



**Biological Resources Report for the
Diamond Siphon Replacement Project
San Marcos, California**

Prepared for
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A handwritten signature in black ink, appearing to read 'B Parker'.

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TABLE OF CONTENTS

Acronyms.....	iii
1.0 Summary	1
2.0 Introduction.....	2
3.0 Methods and Survey Limitations.....	8
4.0 Existing Conditions.....	9
4.1 Botany.....	9
4.2 Zoology	14
5.0 Sensitive Biological Resources.....	15
5.1 Sensitivity Criteria/Regulatory Setting.....	15
5.2 Sensitive Vegetation Communities.....	16
5.3 Potential Jurisdictional Areas	16
5.4 Sensitive Plant Species	17
5.5 Sensitive Wildlife Species	17
5.6 Wildlife Movement Corridor	20
6.0 Project Impacts.....	20
6.1 Direct Impacts	20
7.0 Mitigation.....	23
7.1 Sensitive Vegetation Communities.....	23
7.2 Sensitive Wildlife Species	24
7.3 Wildlife Movement Corridor	28
7.4 Jurisdictional Wetlands and Waters	28
8.0 References Cited.....	30

TABLES

1: Existing Vegetation Communities and Land Cover Types.....	10
2: Impacts to Vegetation Communities and Land Cover Types	21
3: Mitigation for Impacts to Vegetation Communities/Land Cover Types.....	24

TABLE OF CONTENTS (cont.)**FIGURES**

1:	Regional Location.....	3
2:	Project Location on USGS Map	4
3:	Project Location in Relation to the Multiple Habitat Conservation Program.....	5
4a:	Project Location on Aerial Photograph – Option 1.....	6
4b:	Project Location on Aerial Photograph – Option 2.....	7
5a:	Biological Resources and Impacts – Option 1	11
5b:	Biological Resources and Impacts – Option 2.....	13

ATTACHMENTS

- 1: Sensitive Plant Species Observed or with the Potential to Occur
- 2: Sensitive Wildlife Species Occurring or with the Potential to Occur

Acronyms

amsl	above mean sea level
BCLA	Biological Core Linkage Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
FPA	Focused Planning Area
MBTA	Migratory Bird Treaty Act
MHCP	Multiple Habitat Conservation Program
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Summary

The Diamond Siphon Replacement Project (project) is located in the Draft City of San Marcos Multiple Habitat Conservation Program (MHCP) Subarea Plan. It is not located within a Hard Line Focused Planning Area or any designated Biological Core Linkage Area. The project proposes two options to replace a 10-inch-diameter pipeline between East Mission Road and the Sprinter light rail line. A brief biological survey was conducted to determine the extent of biological resources present within the project areas for the two options. Following implementation of either project option, impacted areas would be revegetated.

The Option 1 survey area contains one sensitive vegetation community: southern arroyo willow riparian forest, a MHCP Group A habitat. The southern arroyo willow riparian forest is also a potential wetland under the jurisdiction of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB). No sensitive or narrow endemic plant species were identified during the biological survey. Although not detected, there is a moderate potential for least Bell's vireo (*Vireo bellii pusillus*) and Cooper's hawk (*Accipiter cooperii*) to occur.

The Option 2 survey area contains one sensitive vegetation community: southern willow scrub, a MHCP Group A habitat. This survey area also contains two potential jurisdictional areas: the southern willow scrub and a 3-foot-wide drainage crossing the survey area are potential USACE, CDFW, and/or RWQCB jurisdictional features. No sensitive or narrow endemic plant species were identified during the general survey. Although not detected, there is a moderate potential for least Bell's vireo and Cooper's hawk to occur.

Implementation of Option 1 would impact 0.03 acre of southern arroyo willow riparian forest. Following construction, all the existing soil in the natural habitat areas would be replaced and the areas would be revegetated. Thus, all direct impacts would be considered temporary. This revegetation would be designed to result in no net loss of wetlands of the impacted area following construction. With the recommended revegetation, the impact would be reduced to below a level of significance.

Implementation of Option 2 would impact less than 0.01 acre (18 linear feet, 54 square feet) of the potential jurisdictional drainage. Following construction, the drainage would be replaced and exposed areas would be revegetated. Thus, the impact to the drainage would be considered temporary and there would be no net loss of jurisdictional wetlands or waters. With the recommended revegetation, the impact would be reduced to below a level of significance.

The proposed project may directly impact nesting migratory birds, including least Bell's vireo, if construction occurs during the breeding season (March 15 to September 15 for least Bell's vireo, February 15 to September 15 for other birds protected by the Migratory Bird Treaty Act). Additionally, both Option 1 and Option 2 have potential to cause indirect impacts to least Bell's vireo if construction if construction noise is in excess of 60 hourly

equivalent A-weighted decibels (dB(A) L_{eq}) at an active nest during the breeding season. To avoid direct impacts to least Bell's vireo and nesting migratory birds, pre-construction surveys would be conducted within the development footprint during the breeding season to determine the presence or absence of breeding birds and ensure that no impacts occur to any nesting birds or their eggs, chicks, or nests.

2.0 Introduction

This report describes the results of a biological survey conducted by RECON Environmental, Inc. (RECON) for the Diamond Siphon Replacement Project (project; Capital Improvement Program ID # SP-10) proposed by the Vallecitos Water District. The project lies in the city of San Marcos, within the Los Vallecitos Landgrant on the United States Geological Survey (USGS) 7.5-minute topographic map series, San Marcos quadrangle (Figures 1 and 2; USGS 1996). It is situated within and southwest of East Mission Road between approximately 753 and 807 East Mission Road. The project is located entirely within the Draft City of San Marcos Multiple Habitat Conservation Program (MHCP) Subarea Plan (draft Subarea Plan; City of San Marcos 2001) boundary (Figure 3).

Under the capital improvement program, the Vallecitos Water District is proposing replacement of 200 feet of two 10-inch-diameter existing adjacent pipelines. The existing pipelines cross beneath San Marcos Creek and run northeast-southwest between the Diamond Environmental Services parking lot and the Inland Rail Trail and Sprinter light rail line. Two construction options are being considered:

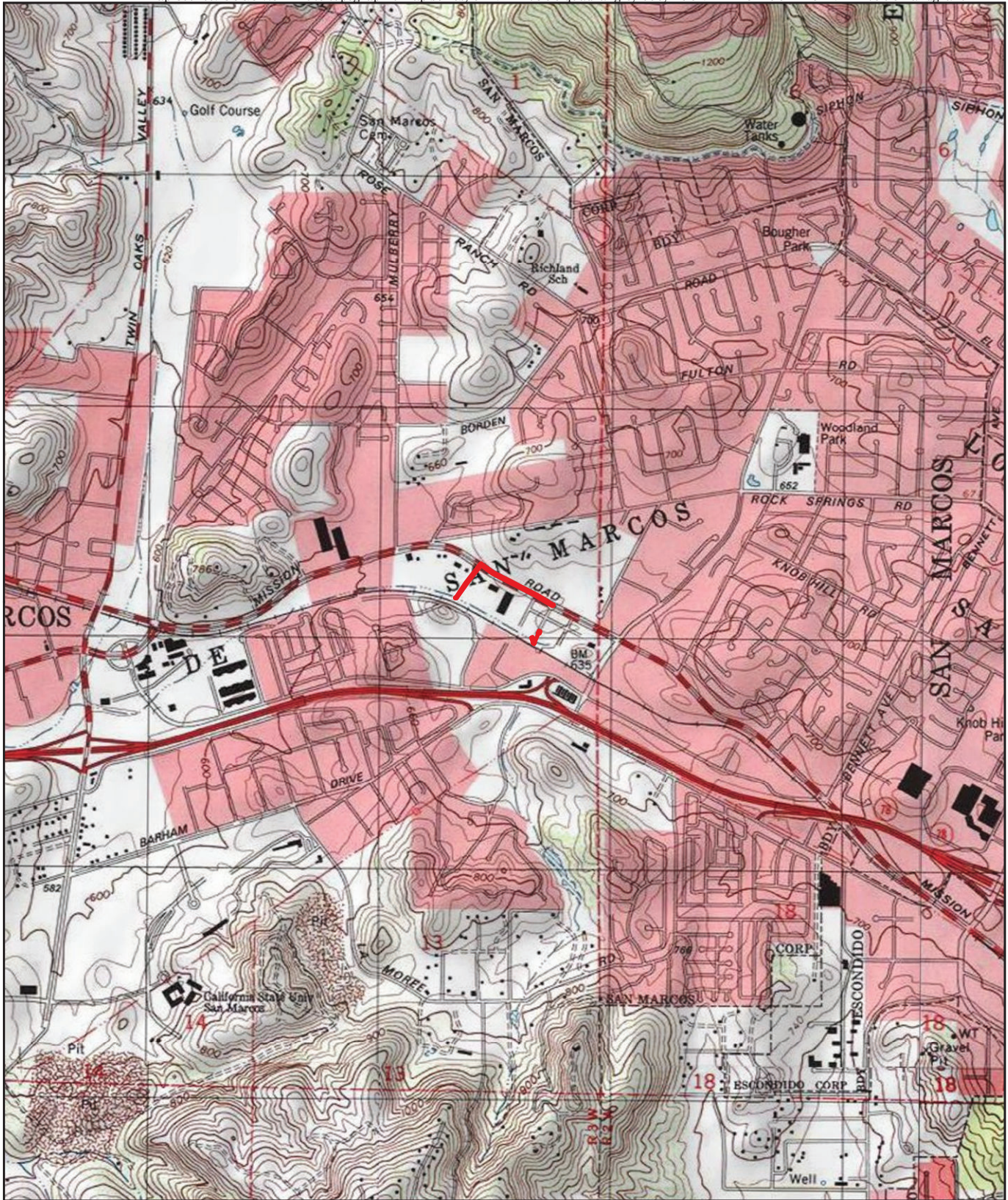
1. Replacement in place of two pipelines beneath San Marcos Creek with double barrel 15-inch-diameter siphons. The option would involve a partially trenchless approach and would include tunneling beneath San Marcos Creek (Figure 4a).
2. Rerouting and replacement of the sewer line with 15-inch-diameter gravity pipeline. This option would involve cutting, plugging, and abandoning the portion of the existing pipeline that makes a 90-degree bend in front of Diamond Environmental Services on Mission Road. The proposed alignment would continue west on Mission Road for approximately 1,320 feet, make a 90-degree turn into 753 East Mission Road, continue south for approximately 450 feet, and connect to the existing sewer system that runs along San Marcos Creek (Figure 4b).

This report identifies biological resources occurring or potentially occurring within the survey area, discusses direct and indirect project impacts to these resources, and recommends avoidance and mitigation to offset those impacts. It satisfies the requirements for environmental analysis by the California Environmental Quality Act (CEQA) and is consistent with the MHCP (SANDAG 2003).



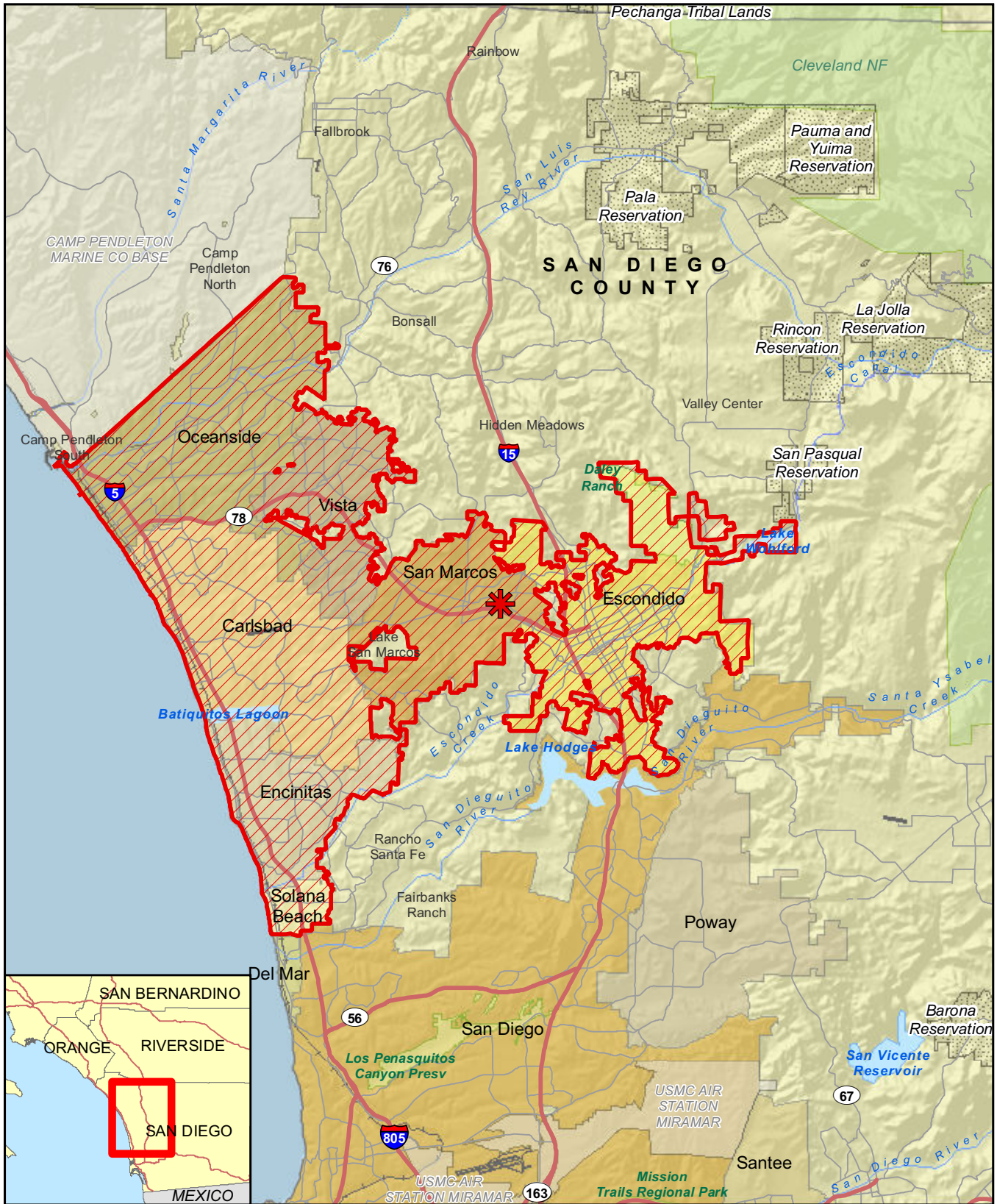
 Project Location

FIGURE 1
Regional Location



 Project Location

FIGURE 2
Project Location on USGS Map





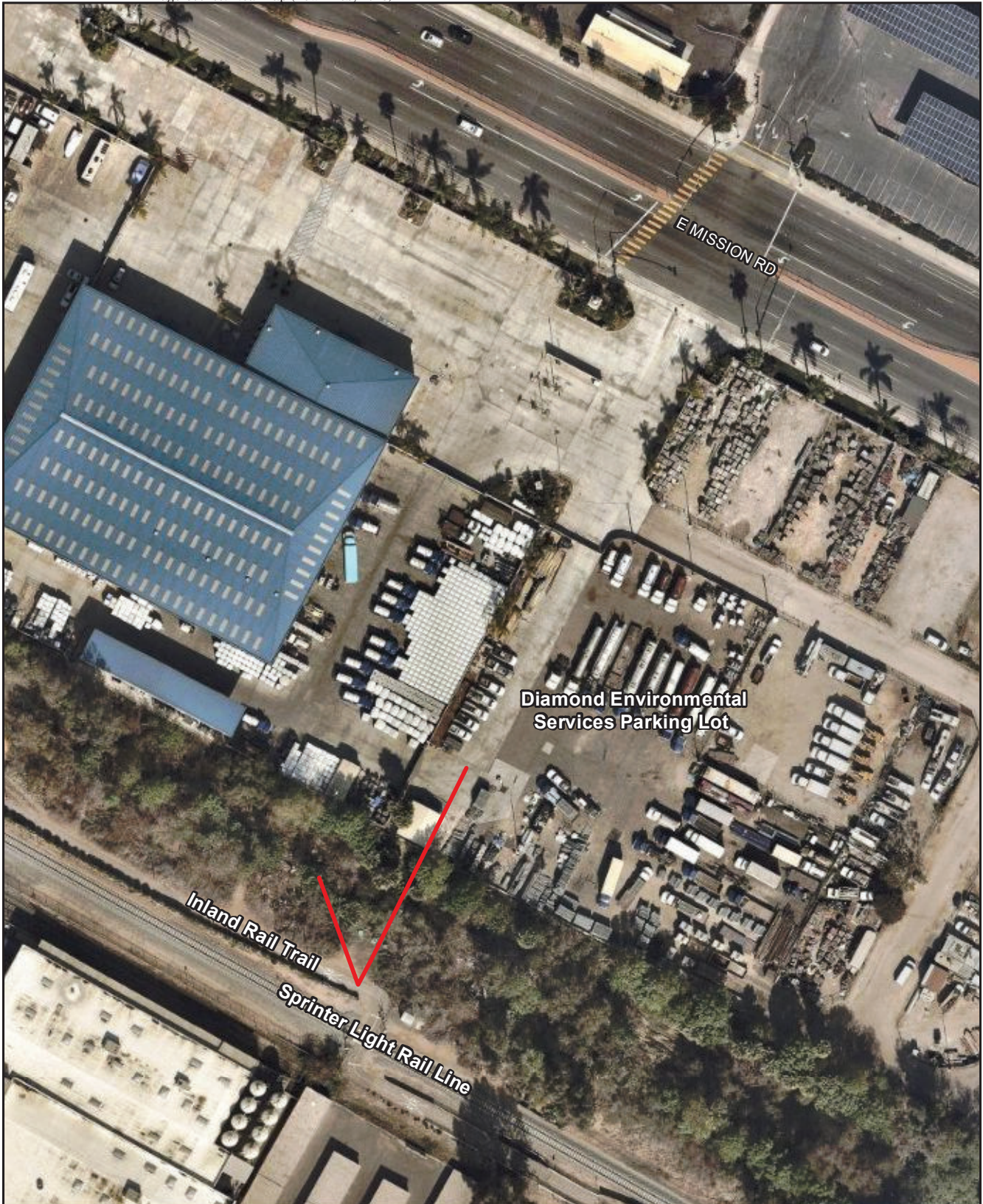
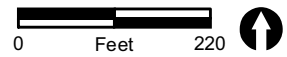
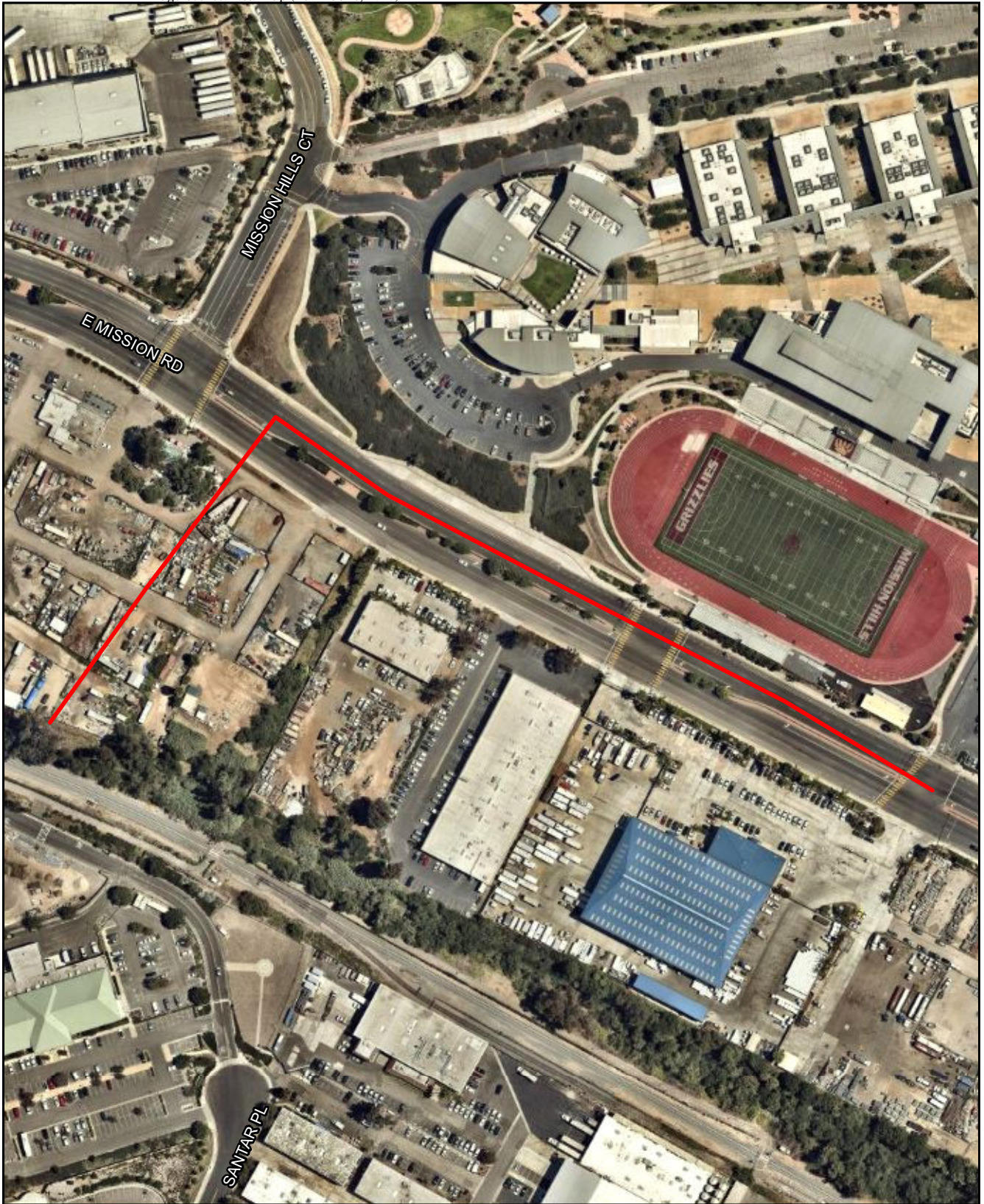
-  Project Location
-  Draft MHCP Subarea Plan

FIGURE 3
 Project Location in Relation to the
 Multiple Habitat Conservation Program



Construction Option
— 1 Replacement
Pipeline

FIGURE 4a
Project Location on
Aerial Photograph - Option 1



— Construction Option 2
Project Location

FIGURE 4b
Project Location on
Aerial Photograph - Option 2

3.0 Methods and Survey Limitations

On March 9, 2016, personnel from RECON, the Vallecitos Water District, and Black & Veatch conducted a site visit of the survey area. As part of the site visit, RECON biologist Kayo Valenti conducted a reconnaissance-level biological survey of the site. As at the time of the survey the limits of disturbance had not been finalized for either project option, the survey area included the approximate project location plus a 100-foot survey buffer.

The survey was conducted between 9:45 a.m. and 10:45 a.m. Weather conditions were fair, with 67- to-70-degree Fahrenheit air temperature, 0- to 2-mile-per-hour winds, and 0 percent cloud cover. Ms. Valenti mapped vegetation communities within the Option 1 and Option 2 survey areas, noted dominant plant species, recorded incidental observations of wildlife species, and took photographs. Aerial imagery was used to estimate the vegetation community boundaries, and vegetation community classifications were determined using field notes and photographs.

Construction for Option 1 would occur primarily within the Diamond Environmental Services parking lot and Mission Road, and within an approximate 100-foot-wide section within San Marcos Creek. High vegetation density restricted access and visibility within the creek. The southern portion of the creek was accessed on foot via open areas from the Inland Rail Trail to the south (see Figure 4a), and the northern portion was observed from the Diamond Environmental Services parking lot.

Construction for Option 2 would occur partially within Mission Road south of Mission Hills High School, extending southwest through private property at 753 East Mission Road, where it would terminate at a narrow channelized section of San Marcos Creek north of the Sprinter light rail line. A narrow strip of vegetation occurs along the southern edge of this portion of the creek, and the creek falls under the canopy of the trees. This southern portion of this survey area was viewed on foot. A barbed wire fence runs approximately 2 to 5 feet south and parallel to the channel. Two manholes, associated with the pipeline easement through San Marcos Creek, occur approximately one foot south of this section of the creek.

Floral nomenclature for common plants follows the Jepson Online Herbarium (University of California 2017), for ornamental plants Brenzel (2001), and for sensitive plants California Native Plant Society (CNPS; 2017). Vegetation community classifications follow Oberbauer et al. (2008), which is based on Holland's 1986 Preliminary Descriptions of the Terrestrial Natural Communities of California, and also the MHCP. Zoological nomenclature for birds is in accordance with the American Ornithological Society Checklist (2016) and Unitt (2004); for mammals with Baker et al. (2003); and for reptiles with Crother (2008). Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for the species (Jennings and Hayes 1994; Unitt 2004; CNPS 2017; Reiser 2001), and species occurrence records are from the California Natural Diversity Database (CNDDB; State of California 2017a) or as identified by the City of San Marcos (2001).

4.0 Existing Conditions

The Option 1 and Option 2 survey areas consist primarily of previously developed or graded areas, with a small portion of undeveloped land along San Marcos Creek. Both survey areas are located outside the Focused Planning Areas (FPA), which are identified in the MHCP as areas for targeted habitat conservation within the region.

Elevations within the Option 1 survey area are between 615 feet above mean sea level (amsl) within the San Marcos Creek channel and 620 feet amsl at the northeastern end of the pipeline alignment at East Mission Road. Elevations within the Option 2 survey area range from 595 feet amsl in the San Marcos Creek channel to 630 feet amsl within East Mission Road in the eastern portion of the survey area.

Soils within the Option 1 survey area consist of Visalia sandy loam (0 to 2 percent slopes) in the northern portion of the survey area and Chino fine sandy loam (0 to 2 percent slopes) in the southern portion. In the Option 2 survey area, soils consist of Exchequer rocky silt loam (9 to 30 percent slopes) in the southwestern portion near San Marcos Creek, Chino fine sandy loam (0 to 2 percent slopes) in the northern portion, and Visalia sandy loam (0 to 2 percent slopes) in the eastern portion within East Mission Road. Soils are characterized according to mapping by the U.S. Department of Agriculture (USDA; 1973).

4.1 Botany

A complete list of plant species present within the survey areas was not compiled; the dominant plants present within each vegetation community are discussed below. Vegetation communities are categorized per MHCP habitat groups (SANDAG 2003):

Group A - Wetland or riparian habitats

Group B - Rare upland vegetation communities

Group C - Coastal sage scrub vegetation communities

Group D - Chaparral vegetation communities

Group E - Annual non-native grasslands

Group F - Other, non-sensitive areas, including disturbed, non-native, and developed lands

Acres of vegetation communities and land cover types within the Option 1 and Option 2 survey areas are presented in Table 1.

Vegetation Communities and Land Cover Types	MHCP Habitat Group	Existing Acreage
Option 1 Survey Area		
Southern arroyo willow riparian forest	Group A	0.54
Disturbed habitat	Group F	0.03
Urban/developed land	Group F	2.81
TOTAL OPTION 1		3.38
Option 2 Survey Area		
Southern willow scrub	Group A	0.15
Eucalyptus woodland	Group F	0.12
Disturbed habitat	Group F	2.41
Urban/developed land	Group F	6.09
TOTAL OPTION 2		8.77

4.1.1 Option 1

Three vegetation communities and land cover types occur within the Option 1 survey area: southern arroyo willow riparian forest, disturbed habitat, and urban/developed land (Figure 5a; see Table 1).

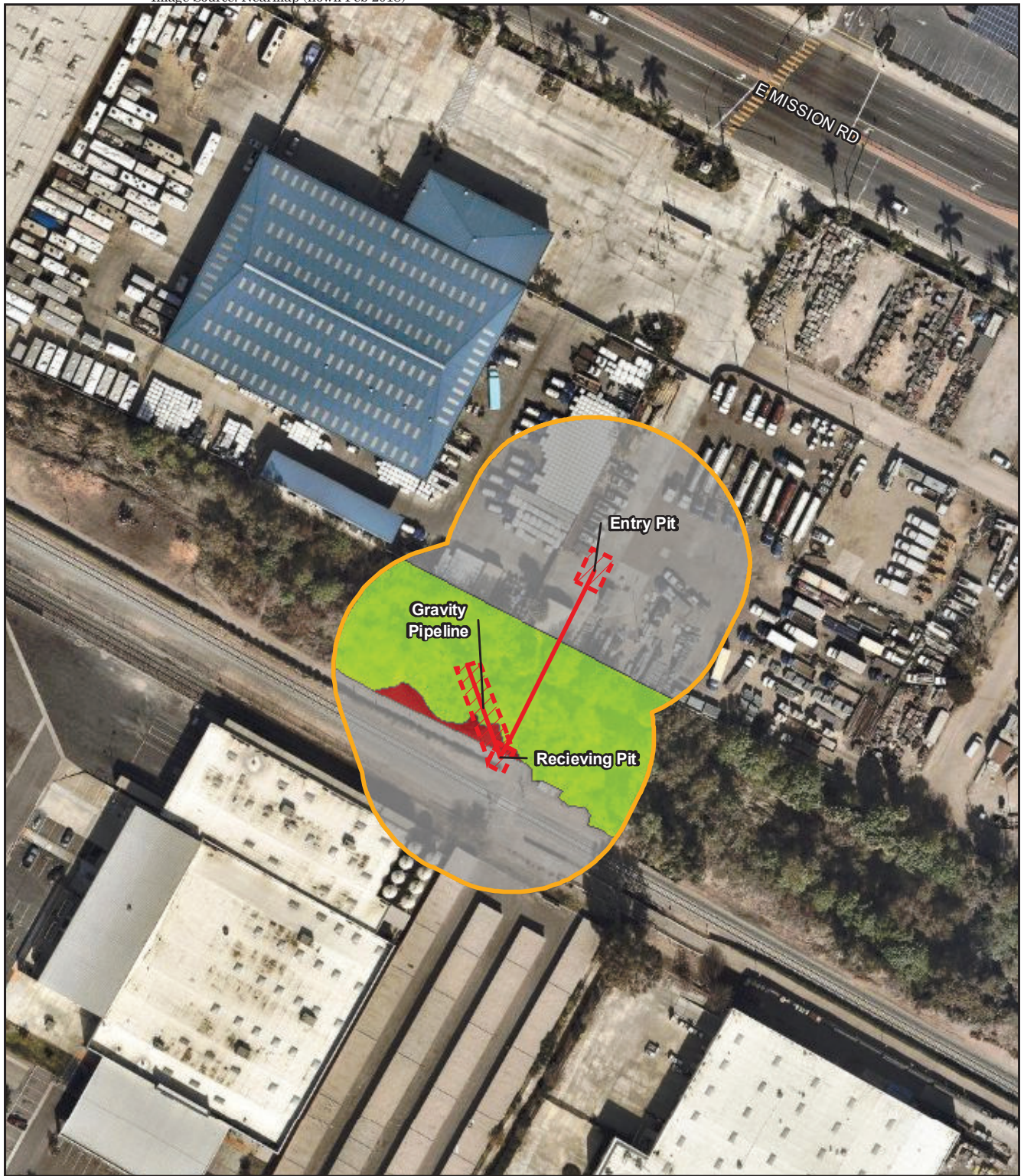
Southern Arroyo Willow Riparian Forest

Southern arroyo willow riparian forest typically consists of broadleaved, winter-deciduous tree species with a closed canopy and an understory of shrubby willows (Oberbauer et al. 2008). It is an MHCP Group A vegetation community (SANDAG 2003).

Within the survey area, this vegetation community is dominated arroyo willow (*Salix lasiolepis*), with significant cover by Pacific willow (*Salix lasiandra* var. *lasiandra*) and Goodding's black willow (*Salix gooddingii*), as well as the non-native trees, shamel ash (*Fraxinus uhdei*) and Mexican fan palm (*Washingtonia robusta*). Dominant understory species in this community include a mix of native and non-native herbaceous plants, such as celery (*Apium graveolens*), southern cattail (*Typha domingensis*), castor bean (*Ricinus communis*), Japanese honeysuckle (*Lonicera japonica*), and riggut grass (*Bromus diandrus*). This vegetation community is considered high-quality habitat for wildlife due to the presence of mature native vegetation along an established riparian corridor. This area of the creek appears to be subject to occasional human disturbance, as a small transient camp was observed adjacent to the manhole, near the southeast side of the survey area. San Marcos Creek contained standing water at the time of the survey.

Disturbed Habitat

Disturbed habitat typically consists of non-native ruderal or ornamental plant species that take advantage of disturbance. These areas can be largely devoid of vegetation as a result of previous disturbance, including vehicular use, dumping, or other human or natural factors (Oberbauer et al. 2008). This vegetation community is considered an MHCP Group F vegetation community and is not considered sensitive (SANDAG 2003).



- Construction Option 1 Replacement Pipeline
- Impact Area
- 100-foot Buffer Area

Vegetation Communities and Land Cover Types

- Southern Arroyo Willow Riparian Forest
- Disturbed Habitat
- Urban/Developed

FIGURE 5a

Biological Resources and Impacts - Option 1

A narrow strip of disturbed habitat occurs at the southern edge of the Option 1 survey area. This area is dominated by non-native species such as short-pod mustard (*Hirschfeldia incana*), wall barley (*Hordeum murinum*), ripgut grass, redstem filaree (*Erodium cicutarium*), Japanese honeysuckle, and Canary Island palm (*Phoenix canariensis*). It also contains a number of native coyote brush (*Baccharis pilularis*) shrubs and western ragweed (*Ambrosia psilostachya*) annual plants. The disturbed habitat is considered low-quality habitat for wildlife due to the dominance of non-native plant species and adjacency to development.

Urban/Developed Land

Urban/developed land consists of areas that have been subject to construction or have been permanently altered such that they no longer support native vegetation. It includes areas with permanent structures, pavement, hardscape, or landscaped areas. Urban/developed land is considered an MHCP Group F vegetation community and is not considered sensitive (SANDAG 2003). Within the survey area, urban/developed land includes the Diamond Environmental Services property, paved portions of the Inland Rail Trail, and the Sprinter light rail line.

4.1.2 Option 2

Four vegetation communities and land cover types occur within the Option 2 survey area: southern willow scrub, eucalyptus woodland, disturbed habitat, and urban/developed land (Figure 5b; see Table 1).

Southern Willow Scrub

Southern willow scrub is a dense riparian community dominated by shrubby, broad-leaved, winter-deciduous trees such as willows (*Salix* spp.), often mixed with other riparian trees or herbs. It occurs along drainages, where the density of willows typically prevents a substantial understory from growing. It is often found in loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. This community requires repeated flooding to prevent succession to community dominated by sycamores and cottonwoods (Holland 1986). This vegetation community is considered an MHCP Group A vegetation community (SANDAG 2003).

Within the Option 2 survey area, southern willow scrub occurs in patches within a 50-foot-wide strip of vegetation along San Marcos Creek. These patches are bounded by a disturbed area and a graded lot to the north, and the Sprinter light rail line to the south. San Marcos Creek crosses through the southern willow scrub at the eastern and western edges in the southern portion of this survey area. The southern willow scrub within the survey area is characterized by arroyo willow mixed with Mexican fan palms, and has an understory dominated by western ragweed and ripgut grass.











- | | |
|--|---|
|  Construction Option 2 Project Location | Vegetation and Land Cover Types |
|  100-foot Buffer Area |  Disturbed Habitat |
|  Impact Area |  Eucalyptus Woodland |
|  Potential Jurisdictional Drainage |  Southern Willow Scrub |
| |  Urban/Developed |

FIGURE 5b

Eucalyptus Woodland

Eucalyptus woodland is characterized by tall, exotic, gum trees (*Eucalyptus* sp.) that were originally imported from Australia. This introduced woodland community is common in urban areas and the coastal plains. It often forms single-species habitats with little or no shrub understory. It produces a large amount of leaf litter, which has chemical characteristics that can limit growth of other plants in the understory (Oberbauer et al. 2008). It is considered an MHCP Group F vegetation community (SANDAG 2003) and is not considered sensitive.

Within the Option 2 survey area, the eucalyptus woodland consists of two gum trees at the south end of the survey area. The larger northern tree is rooted approximately 5 feet south of San Marcos Creek, which runs east to west beneath the tree canopy. The understory was sparsely vegetated with ripgut grass, and leaf litter from the trees. The eucalyptus woodland has potential to provide moderate-quality habitat for raptors, but low-quality habitat for other wildlife species.

Disturbed Habitat

Disturbed habitat occurs within the private lot at 753 East Mission Road. At the time of the survey, most of this property was fenced off and inaccessible. Vegetation outside the fenced area had been cleared or mowed and contained large sections of bare ground. The southern portion of the disturbed habitat, north of the creek, was dominated by dwarf nettle (*Urtica urens*) and other non-native annual plant species such as lesser swine cress (*Lepidium didymum*), freeway iceplant (*Carpobrotus edulis*), short-pod mustard, ripgut grass, and castor bean. The disturbed habitat is considered low-quality habitat for wildlife due to the dominance of bare ground, presence of human disturbance, and adjacency to development. It is considered an MHCP Group F vegetation community (SANDAG 2003).

Urban/developed Land

Within the Option 2 survey area, all landscaped and paved areas within and immediately adjacent to East Mission Road were mapped as urban/developed land. These areas provide no habitat value for native wildlife. Urban/developed land is considered an MHCP Group F vegetation community (SANDAG 2003).

4.2 Zoology

All wildlife species detected during the survey are discussed below.

4.2.1 Option 1

Three wildlife species were recorded in the Option 1 survey area: Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos hesperis*), and house finch (*Haemorhous mexicanus frontalis*). These species are typical for disturbed and developed areas in San Diego County.

4.2.2 Option 2

Two wildlife species were observed in the Option 2 survey area. Black phoebe (*Sayornis nigricans semiatra*) was observed within the disturbed habitat on private property south of East Mission Road, and red-tailed hawk (*Buteo jamaicensis*) was observed perched within a gum tree within the eucalyptus woodland along San Marcos Creek. These species are typical for disturbed and developed areas in San Diego County.

5.0 Sensitive Biological Resources

The applicable federal, state, and local regulations for protecting sensitive biological resources are summarized below, followed by a detailed discussion of the specific sensitive resources with potential to occur on-site. The assessments of potential species occurrence are based upon on-site conditions, known species ranges and habitat preferences, recorded species occurrences from the CNDDDB, and species occurrence records from other sites in the vicinity of the survey area. These sensitive biological resources are discussed in further detail below.

5.1 Sensitivity Criteria/Regulatory Setting

The City of San Marcos is in the process of preparing a Subarea Plan under the MHCP. The MHCP is a habitat conservation plan for the seven jurisdictional areas within the northern subregion of San Diego County, including San Marcos (SANDAG 2003). Under the MHCP, the draft Subarea Plan addresses land conservation issues (City of San Marcos 2001). This draft City of San Marcos Subarea Plan identifies a series of FPAs within which some lands will be dedicated for preservation of native habitats. These areas contain both “hard line” areas, which will be preserved as open space, and “soft line” areas, which will include both development and open space to be determined through the planning process. Neither the Option 1 nor Option 2 survey area is located within a FPA.

For the purposes of this report, species are considered sensitive if they are:

1. covered species or narrow endemic species under the MHCP (SANDAG 2003) and/or the City’s draft Subarea Plan (City of San Marcos 2001);
2. listed or proposed for listing by state or federal agencies as threatened or endangered (State of California 2017b, 2017c, 2017d, 2017e);
3. identified as CNPS California Rare Plant Rank (CRPR) 1B 2, 3, or 4 (CNPS 2017); or
4. considered rare, endangered, or threatened by the CNDDDB (State of California 2017a).

Sensitive vegetation communities are those identified as Habitat Group A through E in the MHCP or City’s draft Subarea Plan (SANDAG 2003, City of San Marcos 2001).

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs (State of California 1991). The federal Migratory Bird Treaty Act of 1918 (MBTA) was established to provide protection to the breeding activities of migratory birds throughout the U.S. The MBTA protects migratory birds and their breeding activities from take and harassment.

5.2 Sensitive Vegetation Communities

The Option 1 survey area supports one sensitive vegetation community: southern arroyo willow riparian forest. As previously mentioned, this is a Group A vegetation community, provides high quality wildlife habitat, and is a part of a wildlife corridor. Similarly, the Option 2 survey area supports one sensitive vegetation community: southern willow scrub, which is considered a Group A community and is part of the wildlife corridor along San Marcos Creek.

5.3 Potential Jurisdictional Areas

Potential jurisdictional resources were identified along San Marcos Creek in both Option 1 and Option 2 survey areas during the biological survey. A description of each is below.

In accordance with Section 404 of the Clean Water Act, U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into waters of the United States. The term “waters of the United States” is defined as:

- All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation, or destruction of which could affect foreign commerce including any such waters, (1) which could be used by interstate or foreign travelers for recreational or other purposes; or (2) from which fish or shellfish are, or could be, taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industries in interstate commerce;
- All other impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified above;

- The territorial seas; and
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above (33 Code of Federal Regulations Part 328.3(a)).

Under Sections 1600–1607 of the Fish and Game Code, CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats (e.g., southern willow scrub) associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider.

Regional Water Quality Control Board (RWQCB) jurisdictional areas include waters of the state as mandated by both the federal Clean Water Act Section 401 and the California Porter-Cologne Water Quality Control Act.

5.3.1 Option 1

Within the Option 1 survey area, the southern arroyo willow riparian forest habitat along San Marcos Creek (described in Section 4.1.1) likely qualifies as USACE and RWQCB wetland, and a California Department of Fish and Wildlife (CDFW) riparian habitat. A formal jurisdictional delineation would be necessary to confirm jurisdictional boundaries.

5.3.2 Option 2

San Marcos Creek crosses the southern portion of the Option 2 survey area as an approximately 3-foot-wide channel. This channel, which totals 0.01 acre (approximately 54 square feet, 18 linear feet), would likely be considered USACE jurisdictional non-wetland waters of the U.S., RWQCB non-wetland waters of the state, and a CDFW streambed. The southern willow scrub (described in Section 4.1.2) that occurs along the creek also likely qualifies as CDFW riparian habitat.

5.4 Sensitive Plant Species

No sensitive plant species were observed or are expected to occur within either the Option 1 or Option 2 survey area. A list of sensitive plant species assessed for potential to occur within the survey area is presented in Attachment 1.

5.5 Sensitive Wildlife Species

5.5.1 Option 1

No sensitive wildlife species were detected within the Option 1 survey area. Two sensitive wildlife species, least Bell's vireo (*Vireo bellii pusillus*) and Cooper's hawk (*Accipiter*

cooperii), have moderate potential to occur in the survey area. Additionally, other avian species protected by the MBTA also have potential to nest within the Option 1 survey area.

A list of sensitive wildlife species assessed for potential to occur within the survey area is presented in Attachment 2.

Least Bell's Vireo

Least Bell's vireo is federally and state listed as endangered and is an MHCP covered species (State of California 2017e; SANDAG 2003). Its historical breeding range once extended from northwestern Baja California, Mexico, to interior northern California, as far north as Red Bluff in Tehama County, California (Franzreb 1989). The species occurs exclusively in riparian forest, woodland, or scrub habitat and requires a dense canopy for foraging and a dense understory for nesting (Unitt 2004; U.S. Fish and Wildlife Service [USFWS] 1998). Least Bell's vireos migrate to breed San Diego County in mid-March and remain until September or October. Populations are concentrated in the coastal lowlands of the county and are scattered within the foothills (Unitt 2004).

Populations of least Bell's vireo have declined drastically due to extensive loss of riparian habitat from urban development, including flood control and damming, introduction of non-native invasive plant species such as giant reed (*Arundo donax*) and saltcedar (*Tamarix ramosissima*), and nest parasitism by brown-headed cowbird (*Molothrus ater*) (USFWS 2009). Populations have recovered somewhat thanks to extensive brown-headed cowbird trapping programs (Unitt 2004). Least Bell's vireos also respond well to riparian restoration efforts, especially in areas adjacent to mature riparian habitat.

Least Bell's vireo has moderate potential to nest in the southern arroyo willow riparian forest in the southern portion of the survey area. Historical records from the USFWS and the CNDDDB include observations of this species within San Marcos Creek, approximately one mile from the Option 1 survey area. The southern arroyo willow riparian forest in the southern portion of the survey area provides moderate-quality habitat for this species, and is part of a narrow strip of riparian habitat extending to San Marcos Lake, approximately 3.8 miles downstream to the west.

Cooper's Hawk

Cooper's hawk is a CDFW watch list species (nesting) and an MHCP covered species (State of California 2017d; SANDAG 2003). The Cooper's hawk's year-round range extends throughout most of the United States. Its wintering range extends south to Central America, and its breeding range extends north to southern Canada (Rosenfield and Bielefeldt 1993). Breeding birds are widespread over San Diego County's coastal slope and most abundant in lowland and foothill canyons and in urban areas. It commonly nests in oak and willow riparian woodlands, as well as urban environments, and nests are found in eucalyptus trees nearly as often as oaks (Unitt 2004). Additionally, this species has been known to nest within planted trees including pine, redwood, and avocado (Unitt 2004). Breeding occurs from March to June, and nests are typically located high in the tree but under the canopy. This hawk forages primarily on medium-sized birds, but is also known to

eat small mammals such as chipmunks and other rodents (Rosenfield and Bielefeldt 1993). Although Cooper's hawk populations have historically declined due to urbanization and loss of habitat, they have increased somewhat over the last 20 years, as the species appears to have adapted to city living (Unitt 2004).

Cooper's hawk has moderate potential to occur within the southern arroyo willow riparian forest within and adjacent to the Option 1 survey area, as there are several tall trees that could provide suitable nesting habitat. While only marginal-quality foraging habitat is present within the survey area, there are patches of higher-quality undeveloped areas south of Highway 78, approximately 1,000 feet south of the survey area.

Other Avian Species

Due to the presence of the mature riparian habitat, avian species protected by the MBTA have high potential to nest within the southern arroyo willow riparian forest at the south end of the Option 1 survey area. The remaining disturbed and developed areas have only low potential to support nesting migratory birds.

5.5.2 Option 2

No sensitive wildlife species were detected within the Option 2 survey area; however least Bell's vireo and Cooper's hawk have moderate potential to occur in the survey area. Additionally, other avian species protected by the MBTA also have potential to nest within the Option 2 survey area.

Least Bell's Vireo

The southern willow scrub in the Option 2 survey area is low-quality habitat for least Bell's vireo; however, higher-quality habitat occurs just east (upstream) and approximately 400 feet west of the Option 2 survey area. As a result, vireos are not expected to nest within the survey area, but any vireos potentially nesting off-site could use the Option 2 survey area for foraging, dispersal, or movement between patches of higher-quality habitat.

Cooper's Hawk

Cooper's hawk has moderate potential to nest within the Option 2 survey area. Eucalyptus woodland at the southern portion of the survey area contains a large gum tree in which a red-tailed hawk was observed. While only marginal-quality foraging habitat is present within the survey area, there are patches of higher-quality undeveloped areas south of Highway 78, approximately 1,600 feet southeast and 3,200 feet south of the survey area.

Other Avian Species

Avian species protected by the MBTA have moderate potential to nest within the southern willow scrub and eucalyptus woodland at the southern portion of the Option 2 survey area. The disturbed habitat and developed areas to the north and along Mission Road have very low potential to support nesting migratory birds.

5.6 Wildlife Movement Corridor

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important, because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

The draft Subarea Plan identifies Biological Core and Linkage Areas (BCLAs) as those areas determined biologically valuable for inclusion in the regional preserve system (SANDAG 2003). BCLAs were designed to conserve sensitive species and corridors between areas of high-quality habitat and to provide avenues for wildlife movement between these areas. Neither the Option 1 nor 2 survey area has been identified as part of a BCLA, although San Marcos Creek in the southern portions of both survey areas provides opportunities for wildlife movement. The riparian corridor is 50 to 100 feet wide, terminating 400 feet east of the Option 1 survey area, and it is constrained at the north and south by existing development. Despite these constraints, the corridor has connectivity with Lake San Marcos approximately 3.8 miles to the west and thereby to larger swaths of undeveloped natural habitat in Double Peak Park, Harmony Grove, and Lake Hodges. Thus, these portions of the Option 1 and Option 2 survey areas represent a low-quality wildlife corridor that provides connectivity among undeveloped areas along San Marcos Creek.

6.0 Project Impacts

Direct impacts to biological resources are discussed below and are shown on Figures 5a and 5b. As the final construction plans have not been determined, this report assumes a conservative estimate of project impacts. This report assumes a 20-foot-wide trenching corridor centered on the pipeline alignments, although it should be possible to work within a smaller area in most portions of the project. All project staging is assumed to occur within existing disturbed or developed areas and would not occur within the southern arroyo willow riparian forest or southern willow scrub along San Marcos Creek.

6.1 Direct Impacts

6.1.1 Option 1

Vegetation Communities

Direct impacts to vegetation communities from Option 1 are presented in Figure 5a and Table 2. Following pipeline replacement, all the existing soil in the natural habitat areas

would be replaced and the areas would be revegetated. Thus, all direct impacts would be considered temporary. Implementation of Option 1 would cause temporary impacts to southern arroyo willow riparian forest, disturbed habitat, and urban/developed land. Temporary impacts to southern arroyo willow riparian forest would be considered significant under the MHCP and would require mitigation (SANDAG 2003). Impacts to disturbed habitat and urban/developed land would not be considered significant and would not require mitigation.

Table 2			
Impacts to Vegetation Communities and Land Cover Types			
(acres)			
Habitat and Land Cover Types (Oberbauer)	MHCP Habitat Group	Existing	Impacts
Option 1 Survey Area			
Southern arroyo willow riparian forest	Group A	0.54	0.03
Disturbed habitat	Group F	0.03	0.01
Urban/developed land	Group F	2.81	0.02
TOTAL OPTION 1		3.38	0.06
Option 2 Survey Area			
Southern willow scrub	Group A	0.15	-
Eucalyptus woodland	Group F	0.12	0.01*
Disturbed habitat	Group F	2.41	0.23
Urban/developed land	Group F	6.09	0.58
TOTAL OPTION 2		8.77	0.82
* Approximately 54 square feet (18 linear feet) of the potential jurisdictional drainage occur beneath the eucalyptus woodland canopy and would likely be impacted (see Section 6.1.2)			

Sensitive Wildlife Species

General wildlife. The project may result in direct impacts to small mammals and reptiles with low mobility. Large mammal species and most birds would be able to move out of the way during trenching. These impacts to general wildlife would be minimal and considered less than significant.

Least Bell's vireo. Project construction has potential to cause direct impacts to least Bell's vireos potentially nesting within the impact area if vegetation clearing would occur during the breeding season (March 15 to September 15). In addition, indirect impacts to least Bell's vireo have potential to occur from construction activity near active nests if construction noise is in excess of 60 hourly equivalent A-weighted decibels (dB(A) L_{eq}) at an active nest during the breeding season. Impacts to this species would be considered significant.

Cooper's hawk. Construction is not expected to require removal of any large trees, so no direct impacts to Cooper's hawk would occur. Potential indirect impacts from construction noise would be considered less than significant.

Nesting birds. If construction occurs during the general breeding season of MBTA protected birds (February 15 to September 15), the project would have potential to cause

direct impacts to migratory or nesting birds within the survey area. Direct impacts to nesting and migratory birds would be considered significant.

Wildlife Movement Corridor

Option 1 would cause temporary impacts within the southern arroyo willow riparian forest along San Marcos Creek. As a result, it would cause temporary impacts to a low-quality wildlife movement corridor. As the impacts would be temporary and Option 1 is very close to the eastern terminus of the riparian corridor, implementation of this Option is not expected to substantially affect wildlife movement through the region. As a result, impacts to wildlife movement corridors would be considered less than significant.

Jurisdictional Wetlands

As shown in Table 2, the project would cause direct impacts to southern arroyo willow riparian forest, which would likely be considered potential jurisdictional USACE and RWQCB wetland and a CDFW riparian habitat. A formal jurisdictional delineation would likely be required prior to project approval. Impacts to jurisdictional areas would likely be considered significant and would require a formal jurisdictional delineation, mitigation, and resource agency permitting.

6.1.2 Option 2

Vegetation Communities

Direct impacts to vegetation communities from Option 2 are presented in Table 2 and shown in Figure 5b. Following pipeline replacement, all the existing soil in the natural habitat areas would be replaced and the areas would be revegetated. Thus, the impact would be considered temporary. Implementation of Option 2 would cause temporary impacts to eucalyptus woodland, disturbed habitat, and urban/developed land. The impact to eucalyptus woodland would occur on the ground beneath the canopy of a large gum tree; and it may be possible to avoid trimming the tree. These temporary impacts would be considered less than significant under the MHCP (SANDAG 2003).

Sensitive Wildlife Species

General wildlife. The project may result in direct impacts to small mammals and reptiles with low mobility. Large mammal species and most birds would be able to move out of the way during trenching. These impacts to general wildlife would be minimal and considered less than significant.

Least Bell's vireo. Implementation of Option 2 is not expected to impact southern willow scrub, so it would not cause direct impacts to least Bell's vireo. However, Option 2 does have potential to cause indirect impacts to least Bell's vireo if construction noise is in excess of 60 dB(A) L_{eq} at an active nest during the breeding season (March 15 to September 15). Indirect impacts to this species would be considered significant.

Cooper's hawk. Construction is not expected to require removal of any large trees, so no direct impacts to Cooper's hawk would occur. Potential indirect impacts from construction noise would be considered less than significant.

Nesting birds. If construction occurs during the general breeding season of MBTA protected birds (February 15 to September 15), the project would have potential to cause direct impacts to migratory or nesting birds within the survey area. Direct impacts to nesting and migratory birds would be considered significant.

Wildlife Movement Corridor

Option 2 would cause temporary impacts within eucalyptus woodland. This impact would occur within the northern edge of the low-quality wildlife movement corridor along San Marcos Creek and is not expected to substantially restrict wildlife movement along the corridor. As a result, impacts to wildlife movement corridors would be considered less than significant.

Jurisdictional Waters

As shown in Table 2, the project would cause direct impacts to the 3-foot-wide drainage within the Option 2 survey area, which would likely be considered jurisdictional USACE non-wetland water of the U.S., RWQCB non-wetland water of the state, and CDFW streambed. A formal jurisdictional delineation would likely be required prior to project implementation. Any impacts to this drainage would be considered significant and would require mitigation and resource agency permitting.

7.0 Mitigation

Mitigation is required for impacts considered significant under CEQA and in compliance with the MHCP and Subarea Plan. As described in the MHCP, "unavoidable impacts to habitat will be mitigated by restoration or conservation of other habitat areas. For impacts to group A (wetland or riparian) communities, mitigation shall consist of restoration or creation of new habitat areas to meet the no net loss goal" for jurisdictional wetlands and waters.

7.1 Sensitive Vegetation Communities

7.1.1 Option 1

Table 3 provides the mitigation required for Option 1 project impacts. As all impacts would be considered temporary, mitigation would occur with *in-situ* revegetation of the impacted area. This revegetation would be designed to result in no net loss of wetlands of the impacted area following construction. With the recommended revegetation, the impact would be reduced to below a level of significance.

Table 3 Mitigation for Impacts to Vegetation Communities/Land Cover Types (acres)				
Habitat and Land Cover Types (Oberbauer)	MHCP Habitat Group	Impacts	Mitigation Ratio	Mitigation Requirement
Option 1 Survey Area				
Southern arroyo willow riparian forest	Group A	0.03	1:1*	0.03
Disturbed habitat	Group F	0.01	-	-
Urban/developed land	Group F	0.02	-	-
TOTAL OPTION 1		0.06	-	0.03
Option 2 Survey Area				
Southern willow scrub	Group A	-	1:1*	-
Eucalyptus woodland	Group F	0.01	**	-
Disturbed habitat	Group F	0.23	-	-
Urban/developed land	Group F	0.58	-	-
TOTAL OPTION 2		0.82	-	0.00
*Mitigation would occur by <i>in situ</i> revegetation of the impacted area to result in no net loss of wetlands and waters. **No mitigation would be required for impacts to eucalyptus woodland; however, impacts to 54 square feet (18 linear feet) of the potential jurisdictional drainage would require resource agency permitting and mitigation at a minimum 1:1 ratio (see Section 7.4.2).				

7.1.2 Option 2

Implementation of Option 2 would not cause direct impacts to sensitive vegetation communities. Therefore, no mitigation would be required.

7.2 Sensitive Wildlife Species

7.2.1 Option 1

General Wildlife

Impacts to general wildlife would be considered less than significant. Therefore, no mitigation would be required.

Least Bell’s Vireo

If vegetation clearing within the southern arroyo willow riparian forest occurred during the least Bell’s vireo breeding season (March 15 to September 15), implementation of Option 1 would have potential to cause direct impacts to least Bell’s vireo. The following measures would be required to mitigate potential impacts to this species:

- A. A qualified biologist shall survey habitat that would be removed and a buffer that would be subject to construction noise levels exceeding an hourly average of 60 A-weighted decibels (dB[A] L_{eq}) for the presence of the least Bell’s vireo.

Surveys for the this species shall be conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of construction. If the least Bell's vireo is present, then the following conditions must be met:

- I. Between March 15 and September 15, no clearing, grubbing, or grading of occupied least Bell's vireo habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and
- II. Between March 15 and September 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) L_{eq} at the edge of occupied least Bell's vireo or habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) L_{eq} at the edge of occupied habitat must be completed by a qualified acoustician and approved by the City manager at least two weeks prior to the commencement of construction activities during the breeding season. Prior to the commencement of any of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; or
- III. At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) L_{eq} at the edge of habitat occupied by the least Bell's vireo. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(a) L_{eq} . If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

*Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB (A) L_{eq} or to the ambient noise level if it already exceeds 60 dB (A) L_{eq} . If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

- B. If least Bell's vireo are not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the City manager and applicable

resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 and September 15 as follows:

- I. If this evidence indicates the potential is high for least Bell's vireo to be present based on historical records or site conditions, then condition A(III) shall be adhered to as specified above.
- II. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

Cooper's Hawk

Potential impacts to Cooper's hawk would be considered less than significant. Therefore, no mitigation would be required

Nesting Birds

Implementation of Option 1 has potential to cause significant direct impacts to MBTA protected birds if construction occurs during the breeding season (February 15 to September 15). The following measures are recommended to avoid or mitigate potential impacts to nesting birds:

- To remain in compliance with the MBTA and California Fish and Game Code 3503, no direct impacts shall occur to any nesting birds or their eggs, chicks, or nests during the breeding season as mentioned above. If vegetation clearing would occur within or adjacent to native habitat during the breeding season (February 15 to September 15) or an active nest is noted, the project biologist shall conduct a pre-grading survey for active nests in the development area.
- If active nests are detected, mitigation in conformance with applicable state and federal law (i.e., appropriate follow-up surveys, monitoring schedules, construction, and/or noise barriers/buffers, etc.) may be required. If no nesting birds are detected, no mitigation would be required.

7.2.2 Option 2

General Wildlife

Impacts to general wildlife would be considered less than significant. Therefore, no mitigation would be required.

Least Bell's Vireo

If vegetation clearing occurred during the least Bell's vireo breeding season (March 15 to September 15), construction noise from Option 2 could cause indirect impacts to breeding least Bell's vireo. The following measures would be required to mitigate potential impacts to this species:

- A. A qualified biologist shall survey an appropriate buffer of potentially suitable habitat that would be subject to construction noise levels exceeding an hourly average of 60 A-weighted decibels (db[A] L_{eq}) for the presence of the least Bell's vireo. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of construction. If the least Bell's vireo is present, then the following conditions must be met:
- I. Between March 15 and September 15, no clearing, grubbing, or grading of occupied least Bell's vireo habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and
 - II. Between March 15 and September 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) L_{eq} at the edge of occupied least Bell's vireo or habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) L_{eq} at the edge of occupied habitat must be completed by a qualified acoustician and approved by the City manager at least two weeks prior to the commencement of construction activities during the breeding season. Prior to the commencement of any of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; or
 - III. At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) L_{eq} at the edge of habitat occupied by the least Bell's vireo. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(a) L_{eq} . If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

*Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB (A) L_{eq} or to the ambient noise level if it already exceeds 60 dB (A) L_{eq} . If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

- B. If least Bell's vireo are not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the City manager and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 and September 15 as follows:
 - I. If this evidence indicates the potential is high for least Bell's vireo to be present based on historical records or site conditions, then condition A(III) shall be adhered to as specified above.
 - II. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

Cooper's Hawk

Potential impacts to Cooper's hawk would be considered less than significant. Therefore, no mitigation would be required

Nesting Birds

Implementation of Option 2 has potential to cause significant direct impacts to MBTA protected birds if construction occurs during the breeding season (February 15 to September 15). The following measures are recommended to avoid or mitigate potential impacts to nesting birds:

- To remain in compliance with the MBTA and California Fish and Game Code 3503, no direct impacts shall occur to any nesting birds or their eggs, chicks, or nests during the breeding season as mentioned above. If vegetation clearing would occur within or adjacent to native habitat during the breeding season (February 15 to September 15) or an active nest is noted, the project biologist shall conduct a pre-grading survey for active nests in the development area.
- If active nests are detected, mitigation in conformance with applicable state and federal law (i.e., appropriate follow-up surveys, monitoring schedules, construction, and/or noise barriers/buffers, etc.) may be required. If no nesting birds are detected, no mitigation would be required.

7.3 Wildlife Movement Corridor

Impacts associated with both Option 1 and 2 would be considered less than significant. Therefore, no mitigation would be required for either option.

7.4 Jurisdictional Wetlands and Waters

A wetland delineation would be required to determine the extent of the jurisdictional resources on-site. A Section 404 Nationwide Permit from USACE, a Streambed Alteration Agreement from CDFW, and a 401 Water Quality Certification from the RWQCB would be required for impacts to jurisdictional wetlands or waters. The approval of mitigation for

impacts to jurisdictional waters is part of the required permit process that authorizes the impacts.

Impacts caused by implementation of Option 2 would be considered temporary. Mitigation for these impacts would occur with *in situ* revegetation of the impacted area (see Table 3). This revegetation would be designed to result in no net loss of wetlands of the impacted area following construction.

7.4.1 Option 1

Implementation of Option 1 is expected to cause direct temporary impacts to 0.03 acre of southern arroyo willow riparian forest that is a potential jurisdictional USACE wetland water, RWQCB wetland water, and CDFW riparian wetland. Because this impact would be considered temporary, mitigation would be performed at a 1:1 ratio with revegetation of the impacted area as presented in Table 3 above. As all impacted areas would be revegetated following construction, there would be no net loss of wetlands and the impact would be reduced to below a level of significance.

7.4.2 Option 2

Implementation of Option 2 is expected to cause direct temporary impacts to less than 0.01 acre (54 square feet, 18 linear feet) of a channelized portion of San Marcos Creek. This drainage would likely be considered USACE non-wetland water of the U.S., a CDFW streambed, and RWQCB non-wetland water of the state. It is anticipated that this mitigation would be accomplished at a 1:1 ratio with replacement of the impacted area. With the recommended revegetation, there would be no net loss of jurisdictional waters and the impact would be reduced to below a level of significance.

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ATTACHMENTS

ATTACHMENT 1

**Sensitive Plant Species
Observed or with the Potential for Occur**

Attachment 1
Sensitive Plant Species
Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Marcos	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
ANGIOSPERMS: DICOTS						
APIACEAE CARROT FAMILY						
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	CE/FE	1B.1	MHCP	Biennial/perennial herb; vernal pools, mesic areas of coastal sage scrub and grasslands, blooms April–June; elevation less than 2,000 feet. Known from San Diego and Riverside counties. Additional populations occur in Baja California, Mexico.	No	This species was not observed in either survey area and is not expected to occur within the survey area due to the lack of vernal pools.
ASTERACEAE SUNFLOWER FAMILY						
<i>Centromadia</i> [= <i>Hemizonia</i>] <i>parryi</i> ssp. <i>australis</i> southern tarplant	–/–	1B.1	–	Annual herb; margins of salt marshes and swamps, valley and foothill grasslands, vernal pools; blooms May–November; elevation less than 1,600 feet.	No	This species was not observed in either survey area and is not anticipated to occur due to lack of suitable habitat.
<i>Iva hayesiana</i> San Diego marsh-elder	–/–	2B.2	MHCP	Perennial herb; marshes and swamps, playas, riparian areas; blooms April–September; elevation below 1,700 feet.	No	This perennial species was not observed in either survey area. It is a moderate sized, perennial shrub and would have likely been seen if present.
<i>Quercus dumosa</i> Nuttall's scrub oak	–/–	1B.1	MHCP	Perennial evergreen shrub; closed-cone coniferous forest, coastal chaparral, coastal sage scrub; sandy and clay loam soils; blooms February–March; elevation less than 1,300 feet.	No	This perennial species was not observed in either survey area and is a large, perennial shrub that would have likely been seen if present.

Attachment 1
Sensitive Plant Species
Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Marcos	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
POLEMONIACEAE PHLOX FAMILY						
<i>Navarretia fossalis</i> spreading navarretia [=prostrate navarretia]	-/FT	1B.1	MHCP	Annual herb; vernal pools, marshes and swamps, chenopod scrub; blooms April-June; elevation 100-4,300 feet.	No	This species was not observed in either survey area and is not expected to occur within the survey area due to the lack of vernal pools.
RHAMNACEAE BUCKTHORN FAMILY						
<i>Adolphia californica</i> California adolphia	-/-	2B.1	-	Perennial deciduous shrub; Diegan coastal sage scrub and chaparral; clay soils; blooms December-May; elevation 100-2,500 feet.	No	This perennial species was not observed in either survey area. It is a conspicuous, perennial shrub that would have been seen if present. Additionally, suitable habitat does not occur in the survey area.
FEDERAL CANDIDATES AND LISTED PLANTS				STATE LISTED PLANTS		
FE = Federally listed endangered				CE = State listed endangered		
FT = Federally listed threatened						
CALIFORNIA NATIVE PLANT SOCIETY (CNPS): CALIFORNIA RARE PLANT RANKS (CRPR)						
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.						
2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.						
3.1 = Species seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat).						
.2 = Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat).						
CITY OF SAN MARCOS						
MHCP = Multiple Habitat Conservation Program- covered species						

ATTACHMENT 2

Sensitive Wildlife Species Occurring or with the Potential to Occur

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Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
REPTILES (Nomenclature from Crother 2008)					
SCINCIDAE SKINKS					
Coronado skink <i>Eumeces skiltonianus interparietalis</i>	CSC	Grasslands, open woodlands and forest, broken chaparral. Rocky habitats near streams.	No	Low	No suitable habitat is present.
CROTALIDAE RATTLESNAKES					
Red diamond rattlesnake <i>Crotalus ruber</i>	CSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields.	No	Low	This species likely occurs in scrub habitats north of Mission Road approximately 0.5 mile west of the Option 2 survey area and has potential to use riparian habitats. San Marcos Creek contains the only native habitat in either Option 1 or 2 survey area; however, creek corridor is likely too narrow and separated from upland vegetation to provide suitable habitat.

Attachment 2
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
BIRDS (Nomenclature from American Ornithological Society 2017 and Unitt 2004)					
ACCIPITRIDAE HAWKS, KITES, & EAGLES					
Cooper's hawk (nesting) <i>Accipiter cooperii</i>	WL, MHCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas.	No	Moderate	Suitable trees for nesting occur along San Marcos Creek within both survey areas. Only low-quality foraging opportunities are present within the survey areas. Moderate quality foraging habitat occurs 0.5 mile east of Option 1 survey area and 0.65 mile west of Option 2 survey area.
VIREONIDAE VIREOS					
Least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	FE, CE, MHCP	Willow riparian woodlands. Summer resident.	No	Moderate	Suitable habitat occurs in the southern arroyo willow riparian forest within and adjacent to Option 1 survey area. Only marginal-quality habitat is present within Option 2 survey area, although there are moderately suitable patches present 400 feet to the west. This species has been reported within 1 mile of the survey area (State of California 2017a).

Attachment 2
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
SYLVIIDAE GNATCATCHERS					
Coastal California gnatcatcher <i>Polioptila californica californica</i>	FT, CSC, MHCP	Coastal sage scrub, maritime succulent scrub. Resident.	No	None	No suitable habitat occurs in either survey area. The nearest area of potentially suitable habitat is approximately 0.5 mile west of the Option 2 project area. This species has been reported within 1 mile of the survey area (State of California 2017a).
MAMMALS (Nomenclature from Baker et al. 2003)					
VESPERTILIONIDAE VESPER BATS					
Pallid bat <i>Antrozous pallidus</i>	CSC	Arid deserts and grasslands. Shallow caves, crevices, rock outcrops, buildings, tree cavities. Especially near water. Colonial. Audible echolocation signal.	No	Low	No suitable day roosting sites are present due to the absence of caves, rock outcrops, and large tree snags. Potentially suitable foraging habitat is present. This species has been reported within 1 mile of the survey area (State of California 2017a).

Attachment 2
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
Townsend's western big-eared bat <i>Corynorhinus townsendii townsendii</i>	CSC, MHCP	Caves, mines, buildings. Found in a variety of habitats, arid and mesic. Individual or colonial. Extremely sensitive to disturbance.	No	Low	No suitable day roosting sites are present due to the absence of caves, mines, and abandoned buildings. Potentially suitable foraging habitat is present. This species has been reported within 1 mile of the survey area (State of California 2017a).

FEDERAL LISTED WILDLIFE

FT = Federally listed threatened

CITY OF SAN MARCOS

MHCP = Multiple Habitat Conservation Program-covered species

STATE LISTED WILDLIFE

CE = State listed endangered

CSC = State species of concern