annual herb	1B.1	S1	G2T1
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	1B.2	S2	G2
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	1B.2	S2	G3G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	1B.1	S1	G1G2
Baccharis vanessae	Encinitas baccharis	Asteraceae	perennial deciduous shrub	1B.1	S1	G1
Bergerocactus emoryi	golden-spined cereus	Cactaceae	perennial stem succulent	2B.2	S2	G2
Bloomeria clevelandii	San Diego goldenstar	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial	1B.1	S2	G2

			bulbiferous herb			
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S34	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.2	S3?	G3?
Calochortus dunnii	Dunn's mariposa lily	Liliaceae	perennial bulbiferous herb	1B.2	S2?	G2?
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	3	S4	G4
Ceanothus cyaneus	Lakeside ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	S2	G2
Ceanothus verrucosus	wart-stemmed ceanothus	Rhamnaceae	perennial evergreen shrub	2B.2	S2	G3
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	1B.1	S2	G3G4T2
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Asteraceae	annual herb	1B.1	S1	G5T1T2
Chamaebatia australis	southern mountain misery	Rosaceae	perennial evergreen shrub	4.2	S4	G4
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G4?T1
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	4.2	S3	G3
Chorizanthe orcuttiana	Orcutt's spineflower	Polygonaceae	annual herb	1B.1	S1	G1
Chorizanthe polygonoides var. longispina	long-spined spineflower	Polygonaceae	annual herb	1B.2	S3	G5T3
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	4.2	S3	G3G4
Clarkia delicata	delicate clarkia	Onagraceae	annual herb	1B.2	S3	G3
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	1B.2	S2	G2
Comarostaphylis diversifolia ssp. diversifolia	summer holly	Ericaceae	perennial evergreen shrub	1B.2	S2	G3T2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Corethrogyne filaginifolia var. incana	San Diego sand aster	Asteraceae	perennial herb	1B.1	S1	G4T1Q
Corethrogyne filaginifolia var. linifolia	Del Mar Mesa sand aster	Asteraceae	perennial herb	1B.1	S1S2	G4T1T2Q
Cylindropuntia californica var. californica	snake cholla	Cactaceae	perennial stem succulent	1B.1	S1	G3T2
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	4.2	S4	G4
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	4.2	S3S4	G3G4
Dudleya brevifolia	short-leaved dudleya	Crassulaceae	perennial herb	1B.1	S1	G2T1
Dudleya variegata	variegated dudleya	Crassulaceae	perennial herb	1B.2	S2	G2
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	1B.2	S2	G2
Ericameria palmeri var. palmeri	Palmer's goldenbush	Asteraceae	perennial evergreen shrub	1B.1	S1	G4T2?
Eryngium aristulatum var.	San Diego button-		annual /			

parishii	celery	Apiaceae	perennial herb	1B.1	S1	G5T1
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	2B.2	S2	G5
Ferocactus viridescens	San Diego barrel cactus	Cactaceae	perennial stem succulent	2B.1	S3	G3
Frankenia palmeri	Palmer's frankenia	Frankeniaceae	perennial herb	2B.1	S1	G3G4
Geothallus tuberosus	Campbell's liverwort	Sphaerocarpaceae	ephemeral liverwort	1B.1	S1	G1
Githopsis diffusa ssp. filicaulis	Mission Canyon bluecup	Campanulaceae	annual herb	3.1	S1	G5T2T3
Grindelia hallii	San Diego gumplant	Asteraceae	perennial herb	1B.2	S2	G2
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	4.2	S3	G4
Hazardia orcuttii	Orcutt's hazardia	Asteraceae	perennial evergreen shrub	1B.1	S1	G1
Heterotheca sessiliflora ssp. sessiliflora	beach goldenaster	Asteraceae	perennial herb	1B.1	S1	G4T2T3
Holocarpha virgata ssp. elongata	graceful tarplant	Asteraceae	annual herb	4.2	S3	G5T3
Hordeum intercedens	vernal barley	Poaceae	annual herb	3.2	S3S4	G3G4
Horkelia truncata	Ramona horkelia	Rosaceae	perennial herb	1B.3	S3	G3
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	1B.2	S2	G3G5T2T3
Iva hayesiana	San Diego marsh-elder	Asteraceae	perennial herb	2B.2	S2	G3?
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	4.2	S4	G5T5
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	1B.1	S2	G4T2
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	1B.2	S2S3	G3?
Lepechinia ganderi	Gander's pitcher sage	Lamiaceae	perennial shrub	1B.3	S3	G3?
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	4.3	S3	G5T3
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Leptosyne maritima	sea dahlia	Asteraceae	perennial herb	2B.2	S1	G2
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	4.2	S4	G4
Microseris douglasii ssp. platycarpha	small-flowered microseris	Asteraceae	annual herb	4.2	S4	G4T4
Mimulus diffusus	Palomar monkeyflower	Phrymaceae	annual herb	4.3	S3	G4Q
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Lamiaceae	perennial rhizomatous herb	1B.2	S3	G4T3
Monardella viminea	willowy monardella	Lamiaceae	perennial herb	1B.1	S1	G1
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	3.1	S2	G5T2Q
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	1B.1	S2	G2
Nemacaulis denudata var.	coast woolly-heads	Polygonaceae	annual herb	1B.2	S2	G3G4T2

denudata						
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	1B.2	S3	G3
Ophioglossum californicum	California adder's-tongue	Ophioglossaceae	perennial rhizomatous herb	4.2	S4	G4
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	1B.1	S1	G1
Orobanche parishii ssp. brachyloba	short-lobed broomrape	Orobanchaceae	perennial herb (parasitic)	4.2	S3	G4?T4
Packera ganderi	Gander's ragwort	Asteraceae	perennial herb	1B.2	S2	G2
Pentachaeta aurea ssp. aurea	golden-rayed pentachaeta	Asteraceae	annual herb	4.2	S3	G4T3
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	Boraginaceae	perennial herb	3.2	S3	G5?T3
Phacelia stellaris	Brand's star phacelia	Boraginaceae	annual herb	1B.1	S1	G1
Pinus torreyana ssp. torreyana	Torrey pine	Pinaceae	perennial evergreen tree	1B.2	S1	G1T1
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	4.2	S3	G3
Pogogyne abramsii	San Diego mesa mint	Lamiaceae	annual herb	1B.1	S1	G1
Pogogyne nudiuscula	Otay Mesa mint	Lamiaceae	annual herb	1B.1	S1	G1
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	perennial deciduous shrub	4.3	S4	G5T4
Psilocarphus brevissimus var. multiflorus	Delta woolly-marbles	Asteraceae	annual herb	4.2	S3	G4T3
Quercus cedrosensis	Cedros Island oak	Fagaceae	perennial evergreen tree	2B.2	S1	G2?
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	1B.1	S3	G3
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	4.2	S3	G3
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb	4.1	S3	G3G4
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Sphaerocarpos drewei	bottle liverwort	Sphaerocarpaceae	ephemeral liverwort	1B.1	S1	G1
Stemodia durantifolia	purple stemodia	Plantaginaceae	perennial herb	2B.1	S2	G5
Stipa diegoensis	San Diego County needle grass	Poaceae	perennial herb	4.2	S4	G4
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	1B.2	S2	G3
Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	4.2	S4	G
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	1B.2	S2	G3?
Texosporium sancti-jacobi	woven-spored lichen	Caliciaceae	crustose lichen (terricolous)	3	S1	G3
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2	S2	G2
Viguiera laciniata	San Diego County viguiera	Asteraceae	perennial shrub	4.2	S4	G4
Xanthisma junceum	rush-like bristleweed	Asteraceae	perennial herb	4.3	S4	G5

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 03 December 2015].

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Eastern Recycled Water System Project

IPaC Trust Resource Report

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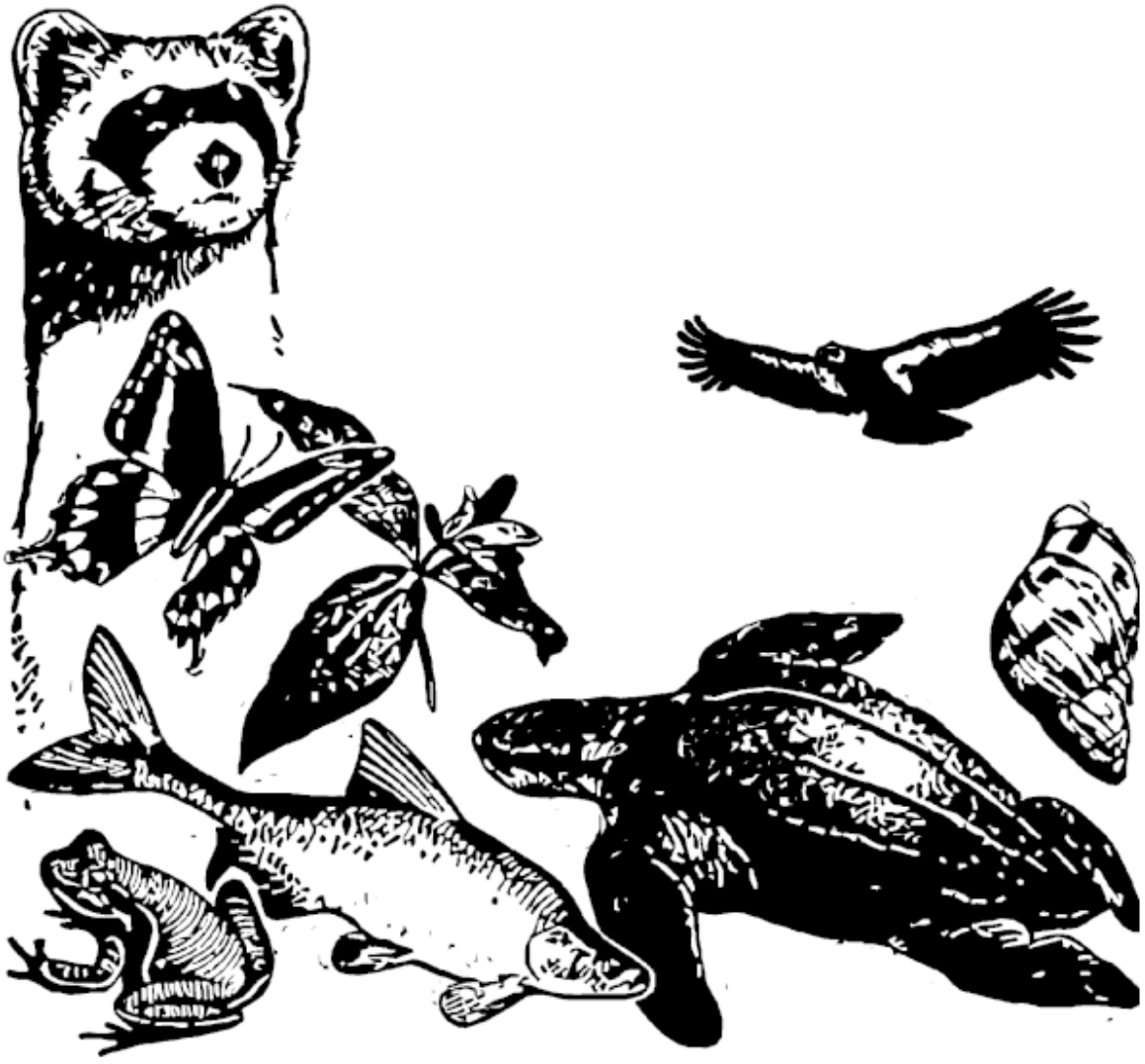
This report is for informational purposes only and should not be used for planning or analyzing project-level impacts. For projects that require FWS review, please return to this project on the IPaC website and request an official species list from the Regulatory Documents page.



US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

Eastern Recycled Water System Project

PROJECT CODE

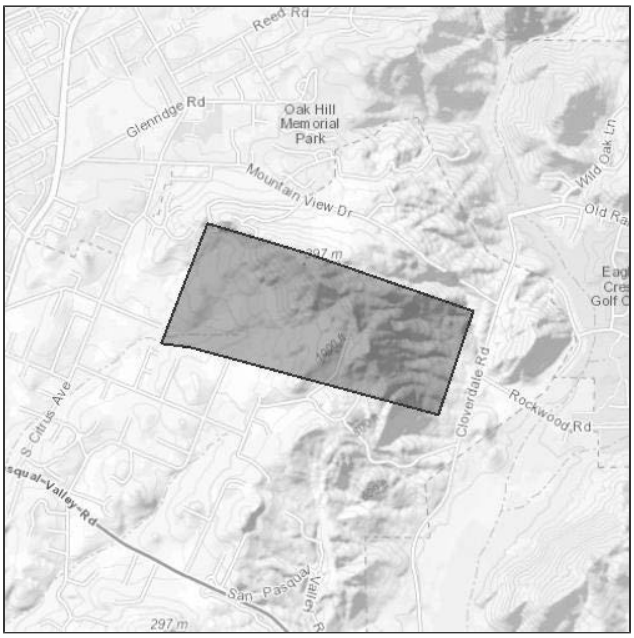
LWS5C-3EBVZ-FYJC7-6KVYR-JSMQFY

LOCATION

San Diego County, California

DESCRIPTION

City of Escondido



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an official species list on the Regulatory Documents page.

Amphibians

Arroyo (=arroyo Southwestern) Toad Anaxyrus californicus — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D020

Birds

Coastal California Gnatcatcher Polioptila californica californica — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08X

Least Bell's Vireo Vireo bellii pusillus — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B067

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094

Flowering Plants

Encinitas Baccharis Baccharis vanessae — Threatened

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q264

San Diego Ambrosia Ambrosia pumila — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q01H

San Diego Button-celery Eryngium aristulatum var. parishii — Endangered

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1W9

San Diego Thornmint Acanthomintha ilicifolia — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q00E

Thread-leaved Brodiaea Brodiaea filifolia — Threatened

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q09H

Willowy Monardella Monardella viminea — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q18M

Insects

Quino Checkerspot Butterfly Euphydryas editha quino (=E. e. wrighti) — Endangered

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I00P

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Allen's Hummingbird Selasphorus sasin — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0LI

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Bell's Sparrow Amphispiza belli — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HE

Bell's Vireo Vireo bellii — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JX

Black-chinned Sparrow Spizella atrogularis — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IR

Brewer's Sparrow Spizella breweri — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NC

Cactus Wren Campylorhynchus brunneicapillus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FZ

California Spotted Owl Strix occidentalis occidentalis — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08L

Costa's Hummingbird Calypte costae — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JE

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IO

Lawrence's Goldfinch Carduelis lawrencei — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0J8

Least Bittern Ixobrychus exilis — Bird of conservation concern
Year-round

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MD

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HQ

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JL

Mountain Plover Charadrius montanus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B078

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HT

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MJ

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Red-crowned Parrot Amazona viridigenalis — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0GO

Rufous-crowned Sparrow Aimophila ruficeps — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MX

Short-billed Dowitcher Limnodromus griseus — Bird of conservation concern

Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JK

Short-eared Owl Asio flammeus — Bird of conservation concern

Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Western Grebe aechmophorus occidentalis — Bird of conservation concern

Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EA

Red Knot Calidris canutus ssp. roselaari — Bird of conservation concern

Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G6

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Freshwater Emergent Wetland

PEMCh	0.426 acre
PEMC	0.341 acre
PEMA	0.198 acre

Freshwater Forested/shrub Wetland

PFOA	3.29 acres
PFOCh	0.84 acre
PSSA	0.654 acre

Freshwater Pond

PUBHh	0.474 acre

Appendix B-2

Coastal California Gnatcatcher
Survey Letter Report

ESA

550 West C Street
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San Diego, CA 92101
619.719.4200 phone
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September 9, 2016

Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: Results of a 2016 Coastal California Gnatcatcher Survey for the proposed Phase 1 Agricultural Reuse and Salt Reduction Project, San Diego County, California

Dear Stacey:

The purpose of this letter is to document the results of the 2016 focused survey for coastal California gnatcatcher (*Polioptila californica californica*; CAGN) conducted within the City of Escondido's proposed Phase 1 Agricultural Reuse and Salt Reduction Project (project) survey area. The project site is located north of San Pasqual Valley Road, south of State Route 78, east of Interstate 15 (Figure 1), in the vicinity of Escondido, San Diego County, California. Figure 2 shows the project site on the Escondido, California U.S. Geological Survey (USGS) 7.5-minute topographic map. This area is on unincorporated county land just outside of the City of Escondido's municipal boundary, but within the City's sphere of influence. As shown on Figure 3, the project site falls within the South County Subarea Plan of the San Diego Multiple Species Conservation Program (MSCP). Land use on the project site consists of scattered residential development, agriculture, and open space. Land cover within the survey area consists of Diegan coastal sage scrub habitat, avocado orchards, disturbed areas characterized by compacted bare ground, and scattered rural residences. Previous disturbances to the site are related to active agricultural activities and grading for the construction of the residences and access roads.

The objective of the project is to construct 2.2 linear miles of an 8-inch diameter recycled water pipeline to distribute recycled water to the growers surrounding Hogback Reservoir. The pipeline would run through several private properties west of the intersection of Cloverdale Road and Rockwood Road. To accommodate the pipeline and to provide access for routine maintenance in the future, the city of Escondido will obtain a 20-foot easement along the pipeline (10 feet on either side of the pipeline). All construction, including staging and access, will occur within this 20-foot easement.

On behalf of the City of Escondido, ESA conducted reconnaissance-level biological surveys in the early spring of 2016 to document the biological resources onsite. These surveys identified habitat suitable for CAGN within 500 feet of the pipeline easement. As such, presence/absence surveys for CAGN were conducted within suitable habitat as described below

Methods

CAGN is a federally threatened species and a California Species of Special Concern. The purpose of CAGN surveys was to determine the presence or absence of CAGN in potentially suitable habitat within the survey area, which includes the pipeline easement plus a 500-foot buffer. The surveys were conducted by qualified Environmental Science Associates (ESA) biologists Rosanne Humphrey, Tommy Molioo, and Alanna Bennett in accordance with the most current U.S. Fish and Wildlife Service protocol (USFWS 1997). Ms. Humphrey holds a valid USFWS permit for the CAGN (Recovery Permit No. TE50466A-2).

Although the surveys were conducted on behalf of the City of Escondido, which does not participate in a Natural Communities Conservation Plan (NCCP), the project site is located on unincorporated county land, which is covered by the South County MSCP. Therefore, pursuant to the USFWS survey protocol, a total of three surveys were conducted in suitable gnatcatcher habitat at least one week apart between February 15 - August 31, between the hours of 6:00 AM and 12:00 PM. Surveys were performed on August 10, 17, and 25, 2016 by walking slowly throughout approximately 50 acres of coastal sage scrub habitat, watching and listening for CAGN. If CAGN were not seen or heard, a recorded call was played. All observations by sight and sound were documented, including location, number of individuals, sex, age, and behavior.

Results

Overall, with the exception of access roads, fire breaks, and trails, the habitat was high quality, with little disturbance and few invasive weeds. Dominant species included California sagebrush (Artemisia californica), Flattop buckwheat (Eriogonum californicum), and California encelia (Encelia californica). Other common species included laurel sumac (Malosma laurina), yucca (Hesperoyucca whipplei), sawtooth goldenbush (Hazardia squarosa), Sacapellote (Acourtia microcephala), and cudweed (Pseudognaphalium spp.). A complete list of all bird species observed during the CAGN 2016 surveys is included in Attachment A.

Table 1 summarizes the results of the three surveys that were conducted between August 10 and August 25, 2016. An adult CAGN pair was observed in one location during all three site visits. During the last site visit, an adult pair was detected at two additional locations (Figure 4). The area between these three locations covers approximately 8 acres. It is likely that the three observations were the same pair, representing a single territory for the following reasons. The home range of CAGN varies seasonally and geographically; the home range is generally larger in the winter (non-breeding) than the summer (breeding), and larger for inland populations than coastal populations (USFWS 2010). Breeding territories generally range from 1-6 hectares (2-14 acres). The 8 acres of area that encompasses all three locations is well within the average breeding territory size; the project site is 18 miles from the coast (i.e., territory size is expected to be larger than for coastal populations); and the surveys were conducted at the very end of the breeding season and therefore gnatcatchers are less likely to be defending a nest, enabling them to

forage in a broader area. Regardless of how many actual pairs or territories there are, it is clear that the coastal sage scrub onsite is occupied by CAGN.

TABLE 1
2016 CAGN SURVEY RESULTS

Date	Personnel	Start Time	End Time	Observations	Environmental Conditions
8/10/2016	R. Humphrey, T. Molioo, A. Bennett	6:45 AM	12:00 PM	10:00 AM; adult pair	Overcast to clear skies, 65-85° F, wind 0-2 mph
8/17/2016	R. Humphrey, T. Molioo	7:30 AM	12:00 PM	7:10 AM; adult pair	Overcast to clear skies, 64-94° F, wind 0-2 mph
8/25/2016	R. Humphrey, T. Molioo	6:40 AM	11:00 AM	7:30 AM; adult pair 9:20AM; adult pair 10:19; adult pair	Overcast to clear skies, 64-80° F, wind 0-2 mph

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Rosanne Humphrey **September 9, 2016**
Recovery Permit No.: TE50466A-2

Alanna Bennett **September 9, 2016**

Tommy Molioo **September 9, 2016**

Attachments:

Attachment A. List of Bird Species Observed during 2016 Surveys

Figure 1. Regional Location Map
Figure 2. USGS Topographic Map
Figure 3. MSCP Map
Figure 4. Survey Area and Gnatcatcher Occurrences

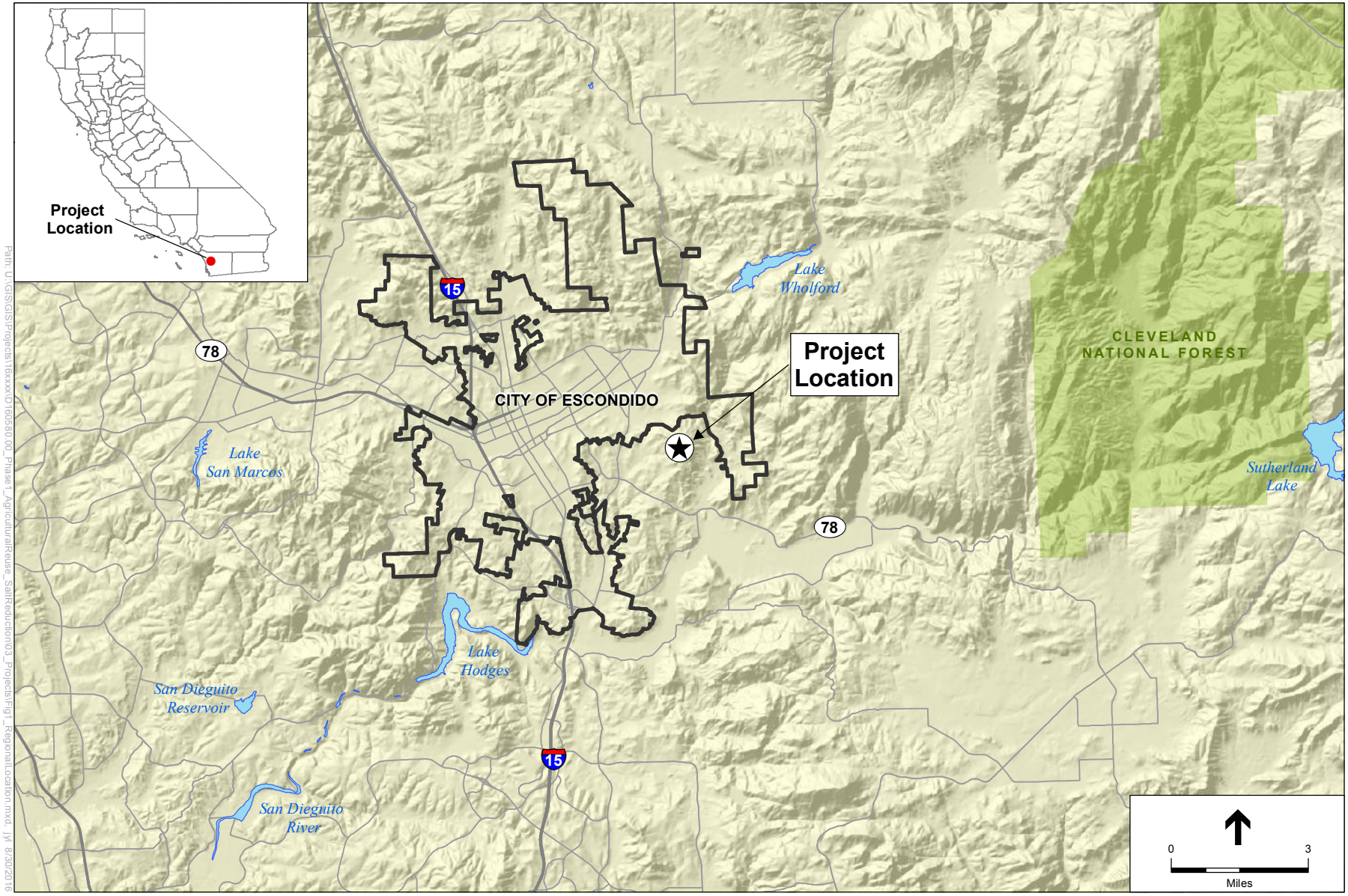
References

U.S. Fish and Wildlife Service (USFWS), 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines, February 28, 1997.

USFWS. 2010. Coastal California Gnatcatcher (*Polioptila californica californica*) 5 Year Review: Summary and Evaluation. September 29, 2010.

Attachment A
BIRD SPECIES OBSERVED DURING 2016 SURVEYS

Scientific Name	Common Name
Accipiter cooperii	Cooper's Hawk
Aphelocoma californica	California Scrub Jay
Archilochus alexandri	Black-chinned Hummingbird
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Callipepla californica	California Quail
Calypte anna	Anna's Hummingbird
Spinus psaltria	Lesser Goldfinch
Cathartes aura	Turkey Vulture
Catherpes mexicanus	Canyon Wren
Chamaea fasciata	Wrentit
Colaptes auratus	Northern Flicker
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
Geococcyx californianus	Greater Roadrunner
Melanerpes formicivorus	Acorn Woodpecker
Mimus polyglottos	Northern Mockingbird
Myiarchus cinerascens	Ash-throated Flycatcher
Picoides nuttallii	Nuttall's Woodpecker
Melozone crissalis	California Towhee
Pipilo maculatus	Spotted Towhee
Poecile gambeli	Mountain Chickadee
Polioptila californica californica	California Gnatcatcher
Psaltriparus minimus	Bushtit
Thryomanes bewickii	Bewick's Wren
Toxostoma redivivum	California Thrasher
Tyrannus vociferans	Cassin's Kingbird
Zenaida macroura	Mourning Dove



SOURCE: ESRI

Phase 1 Agricultural Reuse and Salt Reduction Project. 160580.00

Figure 1

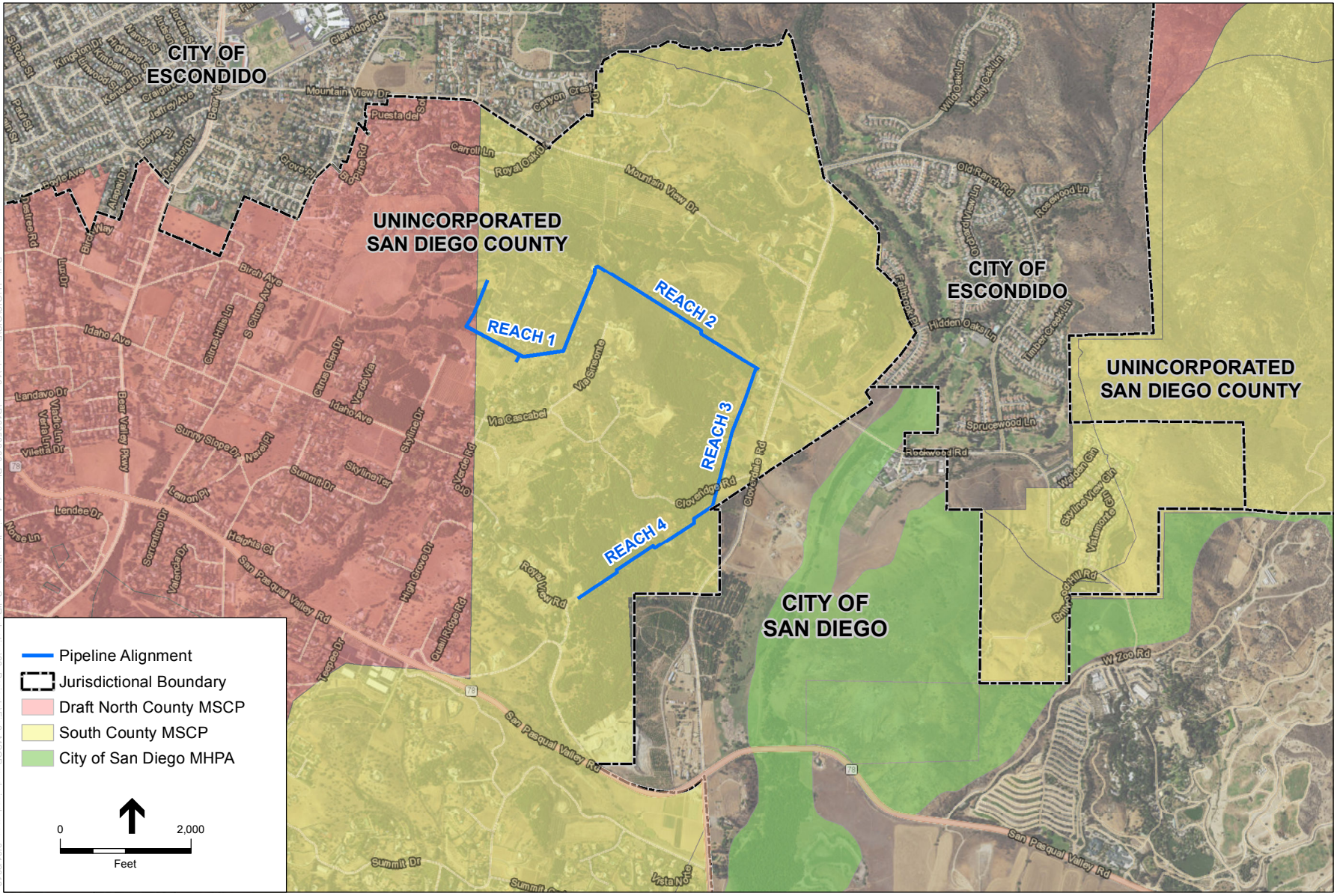
Regional Location

SOURCE: USGS 7.5' Topo Quad Escondido 2013

Phase 1 Agricultural Reuse and Salt Reduction Project . 160580.00

Figure 2

U.S. Geological Survey Topographic Map

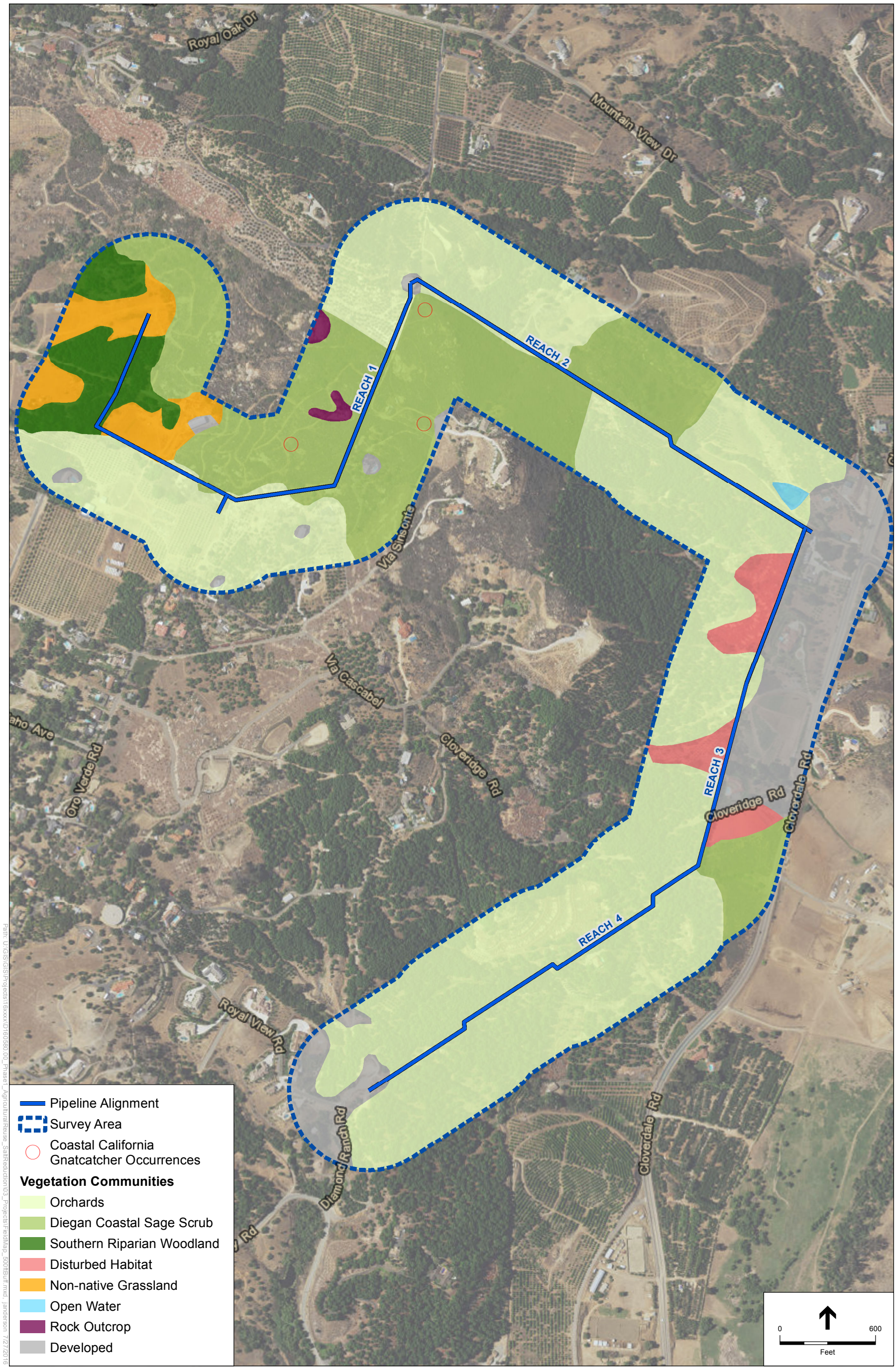


SOURCE: ESRI; SanGIS 2015

Phase 1 Agricultural Reuse and Salt Reduction Project. 160580

Figure 3

MSCP Boundaries



SOURCE: ESRI

Phase 1 Agricultural Reuse and Salt Reduction Project . 160580

Figure 4

Survey Area and Gnatcatcher Occurrences

Appendix B-3

Special-Status Plant and Wildlife Species Survey Letter Report

ESA

550 West C Street
Suite 750
San Diego, CA 92101
619.719.4200 phone
619.719.4201 fax

www.esassoc.com

November 15, 2016

Angela Morrow, P.E.
Deputy Director of Utilities of Construction and Engineering
City of Escondido
1521 S. Hale Avenue
Escondido, CA 92029

Subject: Results of Special-Status Plant and Wildlife Species Surveys for the proposed Phase 1 Agricultural Reuse and Salt Reduction Project, San Diego County, California

Dear Ms. Morrow:

The purpose of this letter is to document the results of the 2016 focused surveys for special-status plants and wildlife that have a potential to occur within or immediately adjacent to the City of Escondido (City) proposed Phase 1 Agricultural Reuse and Salt Reduction Project (project) survey area. The project survey area is located north of San Pasqual Valley Road, south of State Route 78, east of Interstate 15 (**Figure 1**), in the vicinity of Escondido, San Diego County, California. This area is on unincorporated County of San Diego (County) land just outside of the City's municipal boundary, but within the City's sphere of influence. Land use on the project site consists of scattered residential development, agriculture, and undeveloped land. Land cover within the survey area consists of Diegan coastal sage scrub habitat, avocado orchards, disturbed areas characterized by compacted bare ground, and scattered rural residences. Previous disturbances to the site are related to active agricultural activities and grading for the construction of the residences and access roads.

The objective of the project is to construct 2.2 linear miles of an 8-inch diameter recycled water pipeline to distribute recycled water to the growers surrounding Hogback Reservoir. The pipeline would run through several private properties west of the intersection of Cloverdale Road and Rockwood Road. To accommodate the pipeline and to provide access for routine maintenance in the future, the City will obtain a 20-foot easement along the pipeline (10 feet on either side of the pipeline). All construction, including staging and access, will occur within this 20-foot easement. The survey area for the focused surveys includes this 20-foot easement as well as a 500-foot buffer around the proposed pipeline (**Figure 2**).

On behalf of the City, Environmental Science Associates (ESA) biologists conducted reconnaissance-level biological surveys in the early spring of 2016 to document the biological resources onsite. These surveys identified suitable habitat for multiple special-status plant and wildlife species within the native habitats onsite. The presence of the following 17 plants and 8 wildlife species were assessed in the focused survey effort due to their moderate to high potential to occur within the survey area:

- San Diego thorn-mint (*Acanthomintha ilicifolia*),
- San Diego ambrosia (*Ambrosia pumila*),

- San Diego sagewort (*Artemisia palmeri*),
- western spleenwort (*Asplenium vespertinum*),
- San Diego goldenstar (*Bloomeria clevelandii*),
- Lewis' evening primrose (*Camissoniopsis lewisii*),
- Payson's jewelflower (*Caulanthus simulans*),
- southern tarplant (*Centromadia parryi* ssp. *australis*),
- paniculate tarplant (*Deinandra paniculata*),
- sticky dudleya (*Dudleya viscida*),
- San Diego barrel cactus (*Ferocactus viridescens*),
- graceful tarplant (*Holocarpha virgata* ssp. *elongata*),
- mesa horkelia (*Horkelia cuneata* ssp. *puberula*),
- decumbent goldenbush (*Isocoma menziesii* var. *decumbens*),
- Nuttall's scrub oak (*Quercus dumosa*),
- Parry's tetracoccus (*Tetracoccus dioicus*),
- San Diego County viguiera (*Viguiera laciniata*)

- orange-throated whiptail (*Aspidoscelis hyperythra*),
- red-diamond rattlesnake (*Crotalus ruber*),
- coast horned lizard (*Phrynosoma blainvillii*),
- coastal cactus wren (*Campylorhynchus brunneicapillus* ssp. *sandiegensis*),
- Dulzura pocket mouse (*Chaetodipus californicus* ssp. *femoralis*),
- northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*),
- San Diego black-tailed jackrabbit (*Lepus californicus* ssp. *bennettii*),
- San Diego desert woodrat (*Neotoma lepida* ssp. *intermedia*)

These species are known to occur within coastal sage scrub habitats and/or moderately disturbed areas, and have been previously recorded within the vicinity of the survey area. The habitat requirements and potential for occurrence of each species is discussed in the Biological Letter Report for the proposed project (ESA 2016).

Methods

On August 10, 17, and 25, 2016, ESA biologists Tommy Molioo, Rosanne Humphrey, and Alanna Bennett performed a total of three rare plant surveys and focused special-status species surveys within the survey area. The surveys were conducted in the morning hours from approximately 6:30 am to 12:00 pm. Temperatures ranged from 62° Fahrenheit (F) in the morning to approximately 75° F, with overcast skies that cleared off by the end of each survey effort. The purpose of these surveys was to document all plant species occurring within the survey area to identify any occurrences of rare plant species, as well as documenting any special-status wildlife species observed or detected.

During each site visit, suitable habitat within the proposed 20-foot wide easement was surveyed for special-status plants by walking parallel transects and searching for plants that may be in bloom during the time of the survey, as well as any sign (i.e. stalks, dried flowers, etc.) of annual species that may have senesced prior to the survey after blooming earlier in the season. Additionally, suitable habitat within the entire 279-acre survey area was surveyed for special-status wildlife species, concurrently with the rare plant surveys. The biologists documented wildlife observations, including audible detection, or visual presence of sign (i.e. scat, tracks, etc.) of the wildlife species listed above. In areas that were inaccessible, binoculars were used to aid in visual identification of wildlife species. Observations of special-status plant or wildlife species detected were marked on aerial field maps and GPS points were taken with a handheld GPS unit or tablet with ArcCollector software.

Results and Discussion

The survey area occurs within a generally undeveloped area that is characterized by Diegan coastal sage scrub with areas dominated by orchards, rural residences and disturbed habitat. The soils within the survey area are generally rocky coarse sandy loams, and compacted in areas with previous disturbances. Dominant plant species observed include California sagebrush (*Artemisia californica*), flattop buckwheat (*Eriogonum californicum*), and bush sunflower (*Encelia californica*). Other commonly observed species include laurel sumac (*Malosma laurina*), yucca (*Hesperoyucca whipplei*), sawtooth goldenbush (*Hazardia squarosa*), sacapellote (*Acourtia microcephala*), and cudweed (*Pseudognaphalium* spp.). Several trails and dirt access road cut through the survey area which provides opportunities for species that thrive in disturbed environments to occur. Additionally, several rock outcrops are located throughout the survey area which provides basking opportunities for reptiles and granitic substrate for plant species that occur in rocky areas. A complete list of plant and wildlife species observed during the survey effort is included in Attachments A and B.

No special-status plant species were observed within the proposed 20-foot easement or survey area during the focused survey effort. Although the rare plant survey was conducted in August, only San Diego thorn-mint, Lewis' evening primrose, and Payson's jewelflower may not have been identified at the time of the survey due to earlier blooming periods for these three species ending in June. Although San Diego thorn-mint and Lewis' evening primrose were not observed, these species are restricted to clay soils within coastal sage scrub habitats and no clay soils are mapped or observed within the survey area. Therefore, San Diego thorn-mint and Lewis's evening primrose were determined to be absent and they are not likely to be impacted by the proposed project. Since the rare plant survey was not conducted during the appropriate blooming period for Payson's jewelflower and the survey area contains suitable soils to support this species, a pre-construction survey should be conducted within the appropriate blooming period, February through June, and prior to the start of construction to determine if this species is present/absent from the 20-foot easement. Any observed individual plants will be flagged for avoidance. If avoidance is not feasible, this species should be reseeded onsite after construction or included as part of the compensatory habitat-based mitigation required for project-related impacts to Diegan coastal sage scrub.

The remaining 14 special-status plant species surveyed bloom within August or are perennial species that could be readily identifiable if present. Therefore, these 14 species are not present within the survey area and are not expected to be impacted during construction of the proposed project.

One of the eight special-status wildlife species, orange-throated whiptail, a California Species of Special Concern (SSC), was observed within the survey area during the focused surveys. This species was observed on the edge of Diegan coastal sage scrub habitat and orchards in the western portion of the survey area on Reach 1 of the proposed pipeline (Figure 2). The location of this observation was outside the proposed 20-foot easement where project-related impacts would be concentrated. However, this species could move into the 20-foot easement prior to and during construction activities, and could be impacted by the proposed project. Additionally, a wood rat midden was observed in the southwestern portion of the survey area near Reach 1. It could not be discerned at the time of the survey if the midden was occupied by San Diego desert woodrat, a California SSC, or a big-eared woodrat (*Neotoma macrotis*) which overlap in range and build similar middens. This observation is outside the proposed 20-foot easement and while this species could move into the proposed easement during construction activities, there are ample dispersal opportunities for this species in the surrounding native habitat.

The potential impact to an individual California SSC is not considered a significant impact and the population of this species would not drop below self-sustaining levels as a result of construction of the proposed project. To reduce potential impact to orange-throated whiptail or San Diego desert woodrat, the project should implement avoidance measures during construction activities as part of aWorker Environmental Awareness Program (WEAP) training. The WEAP training would be administered by a qualified biologist knowledgeable in the species' biology and identification. Construction personnel would be instructed to avoid directly crushing or injuring individuals of either species, and species identification information, natural history, and photographs would be provided a handout to aid in identification and avoidance. Monitoring will also be conducted during project construction, if construction activities are conducted during the avian nesting season of February through August. Onsite construction monitoring would also aid in reducing potential project-related impacts.

No other special-status plant or wildlife species with a moderate or high potential to occur on the survey area is expected to be impacted by the proposed project.

Sincerely,

Tommy Molioo **November 15, 2016**
Senior Associate Biologist

Attachments:

Attachment A: Plant Species Observed
Attachment B. Wildlife Species Observed

Figure 1. Regional Location Map
Figure 2. Survey Area and Species Occurrences

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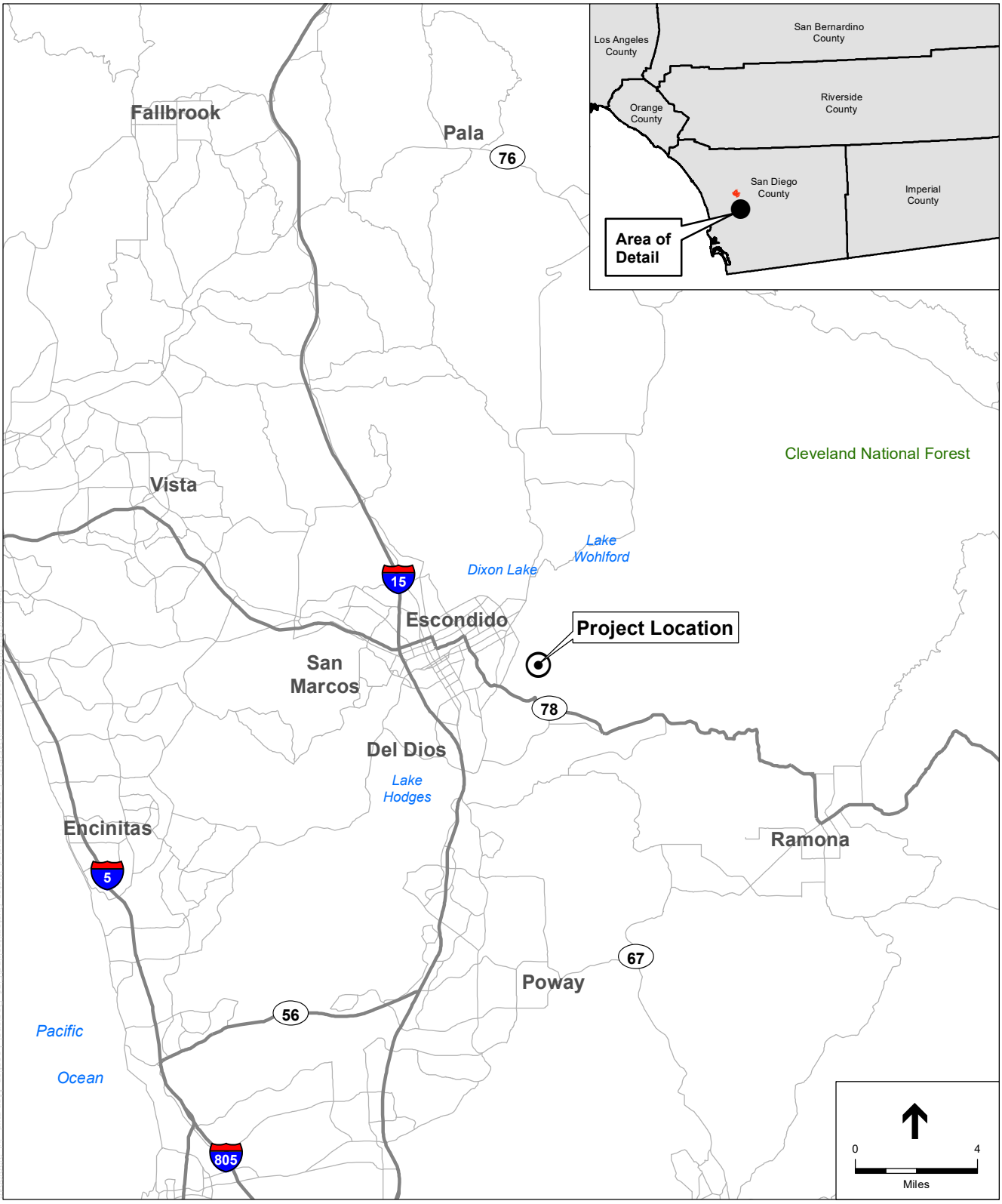
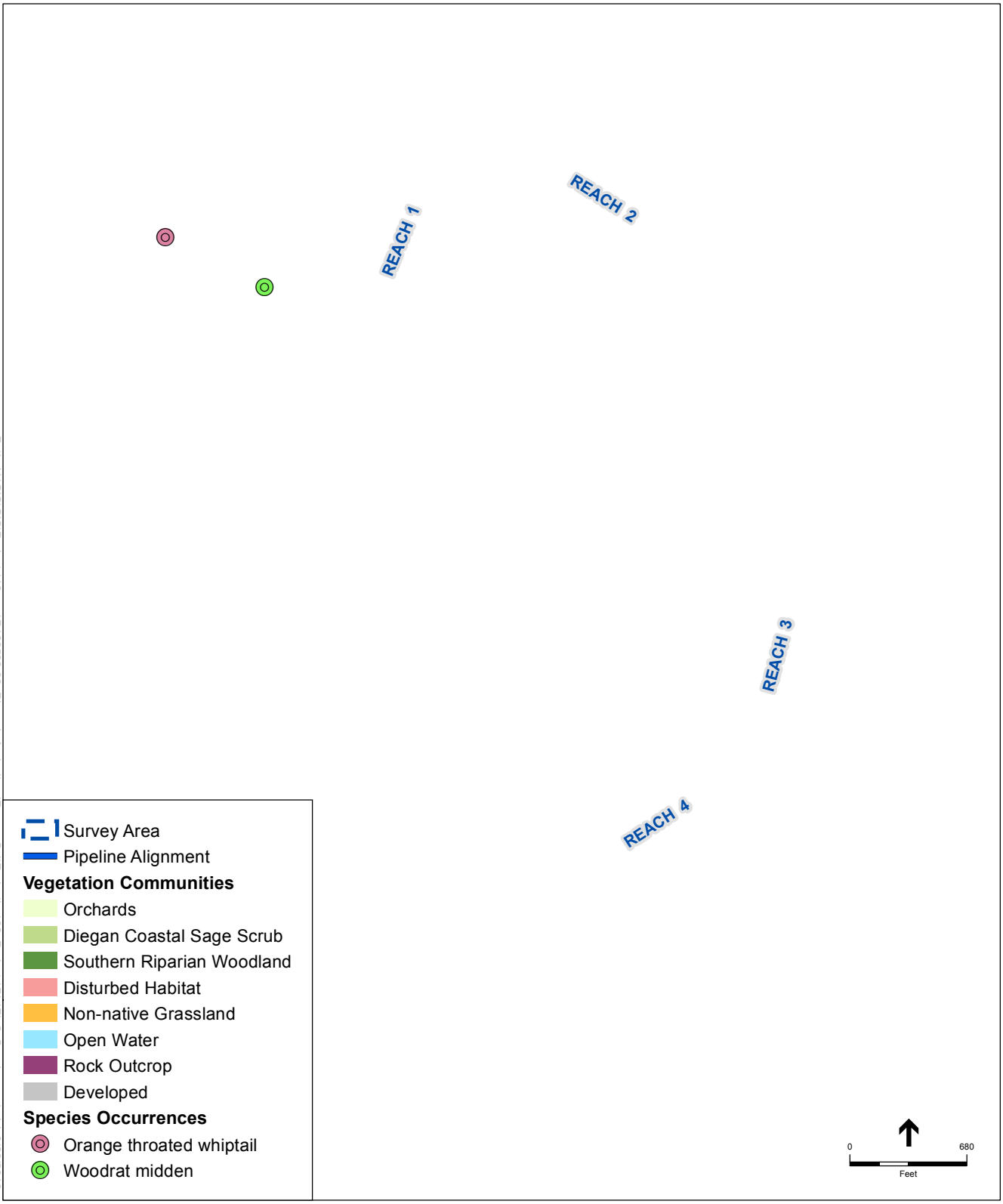


SOURCE: ESRI.

Phase 1 Agricultural Reuse and Salt Reduction Project.. 160580

Figure 1

Regional Location Map



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SOURCE: ESRI

Phase 1 Agricultural Reuse and Salt Reduction Project.. 160580

Figure 2

Survey Area and Species Occurrences

Appendix A
Plant Species Observed

ESA

Family	Scientific Name	Common Name
Selaginellaceae - Spike-Moss Family	*Selaginella bigelovii*	Bigelow's Mossfern
Agavaceae - Agave Family	*Hesperoyucca whipplei*	Our Lord's Candle
Araceae - Arum/Duckweed Family	*Washingtonia robusta**	Mexican Fan Palm
Arecaceae (Palmae) - Palm Family	*Phoenix canariensis**	Canary Island Date Palm
Poaceae - Grass Family	*Avena barbata**	Slender Oat
Poaceae - Grass Family	*Avena fatua**	Wild Oat
Poaceae - Grass Family	*Bromus diandrus**	Ripgut Grass
Poaceae - Grass Family	*Bromus madritensis ssp. rubens**	Foxtail Chess, Red Brome
Poaceae - Grass Family	*Melinis repens**	Natal Grass
Poaceae - Grass Family	*Stipa coronatum*	Giant Stipa
Poaceae - Grass Family	*Triticum aestivum**	Cereal Wheat
Adoxaceae - Adoxa Family	*Sambucus nigra ssp. caerulea*	Blue Elderberry
Aizoaceae - Fig-Marigold Family	*Carpobrotus chilensis**	Sea Fig
Anacardiaceae - Sumac or Cashew Family	*Malosma laurina*	Laurel Sumac
Anacardiaceae - Sumac or Cashew Family	*Rhus ovata*	Sugar Bush
Anacardiaceae - Sumac or Cashew Family	*Schinus molle**	Peruvian Peppertree
Anacardiaceae - Sumac or Cashew Family	*Schinus terebinthifolius**	Brazilian Pepper Tree
Apiaceae - Carrot Family	*Foeniculum vulgare**	Fennel
Asteraceae - Sunflower Family	*Acourtia microcephala*	Sacapellote, Purpleheads
Asteraceae - Sunflower Family	*Artemisia californica*	California Sagebrush
Asteraceae - Sunflower Family	*Baccharis pilularis*	Chaparral Broom, Coyote Brush
Asteraceae - Sunflower Family	*Baccharis salicifolia*	Mule-Fat, Seep-Willow
Asteraceae - Sunflower Family	*Baccharis sarothroides*	Broom Baccharis
Asteraceae - Sunflower Family	*Brickellia californica*	California Brickellbush
Asteraceae - Sunflower Family	*Carduus pycnocephalus**	Italian Thistle
Asteraceae - Sunflower Family	*Encelia californica*	California Encelia
Asteraceae - Sunflower Family	*Encelia farinosa*	Brittlebush
Asteraceae - Sunflower Family	*Erigeron bonariensis**	Flax-leaf Fleabane
Asteraceae - Sunflower Family	*Erigeron canadensis*	Horseweed
Asteraceae - Sunflower Family	*Eriophyllum confertiflorum*	Golden-yarrow
Asteraceae - Sunflower Family	*Gazania linearis*	Treasure Flower
Asteraceae - Sunflower Family	*Glebionis coronarium**	Garland Chrysanthemum
Asteraceae - Sunflower Family	*Gutierrezia sarothrae*	Matchweed
Asteraceae - Sunflower Family	*Hazardia squarrosa*	Saw-toothed Goldenbush
Asteraceae - Sunflower Family	*Helianthus gracilentus*	Slender Sunflower
Asteraceae - Sunflower Family	*Heterotheca grandiflora*	Telegraph Weed
Asteraceae - Sunflower Family	*Lactuca serriola**	Prickly Lettuce
Asteraceae - Sunflower Family	*Pseudognaphalium californicum*	California Everlasting
Asteraceae - Sunflower Family	*Pseudognaphalium biolettii*	Bicolor Cudweed
Asteraceae - Sunflower Family	*Pseudognaphalium microcephalum*	White Everlasting
Asteraceae - Sunflower Family	*Sonchus asper**	Prickly Sow Thistle
Asteraceae - Sunflower Family	*Sonchus oleraceus**	Common Sow Thistle
Asteraceae - Sunflower Family	*Stephanomeria exigua*	Small Wreath-Plan
Asteraceae - Sunflower Family	*Stephanomeria* sp.	Wreath-Plant
Asteraceae - Sunflower Family	*Stylocline gnaphaloides*	Everlasting Nest-Straw
Brassicaceae - Mustard Family	*Brassica nigra**	Black Mustard

Brassicaceae - Mustard Family	*Hirschfeldia incana**	Shortpod Mustard
Brassicaceae - Mustard Family	*Lepidium sp.*	Pepperweed
Brassicaceae - Mustard Family	*Sisymbrium irio**	London Rocket
Cactaceae - Cactus Family	*Opuntia ficus-indica*	Indian Fig
Cactaceae - Cactus Family	*Opuntia littoralis*	Coast Pricklypear
Chenopodiaceae - Goosefoot Family	*Dysphania ambrosioides*	Mexican Tea
Chenopodiaceae - Goosefoot Family	*Salsola tragus**	Russian Thistle
Cistaceae - Rock-Rose Family	*Helianthemum scoparium*	Peak Rush-rose
Convolvulaceae - Morning-Glory Family	*Cuscuta californica*	Dodder
Crassulaceae - Stonecrop Family	*Dudleya pulverulenta*	Chalk-lettuce
Cucurbitaceae - Gourd Family	*Marah macrocarpa*	Wild Cucumber
Euphorbiaceae - Spurge Family	*Croton setiger*	Doveweed
Euphorbiaceae - Spurge Family	*Euphorbia maculata**	Spotted Spurge
Euphorbiaceae - Spurge Family	*Euphorbia polycarpa*	Prostrate Spurge
Fabaceae - Legume Family	*Acmispon glaber*	Deerweed
Fabaceae - Legume Family	*Melilotus albus**	White Sweet Clover
Fagaceae - Oak Family	*Quercus agrifolia*	Coast Live Oak
Geraniaceae - Geranium Family	*Erodium cicutarium**	Red-stem Filaree
Geraniaceae - Geranium Family	*Geranium carolinianum*	Carolina Geranium
Hydrophyllaceae - Waterleaf Family	*Phacelia ramisissima*	Branching Phacelia
Lamiaceae - Mint Family	*Marrubium vulgare**	Horehound
Lamiaceae - Mint Family	*Salvia apiana*	White Sage
Lamiaceae - Mint Family	*Salvia columbariae*	Chia
Lamiaceae - Mint Family	*Salvia mellifera*	Black Sage
Lauraceae - Fig Family	*Persea americana**	Avocado Tree
Malvaceae - Mallow Family	*Malva parviflora**	Cheeseweed
Montiaceae - Montia Family	*Portulaca oleracea**	Common Purslane
Moraceae - Mulberry Family	*Ficus carica*	edible fig
Myrtaceae - Myrtle Family	*Eucalyptus spp.*	Gum Tree
Orobanchaceae - Broom-Rape Family	*Cordylanthus rigidus* ssp. *setigerus*	Dark-Tip Bird's Beak
Phrymaceae - Hopseed Family	*Mimulus aurantiacus*	San Diego Monkeyflower
Phytolaccaceae - Pokeweed Family	*Phytolacca americana**	Tropical Pokeweed
Plantaginaceae - Plantain Family	*Keckiella antirrhinoides*	Yellow Bush Penstemon
Plantaginaceae - Plantain Family	*Penstemon spectabilis*	Showy Penstemon
Polemoniaceae - Phlox Family	*Navarretia hamata*	Hooked Skunkweed
Polygonaceae - Buckwheat Family	*Eriogonum fasciculatum*	California Buckwheat
Polygonaceae - Buckwheat Family	*Polygonum aviculare ssp. depressum*	Common Knotweed
Polygonaceae - Buckwheat Family	*Pterostegia drymarioides*	Granny's Hairnet
Ranunculaceae - Buttercup Family	*Clematis pauciflora*	Small-Leaf Virgin's Bower
Rhamnaceae - Buckthorn Family	*Rhamnus ilicifolia*	Holly-Leaf Redberry
Rosaceae - Rose Family	*Adenostoma fasciculatum*	Chamise
Rosaceae - Rose Family	*Prunus ilicifolia*	Holly-Leaf Cherry
Salicaceae - Willow Family	*Salix lasiolepis*	Arroyo Willow
Scrophulariaceae - Figwort Family	*Scrophularia californica*	California Figwort
Solanaceae - Nightshade Family	*Datura wrighti*	Western Jimson Weed
Solanaceae - Nightshade Family	*Nicotiana glauca**	Tree Tobacco

Vitaceae - Grape Family	*Parthenocissusv inserta**	Woodbane
Rosaceae - Rose Family	*Cercocarpus minutiflorus*	San Diego Mountain-Mahogany
Tamaricaceae - Tamarisk Family	*Tamarix ramosissima**	Tamarisk, Salt-Cedar

Appendix B
Wildlife Species Detected

ESA

Attachment B
WILDLIFE SPECIES OBSERVED DURING 2016 SURVEYS

Scientific Name	Common Name
Accipiter cooperii	Cooper's Hawk
Aphelocoma californica	California Scrub Jay
Archilochus alexandri	Black-chinned Hummingbird
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Callipepla californica	California Quail
Calypte anna	Anna's Hummingbird
Spinus psaltria	Lesser Goldfinch
Cathartes aura	Turkey Vulture
Catherpes mexicanus	Canyon Wren
Chamaea fasciata	Wrentit
Colaptes auratus	Northern Flicker
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
Geococcyx californianus	Greater Roadrunner
Melanerpes formicivorus	Acorn Woodpecker
Mimus polyglottos	Northern Mockingbird
Myiarchus cinerascens	Ash-throated Flycatcher
Picoides nuttallii	Nuttall's Woodpecker
Melozone crissalis	California Towhee
Pipilo maculatus	Spotted Towhee
Poecile gambeli	Mountain Chickadee
Polioptila californica californica	California Gnatcatcher
Psaltriparus minimus	Bushtit
Thryomanes bewickii	Bewick's Wren
Toxostoma redivivum	California Thrasher
Tyrannus vociferans	Cassin's Kingbird
Zenaida macroura	Mourning Dove
Aspidoscelis hyperythra	Orange-throated whiptail
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Desert cottontail

Appendix B-4

Jurisdictional Delineation Report

PHASE 1 AGRICULTURAL REUSE AND SALT REDUCTION PROJECT

Jurisdictional Delineation Report

Prepared for
City of Escondido

November 2016

ESA

PHASE 1 AGRICULTURAL REUSE AND SALT REDUCTION PROJECT

Jurisdictional Delineation Report

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TABLE OF CONTENTS

Phase 1 Agricultural Reuse and Salt Reduction Project
Jurisdictional Delineation Report

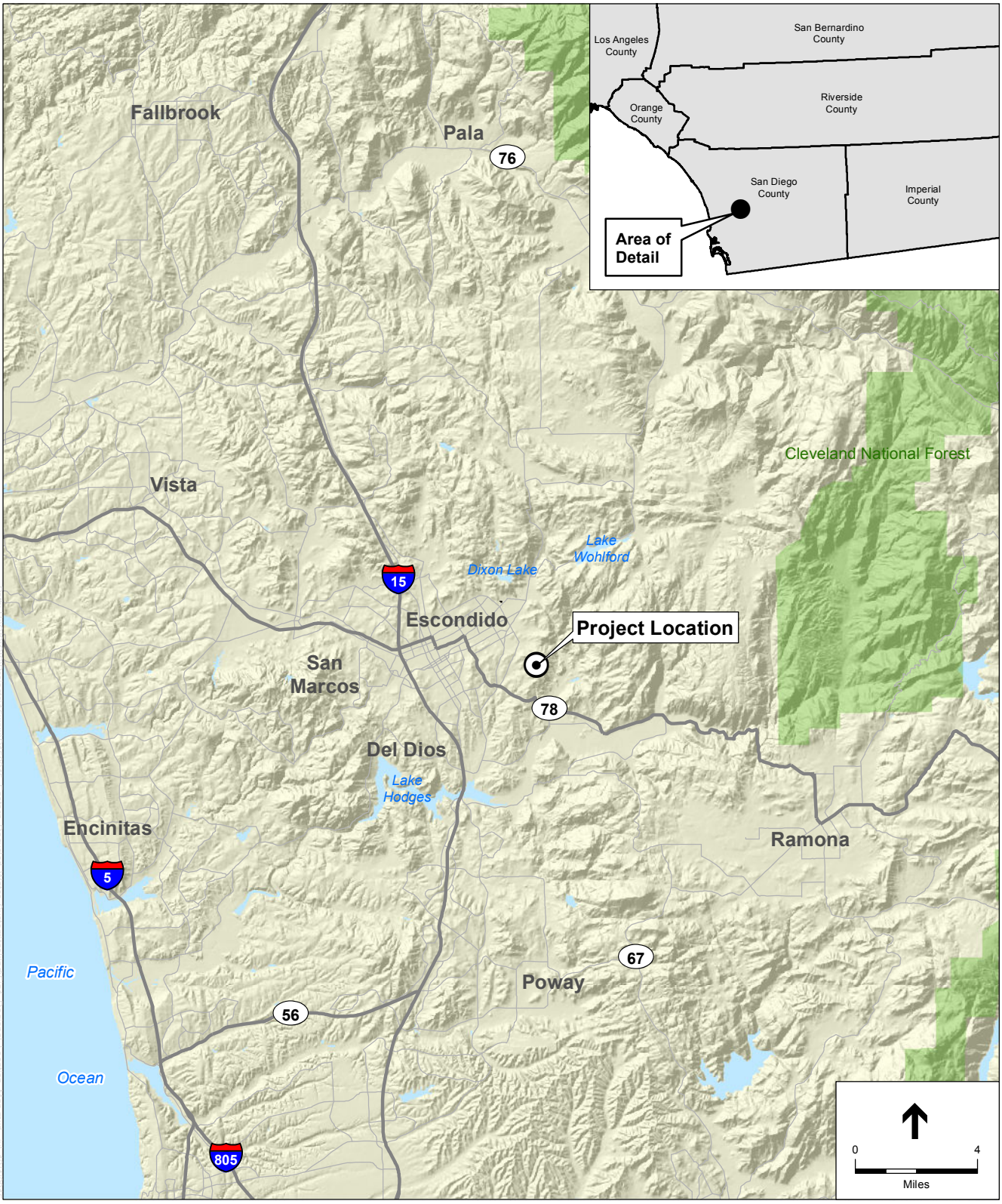
1. Introduction and Purpose

Environmental Science Associates (ESA) conducted a jurisdictional delineation for the City of Escondido's proposed Phase 1 Agricultural Reuse and Salt Reduction Project (project) located in northeastern San Diego County. The City of Escondido (City) proposes to construct approximately 2.2 linear miles of recycled water pipeline to distribute recycled water to the farmers surrounding Hogback Reservoir. Prior to construction, the City would obtain 20-foot easements for the pipeline and access along the pipes for monitoring and routine maintenance. The purpose of this jurisdictional delineation report is to assess the existing conditions of the potential jurisdictional resources on the project site. This report documents all drainage features and wetlands within the project site and surrounding survey area that may be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), the California Regional Water Quality Control Board (RWQCB), the California Department of Fish and Wildlife (CDFW), and County of San Diego as regulated by the Resource Protection Ordinance (RPO). For the purpose of this report, the existing biological resources and jurisdictional features described are located within the approximately 280-acre survey area that includes a 500-foot buffer surrounding the 2.2-mile long pipeline. This report presents the potential acreages of jurisdictional features within the survey area and not project impacts. Project impacts to jurisdictional features would be determined once project design is finalized.

1.1 Project Location

The project is generally located north of State Route 78 and east of Interstate 15, approximately 17 miles from the coast in northern San Diego County (County) (**Figure 1**). The survey area for the project is specifically located east of the intersection of Cloverdale Road and Rockwood Road, within a City easement (**Figure 2**). The majority of the City is developed with urban infrastructure; however, larger blocks of undeveloped, native habitat occur adjacent to unincorporated areas of the County in which regionally important biological resources occur. The survey area is located within this undeveloped area. Although the project is included in the sphere of influence for the City of Escondido, a majority of the survey area occurs within the County Multiple Species Conservation Program (MSCP) Subarea (County of San Diego, 1997), with a small portion at the western end that occurs within the draft North County MSCP (County of San Diego, 2009).

Topography of the survey area consists of foothills that gradually ascend to the northeast with a varied topography that has an elevation range of approximately 450 feet above mean sea level (AMSL) to 1,150 feet AMSL. Surrounding land uses consist of scattered residential development and orchards.

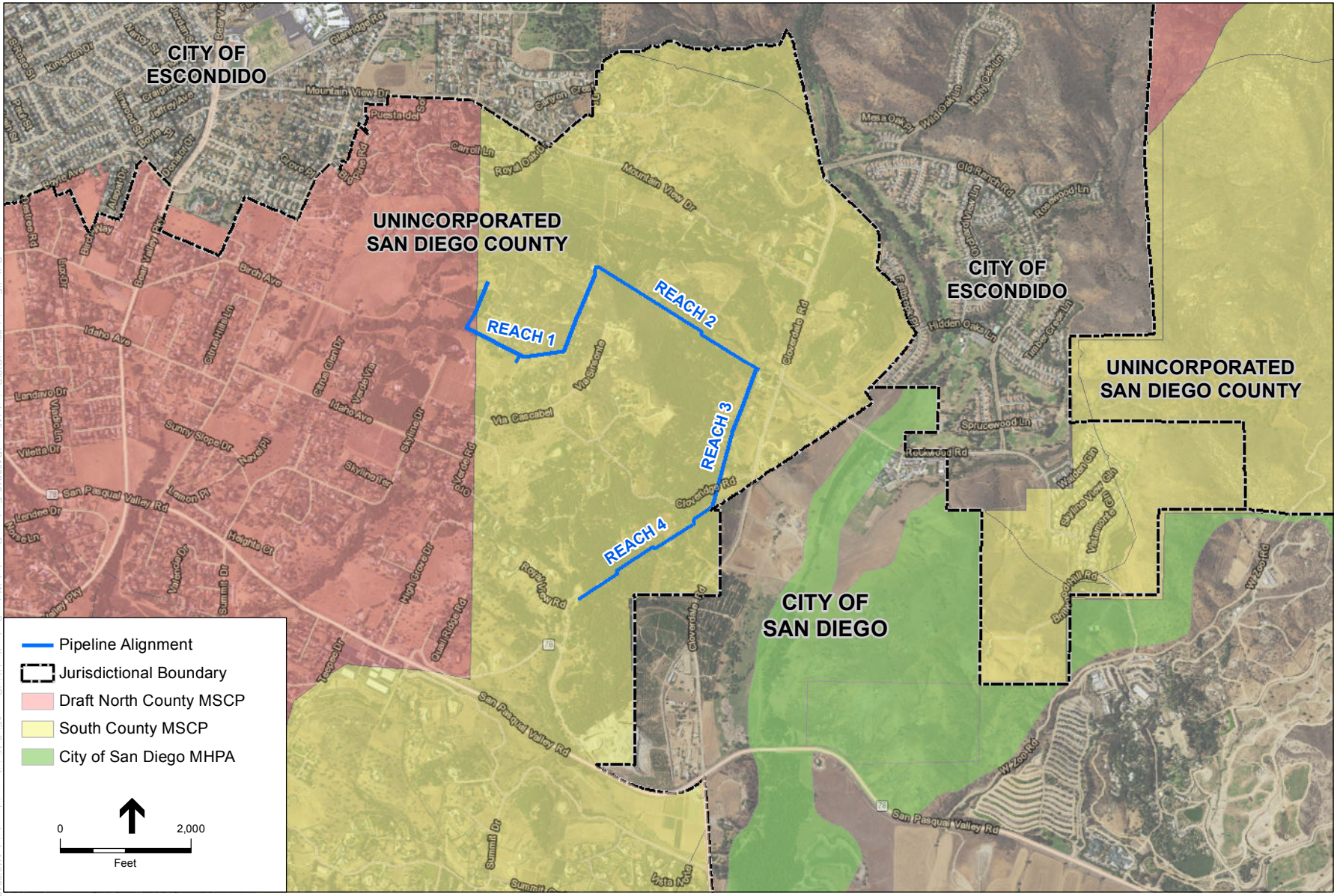


SOURCE: ESRI.

Escondido Eastern Recycled Water System. 150245

Figure 1

Regional Location Map



SOURCE: ESRI; SanGIS 2015

Escondido Eastern Recycled Water System. 150245

Figure 2

Project Vicinity Map

2. Jurisdictional Authority

2.1 Wetlands and Other Waters of the United States

USACE regulates "discharge of dredged or fill material" into "waters" of the United States (waters of the U.S.), which includes tidal waters, interstate waters, and "all other waters, interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide" (33 C.F.R. 328.3(a)), pursuant to provisions of Section 404 of the CWA.

The USACE (Federal Register 1982) and the U.S. Environmental Protection Agency (EPA) (Federal Register 1980) jointly define wetlands as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Wetlands have the following general diagnostic environmental characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology (Environmental Laboratory 1987).

The USACE takes jurisdiction within rivers and streams to the "ordinary high water mark (OHWM)," typically determined by erosion, the deposition of vegetation or debris, and changes in vegetation or soil characteristics. However, if there is no federal nexus to navigable waters, these waters are considered "isolated" and thus not subject to USACE jurisdiction.

The USACE and EPA have issued a set of guidance documents detailing the process for determining CWA jurisdiction over waters of the U.S. following the Rapanos decision. The EPA and USACE issued a summary memorandum of the guidance for implementing the Supreme Court's decision in Rapanos that addresses the jurisdiction over waters of the U.S. under the CWA. The complete set of guidance documents, summarized in the Rapanos Key Points Summary on the following page, were used to collect relevant data for evaluation by the EPA and USACE to determine CWA jurisdiction over the project sites and to complete the "significant nexus test" as detailed in the guidelines.

The significant nexus test includes consideration of hydrologic and ecologic factors. For circumstances such as those described in point B of the Rapanos Key Points Summary, the significant nexus test would take into account physical indicators of flow (e.g., OHWM), whether a hydrologic connection to a Traditionally Navigable Water (TNW) exists, and if the aquatic functions of the water body have a significant effect (more than speculative or insubstantial) on the chemical, physical, and biological integrity of a TNW. The USACE and EPA will apply the significant nexus standard to assess the flow characteristics and functions of the tributary drainage to determine if it significantly affects the chemical, physical, and biological integrity of the downstream TNW.

Rapanos Key Points Summary

(A) The USACE and EPA will assert jurisdiction over the following waters:

- TNWs;
- Wetlands adjacent to TNW;
- Non-navigable tributaries of TNWs that are relatively permanent;
- Where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months); and
- Wetlands that directly abut such tributaries.

(B) The USACE and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

(C) The USACE and EPA generally will not assert jurisdiction over the following features:

- Swales or erosion features (e.g., gullies, small washes characterized by low-volume, infrequent, or short-duration flow); or
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The significant nexus test includes consideration of hydrologic and ecologic factors. The significant nexus test would take into account physical indicators of flow (OHWM), if a hydrologic connection to a Traditionally Navigable Water (TNW) exists, and if the aquatic functions of the water body have a significant effect (more than speculative or insubstantial) on the chemical, physical, and biological integrity of a TNW. The USACE and EPA will apply the significant nexus standard to assess the flow characteristics and functions of the tributary drainage to determine if it significantly affects the chemical, physical and biological integrity of the downstream TNW.

2.2 Waters of the State

State Boards (SWRCB and RWQCB)

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) (together "Boards") are the principal State agencies with primary responsibility for the coordination and control of water quality. The Boards regulate activities pursuant to Section 401(a)(1) of the federal CWA as well as the Porter Cologne Water Quality Control Act (Porter-Cologne Act) (Water Code Section 13260). Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to

conduct any activity including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters. The certification shall originate from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate. Any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA.

In the Porter-Cologne Act, the Legislature declared that the "State must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the State from degradation..." (California Water Code Section 13000). Porter-Cologne Act grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the State. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required to obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act. It is important to note that enforcement of the State's water quality requirements is not solely the purview of the Boards and their staff. Other agencies [e.g., California Department of Fish and Wildlife (CDFW)] have the ability to enforce certain water quality provisions in state law.

California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Section 1602 of the CFG Code, an entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

As further defined by the California Code of Regulations (CCR) Title 14 Section 720, for the purpose of implementing Sections 1601 and 1603 of the California Fish and Game (CFG) Code, this applies to all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds which may have intermittent flows of water. Furthermore, the Lake and Streambed Alteration (LSA) program requires notification for impacts to streams which "includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water" (CDFW 2014).

Stream-dependent riparian habitat is defined in the CFG Code (Section 2785) as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." In addition, CDFW has jurisdiction over riparian habitats and wetlands associated with watercourses. As defined by CFG Code, "wetlands" means lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of a stream or lake, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated riparian habitat not associated with a lake or streambed. The CDFW reviews proposed actions, and if necessary, submits to the applicant a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW

and the applicant is the Lake or Streambed Alteration (LSA) Agreement. Removal of stream-dependent riparian vegetation may also require an LSA Agreement from CDFW. However, CDFW may not regulate isolated wetlands; that is, those that are not associated with a river, stream, or lake.

California Wetland Definition

Unlike the federal government, California has adopted the Cowardin et al. (1979) definition of wetlands. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least 50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and saturated with water or covered by shallow water at some time during the growing season of each year.

Under normal circumstances, the federal definition of wetlands requires all three wetland identification parameters to be met, whereas the Cowardin definition requires the presence of at least one of these parameters. For this reason, identification of wetlands by state agencies consists of the union of all areas that are periodically inundated or saturated or in which at least seasonal dominance by hydrophytes may be documented or in which hydric soils are present.

2.3 Local Waters

County of San Diego Resource Protection Ordinance

Per the County of San Diego Resource Protection Ordinance (RPO), "wetlands" are defined as "All lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or where the land is covered by water. All lands having one or more of the following attributes are wetlands: a) At least periodically, the land supports predominately hydrophytes (plants whose habitat is water or very wet places); b) The substratum is predominately undrained hydric soil; or c) an ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system." In this definition, a "non-soil" substrate includes, but is not limited to, rock outcroppings, or deep-water habitats generally greater than 6.6 feet in depth, as well as cobble rock, bedrock, or scoured channels.

3. Methods

3.1 Database Review

Prior to the field survey, a desktop analysis was conducted to obtain contextual information relevant to the project. ESA conducted a review of available background information pertaining to the project geography and topography prior to conducting the jurisdictional delineation, including a review of the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Wetlands Mapper (USFWS 2016), aerial photography, and topographic maps for the USGS 7.5-minute Harrison Mountain, California topographic quadrangle. Site maps were generated with available aerial photographs, and potentially jurisdictional features were identified and marked on aerial maps to assist in field verification. Soil types mapped within the project site from the Soil Survey Geographic Database (SSURGO) database were also reviewed prior to field efforts to target areas with potentially hydric soils (USDA 2016).

3.2 Field Survey

ESA biologists Tommy Molioo, Rosanne Humphrey, and Alanna Bennett conducted a field delineation on August 17, 2016 from 7:00 am to 12:00 pm, to evaluate potential jurisdictional features within the survey area. Where accessible, potential jurisdictional features were recorded in the field using aerial maps and a hand-held Trimble Geo-XH Global Positioning System (GPS) unit. Data obtained from soil pit sampling was recorded on standardized Arid West datasheets and are included in Appendix A. Google Earth aerial imagery was also used as a tool to map the limits of jurisdictional resources based on field observations, and to map areas that were inaccessible to the field delineators. Vegetation mapping for the project site was also conducted during the field delineation, and vegetation communities were classified using a combination of the nomenclature from the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), Terrestrial Vegetation of California (Barbour and Keeler-Wolf, 2007), and variations based on observed plant dominance. Plant species observed during the survey are included in Appendix B. Representative photographs of the jurisdictional features taken during the field delineation are included in Appendix C.

Wetland Waters of the U.S.

The presence/absence of wetland waters of the U.S. was determined through implementation of the methods described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). The definition of growing season and the basis of determining and recording indicators for hydrophytic vegetation, hydric soils, and wetland hydrology was based on the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (Version 2.0)*, as well as the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a; USACE 2008b).

A Level 2 Determination (i.e., onsite inspection) was conducted as defined in the 1987 USACE Manual. The onsite inspection evaluated the three parameters used by the USACE to define

wetlands, including (1) the dominance of wetland vegetation; (2) the presence of hydric soils; and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. The National List of Plant Species That Occur in Wetlands: California (Region 0) and the National Wetland Plant List (Lichvar 2014) were used to determine the wetland indicator status of plants observed in the project site. The 1987 USACE Manual and 2008 Arid West Regional Supplement were used for the analysis and evaluation of any normal circumstances, atypical situations, and problem areas, as needed.

Data on vegetation, soils, and hydrologic characteristics were recorded in the field and data points (DPs) were taken to identify boundaries between upland and wetland habitats. All sample locations were examined for the presence of positive hydrologic indicators (i.e., direct evidence of saturated soils, oxidized rhizospheres). Soils were examined to determine composition, matrix color, and the presence of redoximorphic features or other hydric soil indicators. The percent dominance by hydrophytic vegetation was also recorded at each sample location.

Non-Wetland Waters of the U.S.

The identification of non-wetland waters of the U.S. was determined by in-field verification of the hydrological connection between the watercourse and downstream TNW (i.e., significant nexus test). Non-wetland waters of the U.S. were identified if the OHWM was clearly visible and passed the significant nexus test (to the Pacific Ocean) but one or more of the remaining USACE wetland parameters were absent (i.e., hydrophytic vegetation or hydric soils). The OHWM of drainage features was determined based on observations of physical evidence that included direct observations of flow, scour marks, and drift lines of debris. The limits of non-wetland waters of the U.S. were confined to the ordinary limits of flow and excluded adjacent upland areas that have been created through the previous placement of fill material from dredging activities.

Waters of the State

California Department of Fish and Wildlife

CDFW jurisdictional waters included streams which show evidence of at least intermittent flow including the floodplain and wetland or riparian habitats associated with watercourses in accordance with Section 1600 of CFG Code. These areas were delineated by the outer edge of riparian vegetation or at the top of the bank of a stream or lake, whichever was wider. UnderCFG Code, "wetlands" are defined as lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools (CFG Code Section 2785).

CDFW wetlands were delineated based on a one parameter definition (California Code of Regulations Title 14 (14 CCR)) that only requires evidence of a single parameter to establish wetland conditions: *Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated*

substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (14 CCR Section 13577).

State Boards (SWRCB and RWQCB)

It is assumed for the purpose of this report that USACE jurisdictional areas are also under the jurisdiction of the San Diego RWQCB, and are subject to Section 401 of the CWA or Porter-Cologne Act. USACE and RWQCB jurisdictional areas have been delineated using the same methodology.

Local Waters

County of San Diego Wetlands

It is assumed for the purpose of this report that CDFW jurisdictional areas are also under the jurisdiction of the County of San Diego, which are considered County wetlands regulated by the RPO, and have been delineated using the same CDFW methodology.

4. Results and Conclusions

4.1 Database Review and Field Survey Results

Results of the literature, aerial reviews, and field delineation are discussed below and in the following pages. The existing conditions observed during the field survey are described for the survey area to account for biological resources on and adjacent to the project site. Data forms from the delineation can be found in Appendix A.

Existing Conditions

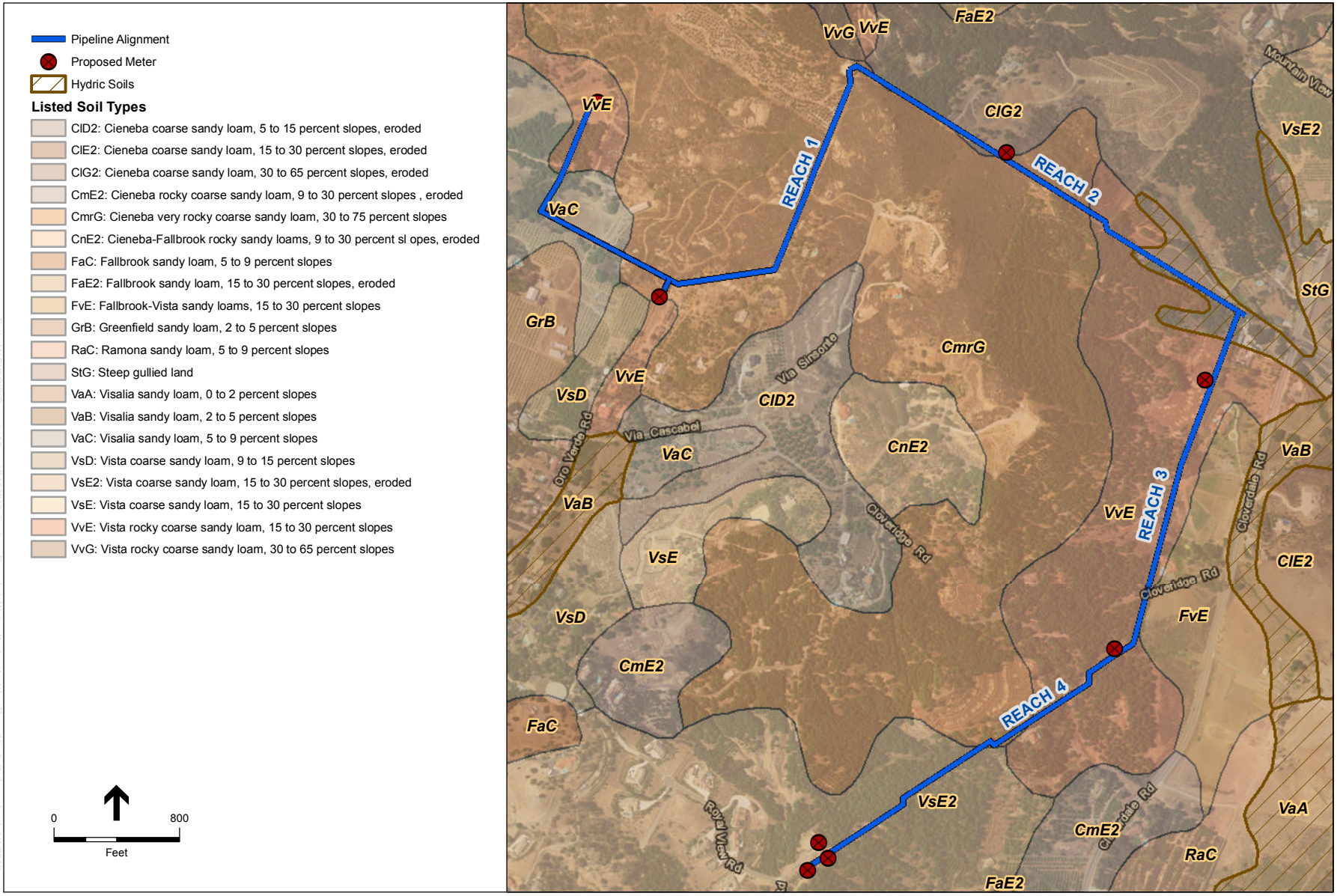
The survey area occurs on moderately to steeply sloped foothills that have been subject to previous disturbances associated with grading for residential development and agricultural activities, access roads and regular maintenance activities. Agricultural activities have been conducted within and adjacent to the survey area since the mid 1940's, which resulted in significant alteration to the topography onsite and fragmentation of habitats and drainages due to the installation of mainly avocado orchards on hillsides (historicaerials.com). While the survey area does contain significant stands of undisturbed native habitat, these stands are fragmented from other larger areas of native habitat that continue offsite. In general, the drainages on the survey area drain local runoff from upland areas. Existing developments on the survey area consist of the Hogback Reservoir, residences, orchards, and dirt and paved access roads.

Soils

Based on a review of the USDA Soils Map for the area, the project site consists of sandy loam soils with granitic rock outcrops (**Figure 3**). Soils mapped within the project site include those belonging to the Cieneba, Fallbrook, Visalia, and Vista soil series, as well as steep gullied land. Specific soil mapping units mapped on the project site include Cieneba coarse sandy loam, Cieneba very rocky coarse sandy loam, Visalia sandy loam (0 to2 percent slopes), Vista coarse sandy loam (15 to 30 percent slopes, eroded), and Vista rocky coarse sandy loam (15 to 30 percent slopes).

Cieneba soils are shallow and excessively drained that formed in material weathered from granitic rock. These soils typically occur on hills and mountains with slopes ranging from 9 to 85 percent (NRCS 2015). Fallbrook soils consist of deep, well drained soils that formed in material weathered from granitic rocks with slopes of 5 to 75 percent. Visalia soils consist of coarse and fine sandy loams that have grayish brown horizons, and are considered a hydric soil in California. Vista soils are moderately deep, well-drained soils that formed in material weathered from decomposed granitic rocks and occur on hills and mountainous uplands. Cieneba and Vista soil complexes are considered hydric soils in California.

Based on the field assessment, the soils are compacted due to previous disturbances on the survey and ongoing disturbances related to agricultural activities. Hydric soils capable of supporting wetland species are mapped for the Cieneba and Vista soil types within the survey area.



SOURCE: ESRI

Escondido Eastern Recycled Water System . 150245

Figure 3

Soils

Vegetation

The plant communities and land use types that occur on the project site were mapped in the field and characterized using the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986; Oberbauer 2008). The vegetation on the site is depicted in **Figure 4**. The observed plant species and potential to support sensitive species is discussed in detail below. Additionally, the tier levels per the County MSCP Subarea Plan are provided, which characterize the sensitivity of vegetation communities.

Diegan Coastal Sage Scrub

Diegan coastal sage scrub is typically composed of a predominance of aromatic, drought deciduous perennial shrubs and subshrubs typically growing to no more than three feet high, with a diverse understory of herbaceous species and annual and perennial grasses. It is usually located on dry, south-facing slopes and intermingles with chaparral, non-native grassland, and other local vegetation communities. It had been widely distributed in the region in the past; however, Diegan coastal sage scrub has lost much of its historic range to residential development and agricultural conversion.

The majority of the natural undisturbed areas on the project site and immediate surroundings are characterized as a Diegan coastal sage scrub. A total of 0.96 acre of Diegan coastal sage scrub is mapped for the project site. An additional 65.75 acres was mapped for the 500-foot buffer area outside the project site alignment. Dominant species observed within the Diegan coastal sage scrub community include California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and deerweed (*Acmispon glaber*). Other less dominant native species observed include California buckwheat (*Eriogonum fasciculatum*), tarragon (*Artemisia dracunculus*), brittlebush (*Encelia farinosa*), prickly pear (*Opuntia littoralis*), chaparral yucca (*Hesperoyucca whipplei*), stinging nettle (*Urtica dioica*), scarlet monkeyflower (*Mimulus cardinalis*), and scalebroom (*Lepidospartum squamatum*). Taller woody shrubs were also observed throughout the Diegan coastal sage scrub but do not function as a separate chaparral community. These species include ceanothus (*Ceanothus* sp.), mountain mahogany (*Cercocarpus betuloides*), laurel sumac (*Malosma laurina*), and scrub oak (*Quercus berberidifolia*). Scattered trees such as coast live oak (*Quercus agrifolia*), Mexican elderberry (*Sambucus mexicana*), arroyo willow (*Salix lasiolepis*), and Mexican fan palm (*Washingtonia filifera*) were also observed throughout the Diegan coastal sage scrub. Portions of this community, particularly along Reach 1 are segmented due to the presence of and continued use of trails. Diegan coastal sage scrub is a Tier II habitat under the County Subarea Plan.

Southern Riparian Woodland

Southern riparian woodlands consist of a moderately dense woodland dominated by small trees or shrubs, with scattered taller riparian trees. This vegetation community is distributed throughout the County, and typically associated with major river systems where flood scour occurs and with smaller major tributaries. The southern riparian woodland habitat on the project site and surrounding buffer is associated with two relatively small drainage features in the western portion of the project site. This habitat includes a mix of native and non-native trees and is dominated by arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus mexicana*), and California fan palm (*Washingtonia filifera*). Scattered salt cedar (*Tamarix* sp.) trees were observed throughout the

southern riparian woodland. A total of 0.31 acre of southern riparian woodland is mapped for the project site and 10.76 acres are mapped for the surrounding buffer. Southern riparian woodland is a Tier I habitat under the County Subarea Plan.

Orchard

Orchards typically consist of monocultures of agricultural crops planted in rows and artificially irrigated. Orchards on the project site and surrounding area are comprised solely of avocado trees, which is typical of the agricultural areas in the region. Because of the topography of the project site, the orchards are located on sloped hillsides, along ridgelines, and adjacent to minor ravines. Orchards were mapped on 3.06 acres of the project site and 147.06 acres of the surrounding 500-foot buffer. Other species observed in the orchards include scattered ground cover species that are not native to California such as prickly sow-thistle (*Sonchus asper*), short-podded mustard (*Hirschfeldia incana*), Sahara mustard (*Brassica tournefortii*), castor bean (*Ricinus communis*), Russian thistle (*Salsola tragus*), and tree tobacco (*Nicotiana glauca*).

Non-Native Grassland

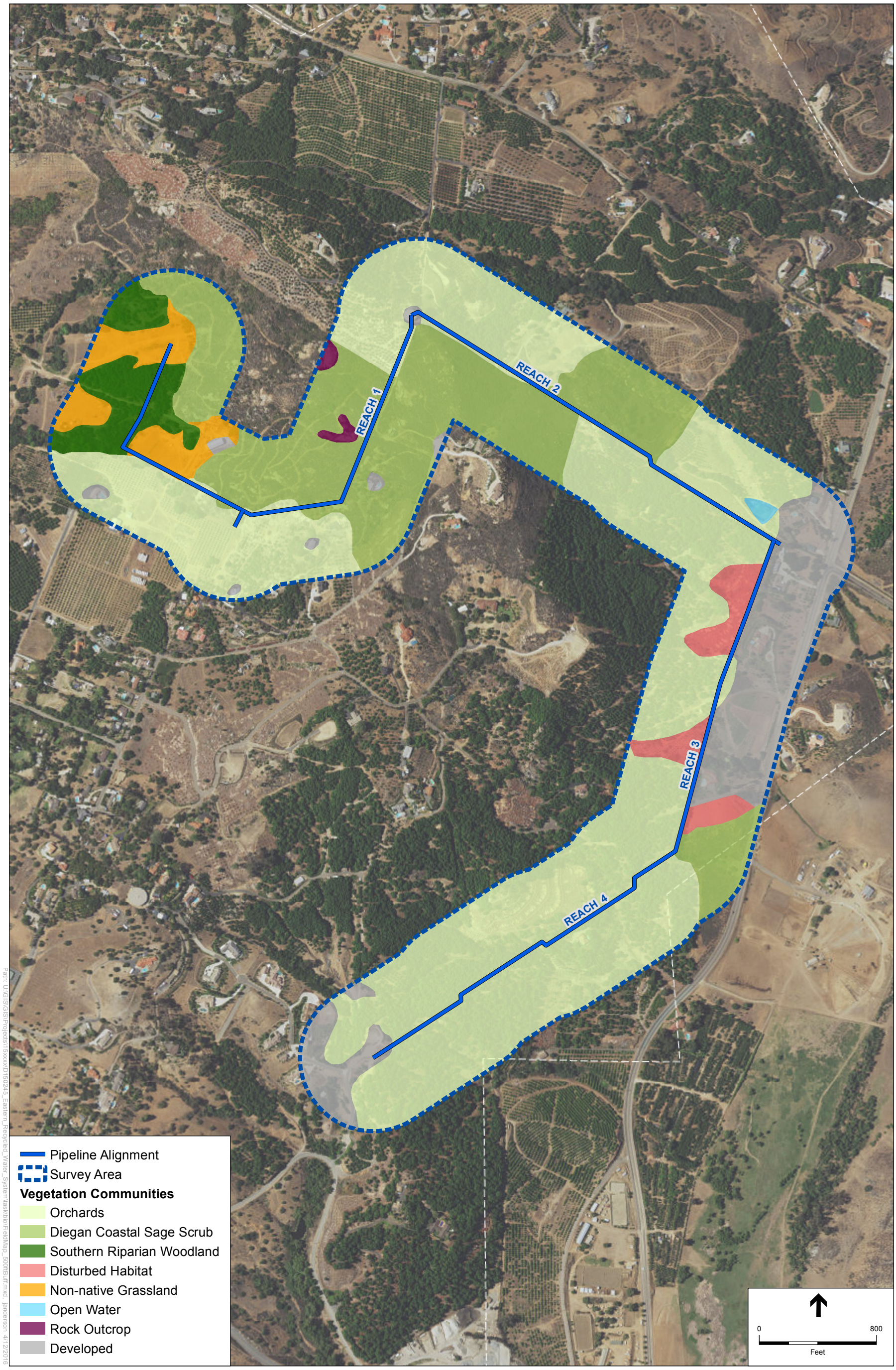
As shown on Figure 4, non-native grassland occurs in the western portion of the project site within relatively flat areas that have been disturbed from previous and ongoing agricultural uses. This area now contains a dominance of low-growing non-native grasses. This community accounts for 0.25 acre of the project site and 9.54 acres of the surrounding survey buffer. Non-native species observed include a dominance of rip-gut brome (*Bromus diandrus*), red brome, and wild oats (*Avena barbata*), with scattered short-podded mustard, artichoke thistle (*Cynara cardunculus*), and star thistle (*Centaurea* sp.). Non-native grassland is a Tier III Habitat under the County Subarea Plan.

Disturbed Habitat

Disturbed habitat consists of areas that have been previously disturbed from a number of human-related causes that have significantly altered and degraded the previous native habitat. Disturbed areas are typically devoid of vegetation except for non-native ruderal species along the periphery and scattered throughout. Soils in these areas are generally compacted as continued uses further degrade the habitat such as hiking, biking, and off-road vehicle use. Species observed in this land use type include scattered non-native species such as red brome, ripgut brome, and short-podded mustard. Disturbed habitat is mapped for 0.29 acre of the project site and 7.03 acres of the surrounding buffer. Disturbed habitat is a Tier IV Habitat under the County Subarea Plan.

Developed

Developed land includes areas that have been significantly altered from previous actions and now consist predominately of impermeable surfaces such as concrete and asphalt for roads, or contain buildings and structures with no naturally-occurring vegetation. Additionally, areas mapped as developed land include rural residences and associated landscaping, as well as areas on the residential property that are used for storage, access, and recreation. No native vegetation was observed in developed areas, and the only vegetation that occurs included non-native ornamental species planted for landscaping purposes. Developed land occurs on 0.51 acre of the project site and 32.02 acres of the surrounding survey buffer, and is listed as a Tier IV Habitat under the County Subarea Plan.



SOURCE:

Eastern Recycled Water System . 150245

Figure 4

Vegetation Communities and Land Use Types

Hydrology

The survey area is located within the San Dieguito Watershed, but does not contain major creeks or tributaries to the San Dieguito River to the south, or Lake Hodges to the southwest. Hydrologic function of the survey area is primarily provided by local topographic relief of runoff from storm events. The survey area is located just to the west and upslope from the San Dieguito River which is a Relatively Permanent Water (RPW) that connects to Lake Hodges and eventually connects to the Pacific Ocean, a Traditional Navigable Water (TNW). Three of the four ephemeral drainages mapped within the survey area connect to the San Dieguito River. No blue-line streams are mapped for the survey area and no intermittent streams were observed in the survey area. Therefore, the source of surface waters is limited to localized runoff, as no RPWs or TNWs occur within the survey area.

4.2 Jurisdictional Features Summary

The potential jurisdictional features delineated within the survey area are shown on **Figure 5a** and **Figure 5b**, and further described on the following pages. The features mapped in the survey area, based on the literature review and field delineation survey, are summarized in **Table 1** below.

TABLE 1
SUMMARY OF POTENTIAL JURISDICTIONAL FEATURES WITHIN THE SURVEY AREA

Map ID	Type of Feature	Habitat Type
Feature 1	Ephemeral Drainage	Southern Riparian Woodland
Feature 2	Incised Channel	Orchards and Diegan Coastal Sage Scrub
Feature 3	Ephemeral Drainage	Orchards, Disturbed Habitat and Developed
Feature 4	Ephemeral Drainage	Orchards
Pond	Man-Made Freshwater Pond	Open Water

Feature 1

Feature 1 is an ephemeral drainage that originates in an upland area adjacent to orchards, near Reach 1 of the proposed pipeline. The drainage conveys local runoff downstream and below a dirt access road through a culvert, before continuing downstream along a southern riparian woodland corridor. The drainage continues further to the south in offsite areas and eventually connects to the San Dieguito River. No surface water, inundation or saturation was observed within Feature 1 during the survey, and no wetlands occur within the ephemeral drainage.

Feature 2

Feature 2 is an incised channel that originates on a hill near Reach 2 of the proposed pipeline that is dominated by coastal sage scrub vegetation and conveys local runoff downstream and below a dirt access road through a culvert. The channel continues downstream through an upland orchard area before a steep descent downhill through another patch of coastal sage scrub. The channel connects to a man-made pond as it continues downstream towards Cloverdale Road, continues below ground through a culvert, and continues offsite before eventually connecting to the San Dieguito River.

Feature 3

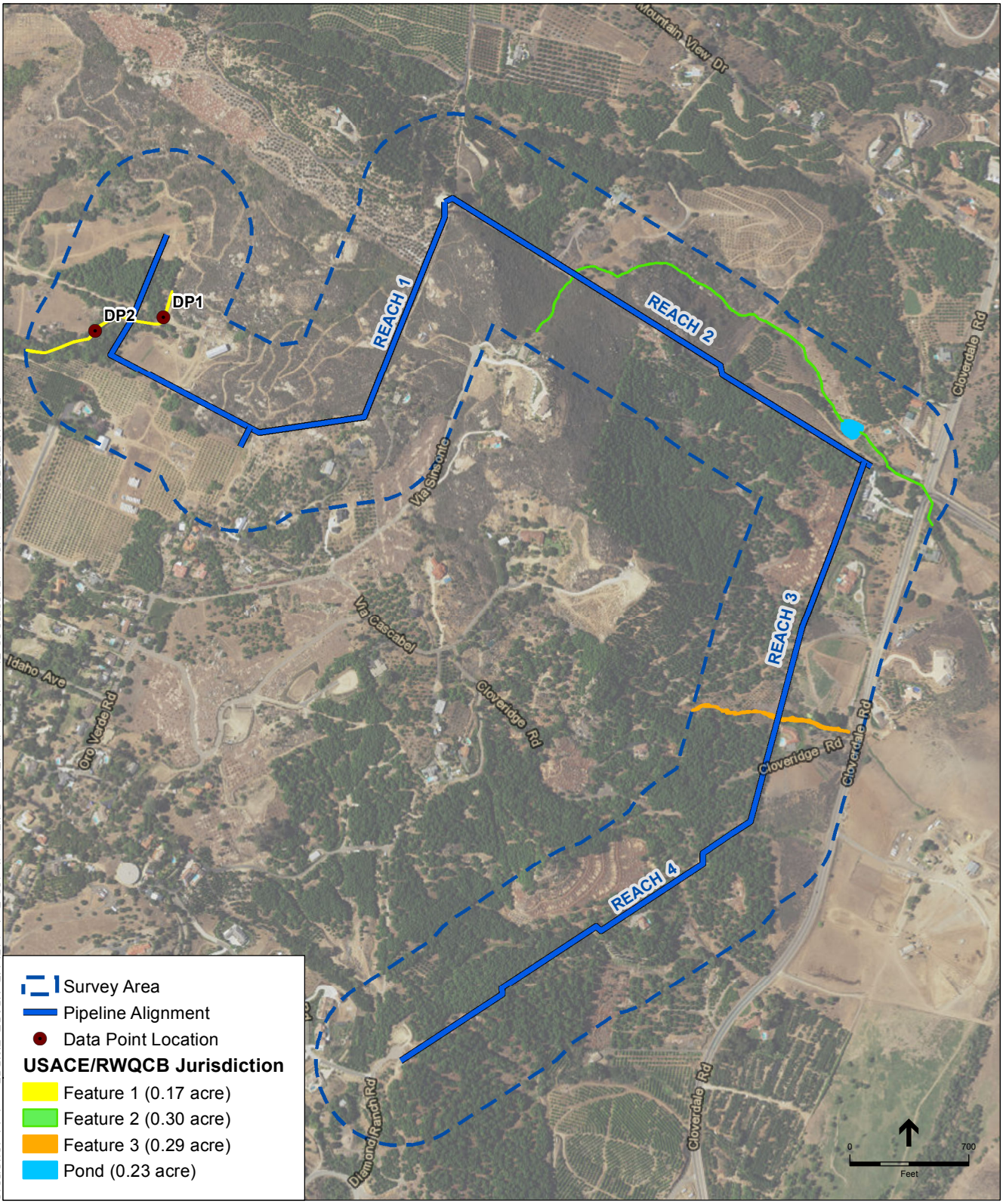
Feature 3 is an ephemeral drainage that originates on a hill near Reach 3 of the proposed pipeline in an area containing orchards, disturbed habitat and developed land. The drainage conveys local runoff from the surrounding topography and orchards during rain events downstream. The drainage continues downstream adjacent to a residence before traveling below Cloverdale Road through a culvert. Feature 3 eventually connects with the San Dieguito River in offsite areas. A majority of the vegetation associated with Feature 3 consists of upland scrub and tree species; however, a stand of mulefat (*Baccharis salicifolia*) is located at the downstream end of the drainage feature before it enters the culvert at Cloverdale Road.

Feature 4

Feature 4 is an ephemeral drainage that originates in an upland area characterized by orchards near Reach 4. This drainage feature conveys local runoff from the surrounding topography and orchards during rain events. This feature is incised in some upstream areas due to erosion, which has widened the bed and bank of the drainage. The downstream portion of the drainage terminates at Cloverdale Road. This feature does not exit through a culvert or continue downstream, and thus does not connect to the San Dieguito Road or any of its tributaries.

Pond

A man-made pond is located near the confluence of Reach 2 and Reach 3 of the proposed pipeline that was installed as an irrigation pond for the local orchards. The pond was created within the flow-line of Feature 2 in order to capture and use any flows in the incised channel, as well as hold water that is pumped from orchard irrigation. The freshwater pond does not contain any associated vegetation and is mapped as open water. The pond has hydrologic connectivity to the San Dieguito River through its connection to Feature 2.



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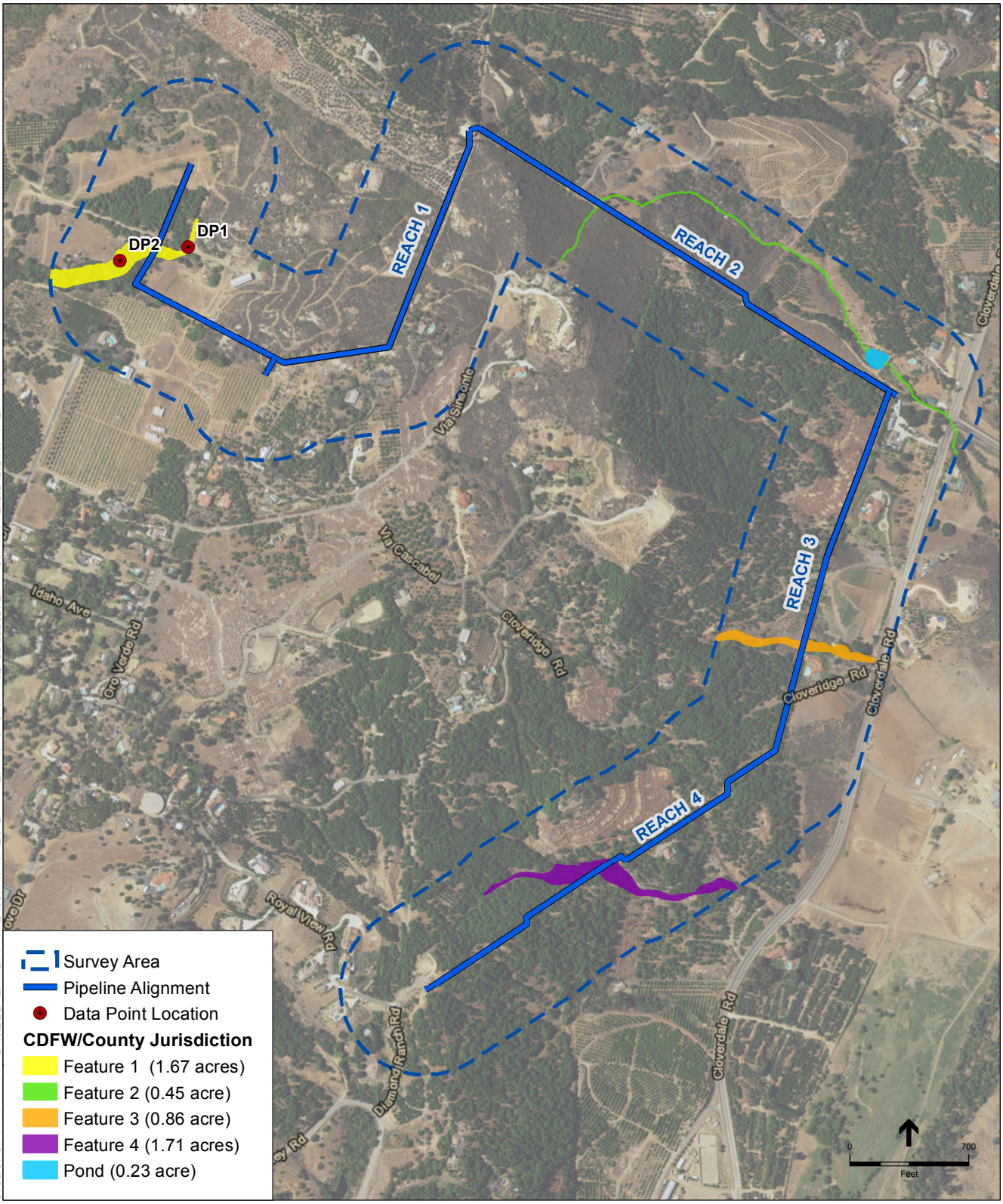
SOURCE: ESRI

Phase 1 Agricultural Reuse and Salt Reduction Project.. 160580

Figure 5a

USACE/RWQCB Jurisdiction



SOURCE: ESRI

Phase 1 Agricultural Reuse and Salt Reduction Project.. 160580

Figure 5b

CDFW/County Jurisdiction

Table 2 summarizes the extent of potential jurisdictional features within the survey area based on the database review and field delineation survey results.

TABLE 2
POTENTIAL EXISTING JURISDICTIONAL FEATURES WITHIN THE SURVEY AREA

Map ID	Type of Feature	Habitat Type	Non-Wetland Waters (acres) [ab]	Wetland Waters (acres)
Potential Waters of the U.S.				
Feature 1	Ephemeral Channel	Southern Riparian Woodland	0.17	0.0
Feature 2	Incised Channel	Orchards and Diegan Coastal Sage Scrub	0.30	0.0
Feature 3	Ephemeral Channel	Orchards, Disturbed Habitat and Developed	0.29	0.0
Pond	Freshwater Pond	Open Water	0.23	0.0
Total Area of Potential Waters of the U.S.			**0.99**	**0.0**
Potential Waters of the State and Local Waters				
Feature 1	Ephemeral Channel	Southern Riparian Woodland	1.67	0.0
Feature 2	Incised Channel	Orchards and Diegan Coastal Sage Scrub	0.45	0.0
Feature 3	Ephemeral Channel	Orchards, Disturbed Habitat and Developed	0.86	0.0
Feature 4	Ephemeral Channel	Orchards	1.71	0.0
Pond	Freshwater Pond	Open Water	0.23	0.0
Total Area of Potential Waters of the State and Local Waters			4.92	0.0
Total Area of Potentially Jurisdictional Features [c]			**5.91**	**0.0**

[a] Jurisdictional waters acreage was determined by using ArcGIS. All acreages are rounded to the nearest hundredth if the areas of the potentially jurisdictional features were less than 0.01 acre (which may account for any minor rounding errors).
[b] These acreages represent potential jurisdiction features within the survey area and not project impacts. Project impacts to jurisdictional features would be determined once project design is finalized.
[c] The total area of potentially jurisdictional features on the survey area is summarized from the total of Waters of the U.S. and State. County of San Diego wetlands are delineated in the same manner as Waters of the State, but are not counted as wetland waters in this table.

Waters of the United States

Waters of the United States potentially subject to the jurisdiction of the USACE include the unnamed ephemeral drainages within the survey area that connect to a downstream RPW, including Feature 1, Feature 2, Feature 3, and the Pond. For the purpose of this report, channels were defined as drainage features that have a distinguishable OHWM. The potential jurisdictional features are further described below

Feature 1

Feature 1 located within Reach 1 near the northwestern portion of the survey area is an ephemeral feature (non-RPW) that conveys upland runoff flows south then west through a metal culvert below a dirt access road. The drainage continues downstream as a soft-bottom channel, and eventually connects to the San Dieguito River, a RPW, through a series of culverts and a storm

drain system. The San Dieguito River connects to Lake Hodges, and eventually to the Pacific Ocean, a TNW; and therefore Feature 1 exhibits a hydrologic connection with a RPW and a TNW. Feature 1 displays an OHWM that is approximately 7-feet wide at the upstream end and widens to approximately 15-feet wide at the downstream portions within the survey area. Two soil pits were dug within the low-flow channel of Feature 1, one (DP1) in the upstream portion of the drainage, and another (DP2) in the downstream portion of the drainage where the OHWM widens. Soils within this drainage feature are the same at both data points, 10YR 3/3, with a sandy loam texture and are the same throughout the entire survey area. Soils within both data points are compacted and shovel refusal was felt at approximately 6 inches. No redoximorphic features or other hydric soil indicators were observed at DP1 or DP2. Hydrology was also absent from both data points as both ephemeral features showed no signs of regular water flow. Hydrophytic vegetation was observed at DP2 due to the presence of mature southern riparian woodland and closed canopy above. Therefore, Feature 1 is not considered a wetland; however, due to hydrological downstream connectivity to a RPW and TNW this feature may be considered a Water of the U.S. potentially subject to USACE and RWQCB jurisdiction.

Feature 2

Feature 2 originates as an ephemeral channel but becomes more incised as it flows downstream draining local runoff from a north-facing hill. As it continues downstream to the east, the OHWM maintains an average width of approximately 5-feet before making a steep descent down another hill, widening to 11-feet before reaching the man-made freshwater pond. Before leaving the survey area, the downstream portion of Feature 2 widens out to approximately 15-feet before exiting through a culvert below Cloverdale Road. Soils within Feature 2 are sandy loam with a color of 10YR 3/3. No redoximorphic features or other hydric soil indicators were observed. No observed hydrology was observed during the survey and no hydrophytic vegetation exists throughout a majority of Feature 2 except for the downstream portion which contains a stand of mulefat. Feature 2 continues to flow downstream offsite until it connects to the San Dieguito River. No wetland indicators were observed within Feature 2, but since there is a hydrologic connection to a RPW and eventually a TNW, Feature 2 may be potentially subject to USACE and RWQCB jurisdiction.

Feature 3

Feature 3 transects Reach 3 of the proposed pipeline route and conveys local upland runoff downstream, through a culvert below Cloverdale Road and connects to the San Dieguito River in offsite areas. Feature 3 contains an average OHWM of approximately 20-feet and is characterized by upland vegetation. The downstream end of Feature 3 contains a canopy of gum trees and ornamental pines. No hydrophytic vegetation is associated with this feature. Additionally, the soils are sandy loam with a color of 10YR 3/3 and no redoximorphic features or other hydric soil indicators. No hydrology indicators were observed within Feature 3 due to the lack of surface hydrology or signs of regular flow. Therefore, no wetlands are located within Feature 3, but due to the presence of an OHWM and hydrologic connectivity to a RPW and TNW, this feature is potentially subject to USACE and RWQCB jurisdiction.

Pond

The man-made pond along Reach 2 of the proposed pipeline was created in the middle of the flow-line for Feature 2 and receives flows during rain events and conveys flows downstream along the downstream end of Feature 2 when the pond overflows. This pond is similar to other irrigation ponds in the vicinity and serves the local farmers by collecting and storing water that flows naturally and pumped through irrigation. The pond does not contain any vegetation, let alone hydrophytic species, so the determination of hydric soils and hydrology was not required to pass the three-parameter test, and therefore the pond does not function as a wetland. However, there is hydrologic connectivity to a downstream RPW and TNW, which may fall under USACE and RWQCB jurisdiction.

Waters of the State and Local Waters

Waters of the State potentially subject to the jurisdiction of CDFW and the County of San Diego RPO include Feature 1, Feature 2, Feature 3, and the Pond, including associated riparian habitat. Additionally, Feature 4 is considered a potential Water of the State due to its conveyance of flows during rain events but lack of downstream hydrologic connectivity. Areas delineated as Waters of the State are also considered potential local waters and were delineated in the same manner.

Feature 1

In addition to the portions of Feature 1 described under Waters of the U.S., CDFW jurisdiction includes the outer limits of the bank to bank, particularly in the upstream portion of the feature, and the associated riparian canopy in the downstream portion. The upstream portion contains upland ruderal vegetation so the jurisdictional limits were mapped at the outer banks. The downstream portion is characterized by southern riparian woodland which was mapped as the outer limits of potential jurisdiction. Potential County of San Diego wetlands is also mapped for the outer limits of the riparian canopy associated with the drainage feature.

Feature 2

In addition to the portions of Feature 2 described under Waters of the U.S., CDFW jurisdiction includes the bank to bank width of the drainage feature because no hydrophytic or riparian vegetation is associated with Feature 2. Potential County of San Diego wetlands are also delineated out to the bank to bank width because no other County wetland parameters occur within Feature 2.

Feature 3

In addition to the portions of Feature 3 described under Waters of the U.S., CDFW jurisdiction includes the outer widths of the banks on the ephemeral drainage. Vegetation associated with this feature contain orchards and disturbed uplands, and therefore CDFW jurisdiction and County of San Diego wetlands are mapped the same.

Feature 4

Feature 4 was not included in the discussion of potential Waters of the U.S. because this feature lacks any downstream connectivity with a RPW or TNW, but it does convey flows downstream and thus may be potentially jurisdictional by CDFW and the County of San Diego RPO. The

potential jurisdictional limits were mapped out to bank to bank of the drainage, and also include areas with associated canopy cover of fan palm and arroyo willow.

Pond

CDFW jurisdiction includes the outer limits of the Pond. Additionally, because there is no associated hydrophytic vegetation the potential jurisdictional limits did not include associated riparian habitat. Potential County of San Diego wetlands are also delineated out to the limits of the Pond.

4.3 Discussion and Conclusions

The total areas mapped during the delineation survey that may be subject to the jurisdiction of USACE, RWQCB, CDFW, and/or City are summarized below. These estimates are preliminary and the final determination of jurisdiction will be determined by each regulatory agency during the permitting/approval process. The estimated acreages are summarized in Table 2 and further discussed below.

Waters of the United States

Waters of the U.S. that are subject to the jurisdiction of the USACE under Section 404 of the CWA include the OHWM limits observed within Feature 1, Feature 2, Feature 3, and the Pond. All four features are hydrologically connected to the San Dieguito River, a RPW, which eventually connects to the Pacific Ocean, a TNW. As discussed above, all four features convey upland runoff from rain events, downstream through a series of culverts and eventually drains into the San Dieguito River. None of these features are mapped as riverine features by the NWI, and all four features are considered Non-Wetland Waters of the U.S. as mapped within the survey area. Therefore, a total of 0.99 acre of Waters of the U.S. occur within the survey area and may be impacted by the proposed project, which would require obtaining a Section 404 CWA permit from the USACE.

Waters of the State

San Diego Regional Water Quality Control Board

The features described above as subject to USACE's jurisdiction also potentially fall under the authority of the San Diego RWQCB in accordance with Section 401 of the CWA. Therefore, a total of approximately 0.99 acre occurs within the survey area and may be impacted by the project, which would require a Section 401 water quality certification from the San Diego RWQCB.

California Department of Fish and Wildlife

Areas under CDFW jurisdiction mapped in the survey area include all wetland and non-wetland Waters of the State, as well as upland banks and associated habitats (Figure 5b). Additionally, Feature 4 is included in potential CDFW jurisdiction. These areas have been mapped to the outer limits of a defined bed and bank, and/or associated riparian habitat, and account for 4.92 acres of the survey area. CDFW jurisdictional areas may be impacted by the proposed project, and would require obtaining a streambed alteration agreement from CDFW.

Local Waters

County of San Diego Wetlands

Areas potentially considered County of San Diego wetlands include all areas mapped and considered potential Waters of the State regulated by CDFW. Approximately 4.92 acres of County of San Diego wetlands have been mapped for the survey area and may be impacted by the project which would require permitting through the County of San Diego RPO.

5. Supplemental Information

5.1 Directions to the Project

From San Diego, take Interstate 15 north towards Escondido. Exit at Bear Valley Parkway and travel east then north for approximately 3.5 miles, turn east onto San Pasqual Valley Road, then turn immediately north onto Citrus Avenue for less than 1 mile and turn east onto Mountain View Drive. The survey area is accessible through the Grangetto property at 2601 Mountain View Drive.

5.2 Project Applicant Contact Information

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APPENDIX A
Wetland Datasheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Escondido Pipeline City/County: Escondido/San Diego Sampling Date: 8/17/16

Applicant/Owner: City of Escondido State: CA Sampling Point: DP1

Investigator(s): T. Molioo, R. Humphrey, A. Bennett Section, Township, Range: Sec 7, T 16 South, R 3 West

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): C Lat: 33.117255° Long: -117.032014° Datum: NAD 83

Soil Map Unit Name: Visallia 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 X, Soil X, 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	No x	**Is the Sampled Area within a Wetland?** **Yes** **No X**
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:

Natural drainage with added culvert (black piping 2" diameter) to allow water to pass below created road that goes across the southern end of the drainage.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Nicotiana glauca	1	yes	FAC
2.			
3.			
4.			
	1	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Malosma laurina	5	yes	UPL
2. Artemisia californica	5	yes	UPL
3. Eriogonum fasciculatum	3	no	UPL
4.			
5.			
	13	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Hirschfeldia incana	60	yes	UPL
2. Phacelia distans	3	no	OBL
3. Croton setigerus	10	no	UPL
4. Sysimbrium irio	10	no	UPL
5. Pseudognaphalium canescens	2	no	FACU
6.			
7.			
8.			
	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.25 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 3	x 1 =	3
FACW species	x 2 =	
FAC species 1	x 3 =	3
FACU species 2	x 4 =	8
UPL species 93	x 5 =	465
Column Totals: 99 (A)		479 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

___ 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.

Hydrophytic Vegetation Present? **Yes** **No x**

Remarks:

Lots of debris ground cover.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Escondido Pipeline City/County: Escondido/San Diego Sampling Date: 8/17/16

Applicant/Owner: City of Escondido State: CA Sampling Point: DP2

Investigator(s): T. Molioo, R. Humphrey, A. Bennett Section, Township, Range: Sec 7, T 16 South, R 3 West

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): C Lat: 33.116953° Long: -117.033403° Datum: NAD 83

Soil Map Unit Name: Visallia 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 X, Soil X, 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 No X**
Hydric Soil Present?	Yes No x	
Wetland Hydrology Present?	Yes No x	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	25	yes	FACW
2. Quercus agrifolia	45	yes	UPL
3. Washingtonia filifera	5	no	FAC
4. Ficus sp.	10	no	FACU
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Washingtonia robusta	2	no	FACW
2. Fraxinus uhdei	1	no	UPL
3.			
4.			
5.			
	3	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Parthenocissus quinquefolia	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 27	x 2 =	54
FAC species 5	x 3 =	15
FACU species 90	x 4 =	360
UPL species 45	x 5 =	225
Column Totals: 167	(A)	654 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

x Dominance Test is >50%

x 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.

Hydrophytic Vegetation Present? **Yes x No**

Remarks:

Flows impeded upstream by large date palm.

SOIL

Sampling Point: DP2

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
0-6	10 YR 3/3	100	0				sandy loam	same throughout

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: compacted soil

Depth (inches): 6”

Hydric Soil Present? Yes _____ No x

Remarks:

Compacted soil; no hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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 _____ No X Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

OWHM ~15’ wide.

APPENDIX B
Plant Species Compendium

Group	Family	Scientific Name	Common Name
LYCOPHYTES [=LYCOPODS]	Selaginellaceae - Spike-Moss Family	*Selaginella bigelovii*	Bigelow's Mossfern
ANGIOSPERMS-MONOCOTS	Agavaceae - Agave Family	*Hesperoyucca whipplei*	Our Lord's Candle
ANGIOSPERMS-MONOCOTS	Araceae - Arum/Duckweed Family	*Washingtonia robusta**	Mexican Fan Palm
ANGIOSPERMS-MONOCOTS	Arecaceae (Palmae) - Palm Family	*Phoenix canariensis**	Canary Island Date Palm
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Avena barbata**	Slender Oat
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Avena fatua**	Wild Oat
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Bromus diandrus**	Ripgut Grass
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Bromus madritensis ssp. rubens**	Foxtail Chess, Red Brome
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Melinis repens**	Natal Grass
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Stipa coronatum*	Giant Stipa
ANGIOSPERMS-MONOCOTS	Poaceae - Grass Family	*Triticum aestivum**	Cereal Wheat
ANGIOSPERMS-EUDICOTS	Adoxaceae - Adoxa Family	*Sambucus nigra ssp. caerulea*	Blue Elderberry
ANGIOSPERMS-EUDICOTS	Aizoaceae - Fig-Marigold Family	*Carpobrotus chilensis**	Sea Fig
ANGIOSPERMS-EUDICOTS	Anacardiaceae - Sumac or Cashew Family	*Malosma laurina*	Laurel Sumac
ANGIOSPERMS-EUDICOTS	Anacardiaceae - Sumac or Cashew Family	*Rhus ovata*	Sugar Bush
ANGIOSPERMS-EUDICOTS	Anacardiaceae - Sumac or Cashew Family	*Schinus molle**	Peruvian Peppertree
ANGIOSPERMS-EUDICOTS	Anacardiaceae - Sumac or Cashew Family	*Schinus terebinthifolius**	Brazilian Pepper Tree
ANGIOSPERMS-EUDICOTS	Apiaceae - Carrot Family	*Foeniculum vulgare**	Fennel
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Acourtia microcephala*	Sacapellote, Purpleheads
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Artemisia californica*	California Sagebrush
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Baccharis pilularis*	Chaparral Broom, Coyote Brush
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Baccharis salicifolia*	Mule-Fat, Seep-Willow
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Baccharis sarothroides*	Broom Baccharis
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Brickellia californica*	California Brickellbush
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Carduus pycnocephalus**	Italian Thistle
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Encelia californica*	California Encelia
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Encelia farinosa*	Brittlebush
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Erigeron bonariensis**	Flax-leaf Fleabane
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Erigeron canadensis*	Horseweed
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Eriophyllum confertiflorum*	Golden-yarrow
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Gazania linearis*	Treasure Flower
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Glebionis coronarium**	Garland Chrysanthemum
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Gutierrezia sarothrae*	Matchweed
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Hazardia squarrosa*	Saw-toothed Goldenbush
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Helianthus gracilentus*	Slender Sunflower
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Heterotheca grandiflora*	Telegraph Weed
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Lactuca serriola**	Prickly Lettuce
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Pseudognaphalium californicum*	California Everlasting
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Pseudognaphalium biolettii*	Bicolor Cudweed
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Pseudognaphalium microcephalum*	White Everlasting
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Sonchus asper**	Prickly Sow Thistle
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Sonchus oleraceus**	Common Sow Thistle
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Stephanomeria exigua*	Small Wreath-Plan
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Stephanomeria* sp.	Wreath-Plant
ANGIOSPERMS-EUDICOTS	Asteraceae - Sunflower Family	*Stylocline gnaphaloides*	Everlasting Nest-Straw
ANGIOSPERMS-EUDICOTS	Brassicaceae - Mustard Family	*Brassica nigra**	Black Mustard
ANGIOSPERMS-EUDICOTS	Brassicaceae - Mustard Family	*Hirschfeldia incana**	Shortpod Mustard
ANGIOSPERMS-EUDICOTS	Brassicaceae - Mustard Family	*Lepidium sp.*	Pepperweed
ANGIOSPERMS-EUDICOTS	Brassicaceae - Mustard Family	*Sisymbrium irio**	London Rocket
ANGIOSPERMS-EUDICOTS	Cactaceae - Cactus Family	*Opuntia ficus-indica*	Indian Fig
ANGIOSPERMS-EUDICOTS	Cactaceae - Cactus Family	*Opuntia littoralis*	Coast Pricklypear
ANGIOSPERMS-EUDICOTS	Chenopodiaceae - Goosefoot Family	*Dysphania ambrosioides*	Mexican Tea
ANGIOSPERMS-EUDICOTS	Chenopodiaceae - Goosefoot Family	*Salsola tragus**	Russian Thistle
ANGIOSPERMS-EUDICOTS	Cistaceae - Rock-Rose Family	*Helianthemum scoparium*	Peak Rush-rose
ANGIOSPERMS-EUDICOTS	Convolvulaceae - Morning-Glory Family	*Cuscuta californica*	Dodder
ANGIOSPERMS-EUDICOTS	Crassulaceae - Stonecrop Family	*Dudleya pulverulenta*	Chalk-lettuce
ANGIOSPERMS-EUDICOTS	Cucurbitaceae - Gourd Family	*Marah macrocarpa*	Wild Cucumber
ANGIOSPERMS-EUDICOTS	Euphorbiaceae - Spurge Family	*Croton setiger*	Doveweed
ANGIOSPERMS-EUDICOTS	Euphorbiaceae - Spurge Family	*Euphorbia maculata**	Spotted Spurge

ANGIOSPERMS-EUDICOTS	Euphorbiaceae - Spurge Family	*Euphorbia polycarpa*	Prostrate Spurge
ANGIOSPERMS-EUDICOTS	Fabaceae - Legume Family	*Acmispon glaber*	Deerweed
ANGIOSPERMS-EUDICOTS	Fabaceae - Legume Family	*Melilotus albus**	White Sweet Clover
ANGIOSPERMS-EUDICOTS	Fagaceae - Oak Family	*Quercus agrifolia*	Coast Live Oak
ANGIOSPERMS-EUDICOTS	Geraniaceae - Geranium Family	*Erodium cicutarium**	Red-stem Filaree
ANGIOSPERMS-EUDICOTS	Geraniaceae - Geranium Family	*Geranium carolinianum*	Carolina Geranium
ANGIOSPERMS-EUDICOTS	Hydrophyllaceae - Waterleaf Family	*Phacelia ramisissima*	Branching Phacelia
ANGIOSPERMS-EUDICOTS	Lamiaceae - Mint Family	*Marrubium vulgare**	Horehound
ANGIOSPERMS-EUDICOTS	Lamiaceae - Mint Family	*Salvia apiana*	White Sage
ANGIOSPERMS-EUDICOTS	Lamiaceae - Mint Family	*Salvia columbariae*	Chia
ANGIOSPERMS-EUDICOTS	Lamiaceae - Mint Family	*Salvia mellifera*	Black Sage
ANGIOSPERMS-EUDICOTS	Lauraceae - Fig Family	*Persea americana**	Avocado Tree
ANGIOSPERMS-EUDICOTS	Malvaceae - Mallow Family	*Malva parviflora**	Cheeseweed
ANGIOSPERMS-EUDICOTS	Montiaceae - Montia Family	*Portulaca oleracea**	Common Purslane
ANGIOSPERMS-EUDICOTS	Moraceae - Mulberry Family	*Ficus carica*	edible fig
ANGIOSPERMS-EUDICOTS	Myrtaceae - Myrtle Family	*Eucalyptus spp.*	Gum Tree
ANGIOSPERMS-EUDICOTS	Orobanchaceae - Broom-Rape Family	*Cordylanthus rigidus* ssp. *setigerus*	Dark-Tip Bird's Beak
ANGIOSPERMS-EUDICOTS	Phrymaceae - Hopseed Family	*Mimulus aurantiacus*	San Diego Monkeyflower
ANGIOSPERMS-EUDICOTS	Phytolaccaceae - Pokeweed Family	*Phytolacca americana**	Tropical Pokeweed
ANGIOSPERMS-EUDICOTS	Plantaginaceae - Plantain Family	*Keckiella antirrhinoides*	Yellow Bush Penstemon
ANGIOSPERMS-EUDICOTS	Plantaginaceae - Plantain Family	*Penstemon spectabilis*	Showy Penstemon
ANGIOSPERMS-EUDICOTS	Polemoniaceae - Phlox Family	*Navarretia hamata*	Hooked Skunkweed
ANGIOSPERMS-EUDICOTS	Polygonaceae - Buckwheat Family	*Eriogonum fasciculatum*	California Buckwheat
ANGIOSPERMS-EUDICOTS	Polygonaceae - Buckwheat Family	*Polygonum aviculare ssp. depressum*	Common Knotweed
ANGIOSPERMS-EUDICOTS	Polygonaceae - Buckwheat Family	*Pterostegia drymarioides*	Granny's Hairnet
ANGIOSPERMS-EUDICOTS	Ranunculaceae - Buttercup Family	*Clematis pauciflora*	Small-Leaf Virgin's Bower
ANGIOSPERMS-EUDICOTS	Rhamnaceae - Buckthorn Family	*Rhamnus ilicifolia*	Holly-Leaf Redberry
ANGIOSPERMS-EUDICOTS	Rosaceae - Rose Family	*Adenostoma fasciculatum*	Chamise
ANGIOSPERMS-EUDICOTS	Rosaceae - Rose Family	*Prunus ilicifolia*	Holly-Leaf Cherry
ANGIOSPERMS-EUDICOTS	Salicaceae - Willow Family	*Salix lasiolepis*	Arroyo Willow
ANGIOSPERMS-EUDICOTS	Scrophulariaceae - Figwort Family	*Scrophularia californica*	California Figwort
ANGIOSPERMS-EUDICOTS	Solanaceae - Nightshade Family	*Datura wrighti*	Western Jimson Weed
ANGIOSPERMS-EUDICOTS	Solanaceae - Nightshade Family	*Nicotiana glauca**	Tree Tobacco
ANGIOSPERMS-EUDICOTS	Vitaceae - Grape Family	*Parthenocissusv inserta**	Woodbane
ANGIOSPERMS-EUDICOTS	Rosaceae - Rose Family	*Cercocarpus minutiflorus*	San Diego Mountain-Mahogany
ANGIOSPERMS-EUDICOTS	Tamaricaceae - Tamarisk Family	*Tamarix ramosissima**	Tamarisk, Salt-Cedar

APPENDIX C
Site Photographs

Appendix C: Site Photographs

Photograph 1: Taken at data point DP1, facing north (upstream) within Feature 1.

Photograph 2: Taken at DP1, facing south (downstream) within Feature 1. Culvert that allows flows to continue below the dirt road is covered in vegetation.

Photograph 3: Taken at DP2 within Feature 1, facing southwest (downstream).

Photograph 4: Taken at DP2 within Feature 1, facing northeast (upstream). Note large palm tree in the center of the drainage.

Photograph 5: Taken at a culvert below a dirt access road in the upstream portion of Feature 2. Flows originate further upslope.

Photograph 6: Facing downstream at Feature 2 from the culvert depicted in photograph 5.

Photograph 7: Taken at a culvert below a dirt access road in the center of Feature 2. Flows originate further upstream as depicted in photographs 5 and 6.

Photograph 8: Taken near Hogback Reservoir, facing southeast towards Feature 2 at the line of rocks in the center of the photograph.

APPENDIX C

Phase I Cultural Resources Study

PUBLIC VERSION

EASTERN RECYCLED WATER SYSTEM PROJECT

Phase I Cultural Resources Study

Prepared for
City of Escondido

April 2015

PUBLIC VERSION

EASTERN RECYCLED WATER SYSTEM PROJECT

Phase I Cultural Resources Study

Prepared for:
City of Escondido
201 North Broadway
Escondido, CA, 92025

April 2015

Prepared by:
ESA
626 Wilshire Boulevard, Suite 1100
Los Angeles, California 90017

Project Location: Escondido (CA) USGS 7.5-minute Topographic Quad
Township 12 South, Range 2 West, Unsectioned

Acreage: Approx. 97 acres

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150245.00

TABLE OF CONTENTS

Eastern Recycled Water System Project
Phase I Cultural Resources Study

EXECUTIVE SUMMARY

Eastern Recycled Water System Project Phase I Cultural Resources Study

Environmental Science Associates (ESA) has been retained by the City of Escondido (City) to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Eastern Recycled Water System Project (Project). The proposed Project includes the construction of a recycled water distribution system that would transport treated recycled water from a proposed Micro Filtration/Reverse Osmosis (MFRO) Treatment Facility to six local avocado growers surrounding Hogback Reservoir. The proposed MFRO Facility will be constructed as part of a separate project and is located approximately 2.25 miles northeast of the proposed Project.

The Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The EPA established a process, known as California Environmental Quality Act (CEQA)-Plus, for SWRCB to administer the SRF Loan Program in compliance with federal statutes. This Phase I cultural resources study has been prepared in support of the IS/MND in compliance with CEQA-Plus guidelines. The City is the lead agency responsible for compliance with CEQA-Plus.

The Area of Potential Effects (APE) encompasses the Project footprint, including the recycled water pipelines, the new potable water tank, storage ponds, and Hogback Reservoir, as well as a 100-foot buffer around the Project components. The horizontal APE encompasses 97 acres. The vertical APE includes the anticipated maximum depth of ground disturbance of 8.5 feet below ground surface. The APE is located within the City of Escondido, in northwest San Diego County. Specifically, the Project is located west of the intersection of Cloverdale Road and State Route 78 within the southeastern portion of Escondido in an un-sectioned portion of the Escondido and Valley Center 7.5-minute U.S. Geological Survey (USGS) topographic quadrangles.

The result of the records search indicated that 24 cultural resources have been previously recorded within a 1/2 mile of the APE. Of these, four (P-37-019062, P-37-019064, CA-SDI-011048, and CA-SDI-015818) are within the Project APE. Two of the resources are prehistoric archaeological sites consisting of bedrock milling stations (CA-SDI-011048 and CA-SDI-015818). The third resource is a historic-period built resource consisting of the Escondido Gravity Float Line (P-37-019064). The fourth resource is a prehistoric isolate (P-37-019062) consisting of a chipped stone flake.

A Sacred Lands File (SLF) search was requested from the California Native American Heritage Commission (NAHC) on October 1, 2015. The NAHC SLF search results did not indicate the presence of known Native American cultural resources within the vicinity of the Project APE. Follow-up contact with Native American groups and/or individuals identified by the NAHC as having affiliation with the Project APE vicinity was conducted via certified mail on October 27, 2015 and via phone on November 19, 2015 and December 3 through December 7, 2015. Of the eighteen individuals contacted, two responses were received. Mr. Clint Linton, Director of Cultural Resources, Lipay Nation of Santa Ysabel (Diegueno/Kumeyaay) requested that a Kumeyaay Native American monitor be present. In addition, Mr. Steve Banegas, Chairman, Kumeyaay Cultural Repatriation Committee (Diegueno/Kumeyaay) also requested the presence of a Native American monitor.

A geoarchaeological review of the APE and vicinity was conducted in order to evaluate the potential for buried archaeological resources. Geologically, the APE is located within the Peninsular Ranges geomorphic province, which is dominated by granitic bedrock outcrops. The existence of exposed bedrock outcroppings with evidence for grinding/milling suggests relative landform stability and a general absence of deposition capable of deeply burying any archaeological remains. The geoarchaeological review indicates that the potential for surface archaeological sites is considered high, but the potential for buried archaeological sites is considered low.

A cultural resources field survey of the APE was conducted on January 13 and 28, 2016. No new cultural resources were identified during the survey. One previously recorded resource (CA-SDI-011048) was relocated and two previously recorded resources (CA-SDI-015818 and P-37-019062) could not be relocated. One previously recorded resource (P-37-019064) is underground and was not visible to surveyors.

Four cultural resources were identified within the Project APE as a result of this study (P-37-019062, P-37-019064, CA-SDI-011048, and CA-SDI-015818). Resources P-37-019064 (Escondido Gravity Float Line), CA-SDI-011048 (bedrock milling station), and P-37-019062 (prehistoric isolate) are not eligible for the NRHP, CRHR, and/or local listing, and do not meet the definition of historic properties under Section 106 of the NHPA or historical resources and/or unique archaeological resources under CEQA. Resource CA-SDI-015818 (bedrock milling station) could not be relocated and has not been evaluated for its significance. ESA recommends a finding of no effect to historic properties under Section 106 of the NHPA.

Due to the archaeological sensitivity of the area for surface archaeological sites, recommendations for construction worker cultural resources training, archaeological and Native American monitoring, and procedures to follow in the event of the discovery of archaeological resources or human remains are provided in the *Conclusions and Recommendations* section at the close of this report in order to reduce impacts to historical resources and/or unique archaeological resources to less than significant under CEQA.

EASTERN RECYCLED WATER SYSTEM PROJECT

Phase I Cultural Resources Study

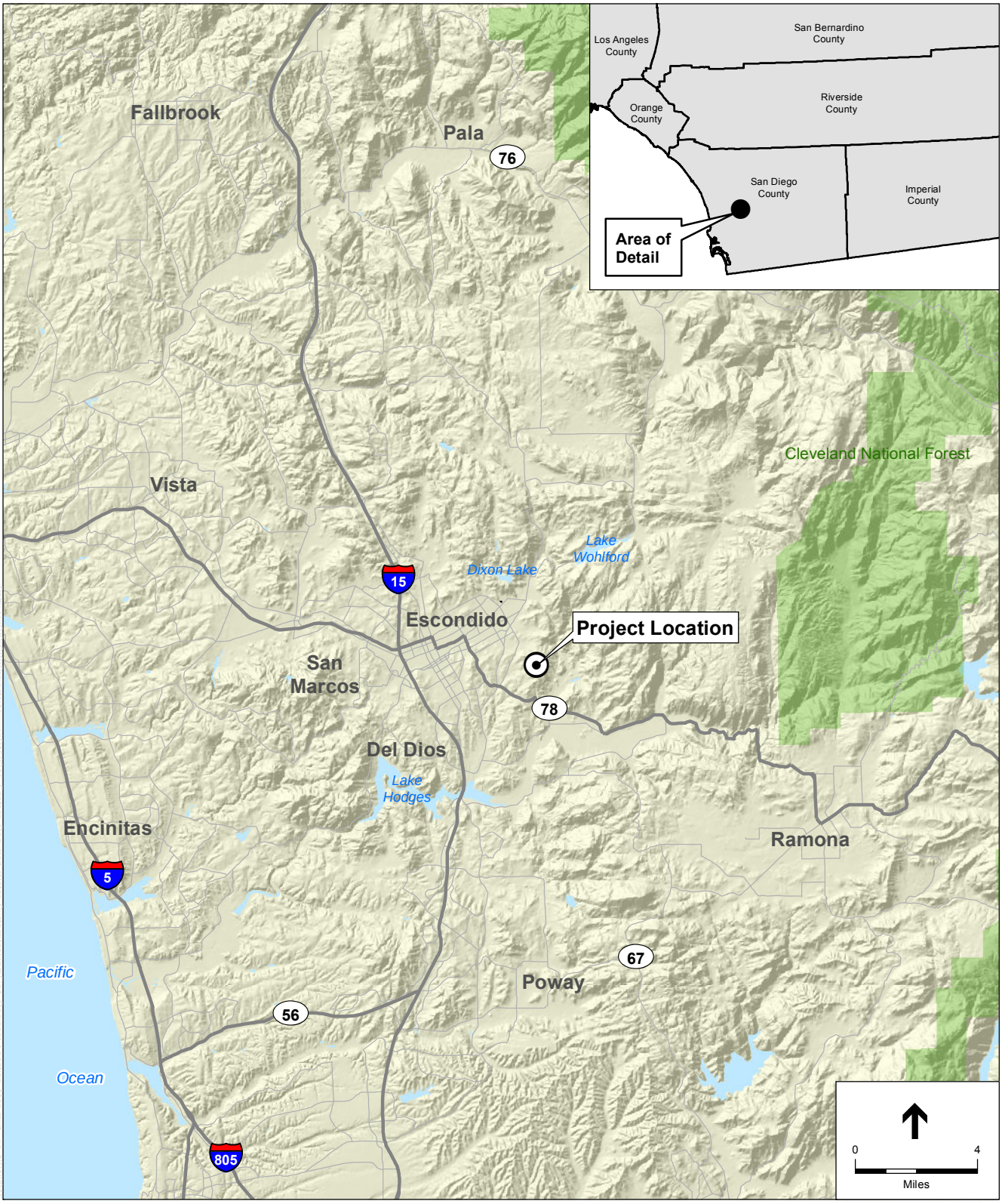
Introduction

Environmental Science Associates (ESA) has been retained by the City of Escondido (City) to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Eastern Recycled Water System Project (Project). The proposed Project includes the construction of a recycled water distribution system that would transport treated recycled water from a proposed Micro Filtration/Reverse Osmosis (MFRO) Treatment Facility to six local avocado growers surrounding Hogback Reservoir. The proposed MFRO Facility will be constructed as part of a separate project and is located approximately 2.25 miles northeast of the proposed Project. Avocados producers are a vital part of Escondido's community and its economy, and water quality for avocado production is important for quantity and quality of production. For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production.

The Project is eligible for funding from the State Revolving Fund (SRF) Loan Program, which is administered by the California State Water Resources Control Board (SWRCB). Since the SRF Loan Program is partially funded by the U.S. Environmental Protection Agency (EPA), it is subject to federal environmental regulations including Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The EPA established a process, known as California Environmental Quality Act (CEQA)-Plus, for SWRCB to administer the SRF Loan Program in compliance with federal statutes. This Phase I cultural resources study has been prepared in support of the IS/MND in compliance with CEQA-Plus guidelines. The City is the lead agency responsible for compliance with CEQA-Plus.

Project Location

The 97-acre Project site is located within the City of Escondido, in northwest San Diego County (**Figure 1**). Specifically, the Project is located within the eastern portion of Escondido in an un-sectioned portion of the Escondido 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle, Township 12 South/ Range 1 and 2 West (**Figure 2**).

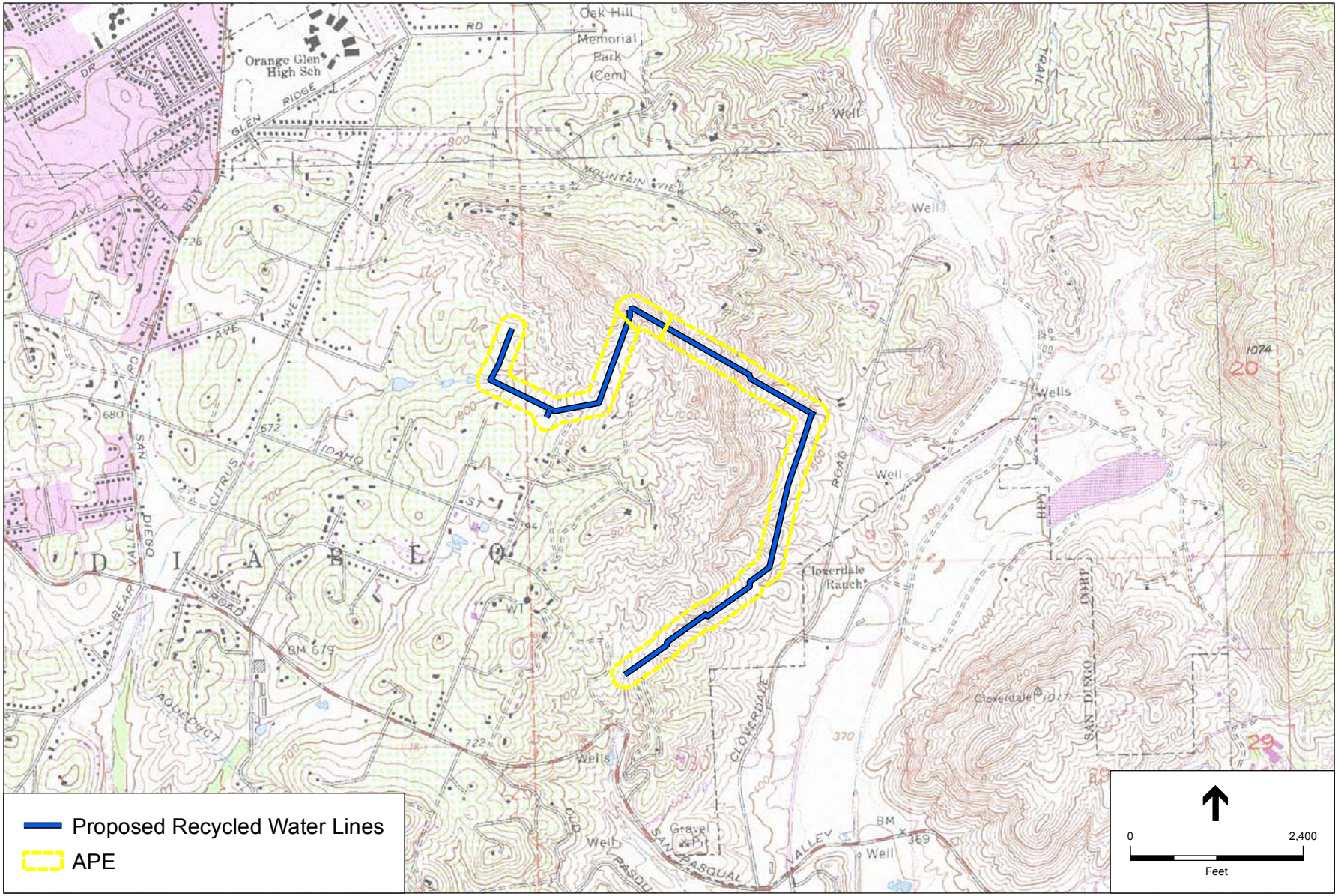


SOURCE: ESRI.

Escondido Eastern Recycled Water System. 150245

Figure 1

Regional Location Map



SOURCE: Escondido, San Pasqual and Valley Center Topoquads

Escondido Eastern Recycled Water System. 150245

Figure 2

Project Location

Project Description

Agricultural producers are a vital part of Escondido's community and its economy. Avocados are one of the most important crops grown in San Diego County, and water quality for avocado production is important for quantity and quality of production. Growers maintain a high demand for water, specifically low-salinity water. Water must be low in chlorides and other constituents to avoid leaf burn, root rot, and the need for excessive flushing. Salinity management issues take priority due to the drought in California forcing a shift to higher salinity source water. For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production.

The proposed project would include the construction of a recycled water distribution system that would transport treated recycled water from a proposed Micro Filtration/Reverse Osmosis (MFRO) Treatment Facility to six local avocado growers surrounding Hogback Reservoir. The proposed MFRO Facility will be constructed as part of a separate project and is located northwest of East Washington Avenue between North Citrus Avenue and East El Norte Parkway within the eastern portion of Escondido, approximately 2.25 miles northeast of the proposed Project. The system would include recycled water pipelines, a new potable water tank, and storage ponds to distribute recycled water. The proposed project would also include the conversion of the existing Hogback Reservoir, currently a potable water reservoir serving the project sites, to a recycled water reservoir. The new potable reservoir is proposed to be located next to the existing Hogback Reservoir to provide continued potable water storage for existing residential potable uses.

The project area encompasses 97-acres and would service six properties. Each of the properties has at least one ground water well and property owners have indicated that the groundwater is of poor quality for their farming operations.

Hillebrecht/Birch

The Hillebrecht grove includes 186 acres total with approximately 93 acres that are in agricultural production. The grove is located across portions of twelve separate parcels with six houses that are served from the existing meters. The Hillebrecht's also operate the contiguous 37 acre parcel owned by the Birch family to the northwest. The grove peak demand is 580 gallons per minute (gpm), with a total annual demand of about 455 acre-feet per year (afy) for the grove.

Wylie

The Wylie grove include 103 acres total with approximately 101 acres of avocados. The grove is made up of eight parcels and has one house on the property. The grove peak demand is 600 gpm, with a total annual demand of approximately 490 afy for the grove.

Grangetto

The Grangetto Ranches include two distinct grove areas, an east and west grove. The west grove is 76 acres total with approximately 71 acres of citrus and avocados and is made up of six parcels. In addition to the six parcels of the Grangetto Ranches, there are three other contiguous parcels

that are operated by the Grangetto's but owned by others. These parcels total five acres with approximately three acres of avocados. The east grove area is 39 acres with approximately 16 acres of avocados and the rest unfarmed. The east and west groves peak demand is 470 gpm, with a total annual demand of approximately 290 afy for both.

Bar-B Ranch

The Bar-B Ranch grove is operated by the Henry Avocado Corporation and has 69 acres total with approximately 55 acres of avocados. The grove is made up of five parcels with three houses. The grove peak demand is 650 gpm, with an annual demand of about 390 afy.

Heritage Ranch

This property is made up of one 54-acre parcel with approximately 40 acres of avocados. There is currently one house and one house being developed. There is a 30 horse power booster pump station that supplies the higher elevations on the grove.

Rancho Brovo

This grove is made up of one parcel that includes 25 acres total with about 23 acres of avocados. There are two houses located on the parcel. The grove peak demand is 400 gpm, with an annual demand of about 118 afy.

Recycled Water Demand by Site Owner

The agricultural customers identified in Table 1 below grow avocados with only one of these that also grows citrus. Table 2-1 identifies the estimated recycled water flow to each of the sites. The proposed flows would be in the range of two mgd to four mgd, which equates to a range of 1,400 gpm to 2,800 gpm.

TABLE 1
ESTIMATED FLOWS BY SITE

Site Name/Owner	Number of Associated Parcels	Estimated Irrigated Acreage	Estimated Annual Demand (acre-feet)	Estimated Peak Flow (gpm)
Hillebrecht/Birch	13	130	455	580
Wylie	8	101	354	445
Grangetto West & East	10	87	305	385
Bar-B Ranch	6	55	193	250
Heritage Ranch	1	40	140	180
Rancho Brovo	1	23	81	105
Total	39	436	1,528	1,945

SOURCE: Eastern Recycled Water System Preliminary Design Report.

Recycled Water Pipeline Corridor

The recycled water pipeline would be installed above ground using high-density polyethylene (HDPE) fusion welded pipe and would include four reaches (Reach 1-4). Table 2 summarizes the pipeline length and size for each reach.

TABLE 2
REACH PIPELINE LENGTH AND SIZE

Reach	Length (feet)	Size (In.)	No. of Services
1	3,080	8	2-3”
2	3,010	20	1-2”
3	2,360	12	2-4”
4	2,450	10	2-4” & 1-3”

SOURCE: Eastern Recycled Water System Preliminary Design Report.

Reach 1 would start at the Hogback Reservoir, heading south to the Hillebrecht/Birch property, where two to three inch meters would be installed. In addition, the Hillebrecht property would provide wet weather storage for the eastern recycled water system. This storage would be open surface water storage in existing modified ponds.

Reach 2 would start at the Hogback Reservoir, heading southeast to Cloverdale. This system would be oversized for future expansion east.

Reach 3 would continue from the end of Reach 2, heading south along the south edge of the Wylie Property and would continue to the boundary of Rancho Brovo where it would turn southwest along the property edge to the boundary of Bar-B Ranch.

Reach 4 would continue from the end of Reach 3, heading southwest to the Bar-B Ranch meter. This final reach would end at the Heritage Ranch and Bar-B ranch meters.

Hogback Reservoir and Proposed Water Tank

The existing 1.2 million gallon Hogback Reservoir for potable water would be converted to recycled water tank. A new potable reservoir is proposed to be located next to the existing Hogback Reservoir to provide some potable water storage albeit significantly smaller.

Agricultural Ponds

The Hillebrecht property would provide wet weather storage for the eastern recycled water system. This storage would be open surface water storage in existing modified ponds.

Area of Potential Effects

A historic architectural/archaeological Area of Potential Effects (APE) was established for the Project according to Section 106 of the NHPA in coordination with the City (**Figure 3**). An APE is defined as:

> *…the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]).*

The 97-acre horizontal APE encompasses the Project footprint, including the recycled water pipelines, the new potable water tank, storage ponds, and Hogback Reservoir, as well as a 100-foot buffer around the Project components. The vertical APE includes the anticipated maximum depth of ground disturbance of 8.5 feet below ground surface.

Setting

Environmental Setting

The APE is situated in the southeastern portion of the City of Escondido in the North County section of San Diego County, along rural residential and agricultural land. Specifically, the APE is situated along eastern and southern aspect slopes overlooking Cloverdale Creek, a southward flowing tributary to the San Dieguito River. The terrain within the APE is hilly with elevations ranging from approximately 430 feet above mean sea level (amsl) to 1,150 feet amsl near the Hogback Reservoir Tank. Prior to urban development, the Project APE was used primarily for agricultural purposes including cattle grazing and the cultivation of orchards.

Prehistoric Setting

The chronology of coastal southern California is typically divided into three general time periods: the Early Holocene (11,000 to 8,000 before present [B.P.]), the Middle Holocene (8,000 to 4,000 B.P.), and the Late Holocene (4,000 B.P. to A.D. 1769). Within this general timeframe, the archaeology of southern California is generally described in terms of cultural "complexes." A complex is a specific archaeological manifestation of a general mode of life, characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

Early Holocene (11,000 to 8,000 B.P.)

While it is not certain when humans first came to California, their presence in southern California by about 11,000 B.P. has been well documented. At Daisy Cave, on San Miguel Island, cultural remains have been radiocarbon dated to between 11,100 and 10,950 years B.P. (Byrd and Raab, 2007). On the mainland, radiocarbon evidence confirms occupation of the Orange County and San Diego County coast by about 9,000 B.P., primarily in lagoon and river valley locations (Gallegos, 2002). During the Early Holocene, the climate of southern California became warmer

and more arid and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Horne and McDougall, 2003).

The primary Early Holocene cultural complex in coastal southern California was the San Dieguito Complex. The people of the San Dieguito Complex (about 10,000–8,000 B.P.) inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Moratto, 1984; Warren, 1967). Leaf-shaped and large-stemmed projectile points are typical of San Dieguito Complex material culture.

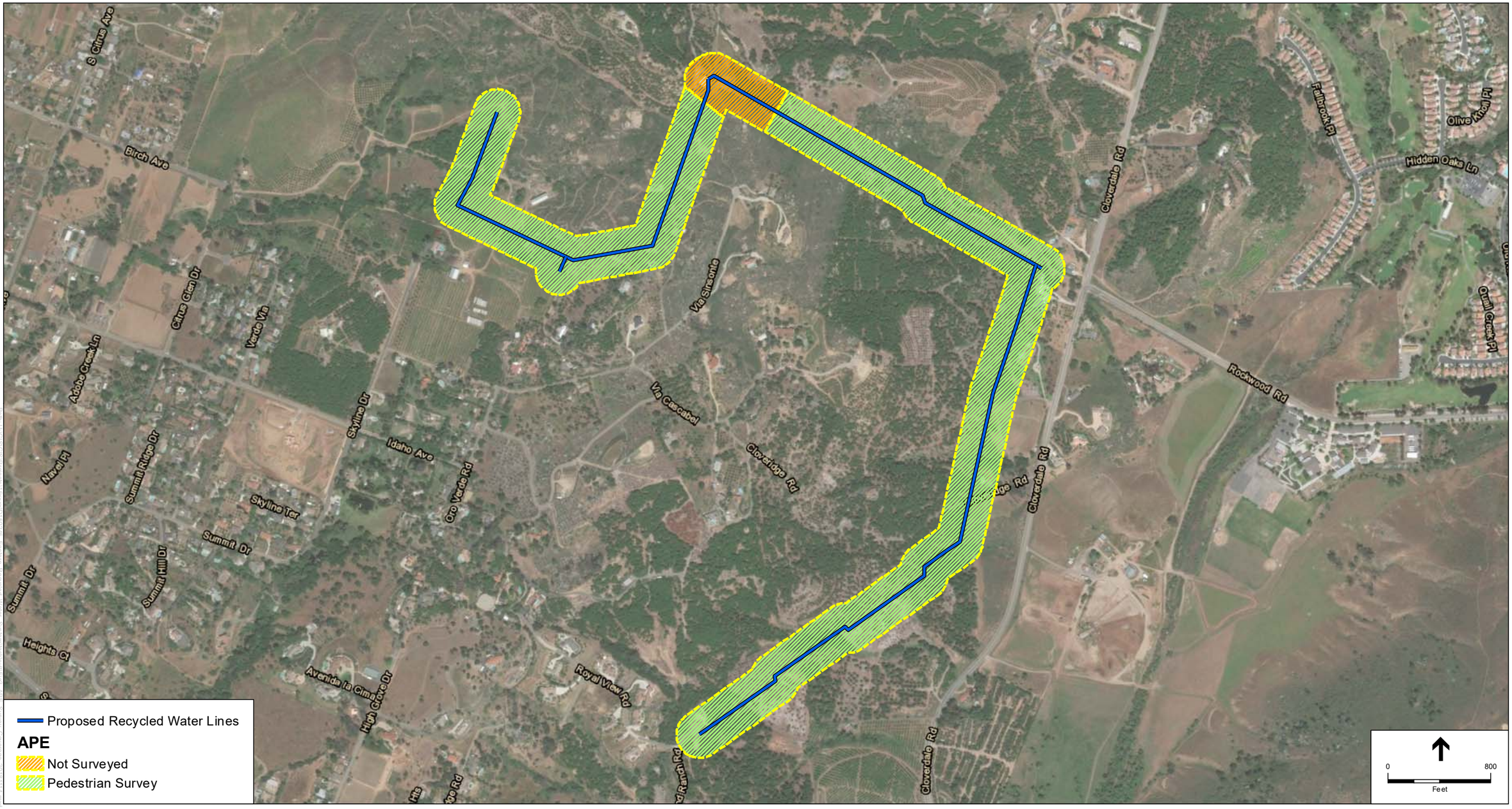
Middle Holocene (8,000 to 4,000 B.P.)

During the Middle Holocene, there is evidence for the processing of acorns for food and for the increased importance of hunting (Horne and McDougall, 2003). The processing of plant foods, particularly acorns, increased, a wider variety of animals were hunted, and trade with neighboring regions intensified (Horne and McDougall, 2003). Major technological changes appeared as well, particularly with the advent of the bow and arrow, which largely replaced the use of the dart and atlatl.

The Middle Holocene La Jolla Complex (about 8,000–4,000 B.P.) is essentially a continuation of the San Dieguito Complex. La Jolla groups lived in chaparral zones or along the coast, often migrating between the two. Coastal settlement focused around the bays and estuaries of coastal Orange and San Diego counties. La Jolla peoples produced large, coarse stone tools, but also produced well-made projectile points, and milling slabs. The La Jolla Complex represents a period of population growth and increasing social complexity, and it was also during this time period that the first evidence of the grinding of seeds for flour, as indicated by the abundance of millingstones in the archaeological record, appears (Horne and McDougall, 2003).

Late Holocene (4,000 B.P. to A.D. 1769)

During the Late Holocene, native populations of southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps. Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence, towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab, 2007). In coastal southern California, conditions became dryer and many lagoons had been transformed into saltwater marshes. Because of this, populations abandoned mesa and ridge tops to settle nearer to permanent freshwater resources (Gallegos, 2002). Although the intensity of trade had already been increasing, it reached its zenith during this time period, with asphaltum (tar), seashells and steatite being traded from southern California to the Great Basin.



SOURCE: NAIP 2014

Eastern Recycled Water System . 160580.01

Figure 3

Area of Potential Effects and Survey Coverage

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Ethnographic Setting

Luiseño

The Luiseño were named after the Mission San Luis Rey, to which many of them were relocated. The language of the Luiseño people has been identified as belonging to the Cupan group of the Takic subfamily, which is part of the larger Uto-Aztecan language family (Bean and Shipek, 1978). Luiseño territory was bordered by Agua Hedionda Creek on the south and Aliso Creek on the northwest, encompassed most of the drainage of the San Luis Rey River and the Santa Margarita River, and extended east as far as the San Jacinto Mountains. Today this area is located within northern San Diego, southern Orange, and Riverside counties, and would have encompassed a diverse environment including lagoons and marshes, coastal areas, inland river valleys, foothills, and mountains.

The Luiseño subsisted on small game, coastal marine resources, and a wide variety of plant foods such as grass seeds and acorns. Luiseño houses were conical thatched reed, brush, or bark structures. The Luiseño inhabited permanent villages centered around patrilineal clans, with each village headed by a chief (Sparkman, 1908). Seasonal camps associated with villages were also used. Each village or clan had an associated territory and hunting, collecting, and fishing areas. Villages were typically located in proximity to a food or water source, or in defensive locations, often near valley bottoms, streams, sheltered coves or canyons, or coastal strands (Bean and Shipek, 1978). It is estimated that there may have been around 50 Luiseño villages with a population of about 200 each at the time of the first Spanish contact (Bean and Shipek, 1978).

Today, there are six federally recognized tribes in California who share Luiseño tribal affiliation, language, and culture, including the La Jolla Band of Luiseño Indians (La Jolla), Rincon Band of Luiseño Indians (Rincon), Pauma Yuima Band of Mission Indians (Pauma), Pechanga Band of Luiseño Indians (Pechanga), Pala Band of Mission Indians (Pala), and Soboba Band of Luiseño Indians (Soboba).

Kumeyaay

The greater San Diego area was inhabited by a group of people known generally as the Kumeyaay. The Kumeyaay are one of many local Native groups collectively referred to as the Diegueño, specifically representing populations occupying an area that encompassed roughly southern present-day San Diego County, southern Imperial County, and northern Baja California (Kroeber, 1925). The Kumeyaay language belonged to the Yuman language family, Hokan stock (Luomala, 1978). Subsistence strategy for the Kumeyaay involved small-game hunting and resource gathering, with a noted reliance upon marine resources near San Diego Bay and along the Pacific Coast. Inland Kumeyaay populations relied primarily upon the exploitation of small game animals including insects, fish, birds, dove, rabbits, and squirrels, as well as abundantly available vegetal resources such as many varieties of seeds, principally the acorn, cacti, and herbaceous plants. Studies indicate that the Kumeyaay divided their seasonal subsistence between the mountain and the desert ecological zones. With the seasons, the Kumeyaay moved in small bands from one productive area to another to ensure a near constant food supply (Luomala, 1978).

In 1769, the Mission San Diego de Alcalá was founded and Kumeyaay were missionized and eventually moved onto reservations (Luomala, 1978). Today, Kumeyaay tribal members within the United States are divided into twelve federally recognized bands: Barona, Campo, Ewiiaapaayp, Inaja-Cosmit, Jamul, La Posta, Manzanita, Mesa Grande, San Pasqual, Santa Ysabel, Sycuan, and Viejas. An additional San Diego County band, the Kwaaymii Laguna Band of Indians, is not currently federally recognized. Several more Kumeyaay communities are present in Mexico.

Historic Setting

The first European presence near present day San Diego came in 1542, when Juan Rodriguez Cabrillo led an expedition along the coast. Europeans did not return until 1769, when the expedition of Gaspar de Portola traveled overland from San Diego to San Francisco. In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples (Horne and McDougall, 2003). The nearest mission to the Project APE was Mission San Luis Rey de Francía (San Luis Rey), founded in 1798 by Father Fermín de Francisco Lasuén de Arasqueta.

Disease and hard labor took a toll on the native populations; by 1900, the Native Californian population had declined by as much as 95 percent (Chartkoff and Chartkoff, 1984). In addition, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered.

In 1821, Mexico, which included much of present-day California, became independent from Spain, and during the 1820s and 1830s the California missions were secularized. Mission property was supposed to have been held in trust for the Native Californians, but instead was handed over to civil administrators and then into private ownership. After secularization, many former Mission Indians were forced to leave the Missions and seek employment as laborers, ranch hands, or domestic servants (Horne and McDougall, 2003).

In 1848, gold was discovered in California, leading to a huge influx of people from other parts of North America. In 1850, California became part of the United States of America. The opening of the Butterfield Overland Stage route in 1858 and later the California Southern Railroad line in 1882 greatly increased the number of people coming to southern California.

City of Escondido

In 1834, a 12,653-acre land grant, known as the Rincon del Diablo Rancho, or “corner of the devil,” located within the Escondido Valley, was granted to Juan Bautista Alvarado of San Diego. The land grant was so named because, during the Mission period, the Escondido Valley was not administered by either the San Diego or San Luis Rey missions, and such lands were believed to be outside the realm of the church (Escondido History Center, 2011). Alvarado constructed a large adobe overlooking the Escondido Valley and raised cattle for the hide and tallow trade. Alvarado transported his hides to the port of San Diego, a major depot for the hide trade, to be traded with Boston merchants for manufactured goods such as guns, powder, hardware, toilet articles, woolens, cotton goods, boots, and shoes. In the early 1850s, Juan and his wife died and

their children each sold their shares of the rancho to a San Diego judge named Oliver S. Witherby (Escondido History Center, 2011).

It took Judge Witherby a decade to acquire full title to the land from Alvarado's many heirs. Though once acquired, Witherby set to work farming and raising cattle on the land. Witherby's interest in Rancho Rincon del Diablo went beyond ranching and agriculture; he envisioned the land's true economic potential lay in its proximity to the Mormon Colony located in the San Bernardino Valley 70 miles to the north (Stanford, 1978). The colony provided a gateway to Salt Lake City and the east, and Judge Witherby predicted that a road would be constructed from the Mormon Colony to the port of San Diego, and that the thoroughfare would pass through his ranch making it an important economic hub (Stanford, 1978). Witherby's gamble didn't pay off when the Mormon Colony's economic activities gravitated toward the markets in Los Angeles. By 1868, Witherby was short of money and sold his rancho to Edward McGeary and the three Wolfskill brothers, John, Matthew and Josiah (Escondido History Center, 2011)

McGeary and the Wolfskill brothers shifted the economic activities of the rancho from cattle ranching to sheep ranching. In 1883, the ranch was sold to The Stockton Company for $128,138.70 (Escondido History Center, 2011). A year later The Stockton Company transferred its interest in the valley to The Escondido Company, which planted large vineyards of Muscat grapes. In March 1886, The Escondido Company deeded the ranch to the Escondido Land & Town Company for $104,042 (Escondido History Center, 2011). The Escondido Land & Town Company subdivided the land and planted vineyards and citrus groves and constructed the 100-room Escondido Hotel. In addition, the company gave free land to religious organizations and within a short period of time Escondido had seven churches (Escondido History Center, 2011).

In 1887, the Escondido Land & Town Company invested in the construction of a rail line that connected Escondido to the town of Oceanside, located approximately 18 miles to the northwest (Escondido History Center, 2011). The rail line transported the agricultural products of the Escondido Valley to outside markets and stimulated settlement in the region. In 1887, the Santa Fe Depot was built on the west end of Grand Avenue and remained in operation until 1945 (Escondido History Center, 2011).

In 1886, the Escondido Land & Town Company drilled several wells to irrigate the groves that they planted. The next year the Escondido Irrigation District was formed to build a reservoir. In 1888, the City of Escondido was incorporated with a population of 249. In 1890, the City passed a bond issue for $450,000 to construct a ditch line and dam to bring water from the San Luis Rey River to the Bear Valley watershed above present day Lake Wohlford, located approximately 4.12 miles northeast of the Project APE (Escondido History Center, 2011). In 1895, the ditch line and dam were completed, providing local farmers access to irrigation water and facilitating expansion of the valley's citrus industry.

In 1950, Highway 395 connected Escondido to the ever expanding City of San Diego, located approximately 30 miles to the southwest. During the Cold War of the 1950s, the City and County of San Diego expanded as military defense spending increased and the demand for affordable housing skyrocketed. To meet the increased demand for new housing many of Escondido's

vineyards and citrus orchards were transformed into housing subdivisions (Escondido History Center, 2011). With the decline of the agricultural industry, Escondido became, in some respects, a bedroom community of San Diego.

Regulatory Framework

Federal

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the NHPA of 1966, as amended (16 USC 470f), and its implementing regulation, Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (National Register). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the National Register. Under the NHPA, a resource is considered significant if it meets the National Register listing criteria at 36 CFR 60.4.

National Register of Historic Places

The National Register was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The National Register recognizes both historic-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 2002):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for National Register listing (U.S. Department of the Interior, 2002).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 2002). The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at *Public Resources Code (PRC) Section 21000 et seq.* CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. An archaeological resource may qualify as an "historical resource" under CEQA. The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (*CEQA Guidelines* Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly

demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

CEQA-Plus

The EPA sponsors the SRF Loan Program to provide funding for construction of publicly-owned treatment facilities and water reclamation projects. This funding for capital improvements to wastewater treatment and water recycling facilities is authorized under the federal Clean Water Act. In order to comply with requirements of the SRF Loan Program, which is administered by the SWRCB in California, a CEQA document must fulfill additional requirements known as CEQA-Plus. The CEQA-Plus requirements have been established by the EPA and are intended to supplement the *CEQA Guidelines* with specific requirements for environmental documents acceptable to the SWRCB when reviewing applications for wastewater treatment facility loans. They are not intended to supersede or replace *CEQA Guidelines*.

The EPA's CEQA-Plus requirements have been incorporated into the SWRCB's *Environmental Review Process Guidelines for SRF Loan Applicants* (2004). The SWRCB's *SRF Guideline*s require that a proposed project comply with Section 106 of the NHPA.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the

California Native American Heritage Commission (NAHC) within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended by Assembly Bill 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Local

City of Escondido

General Plan

The City of Escondido General Plan, Conservation Element (2012), contains the following historic resources goal and policies relevant to the proposed Project:

> **Goal 5:** Preservation of important cultural and paleontological resources that contribute to the unique identity and character of Escondido.
>
> > **Cultural Resources Policy 5.1:** Maintain and update the Escondido History Sites survey to include significant resources that meet local, state, or federal criteria.
> >
> > **Cultural Resources Policy 5.2:** Preserve significant cultural and paleontological resources listed on the national, State, or local registers through: maintenance or development of appropriate ordinances that protect, enhance and perpetuate resources; incentive programs; and/or the development review process.
> >
> > **Cultural Resources Policy 5.3:** Consult with appropriate organization and individuals (e.g., South Coastal Information Center [SCIC] of the California Historical Resources Information System [CHRIS], NAHC, Native American groups and individuals, and San Diego Natural History Museum) early in the development process to minimize potential impacts to cultural and paleontological resources.
> >
> > **Cultural Resources Policy 5.4:** Recognize the sensitivity of locally significant cultural resources and the need for more detailed assessments through the environmental review process.

Cultural Resources Policy 5.5: Preserve historic buildings, landscapes, and districts with special and recognized historic or architectural value in their original locations through preservation, rehabilitation (including adaptive reuse), and restoration where the use is compatible with the surrounding area.

Cultural Resources Policy 5.6: Review proposed new development and/or remodels for compatibility with the surrounding historic context.

Cultural Resources Policy 5.7: Comply with appropriate local, State, or federal regulations governing historical resources.

Escondido Municipal Code Article 40: Historic Resources

The City of Escondido has established a local register of historic resources (local register) as well as local landmarks. Section 33-794 of Article 40 of the Escondido Municipal Code provides the following guidance on the criteria for local register listing and local landmark designation:

> Prior to granting a resource local register or historical landmark status, the City council shall consider the definitions for historical resources and historical districts and shall find that the resource conforms to one (1) or more of the criteria listed in this section. A structural resource proposed for the local register shall be evaluated against criteria number one (1) through seven (7) and must meet at least two (2) of the criteria. Signs proposed for the local register shall meet at least one (1) of the criteria numbered eight (8) through ten (10). Landscape features proposed for the local register shall meet criterion number eleven (11). Archaeological resources shall meet criterion number twelve (12). Local register resources proposed for local landmark designation shall be evaluated against criterion number thirteen (13). The criteria are as follows:
>
> (1) Escondido historical resources that are strongly identified with a person or persons who significantly contributed to the culture, history, prehistory, or development of the City of Escondido, region, state or nation;
>
> (2) Escondido building or buildings that embody distinguishing characteristics of an architectural type, specimen, or are representative of a recognized architect's work and are not substantially altered;
>
> (3) Escondido historical resources that are connected with a business or use that was once common but is now rare;
>
> (4) Escondido historical resources that are the sites of significant historic events;
>
> (5) Escondido historical resources that are fifty (50) years old or have achieved historical significance within the past fifty (50) years;
>
> (6) Escondido historical resources that are an important key focal point in the visual quality or character of a neighborhood, street, area or district;
>
> (7) Escondido historical building that is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type;
>
> (8) Sign that is exemplary of technology, craftsmanship or design of the period when it was constructed, uses historical sign materials and is not significantly altered;

(9) Sign that is integrated into the architecture of the building, such as the sign pylons on buildings constructed in the Modern style and later styles;

(10) Sign that demonstrates extraordinary aesthetic quality, creativity, or innovation;

(11) Escondido landscape feature that is associated with an event or person of historical significance to the community or warrants special recognition due to size, condition, uniqueness or aesthetic qualities;

(12) Escondido archaeological site that has yielded, or may be likely to yield, information important in prehistory;

(13) Escondido significant historical resource that has an outstanding rating of the criteria used to evaluate local register requests. (Ord. No. 2000-23, § 4, 9-13-00; Ord. No. 2008-16, § 4, 7-16-08)

Archival Research

SCIC Records Search

A records search for the Project was conducted on September 15, 2015 at the South Coastal Information Center (SCIC) housed at San Diego State University. The records search included a review of all recorded cultural resources within a 1/2-mile radius of the Project APE, as well as a review of cultural resource reports on file. The Historic Properties Directory was also examined for any documented historic-period built resources within or adjacent to the Project APE.

Previous Cultural Resources Investigations

A total of 23 cultural resources studies have been conducted within a 1/2-mile radius of the Project APE. Approximately 33 percent of the records search radius has been included in previous cultural resources surveys. Of the 23 previous studies, four (SD-04236, -05377, -08588, and -11623) include portions of the Project APE. Approximately 50 percent of the Project APE has been included in previous cultural resources surveys.

TABLE 3
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS WITHIN 1/2 MILE OF THE PROJECT APE

Author	SCIC # (SD-)	Title	Date
American Pacific Environmental Consultants, Inc.	04236*	Environmental Impact Report for San Dieguito River Study Draft Conceptual Master Plan	1981
Anderson, Shawna	09358	San Dieguito River Park Lake Hodges Pedestrian/Bicycle Bridge Initial Study and Mitigated Negative Declaration in the City of San Diego, Lake Hodges Region	2005
Backes, Clarus J.	14948	Letter Report: ETS 26931- Cultural Resources Survey for the Replacement of Pole P161613, City of Escondido, San Diego County, California- IO 7011102	2014

Author	SCIC # (SD-)	Title	Date
Backes, Clarus J.	14949	Letter Report: ETS 26932- Cultural Resources Survey for the Replacement of Pole P161614, City of Escondido, San Diego County, California- IO 7011102	2014
Backes, Clarus J.	14950	Letter Report: ETS 26933- Cultural Resources Survey for the Replacement of Pole P161615, City of Escondido, San Diego County, California- IO 7011102	2014
Baksh, Mike	00120	Archaeological Surveys of the Sycuan, Barona, Santa Ysabel and Los Coyotes Indian Reservations.	1974
Bonner, Wayne H. and Marnie Aslin-Kay	10282	Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate NS-338-01 (Smith Residence), 1678 Cloverdale Road, Escondido, San Diego County, California	2005
Case, Robert P.	06304	Phase II Test and Evaluation of Prehistoric Site CA-SDI-14468 in San Pasqual Valley City of San Diego, California	2000
Case, Robert P., Richard L. Carrico, and Carol Serr	03487	Cultural Resources Survey and Evaluation of Selected Leaseholds in the San Pasqual Valley, City of San Diego, California	1999
Cheever, Dayle	05146	Results of a Cultural Resource Survey for the Orfila Well Project	2001
City of Escondido	08588*	Draft Environmental Impact Report for Expansion of Wastewater Treatment Facility	1980
City of San Diego	07008	Public Notice of a Proposed Mitigated Negative Declaration Christmas Tree Farm Lease	1999
Crafts, Karen Crotteau	00897	An Archaeological Survey Report for the Proposed Highgrove Curve Realignment and Three Biological Mitigation Parcels 11-SD-78, P.M. 21.5-22.8, 11222-12508	1989
Glenn, Brian	05377*	Cultural Resource Monitoring, Testing & Evaluation Program for the San Pasqual Aquatic Treatment Facility & Pipeline	1994
Hector, Susan	01857	Update on Archaeological Sites Located on the Cloverdale-Jones Property	1983
Hector, Susan M. and Alice Brewster	11623*	San Dieguito River Valley Inventory of Archaeological Resources	2002
Liebhauser, William J.	05389	Construction of a Water Storage Tank & Associated Appurtenances at the San Pasqual Water Reclamation Plant	2001
Mason, Roger, Evelyn Chandler, and Cary Cotterman	09621	Cultural Resources Record Search and Field Survey Report for a Verizon Telecommunications Facility: Cloverdale, Escondido, San Diego County, California	2005
McCorkle Apple, Rebecca	02903	Eagle Crest Pipeline Archaeological Survey Report, Escondido, California	1994
McCorkle Apple, Rebecca	01759	Archaeological Survey Report for a Realignment Project on Route 94 at Lyons Valley Road 11-SD-94 P.M. 19.2-19.5 11206-186030	1981
Robbins-Wade, Mary	13977	Cultural Resources Survey Report for the Cemetery Area Water Pipeline Replacement Project, Escondido, San Diego County, California	2011

Author	SCIC # (SD-)	Title	Date
Scientific Resource Surveys	07569	Final Archaeological Report on Cloverdale Ranch	1987
Wade, Sue A.	01659	Results of an Archaeological Archival and Field Survey of the Bear Valley Parkway/SR-78 General Plan Amendment EIR Project Area San Diego County, California	1987

*Indicates Study Overlaps APE

Previously Recorded Cultural Resources

The records search indicated that 24 cultural resources have been previously recorded within a 1/2-mile radius of the Project APE (**Table 4**). These resources include: 20 prehistoric archaeological sites (CA-SDI-005662, -005663, -005664, -005665, -005666, -011047,- 011048, -011159, -014463, -014464, -014465, -014468, -014472, -014473, -014474, -015881, -015983, -015983, -015984, and -016184), two historic-period built resources (P-37-015936 and -019064), and two prehistoric isolates (P-37-019062 and -019063). Of the 24 resources, four are located within the Project APE and include two prehistoric archaeological sites (CA-SDI-011048 [bedrock milling station] and -015818 [bedrock milling station]), one historic-period built resource (P-37-019064 [Escondido Gravity Float Line]), and one prehistoric isolate (P-37-019062 [chipped stone flake]).

TABLE 4
PREVIOUS CULTURAL RESOURCES RECORDED WITHIN 1/2 MILE OF THE PROJECT APE

Primary # (P-37)	Trinomial (CA-SDI-)	Other Designation	Description	Date Recorded
005662	005662	-	Prehistoric archaeological site consisting of midden soil, bedrock milling features, a rock shelter, and ceramic sherds	1976
005663	005663	-	Prehistoric archaeological site consisting of midden soil, bedrock milling features, quartz flakes, and ceramic sherds	1976
005664	005664	-	Prehistoric archaeological site consisting of three rock shelters, one possible petroglyph, and flakes	1976
005665	005665	-	Prehistoric archaeological site consisting of midden soil, rock shelters, flakes, projectile points, and ceramic sherds	1976
005666	005666	-	Prehistoric archaeological site consisting of midden soil, bedrock milling features, groundstone, scrapers, flakes, projectile points, and ceramic sherds	1976
011047	011047	-	Prehistoric archaeological site consisting of one bedrock milling feature	1988
011048*	011048	-	Prehistoric archaeological site consisting of one bedrock milling feature	1988
011159	011159	-	Prehistoric archaeological site consisting of one bedrock milling feature	1989

Primary # (P-37)	Trinomial (CA-SDI-)	Other Designation	Description	Date Recorded
015870	014463	-	Prehistoric archaeological site consisting of one bedrock milling feature	1997
015871	014464	-	Prehistoric habitation site consisting of bedrock milling features, flakes, groundstone, fire affected rock	1997
015872	014465	-	Prehistoric archaeological site consisting of flakes, groundstone, and ceramics	1997
015873	014466	-	Prehistoric archaeological site consisting of flakes and groundstone	1997
015875	014468	-	Prehistoric archaeological site consisting of bedrock milling features, flakes, and one projectile point fragment	1997
015879	014472	-	Prehistoric archaeological site consisting of two bedrock milling features	1997
015880	014473	-	Prehistoric archaeological site consisting of one bedrock milling feature	1997
015881	014474	-	Prehistoric archaeological site consisting of one bedrock milling feature	1997
015936	014840	-	Historic-period built resource consisting of a water conveyance system constructed in the 1880s	1997
019061*	015818	-	Prehistoric archaeological site consisting of one bedrock milling feature	2000
019062*	-	-	Prehistoric isolate consisting of one flake	2000
019063	-	-	Prehistoric isolate consisting of one flake	2000
019064*	-	Escondido Gravity Float Line	Historic-period built resource consisting of a cinder block and cement water conveyance system	2000
023977	015983	-	Prehistoric archaeological site consisting of one bedrock milling feature	2001
023978	015984	-	Prehistoric archaeological site consisting of one bedrock milling feature	2001
024408	016184	-	Prehistoric archaeological site consisting of one bedrock milling feature	2001

Resource Descriptions

Resource CA-SDI-011048 (P-37-011048)

This resource is a prehistoric archaeological site that was originally recorded in 1976 as consisting of one bedrock milling feature containing eight milling slicks (Smith 1988). The site was subject to testing which included the excavation of a 1 meter by 1 meter Test Excavation Unit (TEU) and the site was found to contain no subsurface deposits.

Resource CA-SDI-015818 (P-37-019061)

This resource is a prehistoric archaeological site that was originally recorded in 2000 as consisting of one bedrock milling feature that includes one milling slick and has no associated artifacts (Pigniolo 2000).

Resource P-37-019062

Resource P-37-19062 was recorded in 2000 by Andrew Pigniolo and consists of a prehistoric isolated chipped stone flake (Pigniolo 2000).

Resource P-37-019064

Resource P-37-019064 is the Escondido Gravity Float Line, a water conveyance system that was constructed in 1932 (Pigniolo and Baksh 2000). The majority of the system consists of a 24-inch-wide pipeline constructed of cinder blocks that have been lined and capped with cement, although in some places it is simply a concrete pipe. Resource P-37-019064 runs most of the length of Carrol Lane, between Quail Ridge Road at its south end to just east of Citrus Avenue at its north end. It is approximately 1.4 miles (2.3 kilometers) long. The researchers who originally recorded P-37-019064 concluded that it "is not unique or significant as an historic resource" (Pigniolo and Baksh 2000:3).

Historic Map and Aerial Review

Historic maps and aerial photographs were examined in order to provide historical information on the development and past uses of the Project APE and to contribute to an assessment of the Project APE's archaeological sensitivity. Available maps include: the 1893 and 1901 Escondido 15-minute topographic quadrangles; the 1901 San Luis Rey 30-minute topographic quadrangle; and the 1949 and 1968 Escondido 7.5-minute topographic quadrangles. Historic aerial photographs of the Project APE from 1946, 1953, 1964, 1968, 1971, 1980, 1995, and 2012 were also examined (historicaerials.com, 2015).

The available historic maps and aerial photographs indicate that the Project APE and surrounding area remained largely undeveloped from the late 19th century through the mid-20th century. From the mid-20th century onward the Project APE became increasingly developed for agricultural purposes, specifically for the planting of orchards. The 1893 and 1901 Escondido 15-minute topographic maps, as well as the 1901 San Luis Rey 30-minute topographic map, show the Project APE as being located in the eastern corner of the Rincon Del Diablo land grant in the hills located between the Escondido Valley and the San Pascual Valley. The maps show no development within the Project APE with the exception of a single northwest-southeast oriented road skirting the northeastern boundary of the Project APE. The 1949 and 1968 7.5-minute topo maps show increased development within the vicinity of the Project APE. The 1949 topographic map shows a number of structures and roads skirting the hills in which the Project is located. The place name, "Cloverdale Ranch", is indicated immediately east of the southeastern portion of the Project APE. The 1969 Escondido 7.5-minute topo map shows that the Project APE is surrounded by orchards, and a number of structures are indicated associated with the orchards.

The historic aerial photographs largely reflect what is indicated in the topographic maps. The 1946 historic aerial photograph shows very little development within the vicinity of the Project APE with the exception of winding roads and a number of orchards bounding the western portion of the Project. The 1953, 1967,1971, 1980 aerial photographs indicate increased development of orchards in the Project vicinity with a number of additional orchards shown within the central portion of the Project APE and immediately northeast and south of the Project APE. The orchards

within the APE appear by 1980 (historicaerials.com). The 1995 and 2012 aerial photographs indicate very little additional changes to the Project APE with the exception of additional orchards in the northeastern portion of the Project APE and the Hogback Reservoir tank.

In sum, the historic map and aerial photograph review indicates that the immediate vicinity around the Project APE remained largely undeveloped until the mid-20th century, at which point agricultural development associated with the avocado industry increased. The Project APE is currently used for the cultivation of avocados.

Native American Heritage Commission

A Sacred Lands File (SLF) search was requested from the NAHC on October 1, 2015. The SLF search results prepared by the NAHC indicated that no known Native American cultural resources are known to be located within the vicinity of the Project APE based on the USGS Escondido and Valley Center 7.5-minute quadrangles provided. Follow-up contact with Native American groups and/or individuals identified by the NAHC as having affiliation with the Project APE vicinity was conducted via certified mail on October 27, 2015 and via phone on November 19, 2015 and December 3 through December 7, 2015 (**Table 5**).

Of the eighteen individuals contacted, to date, two responses have been received. Mr. Clint Linton, Director of Cultural Resources, Lipay Nation of Santa Ysabel (Diegueno/Kumeyaay) requested that a Kumeyaay Native American monitor be present. In addition, Mr. Steve Banegas, Chairman, Kumeyaay Cultural Repatriation Committee (Diegueno/Kumeyaay) also requested the presence of a Native American monitor.

TABLE 5
NATIVE AMERICAN OUTREACH

Contact	Tribe/Organization/	Date Letter Mailed	Date of Follow-up Phone Call	Response
Allen E. Lawson, Chairperson	San Pasqual Band of Mission Indians	10/27/15	11/19/2015	No response to date.
Anthony R. Pico Chairperson	Viejas Band of Kumeyaay Indians	10/27/15	11/19/2015	Letter was forwarded to Julie Hagen in the Environmental Department; a phone message was left for Ms. Hagen. No response to date.
Clifford LaChappa, Chairperson	Barona Group of the Capitan Grande	10/27/15	12/3/2015	Left VM. No response to date.
Clint Linton, Director of Cultural Resources	Iipay Nation of Santa Ysabel	10/27/15	12/03/2015	Request is to have Kumeyaay Native American Monitor present.
Virgil Perez, Chairperson	Iipay Nation of Santa Ysabel	10/27/15	12/03/2015	Left VM. No response to date.
Robert Pinto Sr., Chairperson	Ewiiaapaayp Tribal Office	10/27/15	12/3/2015	Left VM. No response to date.
Will Micklin, Executive Director	Ewiiaapaayp Tribal Office	10/27/15	12/3/2015	Left message with receiptionist. No response to date.
Rodney Kephart, Environmental Coordinator	Iipay Nation of Santa Ysabel	10/27/15	12/3/2015	Left VM. No response to date

Contact	Tribe/Organization/	Date Letter Mailed	Date of Follow-up Phone Call	Response
Rebecca Osuna, Chairperson	Inaja Band of Mission Indians	10/27/15	12/3/2015	Unable to leave message. No response to date.
Steve Banegas, Chairperson	Kumeyaay Cultural Repatriation Committee	10/27/15	12/3/2015	Request to have Native American monitor present.
Frank Brown Spokesperson	Inter-Tribal Cultural Resource Protection Committee	10/27/15	12/3/2015	Left VM. No response to date.
Mr. Kim Bactad Executive Director	Kumeyaay Diequeno Land Conservancy	10/27/15	12/3/2015	Unable to reach by phone. No response to date.
Ron Christman	Kumeyaay Cultural Historical Committee	10/27/15	12/4/2015	Unable to reach by phone. No response to date.
Ms. Carmen Lucas	Kwaaymii Laguna Band of Mission Indians	10/27/15	12/4/2015	Left VM. No response to date.
Kristie Orosco Environmental Coordinator	San Pasqual Band of Mission Indians	10/27/15	12/4/2015	Left VM. No response to date.
Lisa Haws Cultural Resources Manager	Sycuan Band of the Kumeyaay Nation	10/27/15	12/4/2015	Letter is in review..
Cody J. Martinez, Chairperson	Sycuan Band of the Kumeyaay Nation	10/27/15	12/4/2015	Left VM. No response to date.
Raymond Hunter, Chairperson	Jamul Indian Village	10/27/15	12/7/2015	Left VM. No response to date.

Geoarchaeological Review

Chris Lockwood, Ph.D., R.P.A., conducted a desktop geoarchaeological review of the APE and vicinity in order to evaluate the potential for buried archaeological resources within the Project APE. The following section presents the results of Dr. Lockwood's analysis.

The APE is situated in the southeastern portion of the City of Escondido in the North County section of San Diego County, California. The Project APE is generally located along rural residential and agricultural land. The terrain is hilly with elevations ranging from approximately 430 feet above mean sea level (amsl) to 1,150 feet amsl near the Hogback Reservoir Tank. The Project Area is situated along eastern and southern aspect slopes overlooking Cloverdale Creek, a southward flowing tributary to the San Dieguito River.

Geology

The APE is located within the Peninsular Ranges geomorphic province, which is dominated granitic bedrock from the Mesozoic-period (252-66 million years ago). In particular, the Project Area is underlain by Cretaceous-aged (145-66 million years) miscellaneous granodiorite with minor tonalite (*Kgd* - Tan and Kennedy 1999; alternately, Woodson Mountain granodiorite [*Kwm*

– Kennedy et al. 2007]). The Project Area extends along slopes and ravines dominated by erosive geomorphic processes since prior to the appearance of people within Southern California. Within the timeframe of human presence, the landforms have either been effectively stable, or even subject to transport and removal of some material by alluvial and colluvial processes. The Project Area is topographically above the floodplain of Cloverdale Creek, as well middle to late Pleistocene alluvial fan deposits extending out of the hills.

Due to its phaneritic texture with rock matrix grains large enough to be distinguished with the naked eye, the local bedrock is unlikely to have been particularly useful in making chipped stone tools. However, the toughness of the plutonic rocks made would have made them amenable for use as groundstone, which is attested by the presence of multiple sites in the area containing exposed bedrock grinding/milling slicks.

Soils

Soil types within the APE are derived from four different soils series (in approximate order of frequency): Cieneba series, Vista series, Fallbrook series, and Visalia series (NRCS 2015). The soils share common characteristics of containing a significant sandy to rocky fraction, and being derived from primarily in situ weathering of granitic bedrock. Cieneba soils consist of very shallow and shallow, somewhat excessively drained coarse sandy loam to very rocky coarse sandy loam formed in weathered granitic rock. Cieneba soils are on hills and mountains and have slopes of 9 to 85 percent. Typical depth to bedrock residuum is 25 to 76 cm (10 to 30 inches). Vista soils consist of moderately deep, well drained coarse sandy loam to rocky coarse sandy loam formed in material weathered from decomposed granitic rocks. Vista soils are on hills and mountainous uplands and have slopes of 2 to 85 percent. Typical depth to bedrock residuum is 89 to 112 cm (35 to 44 inches). Fallbrook soils consist of deep, well drained sandy loam formed in material weathered from granitic rocks. Fallbrook soils are on rolling hills and have slopes of 5 to 75 percent. Typical depth to bedrock residuum is 119 to 173 cm (47 to 68 inches). Within the Project Area, Fallbrook soils are associated with Vista soils (Fallbrook-Vista sandy loams). The translocation (downward movement) of clay (Bt soil horizons) characteristic of Fallbrook soils suggests a landform that has been relatively stable for a sustained period of time. Visalia soils consist of deep, moderately well drained sandy loams derived from granitic alluvium. Typical depth to restrictive feature in Visalia soils is more than 203 cm (80 inches).

Buried Archaeological Potential

There is clear evidence for intact surface archaeological sites within the APE. The existence of exposed bedrock outcroppings with evidence for grinding/milling suggests relative landform stability and a general absence of deposition capable of deeply burying any archaeological remains. Therefore, the potential for intact surface archaeological sites is considered high, but the potential for buried archaeological sites is considered low.

Cultural Resources Survey

Methods

A cultural resources survey of the APE was conducted on January 13 and 28, 2016. The survey was aimed at identifying surface evidence of archaeological materials and historic-period built features. All accessible portions of the project area with visible ground surface were surveyed in a systematic manner with transect intervals spaced no greater than 15 meters (approximately 16.5 feet) apart. Survey coverage is depicted in Figure 3.

Sites, if identified, were defined as consisting of one or more cultural features or three or more artifacts (45 years old or older) within an approximate 25-square-meter area. Fewer than three artifacts within 25-square-meter area were considered isolates. Newly recorded resources were assigned temporary numbers, photographed, and documented on California Department of Parks and Recreation (DPR) 523 forms. Previously relocated sites when relocated were recorded using DPR update forms.

Results

The Project APE is dominated by dense brush vegetation, steep hillsides, several active avocado orchards, and unstable slopes (**Figures 4-5**). Ground surface visibility was about 15 percent; including avocado leaf litter on the east and southeastern portions of the APE and dense waist-high brush vegetation on the west and northwest portions of the APE. Where feasible, the survey was conducted using 15-meter transects. However, a substantial portion of the survey involved traversing narrow paths between vegetation along the west. Portions of the northwest APE were inaccessible given the rugged topography. Areas greater than 20 degree slope were not surveyed. This included the steep unstable portion of the northernmost area along the APE (**Figure 6**), which totaled 5.9 acres.

Disturbances to the APE include agricultural activities, existing unpaved access roads, and sparse private residences. Due to variable amounts of avocado leaf litter, ground surface visibility varied throughout the project area, but averaged less than 10 percent. No subsurface investigation was performed and no artifacts were collected during the survey.

No new cultural resources were identified as a result of the survey. One previously recorded resource (CA-SDI-011048) was relocated and two previously recorded resources (CA-SDI-015818 and P-37-019062) could not be relocated. One previously recorded resource (P-37-019064) is underground and was not visible to surveyors.

Resource CA-SDI-011048

Resource CA-SDI-011048 was relocated and its current condition documented on a DPR update form. No associated surface artifacts were identified.

Resource CA-SDI-015818

Despite diligent efforts using a GPS unit and a visual inspection of all bedrock outcrops in the area, this resource could not be relocated, possibly due to dense brush obscuring it. A DPR update form was not prepared.

Resource P-37-019062

The prehistoric isolate could not be relocated during the current survey due to extreme dense vegetation with waist high brush, rendering surface visibility less that 10 percent. A DPR update form was not prepared.

Resource P-37-019064 (Escondido Gravity Float Line)

The Escondido Gravity Float Line (P-37-019064) is underground and was therefore not visible during the survey. A DPR form update was not prepared. A ditch, possibly associated with the conveyance system was observed outside of the Project APE.

Eastern Recycled Water System Project / 150245

Figure 4
Overview of northern portion of APE. View to the northwest. Photo taken on January 13, 2016.

Eastern Recycled Water System Project / 150245

Figure 5
Overview of southern portion of APE. View to the southeast. Photo taken on January 13, 2016.

Eastern Recycled Water System Project / 150245

Figure 6
Dense vegetation within the non-surveyed portion of the APE. View to the southeast.
Photo taken on January 13, 2016.

Resource Evaluations

NRHP/CRHR

To be eligible for the NRHP (Criteria A through D) or CRHR (Criteria 1 through 4), resources must meet at least one of the four significance criteria and have sufficient integrity to convey its historical significance, as outlined in the Regulatory Framework section.

Resource CA-SDI-011048

Resource CA-SDI-011048 consists of grinding slicks on a granite boulder outcrop, and no surface artifacts or other associated features were observed at CA-SDI-011048 during the field survey. Isolated bedrock milling features like this are the most ubiquitous type of prehistoric sites in the San Diego area, and throughout San Diego County. They are often called special-use sites because they were visited and used by Native Americans while gathering natural resources, and do not represent campsites or village sites. Shallow slicks like those at CA-SDI-011048 are generally assigned to the Late Prehistoric Period, or within the last 1,000 years (O'Connell et al. 1974).

Over the years, archaeologists have conducted numerous test excavations on similar sites in the San Diego area, and have consistently found almost no subsurface artifact deposits. For example, two sites nearby that were previously identified, CA-SDI-013737 and -SDI-008194, consist of bedrock milling stations with no surface artifacts (Apple 1994). The general interpretation of these sites is that they are lightly used, temporary food processing sites located away from the living/camping areas, with little information potential beyond what is observed on the surface and noted in the existing site records.

Resource CA-SDI-011048 was previously tested and failed to identify any subsurface cultural deposits (Smith 1988), and the current field survey failed to identify any other artifacts or features associated with the site. Based on the previous archaeological testing of site CA-SDI-011048, along with the absence of associated artifacts or features identified, the site does not appear to meet any of the NRHP or CRHR eligibility criteria. Resource CA-SDI-011048 is not known to represent a property "associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage" (NRHP/CRHR Criterion A/1); nor one "associated with the lives of persons important in our past" (NRHP/CRHR Criterion B/2); nor a resource that embodies "the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possess high artistic values" (NRHP/CRHR Criterion C/3). Due to the lack of subsurface features or artifacts identified at CA-SDI-011048 along with the absence of artifacts within the boundaries of the site, resource CA-SDI-011048 is unlikely to yield information important to the prehistory of California and therefore does not appear to meet NRHP/CRHR Criterion D/4, the most common criteria used for evaluating prehistoric archaeological sites, which focuses on the known data potential for a site. Therefore, resource CA-SDI-011048 does not appear to be eligible for listing in the NRHP or CRHR.

Resource CA-SDI-015818

This small milling feature with a single slick and no surface artifacts was not relocated during survey due to dense vegetation, despite diligent attempts using a GPS unit and a visual inspection of all bedrock outcrops in the area. As has been mentioned, sites of this nature typically possess little information potential beyond what is observed on the surface. This resource will not be formally evaluated as part of this study.

Resource P-37-019062

Although, the prehistoric isolate could not be relocated during the current survey, isolates are typically not eligible for listing in the NRHP or CRHR because they lack archaeological context. Therefore, resource P-37-019062 does not appear to be eligible for listing in the NRHP or CRHR.

Resource P-37-019064 (Escondido Gravity Float Line)

The Escondido Gravity Float Line is a water conveyance system that has existed in the vicinity of the float line since the late nineteenth century. The Escondido Gravity Float Line consists of a pressurized water conveyance system running between Hogback Siphon and the A-3 Reservoir. It is a 24-inch wide pipeline constructed with cinder blocks and lined and capped with cement, and in places simply a by concrete pipe.

A right-of-way through the five acres of Lot 7, Block 266 of Rancho Rincon del Diablo was sold to the Escondido Irrigation District (EID) for one dollar in 1894 for "the use and maintenance of water ditches, pipes, pipe-lines, conduits and aqueducts for the conveyance of water." An 1895 map of the EID shows a system with a slightly different alignment near the float line. This was likely an open flume that worked through gravity, designed and built by EID employees (Mr. Glen Peterson, Personal Communication 2000). It was altered sometime before 1916 to its current alignment, and became known as the EID "0" Line at an unknown date. The alignment appears on the 1928 aerial photograph as a dirt road.

During the 1930s, pressurized systems were developed and the new technology began to supplant the older lines all over Escondido, which were either removed or abandoned in place. Only some segments of this line were replaced, resulting in a hybrid system of pressurized and gravity flow. On September 14, 1932, the widow Helen M. Hall sold Lot 1, Block 266 of Rancho Rincon del Diablo to the Escondido Mutual Water Company for ten dollars. This included a right-of-way for the float line, upon which a pressure line was subsequently run to Float Box No.1, known as the Helen Hall box to this day. This coincided with the abandonment of the EID "0" Line and the creation of the Gravity Float Line as it exists today (Mr. Glen Peterson, Personal Communication 2000). The line has been used continuously through the present, and will be replaced by a new line as a result of this Project. The Escondido Gravity Float Line is to be abandoned in place, with any openings sealed for safety reasons, and the new line will be installed next to it where necessary.

Currently, seven float boxes are located at intervals along its length, numbered sequentially from north to south. These boxes house sump pumps that transport water from the float line to the avocado and citrus groves it serves. The current system was built in 1932 as a part of general improvements to Escondido's irrigation system, and is similar to other systems in Escondido and elsewhere. It is not unique or significant as an historical resource. Because it is an underground pipeline, it is not visible for inspection. Its condition is presumed to be fair; however, it has been altered and improved through time.

This resource was previously evaluated and does not appear to meet any of the NRHP or CRHR eligibility criteria. The water conveyance system is not known to represent a property “associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage” (NRHP/CRHR Criterion A/1); nor one “associated with the lives of persons important in our past” (NRHP/CRHR Criterion B/2). This conveyance system is similar to other water conveyance systems in the area; therefore, it is not a resource that embodies “the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possess high artistic values” (NRHP/CRHR Criterion C/3). Further examination of this resource is unlikely to yield information important to history (NRHP/CRHR Criterion D/4).

Therefore, resource P-37-019064 does not appear to be eligible for listing in the NRHP or CRHR. The water conveyance system remains in use today and has undergone improvements and alterations throughout its long history that has reduced the integrity of the resource.

City of Escondido Local Register of Historic Resources

Similar to the criteria outlined above for the NRHP and CRHR, the City of Escondido Local Register of Historic Resources recognizes historic resources that meet one or more of 13 criteria that is applicable to the type of resources being evaluated.

Archaeological sites, such as resource CA-SDI-011048, must meet the requirements of Criterion 12. Criterion 12 states that a resource is eligible for listing if the archaeological has yielded, or may be likely to yield, information important in prehistory. As stated above, due to the lack of subsurface features or artifacts identified at CA-SDI-011048 along with the absence of surface artifacts within the boundaries of the site, CA-SDI-011048 is unlikely to yield information important to the prehistory of California or Escondido; and therefore is recommended not eligible for listing in the City of Escondido Local Register of Historic Resources.

A structural resource proposed for the local register shall be evaluated against criteria number one (1) through seven (7) and must meet at least two (2) of the criteria. Of the seven criteria, only criterion 5 is applicable for resource P-37-019064. Criterion 5 states that a resource is eligible for listing if it is at least fifty (50) years old or have achieved historical significance within the past fifty (50) years. As stated above, the Escondido Gravity Float Line is of age (84 years); however, the water conveyance system remains in use today and has undergone improvements and alterations throughout its long history that has reduced the integrity of the resource and has not achieved historical significance. The other criteria are similar to CEQA's criteria with similar results. As such, P-37-019064 is recommended not eligible for listing in the City of Escondido Local Register of Historic Resources.

Conclusions and Recommendations

Four cultural resources were identified with the Project APE as a result of this study (P-37-019062, P-37-019064, CA-SDI-011048, and CA-SDI-015818). Resources P-37-019064 (Escondido Gravity Float Line), CA-SDI-011048 (bedrock milling station), and P-37-019062 (prehistoric isolate) are not eligible for the NRHP, CRHR, and/or local listing, and do not meet the definition of historic properties under Section 106 of the NHPA or historical resources and/or unique archaeological resources under CEQA. Resource CA-SDI-015818 (bedrock milling station) could not be relocated and has not been evaluated for its significance. ESA recommends a finding of no effect to historic properties under Section 106 of the NHPA.

Due to the archaeological sensitivity of the area for surface archaeological sites, ESA provides the following recommendations in order to reduce impacts to historical resources and/or unique archaeological resources to less than significant under CEQA:

- Prior to initiation of the construction program, a Qualified Archaeologist defined as one meeting Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008), should provide a mandatory cultural resources sensitivity training for all construction personnel working on the Project. Construction personnel would be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The City should ensure that

construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

- An archaeological monitor, working under the direction of the Qualified Archaeologist, and a Native American monitor should be retained to monitor all vegetation clearing activities within the entire APE and all ground disturbing activities within 100 feet of resources CA-SDI-011048 and CA-SDI-015818. The Native American monitor should be selected from the list of associated tribes on the NAHC contact list. The archaeological monitor would work under the supervision of the Qualified Archaeologist. If cultural resources are encountered during the course of ground disturbing activities, all ground disturbing activities within 100 feet of the find should cease until the discovery can be evaluated by the Qualified Archaeologist. The Qualified Archaeologist, the archaeological monitor and/or Native American monitor should be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find until the Qualified Archaeologist and Native American monitor have evaluated the find, determined whether the find is culturally sensitive, and designed an appropriate short-term and long term treatment plan.

- If human remains are encountered, the City should halt work in the vicinity (within 100 feet) of the find and contact the San Diego County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC would be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC would designate a MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, the City should ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

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