Diaz Road Improvement Project

General Biological Resources Assessment

July 2021 | 00207.00012.001

Submitted to:

City of Temecula
41000 Main Street
Temecula, CA 92590

Prepared for:

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Temecula, CA 92590

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Suite 150
Irvine, CA 92618

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ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
BMPs	Best Management Practices
BUOW	Burrowing Owl
CASSA	Criteria Area Species Survey Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
City	City of Temecula
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Riverside
CRPR	California Rare Plant Rank
CWA	Clean Water Act
Dudek	Dudek & Associates
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
HANS	Habitat Acquisition and Negotiation Strategy
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
JD	Jurisdictional Delineation
LBVI	Least Bell's Vireo
LDMF	Local Development Mitigation Fee
LF	linear feet
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NEPSSA	Narrow Endemic Plant Species Survey Area
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Diaz Road Improvement Project

ACRONYMS AND ABBREVIATIONS (cont.)

RCA	Western Riverside County Regional Conservation Authority
ROW	Right-of-way
RPW	Relatively Permanent Water Body
RWQCB	Regional Water Quality Control Board
SKR	Stephens' kangaroo rat
SSC	Species of Special Concern
SWFL	Southwestern Willow Flycatcher
TNW	Traditional Navigable Waters
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
WIFL	Willow Flycatcher

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SUMMARY

The 32-acre Diaz Road Improvement Project (project) is located in the City of Temecula, Riverside County, California. The project and a 500-foot survey buffer make up the 326-acre study area which is located within the Southwest Area Plan of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The study area is located within the Subunit 1 (Murrieta Creek) of the Southwest Area Plan of the MSHCP. The study area includes portions of Criteria Cells 6656, 6781, 6782, 6783, 6890, 6891, 7021, and 7078. Although the study area is within several Criteria Cells, the project site is mostly within existing developed areas and is not targeted for conservation or in an area that would contribute to the MSHCP reserve assembly. Furthermore, Diaz Road is considered a "covered road" under the MSCHP. The study area is not located within or adjacent to an MSHCP Criteria Area or MSHCP Conservation Area. The study area is located within the Burrowing Owl (*Athene cunicularia*; BUOW) Survey Area and supports potentially suitable habitat for least Bell's vireo (*Vireo bellii pusillus*; LBVI) and southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL). HELIX Environmental Planning, Inc. (HELIX) conducted a general biological survey, including vegetation mapping and a general habitat assessment; an MSHCP Riparian/Riverine and Vernal Pool habitat assessment; a habitat assessment and a jurisdictional delineation, including mapping of any MSHCP Riparian/Riverine and Vernal Pool Areas encountered on the study area; and focused surveys for BUOW, LBVI, and SWFL.

The study area mostly comprises existing development (163.04 acres) and uplands mustard (68.67 acres). In addition, the study area supports native arroyo willow thicket (27.63 acres) and Fremont cottonwood forest and woodland (0.37 acre). Riverwash (47.70 acres), disturbed habitat (14.56 acres), and eucalyptus grove (3.78 acres) were also mapped within the study area. Smooth tarplant (*Centromadia pungens* ssp. *laevis*) was observed in the northern portion of the study area. Nine fully covered species under the MSHCP were determined to have a potential to occur on the study area, including Coast range newt (*Taricha torosa*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), red diamond rattlesnake (*Crotalus ruber*), southwestern pond turtle (*Actinemys pallida*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), Stephens' kangaroo rat (*Dipodomys stephensi*; SKR), Swainson's hawk (*Buteo swainsoni*), western spadefoot (*Spea hammondii*), and white-tailed kite (*Elanus leucurus*). Southern California legless lizard (*Anniella stebbinsi*), two-striped gartersnake (*Thamnophis hammondii*), and western mastiff bat (*Eumops perotis californicus*; foraging potential only) were determined to have a potential to occur on the study area and are not covered by the MSHCP. Focused BUOW and LBVI surveys were negative. Four males and one pair of LBVIs were observed within suitable habitat on the study area. The study area also supports suitable habitat for nesting migratory bird species. Two sensitive plant communities (arroyo willow thicket [27.63 acres] and southern cottonwood-willow riparian forest [0.37 acre]) were mapped on the study area. The study area supports 12 major drainage features (Murrieta Creek and Drainages A through K). The Jurisdictional Delineation (JD) survey area supports a total of 0.096 acre of U.S. Army Corps of Engineers/Regional Water Quality Control Board non-wetland waters of the U.S. and 0.093 acre of wetland. The JD survey area also supports and 1.49 acres of California Department of Fish and Wildlife jurisdictional streambed and riparian vegetation. MSHCP Riparian Areas were identified within the study area, which are consistent with the limits of CDFW jurisdiction. No other special aquatic sites were observed on the study area. The study area supports trees that may be subject to City tree protection measures.

The project proposes to permanently impact 31.97 acres, including 25.28 acres of existing developed areas, 2.51 acres of disturbed habitat, 0.49 acre of eucalyptus grove, and 3.69 acres of upland mustards. Temporary impacts are also proposed 0.20 acre, including 0.01 acre of existing developed areas,

0.02 acre of disturbed habitat, 0.01 acre of eucalyptus grove, and 0.16 acre of upland mustards. Potential significant impacts were identified for BUOW (if present during focused surveys or the 30-day pre-construction survey), LBVI (indirect impacts only), jurisdictional resources, MSHCP Riparian Areas, and nesting bird species. The project is required to comply with the regulations of the MSHCP and SKR HCP. The project would result in permanent impacts to approximately 0.032 acre of non-wetland waters of the U.S and 0.018 acre of wetlands, and temporary impacts to approximately 0.005 acre of non-wetland waters of the U.S and 0.005 acre of wetlands. In addition, the project would result in permanent impacts to 0.265 acre and temporary impacts to 0.076 acre of CDFW jurisdiction. Since the study area supports trees that may be subject to City tree protection measures, a tree survey will be conducted prior to construction. If protected trees are located within the project site and must be damaged or removed, a Heritage Tree Removal or Relocation Permit must be obtained.

Measures related to the following topics are proposed herein to fully mitigate potential impacts of the project: BUOW, LBVI, jurisdictional resources and MSHCP Riparian/Riverine Areas, migratory nesting bird species, City-protected street trees, compliance with MSHCP landscaping restrictions, and payment of MSHCP and SKR HCP fees. Successful implementation of these measures would mitigate potential impacts to below a level of significance.

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report provides the City of Temecula (City; California Environmental Quality Act [CEQA] lead agency), resource agencies, and the public with current biological data to satisfy review of the proposed Diaz Road Improvement Project (project), located in the City of Temecula (City) in Riverside County (County), California. The purpose of this report is to document the existing biological conditions on and in the immediate vicinity of the project site, and to provide an analysis of potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for project review under CEQA by the City and demonstrates project consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP; Dudek and Associates [Dudek] 2003).

1.2 STUDY AREA LOCATION

The approximately 32-acre project site comprises 2.2 miles along Diaz Road in the western portion of the City (Figure 1, *Regional Location*). It lies within Township 7 South, Range 3 West; and Township 8 South Range 3 West on the U.S. Geological Survey (USGS) 7.5-minute Murrieta and Temecula quadrangle maps (Figure 2, *USGS Topography*). The project site located along Diaz Road, between Cherry Street and Rancho California Road, and mostly occurs within an existing City right-of-way (ROW), but also includes areas immediately outside and along the ROW boundary (Figure 3, *Aerial Photograph*). Due to the linear nature of the project, a 500-foot buffer surrounding the project site was also assessed (study area).

1.3 PROJECT DESCRIPTION

The proposed project is for the widening and improvement of Diaz Road (Figure 4, *Site Plan*). The project proposes to improve Diaz Road to meet the roadway classification requirements of a major arterial with four divided lanes, as specified by City Standard No. 101, between Cherry Street and Rancho California Road. The standards call for a 100-ft minimum right-of-way, a 76-ft roadway with a 14-ft raised median, and 12-ft parkways on each side of the road. The approximately 2.2-mile segment would be improved on its current horizontal alignment, as depicted in the City's General Plan, Circulation Element, Figure C-2 Roadway Plan (City 1993). As such, the proposed project would widen the existing Diaz Road segment and extend the northwestern end of Cherry Street. The project would complete the City's only existing north-south road corridor west of Murrieta Creek. North of Cherry Street, this north-south road corridor is planned to continue as Washington Avenue within the City of Murrieta.

2.0 METHODS

Project evaluation included a review of project plans; a literature review of biological resources occurring on the study area and surrounding vicinity; a general biological survey, including vegetation mapping and a general habitat assessment; focused surveys for sensitive species, including burrowing owl (*Athene cunicularia*; BUOW), least Bell's vireo (*Vireo bellii pusillus*; LBVI), and southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL); a jurisdictional delineation, including mapping of MSHCP Riparian/Riverine and Vernal Pool Areas; and an MSHCP Riparian/Riverine and Vernal Pool Resources

habitat assessment. The methods used to evaluate the biological resources present on the study area are discussed in this section.

2.1 NOMENCLATURE

Nomenclature for this report follows Baldwin et al. (2012) for plants, and the MSHCP (Dudek 2003) for vegetation community classifications, with additional vegetation community information taken from Manual of California Vegetation, Second Edition (MCV; Sawyer et al. 2009) and Oberbauer (2008). Animal nomenclature follows Emmel and Emmel (1973) for butterflies, California Herps (2021) for reptiles and amphibians, American Ornithological Society (2020) for birds, and Baker et al. (2003) for mammals. Rare plant and sensitive animal statuses are from the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (2021) and the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; CDFW 2021). Rare plant species' habitats and flowering periods are from the Jepson Manual (Baldwin et al. 2012), MSHCP (Dudek 2003), CNPS (2021), and CNDDB (CDFW 2021). Soil classifications were obtained from the Natural Resources Conservation Service's (NRCS) Web Soil Survey (2021).

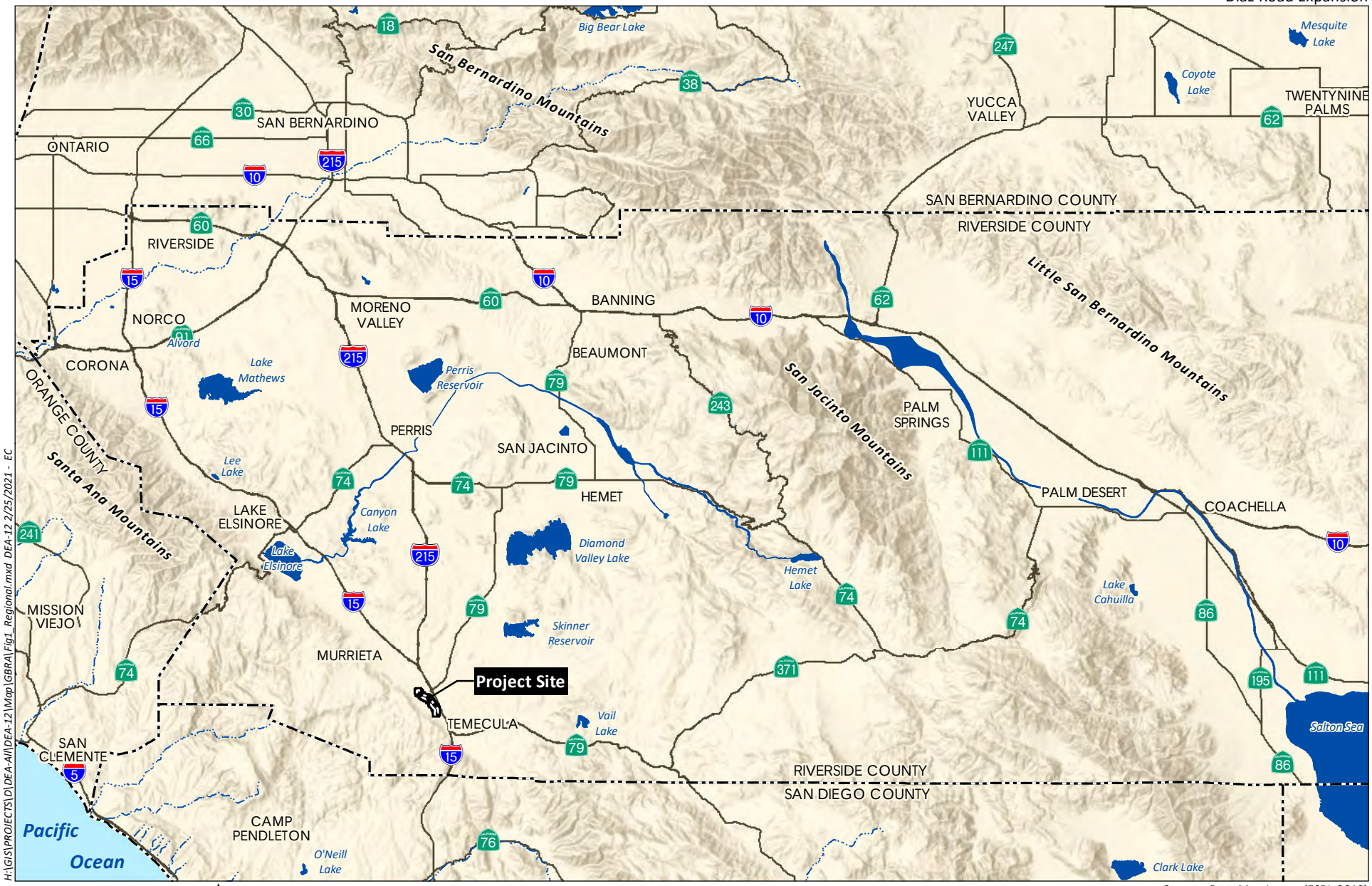
2.2 LITERATURE REVIEW

Prior to conducting the site visit, HELIX Environmental Planning, Inc. (HELIX) reviewed regional planning documents, Google Earth aerials (2020), Web Soil Survey (NRCS 2021), and sensitive species database records, including the Inventory of Rare and Endangered Plants of California (CNPS 2021), CNDDB (CDFW 2021), and U.S. Fish and Wildlife Service's (USFWS) critical habitat maps (2021a). A two-quadrangle database search, which included Murrieta and Temecula, was conducted on CNDDB and CNPS. In addition, the MSHCP (Dudek 2003) and the Regional Conservation Authority's MSHCP Information Tool (Western Riverside County Regional Conservation Authority 2021) were consulted to determine project compliance with the MSHCP.

2.3 FIELD SURVEYS

Field surveys were conducted to document the existing condition of the study area and surrounding lands. The general biological survey included vegetation mapping, during which dominant plant species were noted. A habitat assessment was also conducted on the study area to determine habitat suitability for rare plant and animal species in addition to MSHCP Riparian/Riverine Species. Focused surveys for BUOW, LBVI, and SWFL were also conducted. A jurisdictional delineation was conducted to determine the existing jurisdictional limits regulated by U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW, in addition to MSHCP Riparian/Riverine Areas.

A list of plant and animal species observed and/or detected during the field surveys are provided as Appendix A, *Plant Species Observed*, and Appendix B, *Animal Species Observed and/or Detected*. Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the list of animal species identified is not necessarily a comprehensive account of all species that use the study area, as species that are nocturnal, secretive, or seasonally restricted may not have been observed.



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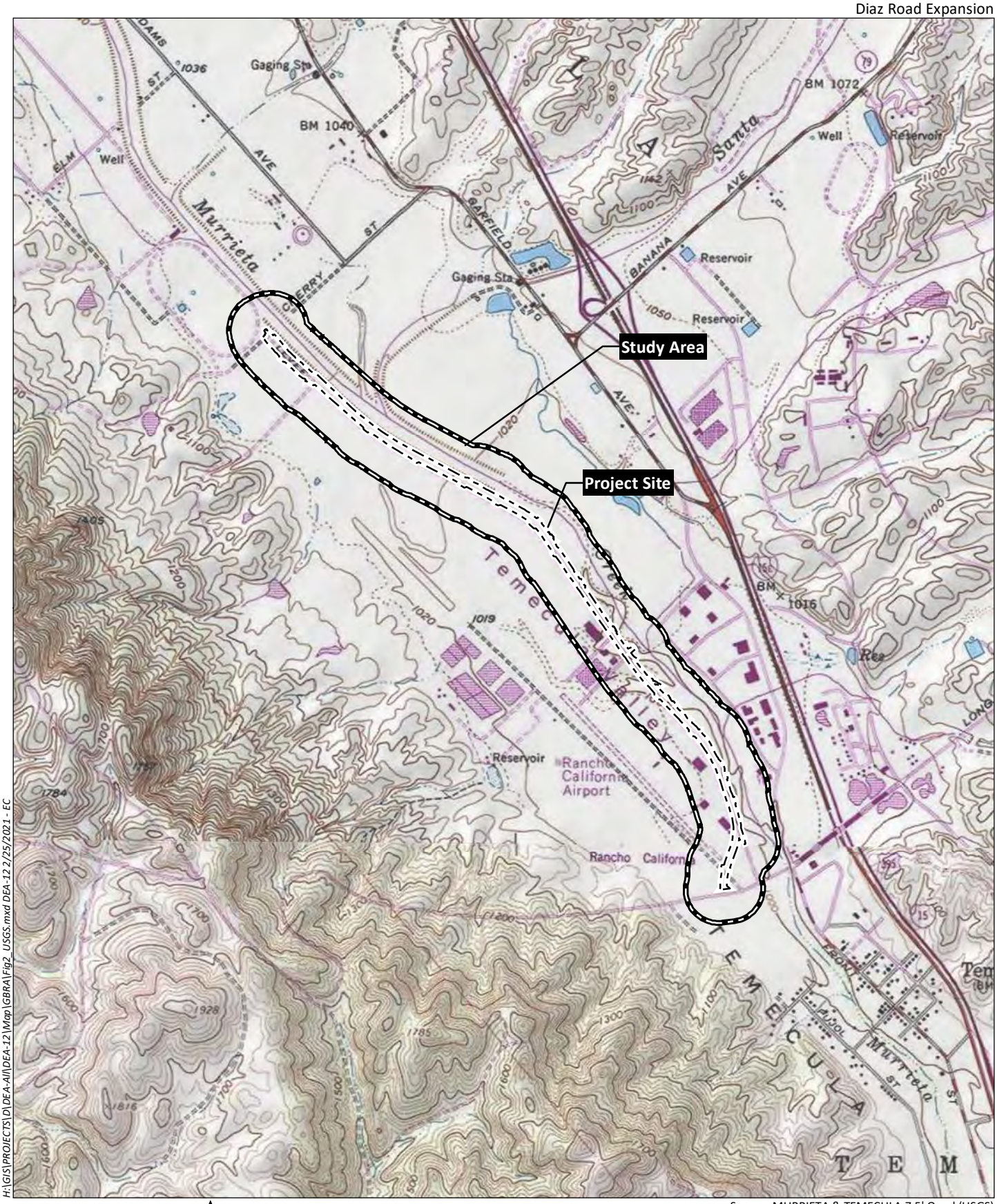
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



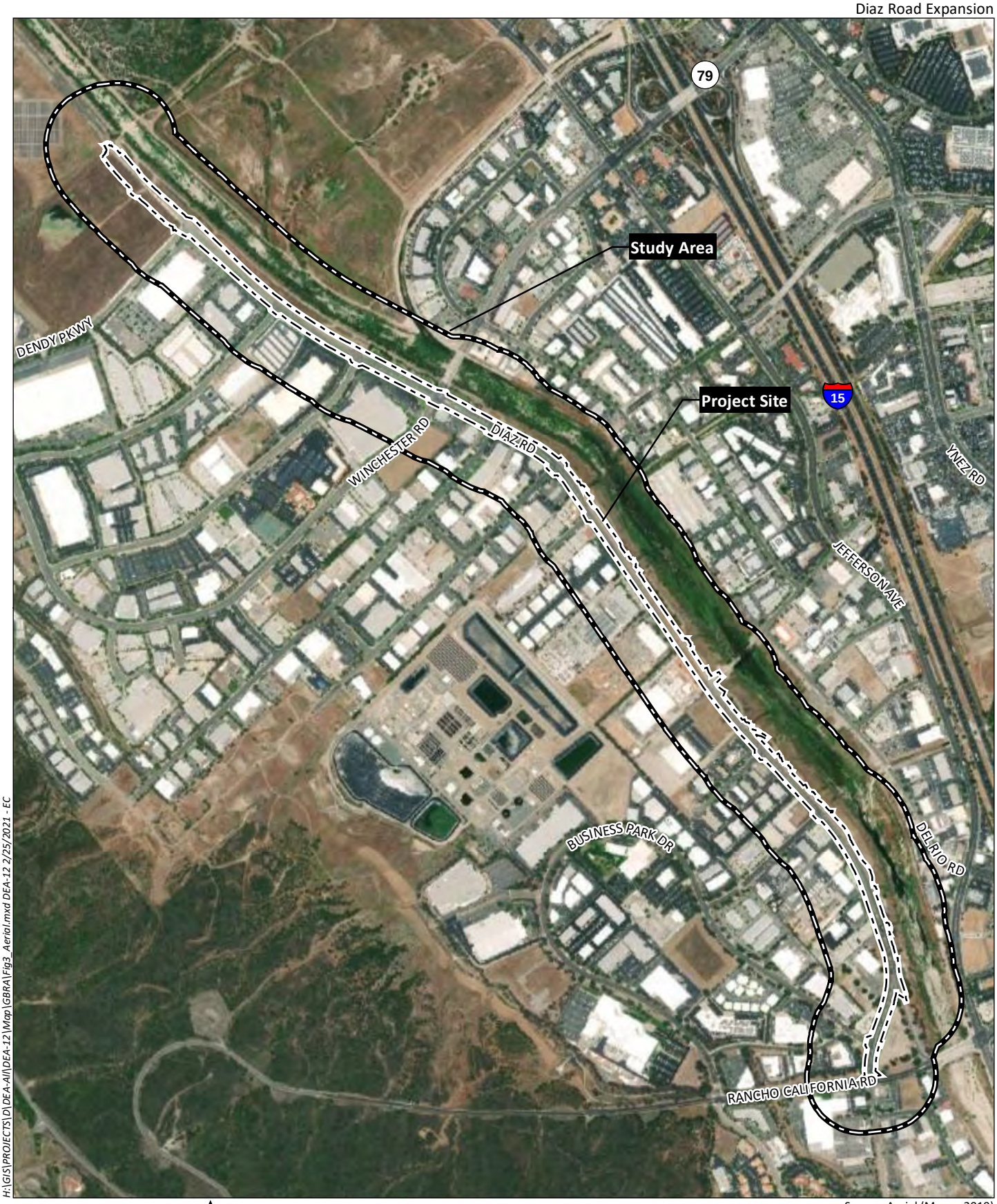
0 2,000 Feet

Source: MURRIETA & TEMECULA 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



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0 1,200 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Aerial Photograph

Figure 3

Study Area
Project Site
Plan Lines

WINCHESTER RD
DIAZ RD
YNEZ RD
79
15
JEFFERSON AVE
BUSINESS PARK DR
DEL RIO RD
RANCHO CALIFORNIA RD
OLD TOWN FRONT ST

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0 800 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Site Plan

Figure 4

2.3.1 General Biological Survey

A general biological survey of the study area was conducted by HELIX Regulatory Specialist Ezekiel Cooley and Biologists Daniel Torres and Jessica Lee on March 27, 2020, in accordance with vegetation community classification described in Section 2.1.3 of the MSHCP (Dudek 2003) and with additional information from MCV (Sawyer et al. 2009) and Oberbauer (2008). Vegetation was mapped on a 175-foot (1 inch = 175 feet) aerial photograph of the study area. Vegetation communities and land uses were mapped by HELIX to one-hundredth of an acre (0.10 acre). The entire study area was surveyed on foot with the aid of binoculars. Representative photographs of the site were taken, with select photographs included in this report as Appendix C, *Site Photographs*. Plant and animal species observed or otherwise detected were recorded in field notebooks. Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs.

2.3.2 Focused Species Surveys

2.3.2.1 Burrowing Owl

The study area is located within an MSHCP BUOW Survey Area. In accordance with the County's survey protocol, a Step I-Habitat Assessment for BUOW was conducted on the study area and within a 150-meter (approximately 500-foot) buffer zone around the periphery of the study area (survey area; County of Riverside [County] 2006). Mr. Dimson completed the habitat assessment on June 5, 2020, during which potential suitable habitat for BUOW was observed.

After completing the habitat assessment, Step II surveys were conducted within the survey area. Step II surveys, which consist of a focused burrow survey (Part A) and four focused BUOW surveys (Part B), were conducted to determine whether the survey area supports suitable burrows and/or BUOWs. The focused burrow survey was conducted concurrently with the first focused BUOW survey. Since suitable burrows were observed within the survey area, three additional focused BUOW surveys were conducted. The biologist walked transects spaced no greater than 30 meters apart (approximately 100 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area. The biologist walked slowly and methodically, closely checking habitat for suitable burrows, BUOW diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance), and individual BUOWs. Inaccessible areas of the survey area were visually assessed using binoculars. The focused burrow survey and four BUOW surveys were conducted by Mr. Dimson and HELIX Biologist Daniel Torres between June 5 and August 6, 2020.

2.3.2.2 Least Bell's Vireo

The study area supports potentially suitable LBVI habitat. Focused surveys for LBVI were conducted in accordance with current USFWS survey protocol (USFWS 2001). The survey consisted of eight site visits conducted by Mr. Cooley, Mr. Torres, and HELIX Biologists Erica Harris and Lauren Singleton between April 28 and July 27, 2020. Surveys were conducted in accordance with the current USFWS survey protocol. The surveys were conducted by walking along the edges of, as well as within, potential LBVI habitat within 500 feet of the study area (survey area) while listening for LBVI and viewing birds with the aid of binoculars. The survey route was designed to ensure complete survey coverage of habitat potentially occupied by LBVI. Accessible potentially suitable habitat within the survey area was

surveyed, which included approximately 28.0 acres of arroyo willow thicket along Murrieta Creek and Fremont cottonwood forest and woodland along a tributary to Murrieta Creek.

2.3.2.3 Southwestern Willow Flycatcher

Focused surveys for SWFL were performed by Ms. Erica Harris (TE-778195-13) in accordance with the current USFWS approved survey protocol (Sogge et al. 2010). The survey protocol requires that five survey visits be conducted at least five days apart, between the hours of sunrise and 10:30 a.m., and within three identified survey periods. One survey was conducted between Survey Period 1 (May 15 through 31), two surveys were conducted during Survey Period 2 (June 1 through 24), and two surveys were conducted during Survey Period 3 (June 25 through July 17), totaling five surveys.

The surveys were conducted by walking within and along the perimeter of suitable SWFL habitat on the study area. Surveys were conducted with binoculars to aid in bird detection. Recorded SWFL vocalizations were played every 20 meters (approximately 65 feet) to 30 meters (approximately 100 feet) followed by a one-minute silent period to listen for a response. The survey route was arranged to ensure complete survey coverage of habitat with potential for SWFL occupancy. Accessible potentially suitable habitat within the survey area was surveyed, which included approximately 28.0 acres of arroyo willow thicket along Murrieta Creek and Fremont cottonwood forest and woodland along a tributary to Murrieta Creek.

2.3.3 Jurisdictional Delineation

Prior to beginning fieldwork, aerial photographs (1 inch = 175 feet), topographic maps (1 inch = 175 feet), USGS quadrangle maps, and National Wetlands Inventory maps (USFWS 2021b) were reviewed to assist in determining the location of jurisdictional waters on the study area. Mr. Cooley conducted the jurisdictional delineation field work on March 27, 2020. Only jurisdictional features occurring within an approximately 50-foot buffer of the project site were delineated as project disturbance beyond the buffer is not anticipated. The assessment was conducted to identify jurisdictional waters subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), RWQCB jurisdiction pursuant to Section 401 of the CWA, and streambed habitats subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the California Fish and Game Code (CFG Code). Data collection was targeted in areas that were deemed to have the potential to support jurisdictional resources, such as the presence of an ordinary high water mark (OHWM), the presence of a bed/bank and streambed associated vegetation, and/or other surface indications of streambed hydrology. Formal wetland soil pits were not conducted due to the presence of obvious hydric soil indicators. The limits of wetlands were identified based on the presence of hydrophytic vegetation and hydrogen sulfide odor in the soils. A hand auger was used to confirm hydrogen sulfur odor in the upper column of the soil profiles. The final determination of jurisdiction will be made by USACE, RWQCB, and CDFW through subsequent processing of regulatory permits for the project.

Representative photographs were taken of jurisdictional features and are included as Appendix D, *Drainage Photographs*. A summary of the regulatory framework is provided below.

2.3.3.1 U.S. Army Corps of Engineers and Regional Water Quality Control Board Jurisdiction

The USACE waters of the U.S. were determined using current USACE guidelines (Environmental Laboratory 1987, USACE 2008a). Areas were determined to be waters of the U.S. if there was evidence of regular surface flow (e.g., bed and bank). Jurisdictional limits for these areas were measured according to the presence of a discernible OHWM, which is defined in 33 Code of Federal Regulations Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; USACE 2008b), which also was considered in this jurisdictional delineation.

The jurisdictional delineation was conducted in accordance with court decisions (i.e., Rapanos v. United States, Carabell v. United States, and Solid Waste Agency of Northern Cook County v. USACE), as outlined and applied by the USACE (USACE 2007; Grumbles and Woodley 2007); and USACE and U.S. Environmental Protection Agency (EPA; 2007). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are a relatively permanent water body (RPW), which has year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation is used to determine if the non-RPW is jurisdictional. As an alternative to the significant nexus evaluation process, a preliminary jurisdictional delineation may be submitted to the USACE. The preliminary jurisdictional delineation treats all waters and wetlands on a site as if they are jurisdictional waters of the U.S. (USACE 2008a). A significant nexus evaluation or preliminary jurisdictional delineation are typically only required for projects that propose impacts to jurisdictional features and, therefore, require a Section 404 permit from the USACE.

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the State pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act. RWQCB jurisdiction found within the study area follows the boundaries of USACE jurisdiction for waters of the U.S. and extends them to the top of bank. There are no areas supporting isolated waters of the State subject to exclusive RWQCB jurisdiction pursuant to the State Porter-Cologne Water Quality Control Act.

2.3.3.2 California Department of Fish and Wildlife Jurisdiction

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow, if present. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses with surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Jurisdictional limits for CDFW streambeds were defined by the top of bank. Vegetated CDFW habitats were mapped at the limits of streambed-associated vegetation, if present.

2.3.4 Riparian/Riverine and Vernal Pool Habitat Assessment

In accordance with the MSHCP, a Riparian/Riverine and Vernal Pool habitat assessment was conducted by Mr. Cooley on March 27, 2020. This habitat assessment was conducted concurrently with the jurisdictional delineation. The identification of Riparian/Riverine habitats is based on potential for the habitat to support, or be tributary to habitat that support, Riparian/Riverine Covered Species identified in MSHCP Section 6.1.2.

3.0 RESULTS

3.1 ENVIRONMENTAL SETTING

The study area mostly consists of paved roads within the Diaz Road ROW. The study area also supports commercial use and some undeveloped land. Diaz Road within the study area has existed as a dirt road since 1978 and has been paved since at least 1996 (Historic Aerials 1978, 1996). The study area supports 16 drainage features, including Murrieta Creek and its tributaries. Arroyo willow thicket was observed along the edges of Murrieta Creek and Fremont cottonwood forest and woodland within the upstream portion of a small tributary to Murrieta Creek. Surrounding land uses include mostly commercial development with some undeveloped parcels along the western study area boundary and Murrieta Creek along the eastern boundary.

3.2 TOPOGRAPHY AND SOILS

The topography of the study area is mostly flat, with elevations ranging from approximately 1,016 feet (310 meters) above mean sea level (AMSL) near the southern boundary to 1,037 feet (316 meters) AMSL near the northern boundary.

The MSHCP lists nine sensitive soil types that occur within the Plan Area (Dudek 2003). Two of these soil types (Domino and Willows soil series) are mapped within the study area. Specifically, six soil types were mapped within the project site, with the majority of the study area dominated by Chino silt loam (drained, saline-alkaline). The other five soil types included Domino silt loam (strongly saline-alkaline), Grangeville fine sandy loam (drained, 0 to 5 percent slopes; saline-alkali, 0 to 5 percent slopes), Grangeville sandy loam (sand substratum, drained, 0 to 5 percent slopes), riverwash, and Willows silty clay (saline-alkaline; deep, saline-alkaline; deep, strongly saline-alkaline; NRCS 2021). The Grangeville soil component in the northern portion of the study area consists of well-drained soils and are associated with alluvial fans. The Chino soil component within the central portion of the study area is somewhat poorly drained and is associated with floodplains. The Domino and Willows soil component within the southern portion of the project site is poorly drained and are associated with alluvial fans and basin floors.

3.3 VEGETATION COMMUNITIES

Seven vegetation communities and land uses were mapped on the study area, including Fremont cottonwood forest and woodland, arroyo willow thicket, riverwash, developed, disturbed, eucalyptus grove, and upland mustards (Table 1, *Vegetation and Land Uses*; Figures 5a-h, *Vegetation*). A brief description of each vegetation community and land use mapped on the study area is provided below.

The CDFW CaCodes and Oberbauer Element Codes are provided in parentheses next to each community name.

Table 1
VEGETATION AND LAND USES

MSHCP Vegetation Community Classification[1]		MCV/Oberbauer	Acres[2]
Collapsed	**Uncollapsed**		
Riparian Scrub, Woodland, Forest	Southern Willow Scrub	Arroyo Willow Thicket (CaCode[3] 61.201.01)[4]	27.63
	Southern Cottonwood/ Willow Riparian	Fremont Cottonwood Forest and Woodland (CaCode 61.130.23)[4]	0.37
N/A	N/A	Riverwash (O[5] 64140)	47.70
Developed/Disturbed Land	Residential/Urban/Exotic	Developed (O 12000)	163.04
		Disturbed (O 11300)	14.56
		Eucalyptus Grove (CaCode 79.100.02)	3.78
		Upland Mustards (CaCode 42.011.05)	68.67
		TOTAL	**325.75**

1 Collapsed and uncollapsed community classifications are terms from MSHCP Table 2-1.
2 Acreages are rounded to the nearest hundredth.
3 CDFW CaCodes
4 Sensitive community pursuant to CDFW's Natural Communities List (CDFW 2020).
5 Oberbauer Element Code.

3.3.1 Arroyo Willow Thicket

Arroyo willow thicket consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* spp.) in association with mule fat (*Baccharis salicifolia*), scattered Fremont cottonwoods (*Populus fremontii*), and western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest.

Arroyo willow thicket was observed along the edges of Murrieta Creek, totaling 27.63 acres. This community was dominated by arroyo willow (*Salix lasiolepis*), with some intermixed sandbar willow (*Salix exigua*). Native species observed in the understory included mule fat, hardstem bulrush (*Schoenoplectus acutus*), and cattails (*Typha* sp.).

3.3.2 Fremont Cottonwood Forest and Woodland

Fremont cottonwood forest and woodland consists of tall, open, broad-leaved, winter-deciduous riparian species and is dominated by cottonwood species (e.g., *Populus fremontii* and *Populus trichocarpa*), with willow species (*Salix* spp.) comprising the main understory. This vegetation community is dense, structurally diverse, and similar to southern arroyo willow riparian forest, although it contains a greater amount of cottonwoods and western sycamores (Holland 1986).

Fremont cottonwood forest and woodland was observed in one area in the central portion of the study area, totaling 0.37 acre. This plant community was dominated by Fremont cottonwood (*Populus fremontii*) and arroyo willow.

3.3.3 Riverwash

Riverwash is mostly unvegetated streambed that typically consists of coarse-textured substrate, which ranges from sand to gravel. The coarse-textured substrate is transported and deposited by stream flows.

The majority of Murrieta Creek consisted of unvegetated and sparsely vegetated riverwash, totaling 47.70 acres within the study area. The riverwash consisted of mostly unvegetated sandy streambed. Some mule fat and non-native grasses were scattered throughout this area.

3.3.4 Developed

Developed land is included under the Urban/Residential/Exotic classification in the uncollapsed MSHCP Vegetation Community Classification. This land use includes areas where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

The majority of the study area includes existing developed land, which totaled 163.04 acres. The developed land consisted of commercial developments, roads, sidewalks, and associated ornamental vegetation.

3.3.5 Disturbed

Disturbed land is included under the Urban/Residential/Exotic classification in the uncollapsed MSHCP Vegetation Community Classification. This land use includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

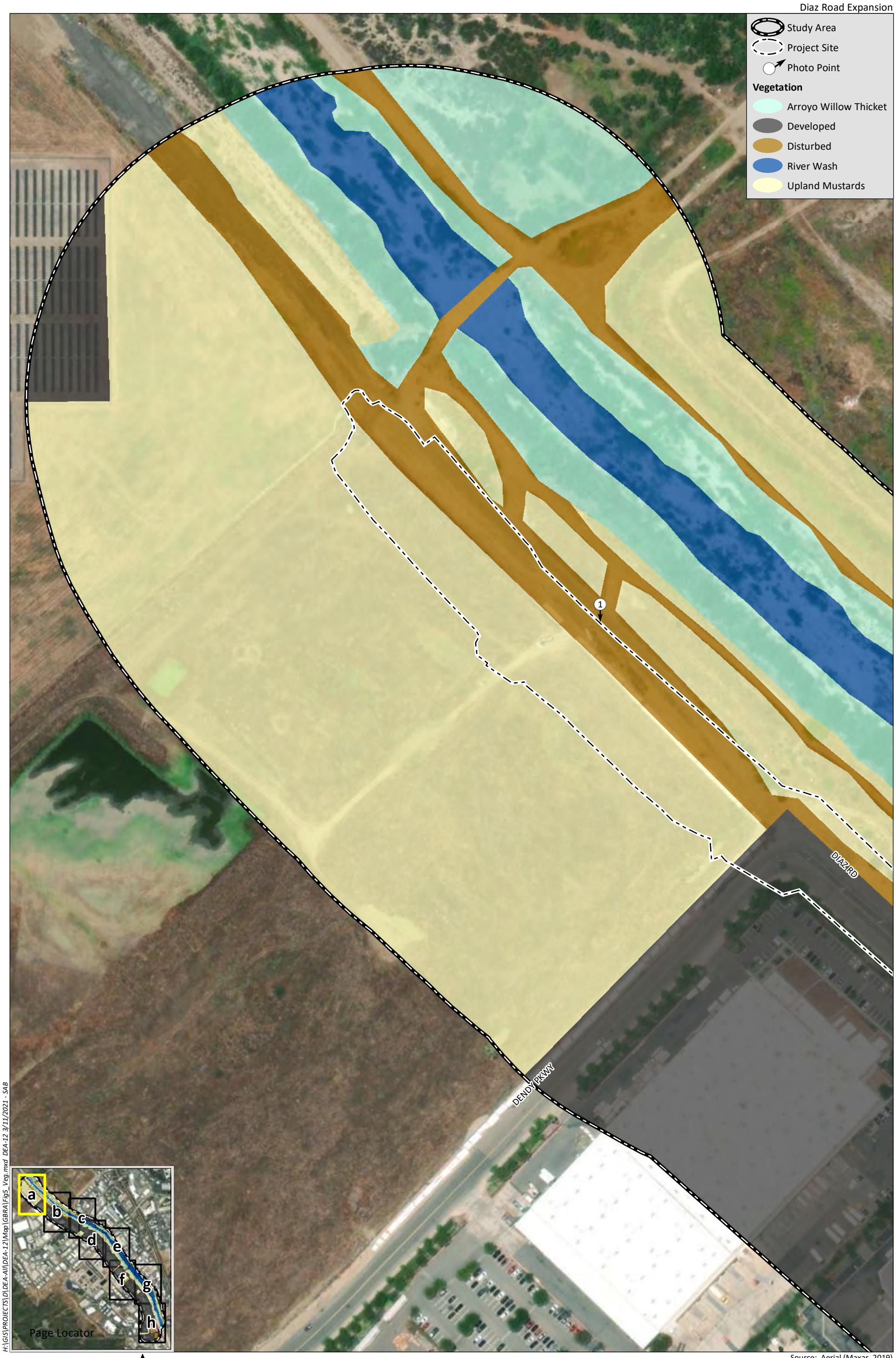
Disturbed land was observed throughout the study area, which totaled 14.56 acres. These areas consisted of compact dirt adjacent to the paved roads and were mostly unvegetated due to heavy perpetual disturbance.

3.3.6 Eucalyptus Grove

Eucalyptus grove is included under the Urban/Residential/Exotic classification in the uncollapsed MSHCP Vegetation Community Classification. Eucalyptus grove is dominated by eucalyptus (*Eucalyptus* spp.), an introduced species that has often been planted purposely for wind blocking, ornamental, and hardwood production purposes. The understory within well-established groves is usually very sparse due to the closed canopy and allelopathic nature of the abundant leaf and bark litter.

A total of 3.78 acres of eucalyptus grove was mapped throughout the study area. The canopy of this plant community was dominated by red river gum (*Eucalyptus camaldulensis*). Other non-native tree species observed in the canopy included Aleppo pine (*Pinus halepensis*) and lemon-scented gum (*Eucalyptus citriodora*). The understory comprised scattered non-native herbaceous species, such as ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), and short-pod mustard (*Hirschfeldia incana*).

Diaz Road Expansion



H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\GBRA\Fig5_Veg.mxd DEA-12 3/11/2021 - SAB

0 150 Feet

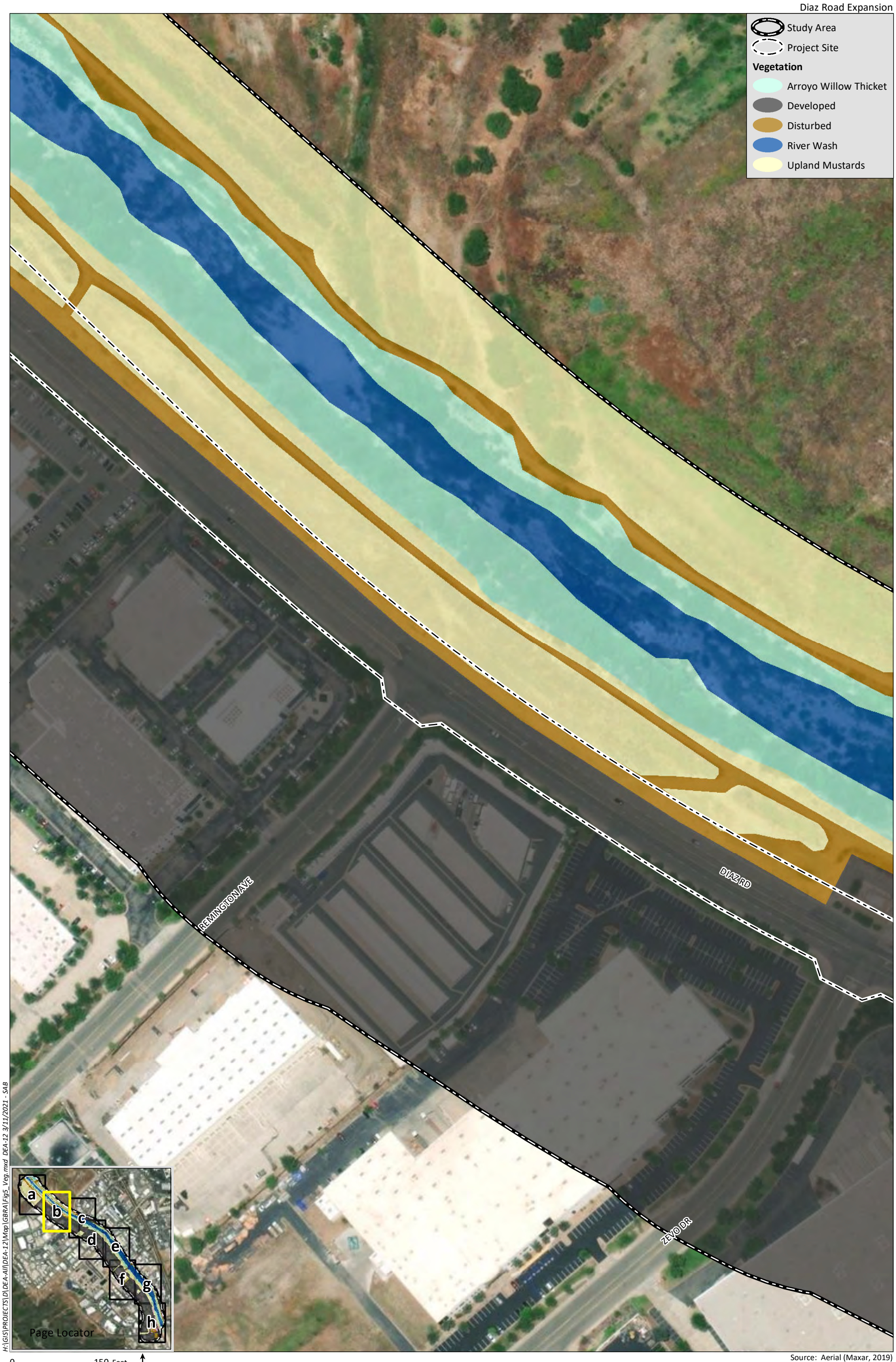
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5a

Diaz Road Expansion



H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\GBRA\Fig5_Veg.mxd DEA-12 3/11/2021 - SAB

0 150 Feet

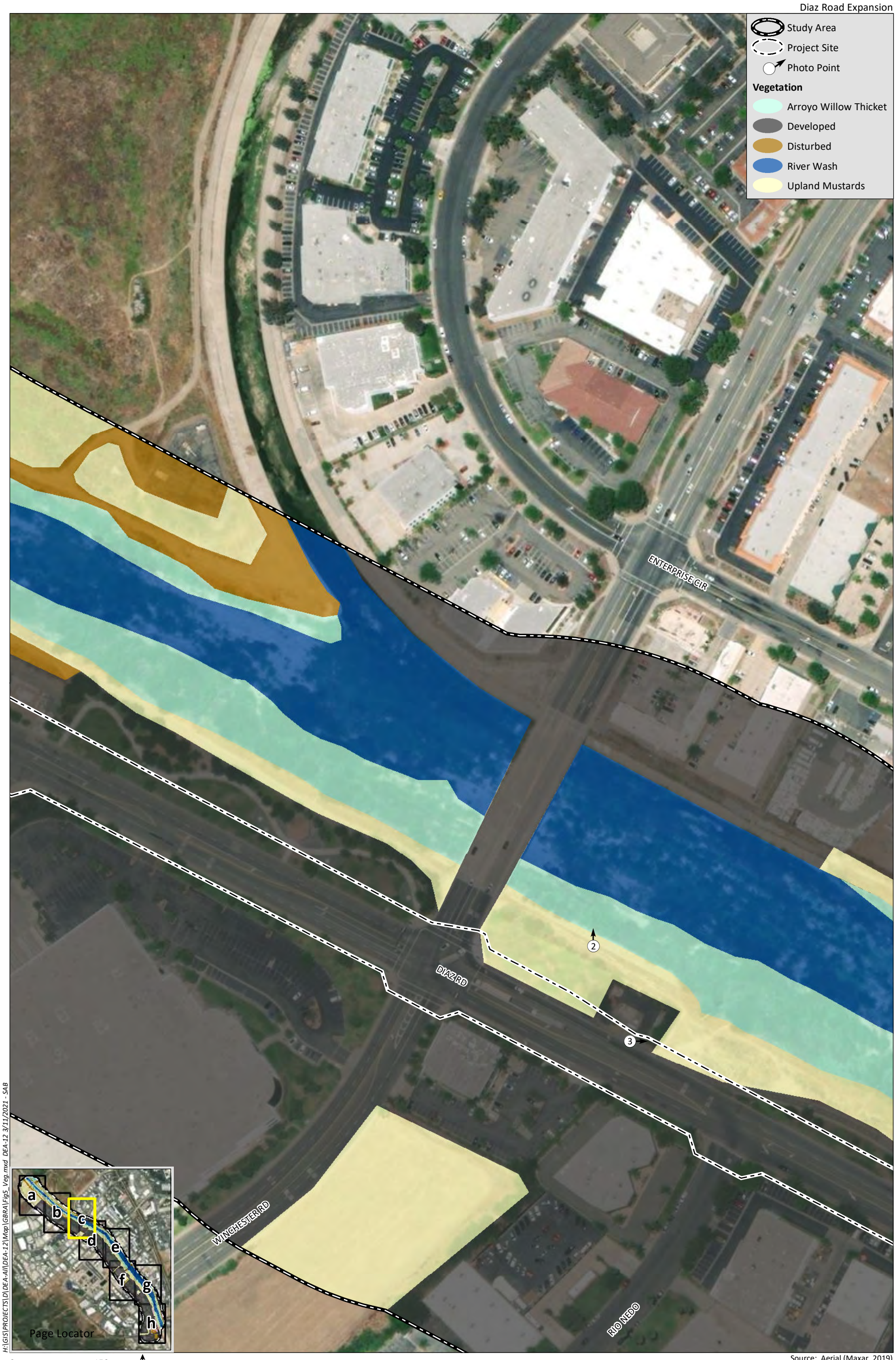
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5b

Diaz Road Expansion



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0 150 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5c

Diaz Road Expansion

Study Area
Project Site
Photo Point

Vegetation

Arroyo Willow Thicket
Developed
River Wash
Upland Mustards

2
3

WINCHESTER RD
DIAZ RD
RIO NEDO
AQUA VISTA WAY
AVENIDA ALVARADO
BLACKDEER LOOP
SARAH WAY

Page Locator
a
b
c
d
e
f
g
h

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\GBRA\Fig5_Veg.mxd DEA-12 3/11/2021 - SAB

0 150 Feet

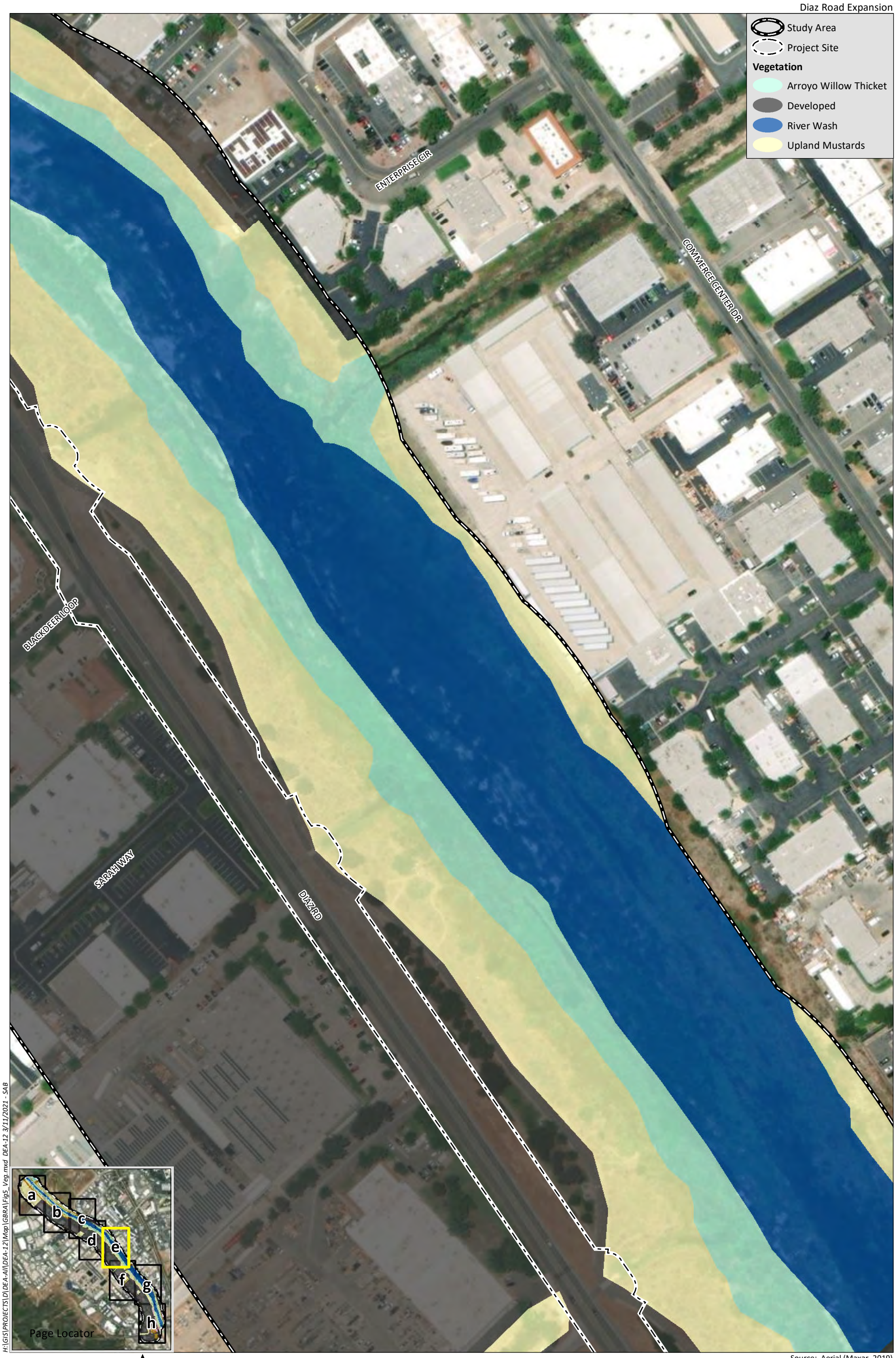
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5d

Diaz Road Expansion



H:\GIS\PROJECTS\D\DEA-AI\DEA-12\Map\GBRA\Fig5_Veg.mxd DEA-12 3/11/2021 - SAB

0 150 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5e

H:\GIS\PROJECTS\D\DEA-AI\DEA-12\Map\GBRA\Fig5_Veg.mxd DEA-12 3/11/2021 - SAB

0 150 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5f

Diaz Road Expansion

Source: Aerial (Maxar, 2019)

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HELIX Environmental Planning

Vegetation

Figure 5g

Diaz Road Expansion

Study Area
Project Site

Vegetation

Arroyo Willow Thicket
Developed
Disturbed
Eucalyptus Grove
River Wash
Upland Mustards

DIAZ RD
JEFFERSON AVE
BUSINESS PARK DR
SINGLE OAK DR
RANCHO CALIFORNIA RD
VINCENT MORAGA DR
FELIX VALDEZ RD

Page Locator
a
b
c
d
e
f
g
h

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\GBRA\Fig5_Veg.mxd DEA-12 3/11/2021 - SAB

0 150 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Vegetation

Figure 5h

3.3.7 Upland Mustards

The upland mustards community is included under the Urban/Residential/Exotic classification in the uncollapsed MSHCP Vegetation Community Classification. This vegetation community is typically associated with land that has been heavily influenced by human activities, including areas adjacent to roads, manufactured slopes, and abandoned lots. Upland mustards are dominated by ornamental and exotic species that take advantage of previously cleared or abandoned landscaping or land showing signs of past or present animal usage that removes any capability of providing viable habitat.

Upland mustards totaled 68.67 acres. This community mostly comprised non-native short-pod mustard. Other non-native species observed in this community included red brome (*Bromus madritensis* ssp. *rubens*) and tocalote (*Centaurea melitensis*).

3.4 PLANTS

HELIX identified a total of 85 plant species on the study area during surveys to date, of which 51 (approximately 60 percent) are non-native species (Appendix A). The predominance of non-native species is indicative of the high degree of disturbance on the site and the presence of surrounding development.

3.5 ANIMALS

A total of 66 animal species were detected on the study area during surveys to date, including 57 bird species, two reptile species, five insect species, and two mammal species (Appendix B). In addition to those listed in Appendix B, other animal species that are expected to occur but were not observed during surveys conducted on the study area, include reptile species, such as woodland alligator lizard (*Elgaria multicarinata webbii*) and San Diego gophersnake (*Pituophis catenifer annectens*), and mammal species such as Botta's pocket gopher (*Thomomys bottae*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*).

3.6 SENSITIVE BIOLOGICAL RESOURCES

3.6.1 Rare Plant Species

Rare plant species are uncommon or limited in that they: (1) are only found in the western Riverside County region; (2) are a local representative of a species or association of species not otherwise found in the region; or (3) are severely depleted within their ranges or within the region. Rare plant species include those species listed by CNPS with a California Rare Plant Rank (CRPR) of 1, 2, or 3 (2021), federally and state listed endangered and threatened species, or those species that require additional surveys by the MSHCP (Dudek 2003). Since the study area does not occur within any MSHCP rare plant survey overlays, no focused surveys were warranted. The MSHCP survey requirements for rare plant species are discussed in Sections 3.7.2 and 3.7.3.1 below.

A total of 29 rare plant species were recorded within the Murrieta and Temecula quadrangles based on a database search conducted on CNDDB and CNPS (CDFW 2021, CNPS 2021). These species are included in Appendix E, *Rare Plant Species Potential to Occur*. Of the 29 rare plant species recorded within the vicinity of the study area, 17 species were considered to have no potential to occur based on geographic range, elevation range, and/or lack of suitable habitat on the study area.

Ten of these species (alkali marsh aster [*Almutaster pauciflorus*], Coulter's goldfields [*Lasthenia glabrata* ssp. *coulteri*], little mousetail [*Myosurus minimus* ssp. *apus*], Orcutt's brodiaea [*Brodiaea orcuttii*], Parry's spineflower [*Chorizanthe parryi* var. *parryi*], long-spined spineflower [*Chorizanthe polygonoides* var. *longispina*], prostrate vernal pool navarretia [*Navarretia prostrata*], San Bernardino aster [*Symphyotrichum defoliatum*], spreading navarretia [*Navarretia fossalis*], and vernal barley [*Hordeum intercedens*]) were determined to have a low potential to occur on the study area based on the presence of low-quality habitat within the study area and/or lack of recent observations within the vicinity of the study area. All but two of these species are either fully or conditionally covered under the MSCHCP. Alkali marsh aster and San Bernardino aster are not covered under the MSHCP. Although potentially suitable habitat is present, these two species are not expected to occur since records within the vicinity of the study area are historical records from the early 1900s. There are no recent observations of alkali marsh aster in Riverside County. The most recent observation of San Bernardino aster in Riverside County was 2015 in the San Jacinto Mountains, approximately 29 miles to the northeast of the project site.

One of these species (San Diego ambrosia [*Ambrosia pumila*]) was determined to have a high potential to occur on the study area based on mapped sandy soils, and this species' affinity for disturbance and observations within one mile of the study area (CDFW 2021). This species is a federally endangered species and is conditionally covered under the MSHCP.

One of these species (smooth tarplant [*Centromadia pungens* ssp. *laevis*]) was observed within the study area during the general biological survey. Smooth tarplant was observed within Drainage A2.1 in the northern portion of the study area north of Diaz road. This species is a CPRP 1B.1 species and is conditionally covered under the MSHCP.

3.6.2 Sensitive Animal Species

Sensitive animal species include federally and state listed endangered and threatened, candidate species for listing by USFWS or CDFW, and/or are species of special concern (SSC) pursuant to CDFW. Additional MSHCP survey requirements for LBVI, SWFL, and BUOW are discussed below in Sections 3.7.1.1 and 3.7.3.3.

A total of 29 sensitive animal species were recorded within the Murrieta and Temecula quadrangles based on a database search conducted on CNDDB (CDFW 2021). These species are included in Appendix F, *Sensitive Animal Species Potential to Occur.* Of the 29 sensitive animal species recorded within the vicinity of the study area, 15 species were determined to have no potential to occur on the study area due to lack of suitable habitat. The remaining 14 species (in addition to SWFL) are discussed in further detail below and in Appendix F.

Four of these species were determined to have a low potential to occur on the study area, based on the presence of low quality and isolated habitat, limited acreage of habitat, surrounding development, and lack of recent observations within the immediate vicinity of the study area. These species include coast range newt (*Taricha torosa*; SSC), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*; SSC), Swainson's hawk (*Buteo swainsoni*; state endangered; foraging potential only), and western mastiff bat (*Eumops perotis californicus*; SSC; foraging potential only). All species but western mastiff bat are fully covered species under the MSHCP.

Six of these species were determined to have a moderate potential to occur based on the presence of suitable habitat and recent observations within the vicinity of the study area. These species include red diamond rattlesnake (*Crotalus ruber*; SSC), Southern California legless lizard (*Anniella stebbinsi*; SSC), southwestern pond turtle (*Actinemys pallida*; SSC), Stephens' kangaroo rat (*Dipodomys stephensi*; SKR; federally endangered and state threatened), two-striped gartersnake (*Thamnophis hammondii*; SSC), and western spadefoot (*Spea hammondii*; SSC). All species but Southern California legless lizard and two-striped gartersnake are fully covered species under the MSHCP.

Two of these species were determined to have a high potential to occur, based on the presence of suitable habitat and recent observations within the vicinity of the study area. The species include coastal whiptail (*Aspidoscelis tigris stejnegeri*; SSC) and white-tailed kite (*Elanus leucurus*; state fully protected). Both of these species are fully covered species under the MSHCP.

Focused surveys for BUOW, LBVI, and SWFL were conducted in 2020. The survey results are summarized below.

Burrowing Owl

Focused surveys for BUOW were conducted in accordance with the County's survey protocol (2006), as previously described in Section 2.3.2.1 above. No BUOWs or BUOW sign were observed within the survey area. Therefore, the study area does not currently support BUOWs. The survey methods and results are discussed in detail in a separate letter report, which is provided as Appendix G, *Burrowing Owl Focused Survey Repor*t.

Least Bell's Vireo

Focused surveys for LBVI were conducted in accordance with USFWS's survey protocol (USFWS 2001), as previously described in Section 2.3.2.2 above. Four males and one pair of LBVIs were observed within suitable habitat on the study area. Therefore, this species is currently presumed present within the study area. The survey methods and results are discussed in detail in a separate letter report, which is provided as Appendix H, *Least Bell's Vireo Focused Survey Report*.

Southwestern Willow Flycatcher

Although SWFL was not recorded within the Murrieta or Temecula quadrangles on CNDDB, suitable habitat was observed within the study, and focused surveys were conducted to comply with MSHCP requirements. The focused SWFL surveys were conducted in accordance with the USFWS approved survey protocol (Sogge et al. 2010), as previously described in Section 2.3.2.3 above. No breeding SFWL were detected during the survey effort. One willow flycatcher (*Empidonax traillii*; WIFL) was detected during the first survey in May. A single male WIFL was heard signing along the eastern bank of Murrieta Creek, between Dendry Road and Winchester Road, near its confluence with Santa Gertrudis Creek. Although the male could not be identified to subspecies, the male was not detected during the subsequent four surveys, and no other WIFLs were detected during any of the surveys. The single observation of a male WIFL is presumed to be a migrating individual. The detailed report findings for the SWFL surveys are included as Appendix I, *Southwestern Willow Flycatcher Focused Survey Report*.

3.6.3 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitats are considered either rare within the region or sensitive by CDFW (CDFW 2018, Holland 1986). Communities are given a Global and State ranking on a scale of 1 to 5. Communities afforded a rank of 5 are most common while communities with a rank of 1 are considered highly periled. CDFW considers sensitive communities as those with a rank between 1 and 3.

The study area supports two sensitive plant communities pursuant to CDFW, including 0.37 acre of Fremont cottonwood forest and woodland (CDFW CaCode 61.130.23) and 27.63 acres of arroyo willow thicket (CDFW CaCode 61.130.23; Figures 5a-h).

3.6.4 Habitat and Wildlife Corridor Evaluation

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Corridors can be local or regional in scale; their functions may vary temporally and spatially based on conditions and species presence. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Animals use these corridors, which are often hillsides or tributary drainages, to move between different habitats. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations.

The study area consists of mostly developed land (Diaz Road, commercial development), with disturbed land along the periphery. Native vegetation is limited to Murrieta Creek and its tributaries. The study area is constrained by commercial development to the west. Portions of the northern boundary of the study area are adjacent to water retention ponds. The eastern portion of the study area is located within Proposed Constrained Linkage 13, which consists of Murrieta Creek (Dudek 2003). Regional wildlife movement is expected to occur within Murrieta Creek, which is within the study area but outside of the project site.

3.6.5 Jurisdictional Waters

Based on the results of the jurisdictional delineation, 16 jurisdictional features were observed within the jurisdictional survey area (JD survey area; Figures 6a-f, *Jurisdictional Features and MSHCP Riparian Areas*; Table 2, *Existing Jurisdictional Features*). Representative drainage photographs are included as Appendix D.

Table 2
EXISTING JURISDICTIONAL FEATURES

Drainage	USACE/RWQCB[1]		CDFW[1] (acres)[2]
	Non-Wetland (acres)[2]	Wetland (acres)[2]	
Murrieta Creek	0.000	0.000	0.577
A	0.014	0.000	0.074
A1	0.008	0.000	0.008
A2	0.002	0.000	0.002
A3	0.005	0.000	0.183
B	0.001	0.029	0.027
C	0.005	0.013	0.059
D	0.003	0.023	0.083

Table 2 (cont.)
EXISTING JURISDICTIONAL FEATURES

Drainage	USACE/RWQCB[1]		CDFW[1] (acres)[2]
	Non-Wetland (acres)[2]	Wetland (acres)[2]	
E	0.036	0.000	0.109
F	0.001	0.000	0.004
G	0.005	0.002	0.063
H	0.007	0.000	0.086
I	0.001	0.016	0.079
I1	0.002	0.000	0.011
J	0.006	0.000	0.073
K	0.000	0.010	0.057
TOTAL	**0.096**	**0.093**	**1.495**

[1] Jurisdictional acreages overlap and are not cumulative (e.g., USACE/RWQCB acreages are included in the CDFW acreages.
[2] Acreages are rounded to the nearest thousandth

The JD survey area supports a total of 0.096 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.093 acre of wetland. The JD survey area also supports and 1.49 acres of CDFW jurisdictional streambed and riparian vegetation. The jurisdictional features are described in detail below.

3.6.5.1 Murrieta Creek

Murrieta Creek is a USGS mapped blueline stream that originates approximately 8.3 miles to the northwest of the JD survey area. The creek flows from northwest to the southeast for roughly 2.1 miles within the JD survey area. Murrieta Creek flows through the JD survey area as a soft-bottomed channel and continues for approximately 1.9 miles, where Temecula Creek and Murrieta Creek meet to form the Santa Margarita River. The Santa Margarita River ultimately drains into the Pacific Ocean, approximately 24 miles to the southwest of the JD survey area. Murrieta Creek is dominated by riverwash and also supports arroyo willow thicket along the edges. Soils within Murrieta Creek consist of Chino silt loam (drained, strongly saline-alkali), Grangeville fine sandy loam (saline-alkali, 0 to 5 percent slopes), Grangeville sandy loam (sandy substratum, drained, 0 to 5 percent slopes), riverwash, Willows silty clay (deep, strongly saline-alkali), and Willows silty clay (saline-alkali; NRCS 2021).

Within the JD survey area, Murrieta Creek supports approximately 0.577 acre of CDFW jurisdictional streambed and riparian vegetation. Waters of the U.S. associated with Murrieta Creek were not located within the 50-foot buffer surrounding the project site.

3.6.5.2 Drainage A

Drainage A is a small tributary to Murrieta Creek, located in the northwestern portion of the JD survey area. Drainage A initiates in the vicinity of a reservoir approximately 2,000 feet southwest of the JD survey area. The drainage appears to be fed by nuisance flows from the slopes adjacent to the reservoir and adjacent undeveloped areas, southwest of the JD survey area. The drainage begins as a cement V-ditch before converting to a small cement drainage. The drainage enters the JD survey area as an earthen drainage and flows northwest for approximately 110 linear feet (LF) before it continues under Diaz Road. Drainage A flows under Diaz Road within a culvert for approximately 75 LF. The drainage daylights on the northside of Diaz Road and flows approximately 50 LF northwest until it meets Murrieta

Creek. The drainage primarily supports non-native vegetation and a small area of arroyo willow thicket. Soils within Drainage A consist of Grangeville sandy loam (sandy substratum, drained, 0 to 5 percent slopes) and Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage A supports approximately 0.014 acre of USACE/RWQCB of non-wetland waters of the U.S. and 0.074 acre of CDFW jurisdictional streambed and riparian vegetation.

3.6.5.3 Drainage A1

Drainage A1 is a small ephemeral tributary to Drainage A, which initiates in the northwestern portion of the JD survey area. The drainage extends for approximately 45 LF prior to joining Drainage A. The drainage primarily supports non-native vegetation and some arroyo willow thicket. Soils within Drainage A1 consist of Grangeville sandy loam (sandy substratum, drained, 0 to 5 percent slopes; NRCS 2021).

Within the JD survey area, Drainage A1 supports approximately 0.008 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.008 acre of CDFW jurisdictional streambed and riparian vegetation.

3.6.5.4 Drainage A2

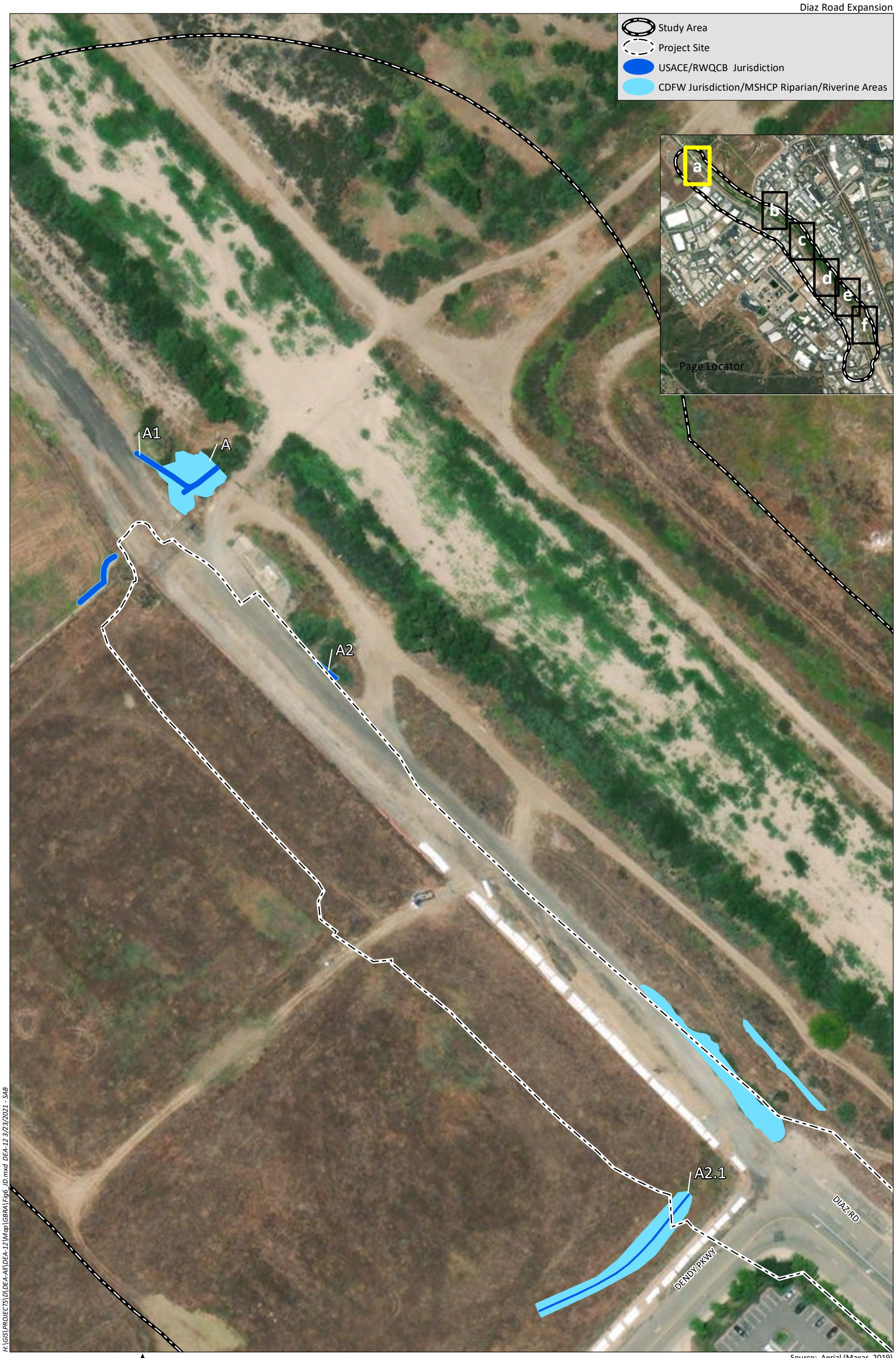
Drainage A2 is a small ephemeral tributary to Drainage A, which initiates in the northwestern portion of the JD survey area. The drainage extends for approximately 25 LF northwest until jurisdictional indicators are no longer discernable. It is assumed that this drainage sheet flows for approximately 215 LF before joining Drainage A. The drainage primarily consists of saltcedar (*Tamarix ramosissima*). Soils within Drainage A2 consist of Grangeville sandy loam (sandy substratum, drained, 0 to 5 percent slopes; NRCS 2021).

Within the JD survey area, Drainage A2 supports approximately 0.002 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.002 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.5 Drainage A2.1

Drainage A2.1 is a small ephemeral tributary to Drainage A, which initiates 450 feet southeast of the JD survey area. The drainage flows northeast within the JD survey area for approximately 215 LF until jurisdictional indicators are no longer discernable. This portion of the drainage is located on private property, which was fenced and had active construction activities occurring during the survey. Due to inaccessibility, the connection is assumed to be through surface flow and not a direct connection through a culvert. It is assumed that the drainage sheet flows across unpaved portions of Diaz Road for approximately 100 feet before it enters a roadside swale that runs parallel to Diaz road. The roadside swale continues for approximately 230 feet before indicators end. Surface runoff is expected to join Drainage 2. The drainage primarily supports non-native vegetation. Soils within Drainage A2.1 consist of Grangeville fine sandy loam (drained, 0 to 2 percent slopes) and Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage A2.1 supports approximately 0.005 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.183 acre of CDFW jurisdictional streambed and associated riparian vegetation.



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0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 6a

Diaz Road Expansion

Study Area
Project Site
USACE Jurisdictional Wetland
USACE/RWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

a
b
c
d
e
f
Page Locator

ENTERPRISE CIR
WINCHESTER RD
Murrieta Creek
B
DIAZ RD
RIO NEDO

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0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 6b

Diaz Road Expansion

Study Area
Project Site
USACE Jurisdictional Wetland
USACE/RWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

a
b
c
d
e
f
Page Locator

C
D
BLACKDEER LOOP
DIAZ RD
SARAH WAY

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Mxd\GBRA\Fig6_JD.mxd DEA-12 3/23/2021 - SAB

0 100 Feet

N

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 6c

Diaz Road Expansion

Study Area
Project Site
USACE Jurisdictional Wetland
USACE/RWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

a
b
c
d
e
f
Page Locator

E
F
G

DEL RIO RD
DIAZ RD

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0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 6d

Diaz Road Expansion

Study Area
Project Site
USACE Jurisdictional Wetland
USACE/RWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

LAS HACIENDAS ST
DEL RIO RD
DEL RIO RD
DIAZ RD
RANCHO WAY

a
b
c
d
e
f
Page Locator

H
I
I1

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Mxp\GBRA\Fig6_JD.mxd DEA-12 3/23/2021 - SAB

0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 6e

Diaz Road Expansion

Study Area
Project Site
USACE Jurisdictional Wetland
USACE/RWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

a
b
c
d
e
f
Page Locator

DIAZ RD
DEL RIO RD
JEFFERSON AVE
J
K
Murrieta Creek

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\GBRA\Fig6_JD.mxd DEA-12 3/23/2021 - SAB

0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 6f

3.6.5.6 Drainage B

Drainage B is a small tributary to Murrieta Creek in the central portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage B enters the JD survey area via a concrete culvert and flows for approximately 80 LF before joining Murrieta Creek. The drainage primarily supports southwestern willow scrub, hardstem bulrush, and cattails with some non-native vegetation. Soils within Drainage B consist of Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage B supports approximately 0.001 acre of USACE/RWQCB non-wetland waters of the U.S. in addition to 0.029 acre of wetlands. Drainage B also supports approximately 0.027 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.7 Drainage C

Drainage C is a small tributary to Murrieta Creek in the central portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage C enters the JD survey area via a concrete culvert and flows for approximately 100 LF before exiting the JD survey area. Drainage C continues off-site for approximately 130 feet before flowing into Murrieta Creek. The drainage primarily supports non-native vegetation with hardstem bulrush and cattails in the bed of the drainage. Soils within Drainage C consist of Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage C supports approximately 0.005 acre of USACE/RWQCB non-wetland waters of the U.S. in addition to 0.013 acre of wetlands. Drainage C also supports approximately 0.059 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.8 Drainage D

Drainage D is a small tributary to Murrieta Creek in the central portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage D enters the JD survey area via a concrete culvert and flows for approximately 100 LF before exiting the JD survey area. Drainage D continues off-site for approximately 130 feet before flowing into Murrieta Creek. The drainage primarily supports willows and mule fat in the bed of the drainage. Soils within Drainage D consist of Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage D supports approximately 0.003 acre of USACE/RWQCB non-wetland waters of the U.S., in addition to 0.023 acre of wetlands. Drainage D also supports approximately 0.083 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.9 Drainage E

Drainage E is a small tributary to Murrieta Creek in the central portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage E enters the JD survey area via a concrete culvert and flows for approximately 100 LF before exiting the JD survey area. Drainage E continues off-site for approximately 150 feet before flowing into Murrieta Creek. The drainage primarily supports non-native vegetation. Soils within Drainage E consist of Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage E supports approximately 0.036 acre of USACE/RWQCB non-wetland waters of the U.S. and approximately 0.109 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.10 Drainage F

Drainage F is a small tributary to Murrieta Creek in the central portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage F enters the JD survey area via a concrete culvert and flows for approximately 50 LF before jurisdictional indicators cease. Drainage F presumably sheet flows for approximately 170 feet until joining Murrieta Creek. The drainage primarily supports non-native vegetation. Soils within Drainage F consist of Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage F supports approximately 0.001 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.004 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.11 Drainage G

Drainage G is a small tributary to Murrieta Creek in the central portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage G enters the JD survey area via a concrete culvert and flows for approximately 100 LF before exiting the JD survey area. Drainage G continues off-site for approximately 250 feet before flowing into Murrieta Creek. The drainage primarily supports non-native vegetation, with small mule fat shrubs, and hardstem bulrush in the drainage bed. Soils within Drainage G consist of Chino silt loam (drained, saline-alkali; NRCS 2021).

Within the JD survey area, Drainage G supports approximately 0.005 acre of USACE/RWQCB non-wetland waters of the U.S. in addition to 0.002 acre of wetlands. Drainage G also supports approximately 0.063 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.12 Drainage H

Drainage H is a small tributary to Murrieta Creek in the southeastern portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage H enters the JD survey area via a concrete culvert and flows for approximately 100 LF before exiting the JD survey area. Drainage H continues off-site for approximately 150 feet before flowing into Murrieta Creek. The drainage primarily supports non-native vegetation. Soils within Drainage H consist of Domino silt loam (strongly saline-alkali; NRCS 2021).

Within the JD survey area, Drainage H supports approximately 0.007 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.086 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.13 Drainage I

Drainage I is a small tributary to Murrieta Creek in the southeastern portion of the JD survey area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage I enters the JD survey area via a concrete culvert and flows for approximately 90 LF before exiting the JD survey area. Drainage I continues off-site for approximately 100 feet before flowing into Murrieta Creek. The

drainage primarily supports willows and hardstem bulrush in the drainage bed. Soils within Drainage I consist of Willows silty clay (deep, strongly saline-alkali; NRCS 2021).

Within the JD survey area, Drainage I supports approximately 0.001 acre of USACE/RWQCB non-wetland waters of the U.S. in addition to 0.016 acre of wetlands. In addition, Drainage I supports approximately 0.079 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.14 Drainage I1

Drainage I1 is a small ephemeral tributary to Drainage I, which initiates in the southeastern portion of the study area. The drainage extends for approximately 20 LF prior to joining Drainage I. The drainage primarily supports non-native vegetation. Soils within Drainage I1 consist of Willows silty clay (deep, strongly saline-alkali; NRCS 2021).

Within the study area, Drainage I1 supports approximately 0.002 acre of USACE/RWQCB non-wetland waters of the U.S. and approximately 0.011 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.15 Drainage J

Drainage J is a small tributary to Murrieta Creek in the southeastern portion of the study area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage J enters the study area via a concrete culvert and flows for approximately 90 LF before exiting the study area. Drainage J continues off-site for approximately 150 feet before flowing into Murrieta Creek. The drainage primarily supports non-native vegetation. Soils within Drainage J consist of riverwash (NRCS 2021).

Within the study area, Drainage J supports approximately 0.006 acre of USACE/RWQCB non-wetland waters of the U.S. and approximately 0.073 acre of CDFW jurisdictional streambed and associated riparian vegetation.

3.6.5.16 Drainage K

Drainage K is a small tributary to Murrieta Creek in the southeastern portion of the study area and appears to be fed by nuisance flows from the adjacent development to the southwest. Drainage K enters the study area via a concrete culvert and flows for approximately 70 LF before exiting the study area. Drainage K continues off-site for approximately 130 feet before flowing into Murrieta Creek. The drainage primarily supports willows in the drainage bed and some eucalyptus grove. Soils within Drainage K consist of riverwash and Grangeville fine sandy loam (drained, 0 to 5 percent slopes; NRCS 2021).

Within the study area, Drainage K supports approximately 0.010 acre of USACE/RWQCB wetland waters of the U.S and approximately 0.057 acre of CDFW jurisdictional streambed and riparian vegetation.

3.7 WESTERN RIVERSIDE COUNTY MSHCP CONSISTENCY ANALYSIS

3.7.1 Habitat Evaluation and Acquisition Negotiation Strategy (Section 6.1.1)

The MSHCP Plan Area is divided into 16 Area Plans, within which 153,000 acres were identified as potential areas for conservation that would contribute to the overall existing MSHCP Conservation Area. The areas identified for conservation within the MSHCP Plan Area are called Criteria Areas, and include Core Areas that support habitat for covered species and Linkages that provide a connection between Core Areas. The Criteria Areas are divided into 160-acre cells, which each have their own conservation goal. All projects within a cell or cell group are required to be assessed through the Habitat Acquisition and Negotiation Strategy (HANS) process to determine the amount of MSHCP conservation required. The HANS processes aid in the acquisition of lands that will contribute to the assembly of the MSHCP Reserve.

The study area is located within the Subunit 1 (Murrieta Creek) of the Southwest Area Plan of the MSHCP. The study area includes portions of Criteria Cells 6656, 6781, 6782, 6783, 6890, 6891, 7021, and 7078 (Figure 7, *MSHCP Criteria*). The conservation requirements for these Criteria Cells are presented below in Table 3, *Conservation Requirement of the MSHCP Criteria Cells*. Although the study area is within several Criteria Cells, the project site is mostly within existing developed areas. The project site is not targeted for conservation or in an area that would contribute to the MSHCP reserve assembly.

Furthermore, Diaz Road is considered a "covered road" under the MSCHP. According to MSHCP Section 7.3.4, "safety improvements to other publicly maintained existing roadways within the Criteria Area are Covered Activities. The proposed road widening is considered a safety improvement and is, therefore, a "covered activity." Implementation of the proposed project would avoid and minimize impacts to sensitive species and habitats adjacent to the existing roadway. Overall, the project would be consistent with the MSHCP.

Table 3
CONSERVATION REQUIREMENT OF THE MSHCP CRITERIA CELLS

Criteria Cell	Conservation Criteria
6656	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on the existing Murrieta Creek channel and adjacent grassland habitat and agricultural land to the extent feasible. Areas conserved within this Cell will be connected to habitat proposed for conservation in Cell #6528 to the north and to grassland habitat proposed for conservation in Cell #6782 to the southeast. Conservation within this Cell will range from 5%-15% of the Cell, focusing in the southwestern portion of the Cell.
6781	Conservation within this Cell will contribute to assembly of Proposed Linkage 10. Conservation within this Cell will focus on chaparral, coastal sage scrub, and grassland habitat. Areas conserved within this Cell will be connected to chaparral, coastal sage scrub, and grassland habitat proposed for conservation in Cell #6780 to the west and #6888 to the south. Conservation within this Cell will range from 35%-45% of the Cell, focusing in the southwestern portion of the Cell.

Table 3 (cont.)
CONSERVATION REQUIREMENT OF THE MSHCP CRITERIA CELLS

Criteria Cell	Conservation Criteria
6782	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on the existing Murrieta Creek channel and adjacent grassland habitat to the extent feasible. Areas conserved within this Cell will be connected to habitat proposed for conservation in Cell #6656 to the northwest and to grassland and adjacent habitat proposed for conservation in Cell #6783 to the east. Conservation within this Cell be approximately 5% of the Cell, focusing in the northeastern portion of the Cell.
6783	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on the existing Murrieta Creek channel and adjacent riparian scrub, woodland forest and grassland habitat to the extent feasible. Areas conserved within this Cell will be connected to grassland and adjacent habitat proposed for conservation in Cell #6782 to the west and to riparian scrub, woodland and forest habitat proposed for conservation in Cell #6890 to the south. Conservation within this Cell will be approximately 5% of the Cell, focusing in the southwestern portion of the Cell.
6890	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on riparian scrub, woodland, forest, and Riversidean alluvial fan sage scrub habitat along Murrieta Creek. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat proposed for conservation in Cell #6783 to the north and to Riversidean alluvial fan sage scrub, riparian scrub, woodland and forest habitat proposed for conservation in Cell #6891 to the east. Conservation within this Cell will range from 10%-20% of the Cell, focusing in the northeastern portion of the Cell.
6891	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on riparian scrub, woodland, forest, Riversidean alluvial fan sage scrub and grassland habitat along Murrieta Creek. Areas conserved within this Cell will be connected to Riversidean alluvial fan sage scrub, riparian scrub, woodland and forest habitat proposed for conservation in Cell #6890 to the west and to riparian scrub, woodland and forest habitat proposed for conservation in Cell #7021 to the south. Conservation within this Cell will range from 15%-25% of the Cell, focusing in the southwestern portion of the Cell.
7021	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on riparian scrub, woodland and forest habitat along Murrieta Creek. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat proposed for conservation in Cell #6891 to the north and in Cell #7078 to the south. Conservation within this Cell will range from 20%-30% of the Cell, focusing in the eastern portion of the Cell.
7078	Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 13. Conservation within this Cell will focus on riparian scrub, woodland and forest habitat along Murrieta Creek. Areas conserved within this Cell will be connected to riparian scrub, woodland and forest habitat proposed for conservation in Cell #7021 to the north and in Cell #7079 to the east. Conservation within this Cell will range from 15%-25% of the Cell, focusing in the northeastern portion of the Cell.

3.7.2 Riparian/Riverine and Vernal Pool Habitat Assessment (MSHCP Section 6.1.2)

The identification of MSHCP Riparian/Riverine resources is based on the potential for the habitat to support, or be a tributary to habitat that supports, Riparian/Riverine Covered Species. Riparian/Riverine

Covered Species are identified in MSHCP Section 6.1.2. The MSHCP defines Riparian/Riverine habitat as "lands which contain habitat dominated by trees, shrubs, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year" (Dudek 2003). The MSHCP defines Vernal Pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season" (Dudek 2003). Artificially created features, except for those created intentionally to provide wetland habitat or resulting from the creation of open waters or alteration of natural stream courses, are not considered MSHCP Riparian/Riverine Areas or Vernal Pools.

In accordance with the MSHCP, a Riparian/Riverine habitat assessment was conducted by Mr. Cooley on March 27, 2020. The Riparian/Riverine and Vernal Pool habitat assessment was conducted concurrently with the jurisdictional delineation. MSHCP Riparian/Riverine Areas were identified within the study area, which are consistent with the limits of CDFW jurisdictional vegetation. The Riparian/Riverine Areas mapped on the study area are equivalent to the total area of CDFW jurisdiction within Murrieta Creek and Drainages A through K (1.49 acres; Figure 6). The study area does not support any areas considered MSHCP Vernal Pool Habitat.

3.7.2.1 Riparian/Riverine and Vernal Pool Species

Through the protection of Riparian/Riverine and Vernal Pool habitats, the MSHCP aims to conserve several plant and animal species within the Plan Area. During the Riparian/Riverine habitat assessment discussed above, each plant and animal species listed in Section 6.1.2 of the MSHCP was evaluated to determine the potential to occur on the study area. Riparian/Riverine and Vernal Pool species are discussed in detail below.

Plant Species

The MSHCP lists 23 rare plant species that have a potential to occur in Riparian/Riverine and/or Vernal Pool habitats within the MSHCP Plan Area, which are listed below in Table 4, *MSHCP Riparian/Riverine and Vernal Pool Plant Species*. Of these, 17 species were determined to have no potential to occur within the study area based on geographic range, elevation range, and/or lack of suitable habitat on the study area. Although the study area is within the geographic range and supports potentially suitable habitat, Southern California black walnut (*Juglans californica*) is a conspicuous tree species and was not observed within the study area during any of the site visits. Of the remaining five species, smooth tarplant (*Centromadia pungens* ssp. *laevis*) was observed within Drainage A2.1 in the northern portion of the study area during the general biological survey. The remaining four species (Orcutt's brodiaea [*Brodiaea orcuttii*], Prostrate navarretia [*Navarretia prostrata*], spreading [*Navarretia fossalis*], and vernal barley [*Hordeum intercedens*]) have a low potential to occur based on the presence of some wetland habitat (see Appendix F). A list of plant species observed during the field surveys is provided as Appendix A.

Diaz Road Expansion

Study Area
Project Site
MSHCP Criteria Cell
MSHCP Cell Group
Burrowing Owl Survey Area

6528
6525
6656
6781
6782
6783
6888
0
6890
6891
7005
7008
0
7021
7075
7076
7077
7078
7079
7158
7161
7164
7166
J'
K'

DATE ST
JEFFERSON AVE
79
15
NICOLE LN
SOLANA WAY
DIAZ RD
WINCHESTER RD
YNEZ RD
BUSINESS PARK DR
DEL RIO RD
RANCHO CALIFORNIA RD
OLD TOWN FRONT ST

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0 1,000 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

MSHCP Criteria

Figure 7

Table 4
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL PLANT SPECIES

Common Name	Scientific Name	Habitat
Brand's phacelia	*Phacelia stellaris*	Sandy washes and/or benches in alluvial flood plains.
California Orcutt grass	*Orcuttia californica*	Vernal pools.
Coulter's matilija poppy	*Romneya coulteri*	Dry washes and canyons in chaparral and coastal sage scrub communities and disturbed areas.
Engelmann oak	*Quercus engelmannii*	Woodlands, mixed chaparral, and savannah grasslands.
Fish's milkwort	*Polygala cornuta* var. *fishiae*	Shaded, rocky places in canyons associated with woodlands and chaparral.
graceful tarplant	*Holocarpha virgata* ssp. *elongata*	Coastal mesas and foothills with grassland habitats.
lemon lily	*Lilium parryi*	Moist montane meadows.
Mojave tarplant	*Deinandra mohavensis*	Drainages within arid montane chaparral.
mud nama	*Nama stenocarpum*	Marshes, swamps, lake margins, and riverbanks along muddy embankments.
ocellated Humboldt lily	*Lilium humboldtii* ssp. *ocellatum*	Shaded montane canyons.
Orcutt's brodiaea	*Brodiaea orcuttii*	Vernally moist grasslands and vernal pools; occasionally occurs along stream embankments within clay soils.
Parish's meadowfoam	*Limnanthes gracilis* var. *parishii*	Montane meadows with abundant annual and herbaceous perennials and lack of shrubs.
prostrate navarretia	*Navarretia prostrata*	Coastal sage scrub, valley and foothill grassland, and vernal pools.
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Vernal pools.
San Jacinto Valley crownscale	*Atriplex coronata* var. *notatior*	Highly alkaline and silty-clay soils associated with alkali sink scrub, alkali playa, vernal pool, and annual alkali grassland habitats.
San Miguel savory	*Clinopodium chandleri*	Coastal sage scrub, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands.
Santa Ana River woolly-star	*Eriastrum densifolium* spp. *sanctorum*	Sandy soils on flood plains and terraces within coastal scrub and chaparral communities.
slender-horned spineflower	*Dodecahema leptoceras*	Sandy soil associated with alluvial scrub; is often found on stream terraces and banks.
smooth tarplant	*Centromadia pungens* ssp. *laevis*	Alkali scrubs, playas, and grasslands; riparian woodland and streams.

Table 4 (cont.)
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL PLANT SPECIES

Common Name	Scientific Name	Habitat
spreading navarretia	*Navarretia fossalis*	Vernal pools, depressions, and ditches.
southern California black walnut	*Juglans californica*	Open savannahs, creek beds, alluvial terraces, and north-facing slopes.
thread-leaved brodiaea	*Brodiaea filifolia*	Clay soils in vernally moist grasslands and vernal pool periphery are typical locales.
vernal barley	*Hordeum intercedens*	Saline flats and depressions in grasslands or vernal pools.

Source: Dudek (2003).

Animal Species

The MSHCP lists 12 sensitive animal species that have a potential to occur in Riparian/Riverine and/or Vernal Pool habitats within the MSHCP Plan Area, which are listed in Table 5, *MSHCP Riparian/Riverine and Vernal Pool Animal Species*. The MSHCP requires focused surveys to be conducted for projects that propose impacts to three invertebrates and three bird species, as described in detail below. The study area supports suitable habitat for two of the sensitive bird species (LBVI and SWFL).

Table 5
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL ANIMAL SPECIES

Common Name	Scientific Name	Habitat
Riverside fairy shrimp	*Streptocephalus woottoni*	Deep vernal pools and other ephemeral basins that hold water for typically 30 or more days.
Santa Rosa Plateau fairy shrimp	*Linderiella santarosae*	Limited to vernal pools within the Santa Rosa Plateau.
vernal pool fairy shrimp	*Branchinecta lynchi*	Vernal pools and other ephemeral basins within patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.
arroyo toad	*Anaxyrus californicus*	Washes and intermittent streams with open-canopy riparian forest.
California red-legged frog	*Rana aurora draytonii*	Perennial streams with dense, shrubby riparian vegetation.
mountain yellow-legged frog	*Rana muscosa*	Perennial waterways, often within open riparian vegetation.
Santa Ana sucker	*Catostomus santaanae*	Clear, cool perennial streams with loose sand, gravel, cobble, and boulders with algae, aquatic emergent vegetation, macroinvertebrates, and riparian vegetation.
bald eagle	*Haliaeetus leucocephalus*	Within close proximity to lakes or other water bodies.
least Bell's vireo	*Vireo bellii pusillus*	Well-developed riparian scrub, woodland, or forest.

Table 5 (cont.)
MSHCP RIPARIAN/RIVERINE AND VERNAL POOL ANIMAL SPECIES

Common Name	Scientific Name	Habitat
peregrine falcon	*Falco peregrinus*	Generally, areas with cliffs or tall buildings near water where prey (shorebirds and ducks) is concentrated.
southwestern willow flycatcher	*Empidonax traillii extimus*	Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Extensive stands of mature riparian woodland.

Source: Dudek (2003).

Invertebrates

There are three sensitive fairy shrimp species that occur in the MSHCP Plan Area, including Riverside fairy shrimp (*Streptocephalus woottoni*), Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*), and vernal pool fairy shrimp (*Branchinecta lynchi*). Vernal pool fairy shrimp occurs throughout the Central Valley and in several disjunct populations in the County. This species exists in vernal pools and other ephemeral basins, often located in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral. Riverside fairy shrimp occurs in Riverside, Orange, and San Diego Counties as well as in northern Baja California, Mexico. This species is typically found in deeper vernal pools and other ephemeral basins that hold water for long periods of time (30 or more days). Santa Rosa Plateau fairy shrimp is limited to the Santa Rosa Plateau in the County.

The MSHCP requires focused surveys to be conducted for projects that propose impacts to suitable habitat for the three sensitive fairy shrimp species discussed above. The study area does not support suitable habitat for fairy shrimp species; therefore, no focused surveys were required.

Birds

Riparian/Riverine Areas within the MSHCP Plan Area provide suitable habitat for sensitive bird species, such as LBVI, SWFL, western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), bald eagle (*Haliaeetus leucocephalus*), and peregrine falcon (*Falco peregrinus*). Typical habitat for LBVI consists of well-developed riparian scrub, woodland, or forest dominated by willows, mule fat, and Fremont cottonwood. LBVI will also use small patches of trees adjacent to dense, riparian habitat. Southwestern willow flycatcher and western yellow-billed cuckoo require mature riparian forest with a stratified canopy and nearby water. Both the bald eagle and peregrine falcon occur primarily in and adjacent to open water habitats, with peregrine falcon occurring in riparian areas.

The MSHCP requires focused surveys to be conducted for projects that propose impacts to suitable habitat for LBVI, southwestern willow flycatcher, and western yellow-billed cuckoo. The study area supports suitable habitat for LBVI and SWFL; therefore, focused surveys were required. As discussed in Section 3.6.2 above, four males and one pair of LBVIs were observed within suitable habitat on the study area. Focused surveys for SWFL were negative.

3.7.3 Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3)

The MSHCP requires focused plant surveys to be conducted for projects located within a Narrow Endemic Plant Species Survey Area (NEPSSA). There are 14 narrow endemic plant species that are associated with 10 different NEPSSAs located throughout the MSHCP Plan Area (see Table 6-1 in the MSHCP). The MSHCP requires a habitat assessment for projects located within a NEPSSA to determine whether the study area supports suitable habitat for plant species listed for the NEPSSA species. Focused surveys for species listed for the NEPSSA must be conducted if suitable habitat is present. If focused surveys are positive, 90 percent of the property that supports habitat suitable for long-term conservation of the species must be avoided until conservation goals for the species are satisfied.

The study area is not within a NEPSSA; therefore, focused NEPSSA surveys were not required.

3.7.4 Additional Survey Needs and Procedures (MSHCP Section 6.3.2)

The MSHCP requires additional surveys for projects that support suitable habitat for certain conditionally-covered species. The survey results provide species-specific information in order for the MSHCP to satisfy the Federal Endangered Species Act (FESA) issuance criteria. If focused surveys are positive for conditionally-covered species, 90 percent of the property that supports habitat suitable for long-term conservation of the species must be avoided until conservation goals for the species are satisfied. Additional survey requirements are discussed in detail below.

3.7.4.1 Criteria Area Species

Focused surveys for rare plant species must be conducted for projects located within a Criteria Area Species Survey Area (CASSA). There are 13 criteria area species, which are associated with eight CASSAs located throughout the MSHCP Plan Area (see Table 6-1 in the MSHCP). Prior to conducting focused surveys, a habitat assessment should be conducted to determine whether the study area supports suitable habitat for plant species listed for the CASSA. If suitable habitat is present, focused surveys for species listed for the CASSA should be conducted.

The study area is not within a CASSA; therefore, focused CASSA surveys were not required.

3.7.4.2 Amphibian Species

Focused surveys for arroyo toad (*Bufo californicus*), California red-legged frog (*Rana draytonii*), and mountain yellow-legged frog (*Rana muscosa*) must be conducted for projects located within an Amphibian Species Survey Area.

The study area is not within the Amphibian Species Survey Area; therefore, focused surveys were not required.

3.7.4.3 Bird Species

The study area is located within the BUOW Survey Area. Therefore, BUOW focused surveys were required in accordance with the County's survey protocol (County 2006). As discussed in Section 3.6.2, no BUOWs or BUOW sign were observed during the focused surveys.

3.7.4.4 Mammal Species

Focused surveys for Aguanga kangaroo rat (*Dipodomys merriami collinus*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) must be conducted for projects located within a Mammal Species Survey Area.

The study area is not within the Mammal Species Survey Area; therefore, focused surveys were not required.

4.0 REGIONAL AND REGULATORY CONTEXT

Biological resources located within the study area are subject to regulatory review by federal, state, and local agencies. Biological resources-related laws and regulations that apply to the project include the FESA, Migratory Bird Treaty Act (MBTA), CWA, California Endangered Species Act (CESA), and CFG Code.

4.1 FEDERAL REGULATIONS

4.1.1 Federal Endangered Species Act

Administered by the USFWS, the FESA provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a "take" under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 4(d), 7, and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation is required when there is a nexus between federally listed species' use of the site and impacts to USACE jurisdictional areas. Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species. The term "incidental" applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. The MSHCP is the Section 10(a) permit for the City, which includes the study area.

4.1.2 Federal Clean Water Act, Section 404

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S., including wetlands and vernal pools, is overseen by USACE under Section 404 of the CWA. Projects may be permitted on an individual basis or may be covered under one of several approved Nationwide Permits. Individual Permits are assessed individually based on the type of action, amount of fill, etc. Individual Permits typically require

substantial time (often longer than six months) to review and approve, while Nationwide Permits are pre-approved if a project meets the appropriate conditions. A CWA Section 401 Water Quality Certification, which is administered by the State Water Resources Control Board, must be issued prior to any 404 Permit.

4.1.3 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the Federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the nesting season, which is generally defined as March 1 to August 31. In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests (January 15 to August 31).

4.1.4 Critical Habitat

As described by the FESA, critical habitat is the geographic area occupied by a threatened or endangered species essential to species conservation that may require special management considerations or protection. Critical habitat also may include specific areas not occupied by the species but that have been determined to be essential for species conservation.

Critical habitat does not occur on the study area. The nearest critical habitat to the study area includes San Diego ambrosia (*Ambrosia pumila*), which is approximately 0.8 mile to the south of the study area (USFWS 2021).

4.2 STATE REGULATIONS

4.2.1 California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (i.e., impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

4.2.2 California Endangered Species Act

The CESA is similar to the FESA in that it contains a process for listing species and regulating potential impacts to listed species. Section 2081 of the California ESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. The MSHCP is the regional 2081 for this portion of the County, which includes the study area. The golden eagle (*Aquila chrysaetos*) and white-tailed kite are considered state fully protected species. Fully protected species may not be taken or possessed at any time, and no state licenses or permits may be issued for their take except for collecting the species necessary for scientific research and relocation of the bird species for the protection of livestock (Fish and Game Code Sections 3511, 4700, 5050, and 5515).

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates the collection, transport, and commerce of plants that are listed. The California ESA followed the NPPA and covers both plants and animals that are determined to be endangered or threatened with extinction. Plants listed as rare under NPPA were designated threatened under the California ESA.

4.2.3 Protection of Raptor Species

Raptors (birds of prey) and owls and their active nests are protected by California Fish and Game Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW.

4.2.4 California Fish and Game Code, Section 1602

The California Fish and Game Code (Section 1600 et seq.) requires an agreement with the CDFW for projects affecting riparian and wetland habitats through the issuance of a Streambed Alteration Agreement.

4.3 LOCAL REGULATIONS

4.3.1 Multiple Species Habitat Conservation Plan Consistency

The MSHCP is a comprehensive multi-jurisdictional effort that includes the City and multiple other cities throughout the western portion of the County. Rather than addressing sensitive species on an individual basis, the MSHCP focuses on the conservation of 146 species, proposing a reserve system of approximately 500,000 acres and a mechanism to fund and implement the reserve system (Dudek 2003). Most importantly, the MSHCP allows participating entities to issue take permits for listed species so that individual applicants need not seek their own permits from the USFWS and/or CDFW. The MSHCP was adopted on June 17, 2003, by the County Board of Supervisors. The Incidental Take Permit was issued by both the USFWS and CDFW on June 22, 2004. Section 3.6 above and Section 5.6 below demonstrate the project's consistency with the MSHCP.

4.3.2 Stephens' Kangaroo Rat Habitat Conservation Plan

The SKR HCP describes the conservation, mitigation, and monitoring measures that are implemented within core reserves. Within the HCP, there are seven core reserves, totaling 41,221 acres for conservation of SKR and associated habitat. The HCP provides a 30-year incidental take authorization for SKR on lands within its boundaries, which includes 533,954 acres within the County and the Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula.

The study area is within the SKR HCP but is not located within any of the core reserves. Therefore, the project is required to pay a mitigation fee for incidental take authorization under the SKR HCP.

4.3.3 Protection of City Street Trees

The City has implemented regulatory measures to protect street trees. Ord. 09-05 § 1, Chapter 8.48 of the Temecula Municipal Code states "no person shall cut, remove, or relocate a Heritage Tree, or encroach into the protected zone of any Heritage Tree without first obtaining a Heritage Tree Removal

or Relocation Permit from the city in accordance with the provisions of this Ordinance." Conditions of the permit may include the relocation or replacement of any trees removed. One or more trees of the same kind or type may be acceptable as replacement. Final permit conditions will be specified in the Heritage Tree Removal and/or Relocation Permit.

5.0 PROJECT EFFECTS

This section describes potential direct and indirect impacts associated with the proposed project. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Indirect impacts consist of secondary effects of a project, including noise, decreased water quality (e.g., through sedimentation, urban contaminants, or fuel release), fugitive dust, colonization of non-native plant species, animal behavioral changes, and night lighting. The magnitude of an indirect impact can be the same as a direct impact; however, the effect may take a longer time to become apparent.

The significance of impacts to biological resources present, or those with potential to occur, was determined based upon the sensitivity of the resource and the extent of the anticipated impacts. For certain highly sensitive resources (e.g., a federally listed species), any impact would be significant. Conversely, other resources that are of low sensitivity (e.g., species with a large, locally stable population in the County but declining elsewhere) could sustain some impact with a less than significant effect.

According to Appendix G of the CEQA Guidelines, project impacts to biological resources would be considered significant if they would:

(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 CDFW or USFWS.

(b) Have a substantial adverse effect on any riparian habitat or sensitive natural community identified by local or regional plans, policies, regulations, or by CDFW or USFWS.

(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (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 local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

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

5.1 SENSITIVE SPECIES

5.1.1 Rare Plant Species

Less than Significant with Mitigation Incorporated

A total of 17 of the 29 rare plant species recorded within the vicinity of the study area were not considered to have a potential to occur based on geographic range, elevation range, and/or lack of suitable habitat (see Appendix E). Of the remaining 12 species, nine of the species with a potential to occur are either fully or conditionally covered species under the MSHCP. The species include Coulter's goldfields, little mousetail, long-spined spineflower, Orcutt's brodiaea, Parry's spineflower, prostrate vernal pool navarretia, San Diego ambrosia, spreading navarretia, and vernal barley. Since the study area is not located within a NEPSSA or CASSA, focused surveys were not warranted, and project impacts (if present) would be covered.

One Riparian/Riverine plant species (smooth tarplant) was observed within Drainage A2.1 in the northern portion of the study area. Smooth tarplant is a conditionally covered species under the MSHCP. Surveys for this species are required if a project occurs within a CASSA 1, 2,3, or 4. Since the study area is not located within a CASSA, impacts to this species would be covered under the MSHCP.

Two species (alkali marsh aster and San Bernardino aster) are considered to have a low potential to occur on the study area and are not covered under the MSHCP. Alkali marsh aster is a CRPR 2B.2 species and San Bernardino aster is a CRPR 1B.2 species. Although potentially suitable habitat is present, these two species are not expected to occur since records within the vicinity of the study area are historical records from the early 1900s. There are no recent observations of alkali marsh aster in Riverside County. The most recent observation of San Bernardino aster in Riverside County was 2015 in the San Jacinto Mountains, approximately 29 miles to the northeast of the project site.

5.1.2 Sensitive Animal Species

Less than Significant Impacts with Mitigation Incorporated

Of the 29 sensitive animal species recorded within the vicinity of the study area, 15 species were considered to have no potential to occur on the study area due to lack of suitable habitat (see Appendix F). Therefore, no significant impacts to these sensitive wildlife species are anticipated by the project. Fourteen of the remaining 29 species (in addition to SWFL) were determined to have a potential to occur on the study area. Potential project impacts to these species are discussed in detail below.

Low Potential Species

Four species have a low potential to occur based on the presence of low quality and isolated habitat, limited acreage of habitat, surrounding development, and lack of recent observations within the immediate vicinity of the study area. These species include coast range newt, San Diego black-tailed jackrabbit, Swainson's hawk (foraging potential only), and western mastiff bat (foraging potential only).

Coast range newt, San Diego black-tailed jackrabbit, and Swainson's hawk are fully covered species under the MSHCP. With payment of the MSHCP Local Development Mitigation Fee (LDMF), no additional mitigation is required for potential impacts to these species.

Western mastiff bat is not an MSHCP covered species and does not carry a federal or state listing as threatened or endangered. This species is listed as SSC by CDFW. The study area does not support suitable roosting habitat for this species. There is some potential for foraging habitat on the study area, although the habitat is considered low quality based on the presence of surrounding development. The nearest observation recorded on CNDDB was made in 2001, approximately 0.25 mile to the southeast of the study area (CDFW 2021). Based on the presence of surrounding development, lack of recent observations, and absence of suitable roosting habitat, no significant impacts to western mastiff bat are anticipated by the project.

Moderate Potential Species

Six species were determined to have a moderate potential to occur based on the presence of suitable habitat and recent observations within the vicinity of the study area. These include red diamond rattlesnake, Southern California legless lizard, southwestern pond turtle, SKR, two-striped gartersnake, and western spadefoot.

Red diamond rattlesnake, southwestern pond turtle, and western spadefoot are fully covered species under the MSHCP. With payment of the MSHCP Local Development Mitigation Fee (LDMF), no additional mitigation is required for potential impacts to these species.

SKR is a fully covered species under the MSHCP. In addition, the study area is located within the SKR HCP and is required to pay an SKR mitigation fee for incidental take authorization under the SKR HCP. See Section 5.6.7 below for a more detailed discussion.

Southern California legless lizard and two-striped gartersnake are SSC and are not covered species under the MSHCP. Although the study area supports potentially suitable habitat for these species, the habitat is considered low quality due to its small extent and heavily disturbed surrounding areas. The project would impact less than 0.5 acre of potentially suitable habitat, which overlaps with CDFW jurisdictional areas. Since the study area supports low quality habitat, the study area is not expected to support large populations of these species. If present, a loss of a few individuals would not be expected to reduce regional population numbers. Impacts to these species would be considered less than significant, and no mitigation measures are considered required.

High Potential Species

Coastal whiptail and white-tailed kite are fully covered species under the MSHCP. With payment of the MSHCP Local Development Mitigation Fee (LDMF), no additional mitigation is required for potential impacts to these species. Direct and/or indirect impacts to white-tailed kite during the nesting season (January 15 through August 31) would be avoided by implementing Measure Bio-4 (see Section 5.4.2 below).

Presumed Absent

BUOW and SWFL are conditionally covered species under the MSHCP. Focused surveys were conducted in 2020. Survey results were negative, and these species are presumed absent from the study area (Appendices G and I). Therefore, no direct or indirect impacts are anticipated to these species.

Since the study area supports suitable habitat for BUOW, focused surveys were conducted in accordance with the County's survey protocol (2006). No BUOWs or BUOW sign were observed on the study area during the focused survey; therefore, BUOW is currently presumed absent from the study area. A measure requiring a pre-construction survey and avoidance of active nests and/or relocation of BUOW (if BUOWs are observed) is included as Measure BIO-1 below. With the implementation of Measure BIO-1, the project would not result in significant impacts to BUOW.

Presumed Present

LBVI is a federally and state endangered species and an MSHCP conditionally covered species. Since the study area supports suitable habitat, focused surveys were conducted during the 2020 season in accordance with USFWS' survey protocol (2001). Four males and one pair were observed within the study area (Appendix H).

The project would not permanently or temporarily impact suitable LBVI habitat (Fremont cottonwood forest and woodland, arroyo willow thicket). However, LBVI was observed within the study area. Since project construction could have indirect impacts to LBVI that occupy habitat adjacent to Diaz Road, an avoidance/minimization measure is provided as Measure BIO-2 in Section 6.0 below, to avoid potential indirect impacts to LBVI during construction. The measure requires construction activities to be conducted outside of the LBVI nesting season (September 1 through March 14), as feasible. If construction activities are proposed within the nesting season (March 15 through August 31), weekly pre-construction surveys must be conducted ahead of project construction and a 300-foot avoidance buffer from occupied habitat must be established if LBVI are observed. If construction is proposed within the 300-foot buffer, a biological monitor would be required at all times and would have the authority to stop work. Additionally, daily noise monitoring would be required. Noise levels at the edge of occupied LBVI habitat may not exceed 60 A-weighted decibels (dBA), or an hourly average increase of 3 dBA if existing ambient noise levels already exceed 60 dBA. Please see Measure BIO-2 for more details. With the implementation of Measure BIO-2, the project would not result in significant impacts to LBVI.

5.2 SENSITIVE VEGETATION COMMUNITIES

5.2.1 California Department of Fish and Wildlife Sensitive Vegetation Communities/Habitats

Less than Significant with Mitigation Incorporated

The majority of permanent impacts are proposed within existing developed areas (25.28 acres; 79 percent; Table 6, *Impacts to Vegetation and Land Uses*; Figures 8a-h, *Impacts to Vegetation*). The majority of temporary impacts are proposed within areas that support upland mustards (0.16 acre; 80 percent). The project would entirely avoid permanent and temporary impacts within CDFW sensitive vegetation communities, including Fremont cottonwood forest and woodland and arroyo willow thicket. Therefore, no mitigation is warranted.

Table 6
IMPACTS TO VEGETATION AND LAND USES

Vegetation Community/Land Use	Temporary Impacts (acres)[1]	Permanent Impacts (acres)[1]
Arroyo Willow Thicket[2]	0.00	0.00
Fremont Cottonwood Forest and Woodland[2]	0.00	0.00
Riverwash	0.00	0.00
Developed	0.01	25.28
Disturbed	0.02	2.51
Eucalyptus Grove	0.01	0.49
Upland Mustards	0.16	3.69
TOTAL	**0.20**	**31.97**

[1] Acreage is rounded to the nearest hundredth.
[2] Sensitive habitats pursuant to CDFW's Natural Communities List (2020).

5.2.2 California Department of Fish and Wildlife Riparian Habitat and Streambed

Less than Significant with Mitigation Incorporated

The JD survey area supports approximately 1.495 acres of jurisdictional streambeds pursuant to Section 1602 of the CFG Code as regulated by CDFW. The project would result in permanent impacts to approximately 0.265 acre and temporary impacts to 0.076 acre of CDFW jurisdiction on the study area (Table 7, *Impacts to CDFW Jurisdiction*; Figures 9a-f, *Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas*). CDFW jurisdiction within Murrieta Creek would be entirely avoided.

Impacts to CDFW jurisdiction will require a Section 1602 Stream Alteration Agreement from the CDFW, as described in Measure BIO-3 included in Section 6.0 below. Compensatory mitigation for permanent impacts to CDFW jurisdiction would be required as part of subsequent Section 1602 permitting requirements. Permanent impacts to CDFW jurisdiction shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at a ratio of no less than 2:1 as detailed in Measure BIO-3. With the implementation of Measure BIO-3, the project would not result in significant impacts to jurisdictional resources.

Table 7
IMPACTS TO CDFW JURISDICTION

Drainage	Permanent Impacts (acres)[1]	Temporary Impacts (acres)[1]
Murrieta Creek	0.000	0.000
A1	0.000	0.000
A2	0.000	0.000
A2.1	0.064	0.026
B	0.000	0.000
C	0.027	0.005
D	0.027	0.006
E	0.036	0.009
F	0.000	0.000
G	0.021	0.006

Table 7 (cont.)
IMPACTS TO CDFW JURISDICTION

Drainage	Permanent Impacts (acres)[1]	Temporary Impacts (acres)[1]
H	0.024	0.007
I	0.020	0.005
I1	0.010	0.001
J	0.016	0.006
K	0.020	0.005
TOTAL	**0.265**	**0.076**

[1] Acreage is rounded to the nearest thousandth

5.3 U.S. ARMY CORPS OF ENGINEERS/REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Less than Significant with Mitigation Incorporated

The JD survey area supports approximately 0.096 acre of USACE/RWQCB non-wetland waters of the U.S. and 0.093 acre of wetlands pursuant to Sections 404/401 of the CWA as regulated by USACE and RWQCB, respectively. The project would result in permanent impacts to approximately 0.032 acre non-wetland waters of the U.S and 0.018 acre of wetlands (Table 8, *Impacts to USACE/RWQCB Jurisdiction*; Figure 9). The project would also require temporary impacts to approximately 0.005 acre of non-wetland waters of the U.S and 0.005 acre of wetlands.

Impacts to USACE/RWQCB jurisdiction will require a Section 404 permit from USACE and a Section 401 permit from RWQCB, as described in Measure BIO-3 included in Section 6.0 below. Compensatory streambed mitigation for permanent impacts to USACE/RWQCB jurisdiction will be required as part of subsequent Section 404/401 permitting requirements. Permanent impacts to USACE/RWQCB jurisdiction shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at a ratio of no less than 2:1 as required by Measure BIO-3. With the implementation of Measure BIO-3, the project would not result in significant impacts to jurisdictional resources.

Table 8
IMPACTS TO USACE/RWQCB JURISDICTION

Drainage	Permanent Impacts		Temporary Impacts	
	Non-Wetland (acres)[1]	Wetland (acres)[1]	Non-Wetland (acres)[1]	Wetland (acres)[1]
A1	0.000	0.000	0.000	0.000
A2	<0.000[2]	0.000	0.000	0.000
A2.1	0.001	0.000	<0.000[3]	0.000
B	0.000	0.000	0.000	0.000
C	0.005	0.004	0.000	0.001
D	0.003	0.007	0.000	0.002
E	0.012	0.000	0.003	0.000
F	0.000	0.000	0.000	0.000
G	0.003	0.000	<0.000[4]	0.000

Table 8 (cont.)
IMPACTS TO USACE/RWQCB JURISDICTION

Drainage	Permanent Impacts		Temporary Impacts	
	Non-Wetland (acres)[1]	Wetland (acres)[1]	Non-Wetland (acres)[1]	Wetland (acres)[1]
H	0.003	0.000	<0.000[5]	0.000
I	0.001	0.004	0.000	0.001
I1	0.002	0.000	<0.000[6]	0.000
J	0.002	0.000	<0.000[7]	0.000
K	0.000	0.003	0.000	0.001
TOTAL	**0.032**	**0.018**	**0.005**	**0.005**

[1] Acreage is rounded to the nearest thousandth.
[2] Actual acreage is 0.0004 acre.
[3] Actual acreage is 0.0003 acre.
[4] Actual acreage is 0.0004 acre.
[5] Actual acreage is 0.0004 acre.
[6] Actual acreage is 0.00003 acre.
[7] Actual acreage is 0.0004 acre.

5.4 WILDLIFE MOVEMENT AND MIGRATORY SPECIES

5.4.1 Wildlife Movement

Less than Significant Impacts

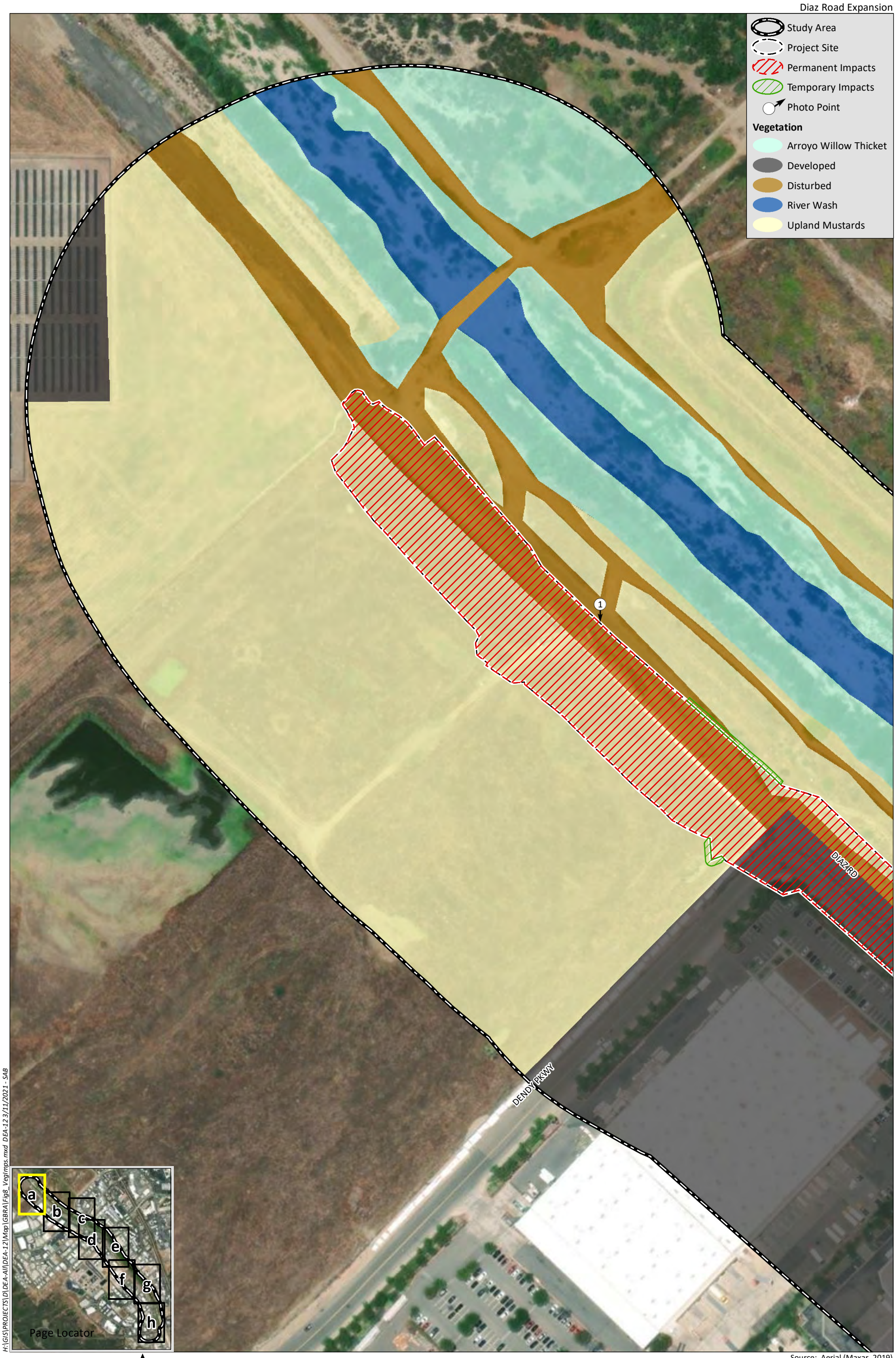
The study area is located within Proposed Constrained Linkage 13, which consists of Murrieta Creek. Regional wildlife movement is expected to occur within Murrieta Creek. However, the project would avoid Murrieta Creek and most of its tributaries. The proposed impacts within the project site are mostly restricted to existing developed areas. The project will implement Urban/Wildland Interface Guidelines to reduce potential indirect impacts to wildlife movement through Proposed Linkage 13, which includes Murrieta Creek. Therefore, the project will not significantly impact movement of wildlife or impede the use of native wildlife nursery sites.

5.4.2 Migratory Species

Less than Significant Impacts with Mitigation Incorporated

Development of the proposed project could disturb or destroy active migratory bird nests, including eggs and young. Disturbance to or destruction of migratory bird eggs, young, or adults is in violation of the MBTA and is considered a potentially significant impact. Although suitable habitat for nesting birds on the study area is limited, herbaceous ground cover, shrubs, and trees located throughout the study area could provide habitat for protected nesting bird species. A mitigation measure is provided as Measure BIO-4 in Section 6.0 below, which would help ensure the project is in compliance with MBTA regulations. With implementation of Measure BIO-4, the project would not result in significant impacts to migratory bird species.

Diaz Road Expansion



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0 150 Feet

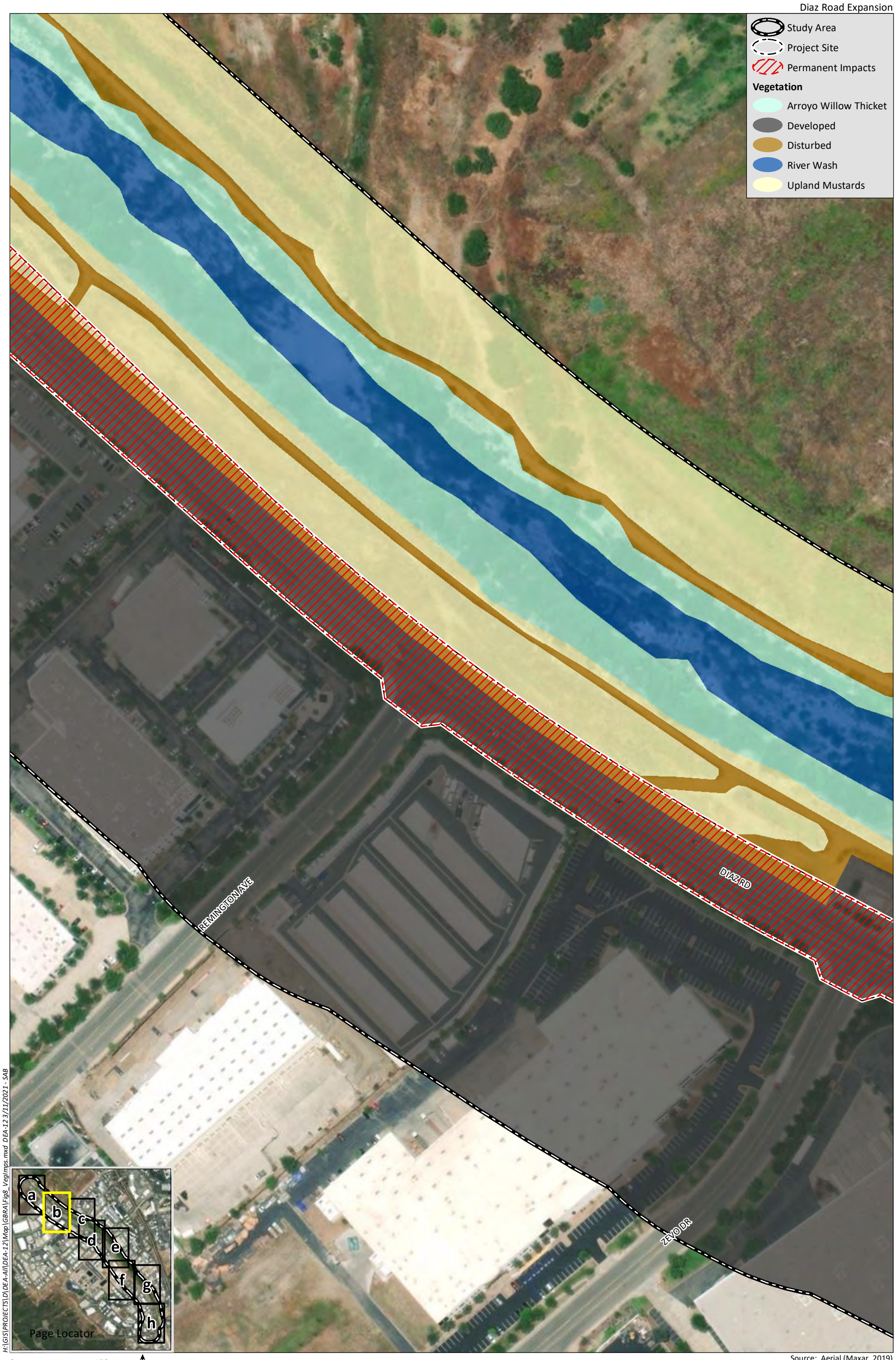
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8a

Diaz Road Expansion



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0 150 Feet

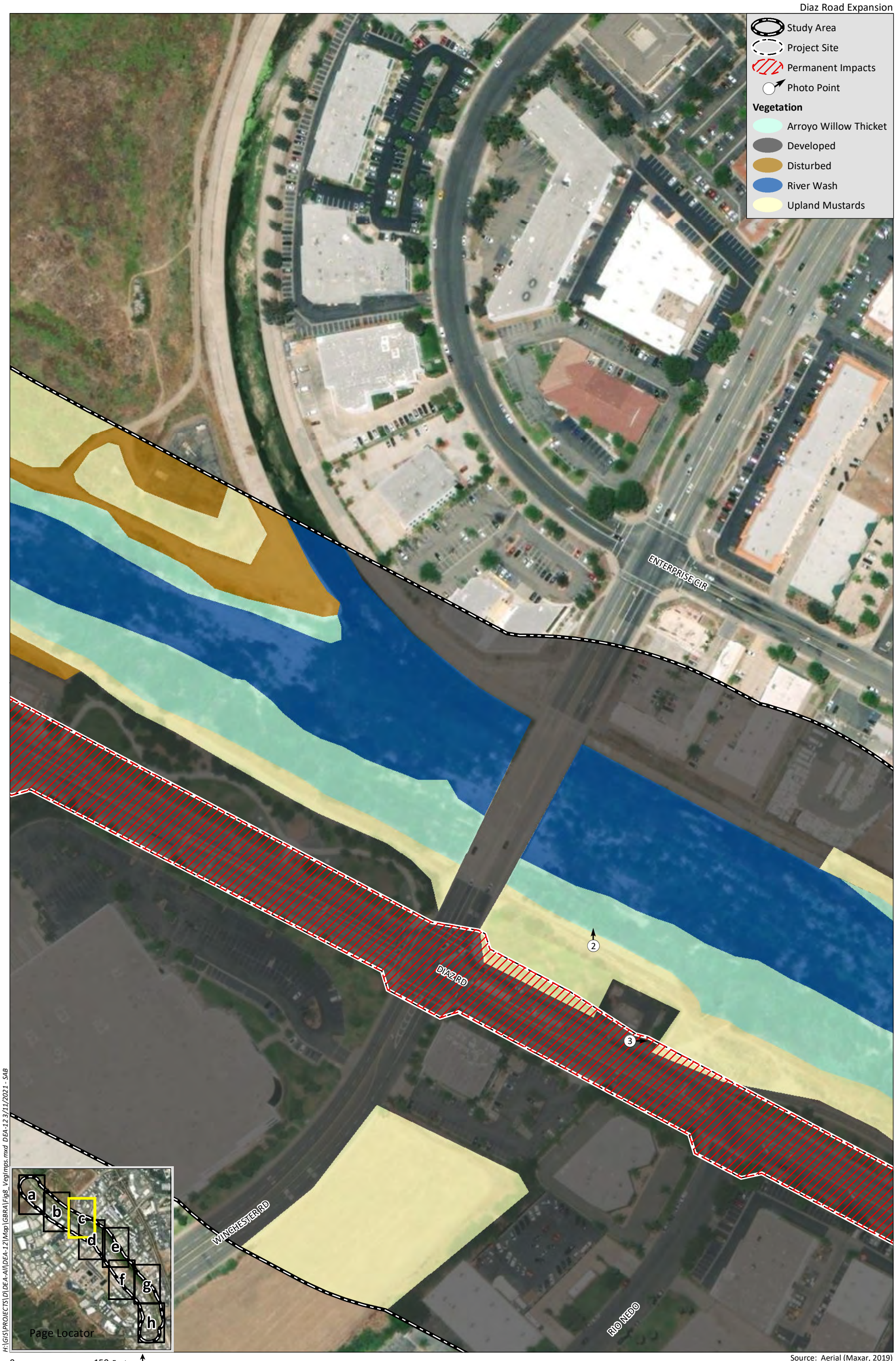
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8b

Diaz Road Expansion



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Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8c

Diaz Road Expansion

Study Area
Project Site
Permanent Impacts
Temporary Impacts
Photo Point

Vegetation

Arroyo Willow Thicket
Developed
River Wash
Upland Mustards

2
3

WINCHESTER RD
DIAZ RD
RIO NEDO
AQUA VISTA WAY
AVENIDA ALVARADO
BLACKDEER LOOP
SARAH WAY

a
b
c
d
e
f
g
h
Page Locator

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0 150 Feet

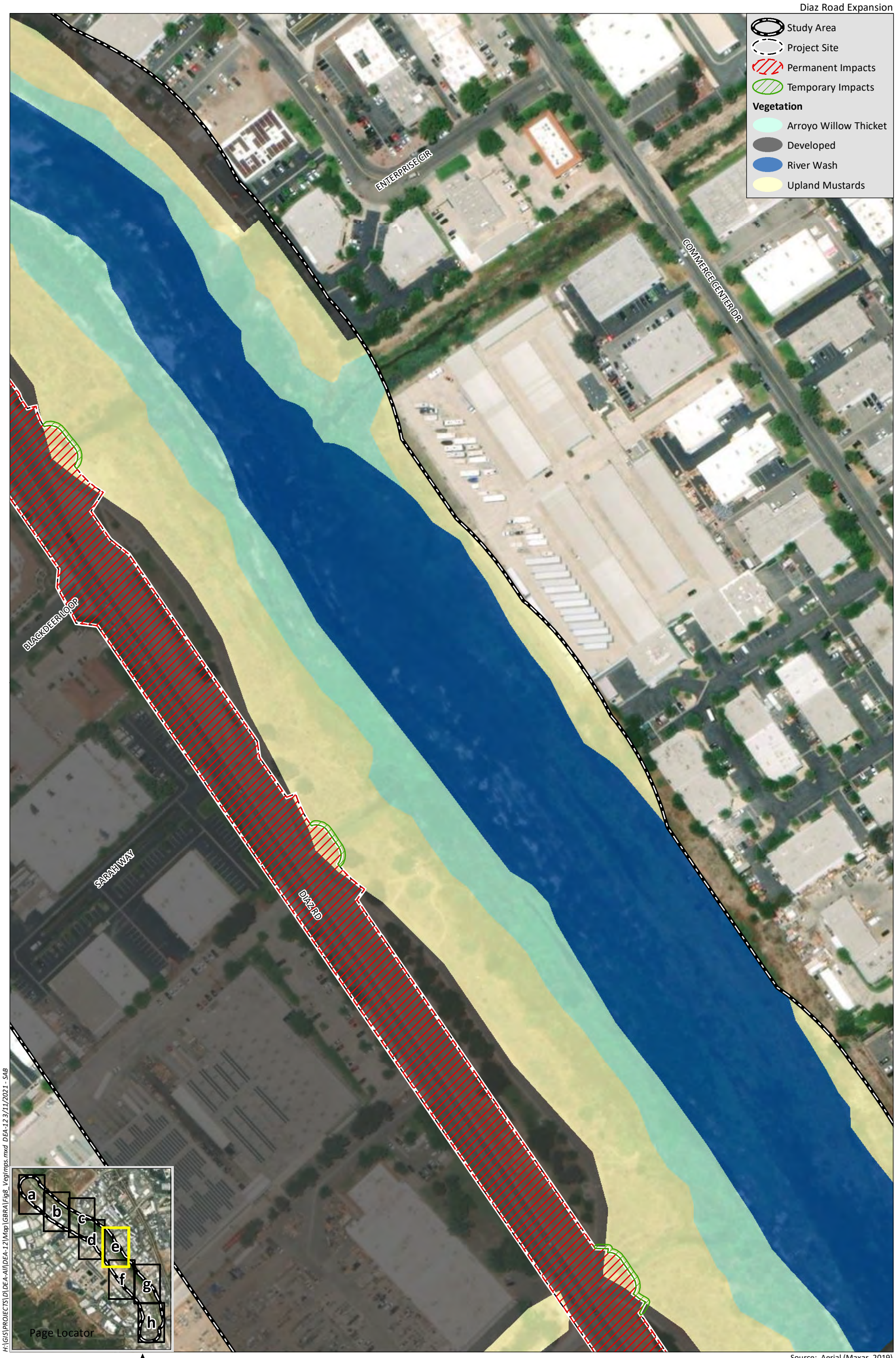
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8d

Diaz Road Expansion



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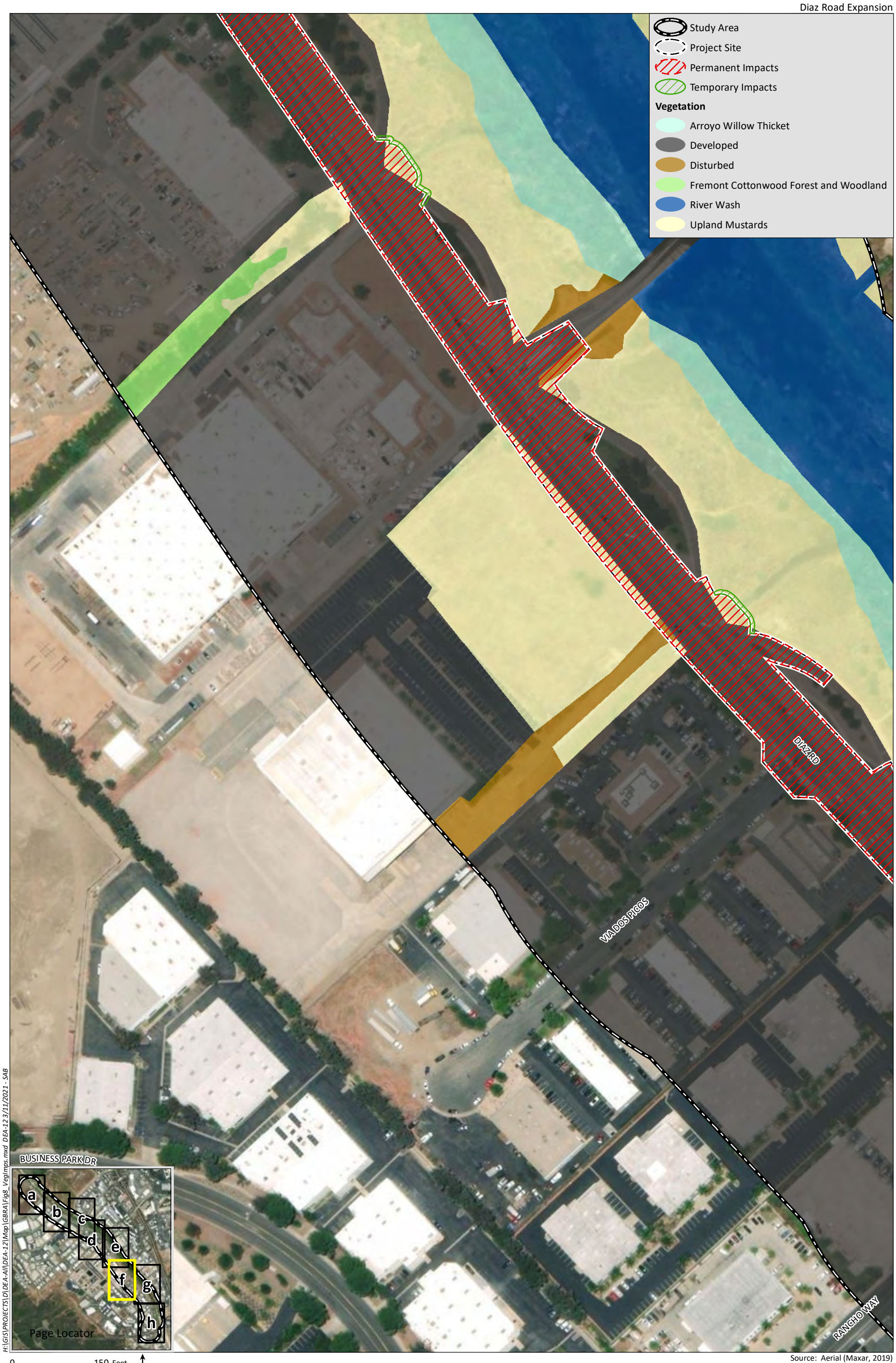
Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8e

Diaz Road Expansion



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0 150 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8f

Diaz Road Expansion

Study Area
Project Site
Permanent Impacts
Temporary Impacts
Photo Point

Vegetation

Arroyo Willow Thicket
Developed
River Wash
Upland Mustards

LAS HACIENDAS ST
DEL RIO RD
CALLE CORTEZ
DEL RIO RD
DIAZ RD
RANCHO WAY
4

Page Locator
a
b
c
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e
f
g
h

0 150 Feet

Source: Aerial (Maxar, 2019)

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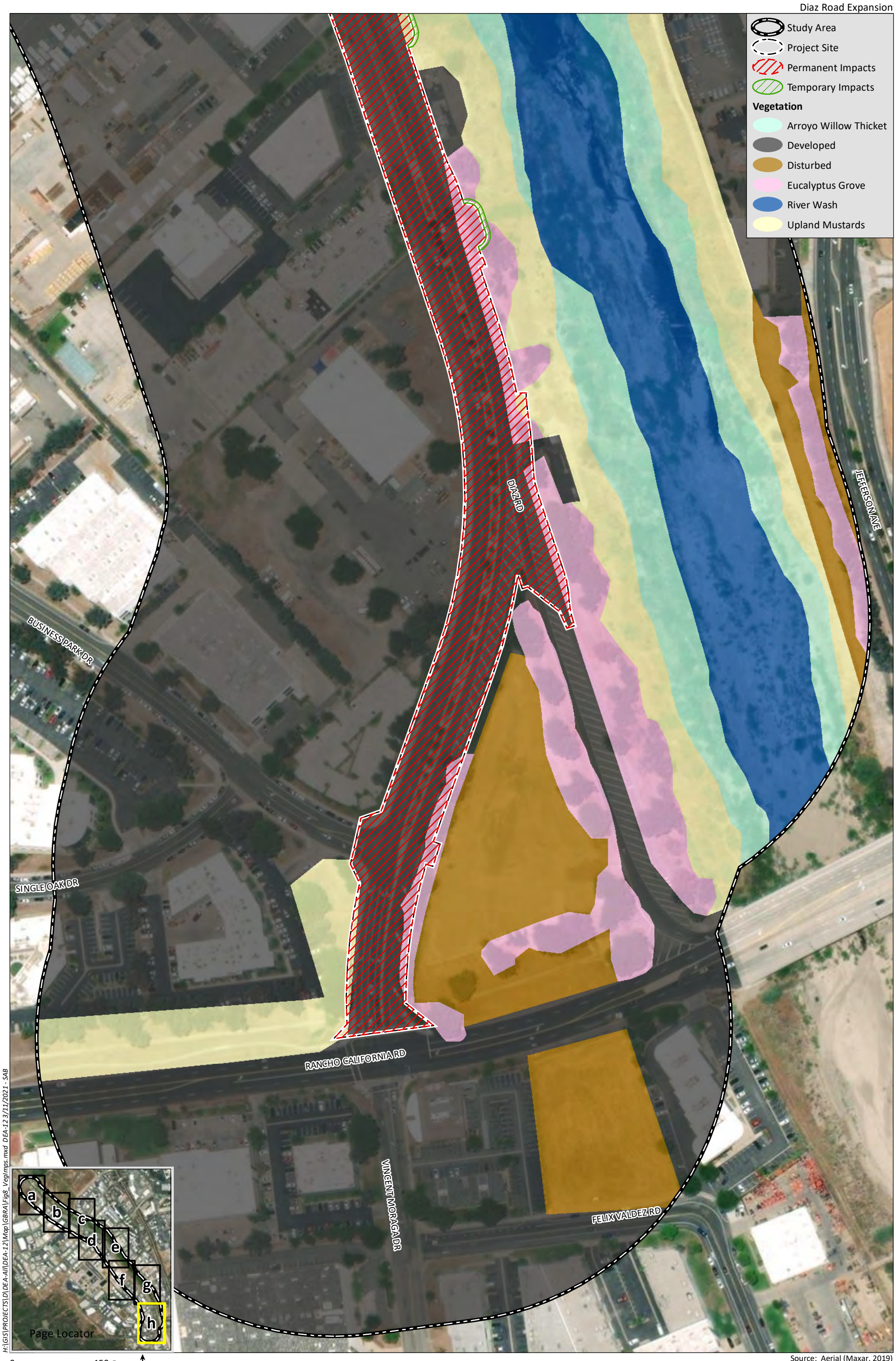
HELIX Environmental Planning

Impacts to Vegetation

Figure 8g

Diaz Road Expansion



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0 150 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Vegetation

Figure 8h

Study Area
Project Site
Permanent Impacts
Temporary Impacts
USACERWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

a
b
c
d
e
f
Page Locator

A1
A
A2
A2.1
DENDY PKWY
DIAZ RD

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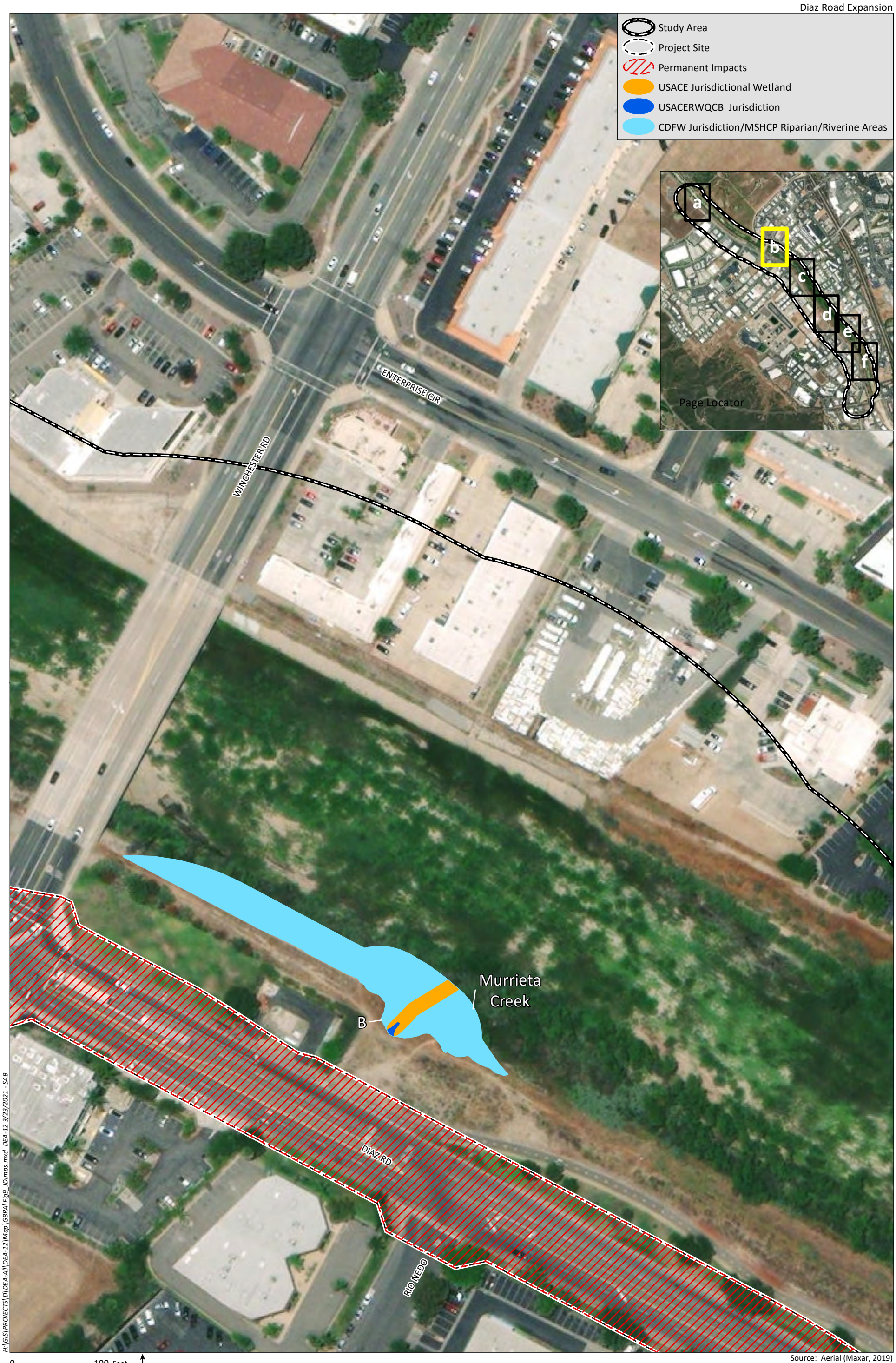
0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 9a



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HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 9b

Diaz Road Expansion

Study Area
Project Site
Permanent Impacts
Temporary Impacts
USACE Jurisdictional Wetland
USACERWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

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d
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f
Page Locator

C
D
BLACKDEER LOOP
DIAZ RD
SARAH WAY

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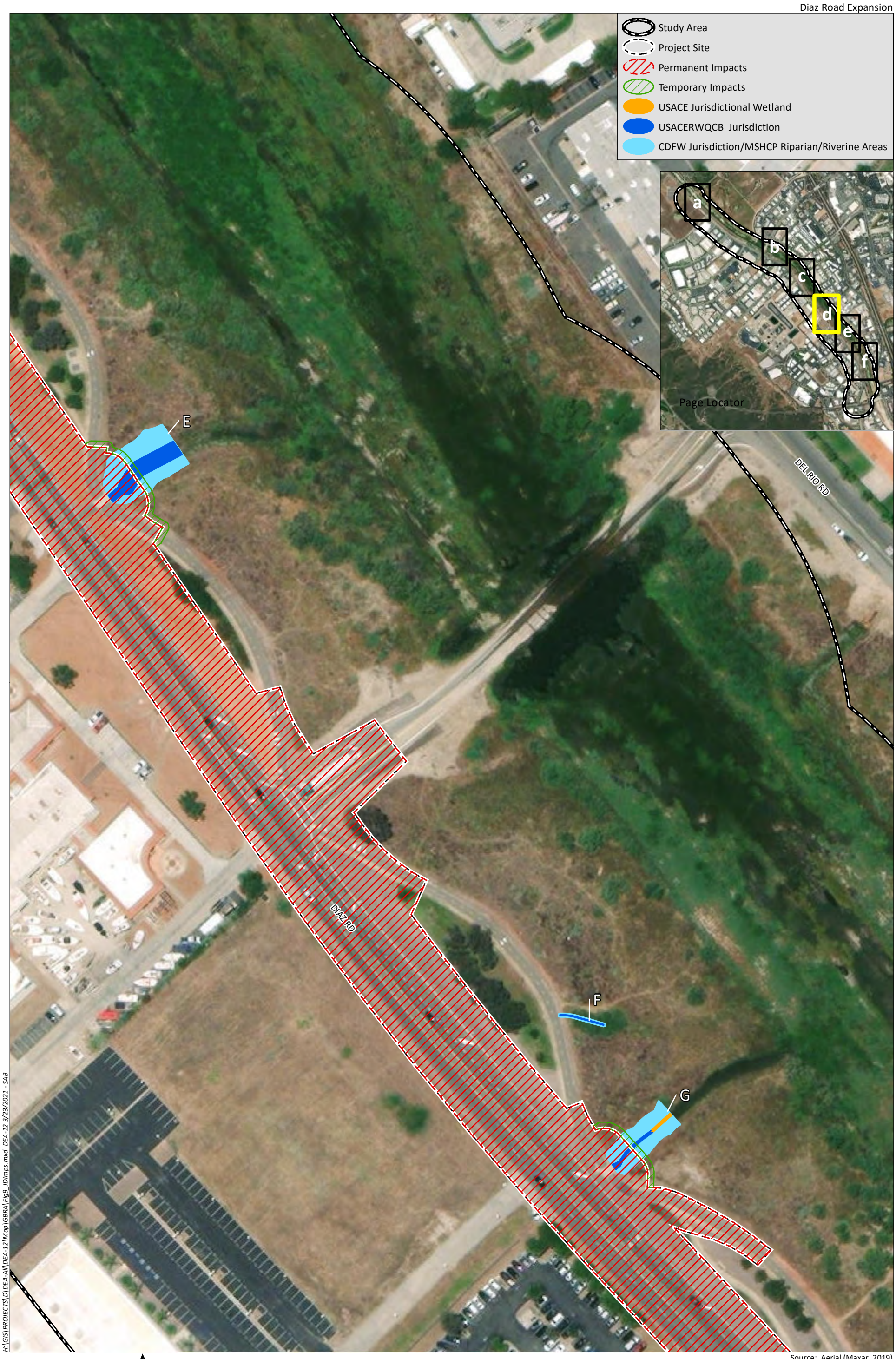
0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 9c



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0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 9d

Study Area
Project Site
Permanent Impacts
Temporary Impacts
USACE Jurisdictional Wetland
USACERWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

LAS HACIENDAS ST
DEL RIO RD
DEL RIO RD
DIAZ RD
RANCHO WAY

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Page Locator

H
I
I1

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0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 9e

Diaz Road Expansion

Study Area
Project Site
Permanent Impacts
Temporary Impacts
USACE Jurisdictional Wetland
USACERWQCB Jurisdiction
CDFW Jurisdiction/MSHCP Riparian/Riverine Areas

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Page Locator

DIAZ RD
DEL RIO RD
JEFFERSON AVE
J
K
Murrieta Creek

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\GBRA\Fig9_JDImps.mxd DEA-12 3/23/2021 - SAB

0 100 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Impacts to Jurisdictional Features and MSHCP Riparian/Riverine Areas

Figure 9f

5.5 CITY-PROTECTED TREES

Less than Significant with Mitigation Incorporated

The project will comply with the City's Heritage Tree Ordinance (Section 8.48 of the City's Municipal Code). The study area supports trees that may be subject to tree protection measures. In accordance with Measure BIO-5, prior to impacts, a tree survey will be conducted prior to construction. If protected trees are located within the project site and must be damaged or removed, a Heritage Tree Removal or Relocation Permit must be obtained. Therefore, implementation of MM BIO-5 would reduce any direct impacts to City-protected trees to less than significant.

5.6 ADOPTED HABITAT CONSERVATION PLANS

Less than Significant Impacts with Mitigation Incorporated

As discussed in Section 3.7.1 above, the study area is within the Southwest Area Plan of the MSHCP. The following sections demonstrate the project's compliance with MSHCP requirements.

5.6.1 MSHCP Reserve Assembly Requirements

The study area is located within the Subunit 1 (Murrieta Creek) of the Southwest Area Plan of the MSHCP. The study area includes portions of Criteria Cells 6656, 6781, 6782, 6783, 6890, 6891, 7021, and 7078 (Figure 7). The conservation requirements for these Criteria Cells are presented below in Table 3, *Conservation Requirement of the MSHCP Criteria Cells*. Although the study area is within several Criteria Cells, the project site is mostly within existing developed areas. The project site is not targeted for conservation or is an area that would contribute to the MSHCP reserve assembly.

Furthermore, Diaz Road is considered a "covered road" under the MSCHP. According to MSHCP Section 7.3.4, "safety improvements to other publicly maintained existing roadways within the Criteria Area are Covered Activities. The proposed road widening is considered a safety improvement and is, therefore, a "covered activity." Implementation of the proposed project would avoid and minimize impacts to sensitive species and habitats adjacent to the existing roadway. To minimize and avoid impacts to sensitive species and habitats occurring adjacent to the project site, the project will comply with Best Management Practices (BMPs), as detailed in Section 7.5.3 and Appendix C of MSHCP. Ultimately, the project would not conflict with the MSHCP reserve assembly.

5.6.2 Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2)

The identification of MSHCP Riparian/Riverine resources is based on the potential for the habitat to support, or be a tributary to habitat that supports, Riparian/Riverine Covered Species. Riparian/Riverine Covered Species are identified in MSHCP Section 6.1.2. The MSHCP defines Riparian/Riverine habitat as "lands which contain Habitat dominated by trees, shrubs, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year" (Dudek 2003). The MSHCP defines Vernal Pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season" (Dudek 2003). Artificially created wetlands, except for those created intentionally to provide habitat or

resulting from the creation of open waters or alteration of natural stream courses, are not considered MSHCP Vernal Pools.

Riparian/Riverine Habitat

The MSHCP Riparian/Riverine Areas mapped on the study area are equivalent to CDFW jurisdiction. Implementation of the proposed project would result in permanent impacts to approximately 0.256 acre of MSHCP Riparian/Riverine habitat and temporary impacts to 0.076 acre of Riparian/Riverine habitat (Figure 9; Table 9*, Impacts to MSHCP Riparian/Riverine Areas; Table 9, Impacts to MSHCP Riparian Area Vegetation*).

Since the project proposes impacts to Riparian/Riverine Areas, the project is required to prepare a Determination of Biologically Equivalent or Superior Preservation, which provides a detailed account of impacts and proposed mitigation to compensate for impacts. Mitigation for permanent impacts to the Riparian/Riverine Areas would be met by implementing required mitigation for impacts to CDFW jurisdiction. Mitigation would include off-site enhancement, restoration, and/or creation at a ratio of no less than 2:1, as required by Measure BIO-3 included in Section 6.0 below. With the implementation of Measure BIO-3, the project would not result in significant impacts to MSHCP Riparian/Riverine Areas.

Table 9
IMPACTS TO MSHCP RIPARIAN/RIVERINE AREAS

Drainage	Permanent Impacts (acres)[1]	Temporary Impacts (acres)[1]
Murrieta Creek	0.000	0.000
A1	0.000	0.000
A2	0.000	0.000
A2.1	0.064	0.026
B	0.000	0.000
C	0.027	0.005
D	0.027	0.006
E	0.036	0.009
F	0.000	0.000
G	0.021	0.006
H	0.024	0.007
I	0.020	0.005
I1	0.010	0.001
J	0.016	0.006
K	0.020	0.005
TOTAL	**0.265**	**0.076**

[1] Acreage is rounded to the nearest thousandth.

Riparian/Riverine and Vernal Pool Species

One Riparian/Riverine plant species (smooth tarplant) was observed within Drainage A2.1 in the northern portion of the study area. Smooth tarplant is a conditionally covered species under the MSHCP. Surveys for this species are required if a project occurs within a CASSA 1, 2,3, or 4. Since the study area is not located within a CASSA, impacts to this species would be covered under the MSHCP. Four other

Riparian/Riverine plant species were determined to have a low potential to occur within the study area. These species were not incidentally observed within the study area during field surveys.

Four males and one pair were observed within the study area. The project would not permanently or temporarily impact suitable LBVI habitat (Fremont cottonwood forest and woodland, arroyo willow thicket). However, project construction could have indirect impacts to LBVI that occupy habitat adjacent to Diaz Road. Indirect impacts to this species during the nesting season (March 1 through August 31) would be a significant impact. To avoid potential indirect impacts to LBVI, an avoidance/minimization measure is provided as Measure BIO-2 in Section 6.0 below. No other Riparian/Riverine animal species are expected to occur on the study area.

5.6.3 Narrow Endemic Plant Species (MSHCP Section 6.1.3)

The study area is not located within a NEPSSA; therefore, no focused surveys were required, and the proposed project is consistent with Section 6.1.3 of the MSHCP.

5.6.4 Urban/Wildland Interface Guidelines (MSHCP Section 6.1.4)

Proposed developments adjacent to MSHCP Conservation Areas may create edge effects that can impact conserved biological resources. The MSHCP provides several guidelines that address potential indirect effects from proposed developments that are in proximity to MSHCP Conservation Areas. These guidelines include measures addressing the quantity and quality of runoff generated by the development (i.e., drainage and toxics), night lighting, noise, non-native invasive plant species, barriers to humans and animal predators, and grading/land development encroachment.

The eastern portion of the study area is located within Proposed Constrained Linkage 13, which consists of Murrieta Creek. As discussed below, the project will comply with each applicable guideline to ensure consistency with MSHCP Section 6.1.4.

Drainage

The project will incorporate measures to avoid the discharge of untreated surface runoff into downstream waters. Measures will include those required for construction pursuant to the State Water Resources Control Board General Construction Storm Water Permit and the project Storm Water Pollution Prevention Program, while post-construction water quality measures will be implemented in compliance with the National Pollutant Discharge Elimination System, Municipal Storm Drain Permit requirements, and subsequent 401 Water Quality Certification from RWQCB for the project. The project will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes downstream from the study area. In addition, post-construction BMPs are intended to help ensure that post-project hydrologic conditions remain consistent with pre-project conditions, therefore minimizing the potential for downstream erosion and/or sedimentation that could otherwise result from implementation of the proposed project.

Toxics

Land uses that use chemicals or generate bio-products that are potentially toxic or may adversely affect wildlife species, habitat, or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge into downstream waters. Measures such as those employed to

address drainage issues would be implemented by the proposed project to avoid the potential impacts of toxics.

Lighting

Temporary construction lighting and ambient lighting from the proposed development are required to be selectively placed, directed, and shielded away from the MSHCP Conservation Area. In addition, large spotlight-type lighting directed into conserved habitat will be prohibited.

Noise

Proposed noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms, or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards.

Temporary construction-related noise impacts will be reduced by the implementation of a number of measures, including the following:

- During all excavation and grading, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards to reduce construction equipment noise to the maximum extent possible. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the study area.

- The construction contractor shall stage equipment in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the study area during all project construction.

- All construction work shall occur during the daylight hours. The construction contractor shall limit all construction-related activities that would result in high noise levels according to the construction hours to be determined by the County.

- The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass through sensitive land uses or residential dwellings.

Invasives

The project shall not use invasive plants for erosion control, landscaping, wind rows, or other purposes. Measure BIO-6 is provided in Section 6.0 below, which requires the project to comply with the MSHCP and avoid the use of invasive, non-native plants in accordance with MSHCP Table 6.2.

Barriers

Since the project consists of widening an existing road, barriers and signage are not necessary.

Grading/Land Development

Since the project consists of widening an existing road, manufactured slopes are not necessary.

5.6.5 Additional Surveys (MSHCP Section 6.3.2)

The study area is not within a CASSA or an Amphibian or Mammal Species Survey Area. No impacts to CASSA species or sensitive amphibian or mammal species are proposed.

The study area is within the MSHCP Burrowing Owl Survey Area, and the study area supports suitable habitat. Focused surveys were conducted in accordance with the County's survey protocol. No burrowing owls or sign of burrowing owls were observed within the study area. Due to the presence of suitable habitat, a pre-construction survey is required within 30 days of ground disturbance pursuant to the MSHCP. A mitigation measure requiring a pre-construction survey, avoidance or replacement of burrowing owl habitat and individuals (if three or more pairs are observed), and avoidance of active nests and/or relocation of burrowing owl (if burrowing owls are observed) is included as Measure BIO-1 below.

As discussed above, the proposed project is consistent with MSHCP Section 6.3.2.

5.6.6 Fuels Management (MSHCP Section 6.4)

Because the proposed project consists of widening an existing road within a heavily developed portion of the City, a fuel modification zone is not incorporated into the proposed project. The proposed project is consistent with Section 6.4 of the MSHCP.

5.6.7 Multiple Species Habitat Conservation Plan and Stephens' Kangaroo Rat Fees

In order for the project to participate in the MSHCP, the project proponent is required to pay an LDMF in order to finance the acquisitions of conservation areas to provide habitat for MSHCP covered species (County 2003). The LDMF must be paid prior to issuance of a building permit. The applicant shall pay the LDMF as determined by the County. Final fee credits shall be determined through coordination with the County.

The study area is also within the SKR HCP but is not located within any of the core reserves (County 1996). Therefore, the project is required to pay an SKR mitigation fee for incidental take authorization under the SKR HCP.

Measure BIO-7 is provided in Section 6.0, which requires the project proponent to pay the MSHCP LDMF and SKR HCP fees.

6.0 MITIGATION MEASURES

The following provides recommended measures intended to minimize or avoid impacts to biological resources:

BIO-1 **Burrowing Owl**: In compliance with the MSHCP, a pre-construction survey shall be conducted on the study area within 30 days prior to ground disturbance to determine presence of burrowing owls. If the pre-construction survey is negative and burrowing owl is confirmed absent, then ground-disturbing activities (i.e., earthwork, clearing, and grubbing) shall be allowed to commence and no further mitigation would be required.

If BUOW is observed during the pre-construction survey, active burrows shall be avoided by the project in accordance with the California Department of Fish and Wildlife's (CDFW) *Staff Report on Burrowing Owl Mitigation* (2012) or CDFW's most recent guidelines. The Project Proponent shall immediately inform the Western Riverside County Regional Conservation Authority (RCA) of BUOW observations. A BUOW Protection and Relocation Plan (plan) shall be prepared by a qualified biologist, which must be sent for approval by RCA prior to initiating ground disturbance. The RCA will coordinate directly with CDFW as needed to ensure that the plan is consistent with the MSHCP and CDFW guidelines. The plan shall detail avoidance measures that shall be implemented during construction and passive or active relocation methodology. Relocation shall only occur outside of the nesting season (September 1 through January 31). The RCA may require translocation sites to be created within the MSHCP Conservation Area for the establishment of new colonies. If required, the translocation sites must take into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species in order to successfully create suitable habitat for BUOW. The translocation sites must be developed in consultation with RCA. If required, translocation sites would also be described in the agency-approved plan.

BIO-2 **Least Bell's Vireo:** Due to presence of LBVI in the vicinity of the study area, the following avoidance and minimization measures shall be implemented to avoid potential impacts:

(1) To the extent feasible, construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the nesting season for LBVI (September 1 through March 14).

(2) If construction activities are proposed within the LBVI nesting season (March 15 through August 31), the following measures (a. through g.) shall be implemented to avoid potential indirect impacts.

(a) At the start of each new stretch of construction, weekly limits will be identified by the contractor, and a qualified biologist will conduct weekly pre-construction surveys to determine the presence of LBVI nest-building activities, egg incubation activities, or brood-rearing activities within 300 feet of anticipated construction activities for the coming week. Surveys will be conducted more frequently if construction could progress beyond the limits of the weekly surveyed area.

(b) If nesting LBVI is observed during the weekly pre-construction surveys, a qualified biological monitor shall clearly delineate a 300-foot avoidance buffer around occupied habitat. The 300-foot avoidance buffer shall be clearly marked with flags and/or fencing prior to commencement of construction. No construction activities shall occur within the 300-foot buffer during the nesting season without the presence of a biological monitor.

(c) If construction activities (e.g., ground disturbance and canopy trimming) must occur within 300 feet of occupied habitat, the following measures shall be implemented:

(i) A biological monitor shall be present to perform daily surveys for LBVI and monitor construction activities. The biological monitor shall have the authority to stop work and notify the construction supervisor if the biologist feels construction activities could alter the birds' normal behavior. The activities shall cease until additional minimization measures have been determined through coordination with CDFW and/or USFWS.

(ii) A qualified acoustician shall also be retained to determine ambient noise levels and construction-related noise levels at the edge of occupied habitat. Noise levels at the edge of the occupied habitat shall not exceed an hourly average of 60 dBA, or an hourly average increase of 3 dBA if existing ambient noise levels exceed 60 dBA. If project-related noise levels exceed the threshold described above, construction activities shall cease until additional minimization measures, such as visual and auditory barriers (e.g., sound wall), are taken to reduce project-related noise levels to below an hourly average of 60 dBA, or below an hourly average increase of 3 dBA if existing ambient noise levels exceed 60 dBA. If additional measures do not decrease project-related noise levels below the thresholds described above, construction activities shall cease until CDFW and/or USFWS are contacted to discuss alternative methods.

(d) All project personnel shall attend a Workers Environmental Awareness Program training presented by a qualified biologist prior to construction activities. The training program will inform project personnel about the life history of LBVI and all avoidance and minimization measures.

(e) The construction contractor shall only allow construction activities to occur during daylight hours.

(f) The construction contractor shall require functional mufflers on all construction equipment (stationary or mobile) used within or immediately adjacent to any 300-foot avoidance buffers to reduce construction equipment noise. Stationary equipment shall be situated so that noise generated from the equipment is not directed towards any occupied habitat for the LBVI.

(g) The construction contractor shall place staging areas as far as possible from any suitable occupied habitat for the LBVI.

(h) The biological monitor shall prepare written documentation of all monitoring activities at the completion of construction activities, which shall be submitted to CDFW and/or USFWS.

BIO-3 **Jurisdictional Resources**: Prior to issuance of a grading permit for impacts to jurisdictional resources, the City shall obtain regulatory permits from USACE, RWQCB, and CDFW (collectively, the "Resource Agencies"). Compensatory mitigation for permanent impacts to jurisdiction shall be required as part of subsequent permitting requirements. Permanent impacts to jurisdictional resources shall be mitigated through on-site or off-site enhancement, restoration, and/or creation of jurisdictional streambed at a mitigation-to-impact ratio of no less than 2:1. The following minimization measures will be implemented during construction:

- Use of standard BMPs to minimize the impacts during construction.
- Construction-related equipment will be stored in developed areas, outside of drainages.
- Source control and treatment control BMPs will be implemented to minimize the potential contaminants that are generated during and after construction. Water quality BMPs will be implemented throughout the project to capture and treat potential contaminants.
- To avoid attracting predators during construction, the project shall be kept clean of debris to the extent possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site.
- Employees shall strictly limit their activities, vehicles, equipment, and construction material to the proposed project footprint, staging areas, and designated routes of travel.
- Exclusion fencing should be maintained until the completion of construction activities.

BIO-4 **Nesting Birds:** To the extent possible, construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the general bird nesting season for migratory birds, which is March 15 through August 31 for songbirds and January 15 to August 31 for raptors.

If construction activities (i.e., earthwork, clearing, and grubbing) must occur during the general bird nesting season for migratory birds (March 15 and August 31) and raptors (January 15 and August 31), a qualified biologist shall be retained to perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the MBTA and CFG Code. The pre-construction survey shall be performed no more than seven days prior to the commencement of construction activities. The results of the pre-construction survey shall be documented by a qualified biologist. If construction is inactive for more than seven days, an additional survey shall be conducted.

If the qualified biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, no impacts within 300 feet (500 feet for raptors) of the active nest shall occur until the young have fledged the nest, and the nest is confirmed to no longer be active, or as determined by the qualified biologist. The biological monitor may modify the buffer as applicable for the specific bird species and type of work, or propose other recommendations to avoid indirect impacts to nesting birds.

BIO-5 **Protected Trees:** Prior to impacting any trees within the project site, a tree survey shall be conducted in accordance with the City of Temecula's Heritage Tree Ordinance (Section 8.48 of the City's Municipal Code). If trees subject to this ordinance must be damaged or removed within the project site, a Heritage Tree Removal or Relocation Permit must be obtained prior to damage or removal.

BIO-6 **MSHCP Landscaping Restrictions**: In accordance with MSHCP Section 6.1.4, no species listed in Table 6-2, *Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area*, shall be used in the project landscape plans (including hydroseed mix used for interim erosion control).

BIO-7 **Habitat Conservation Plan Fees**: The City is subject to the MSHCP LDMF and the SKR HCP Fee, which shall be paid prior to issuance of any grading permit.

7.0 CERTIFICATION/QUALIFICATION

The following individuals contributed to the fieldwork and/or preparation of this report:

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Appendix A

Plant Species Observed

Appendix A
PLANT SPECIES OBSERVED

Family	Scientific Name	Common Name
GYMNOSPERMS		
Pinus	*Cupressus sempervirens**	Italian cypress
	*Pinus halepensis**	Aleppo pine
ANGIOSPERMS - EUDICOTS		
Anacardiaceae	*Schinus molle**	Peruvian peppertree
Apocynaceae	*Nerium oleander**	oleander
Asteraceae	*Acourtia microcephala*	sacapellote
	Ambrosia psilostachya	ragweed
	Artemisia douglasiana	California mugwort
	Artemisia tridentata	big sagebrush
	Baccharis salicifolia	mule fat
	*Centaurea melitensis**	tocalote
	*Cirsium vulgare**	bull thistle
	*Dimorphotheca sinuate**	African daisy
	Heterotheca grandiflora	telegraph weed
	Helianthus annuus	common sunflower
	*Hypochaeris glabra**	smooth cat's ear
	Isocoma menziesii	Menzies' goldenbush
	*Lactuca serriola**	prickly lettuce
	Matricaria discoidea	pineapple weed
	*Oncosiphon piluliferum**	stinknet
	*Pseudognaphalium luteoalbum**	everlasting cudweed
	*Silybum marianum**	milk thistle
	*Sonchus oleraceus**	common sow thistle
	*Taraxacum officinale**	common dandelion
	Artemisia dracunculus	tarragon
Aizoaceae	*Mesembryanthemum nodiflorum**	slender iceplant
Boraginaceae	*Amsinckia intermedia*	common fiddleneck
	Cryptantha intermedia	nievitas
	Heliotropium curassavicum var. oculatum	alkali heliotrope
	Pectocarya heterocarpa	Chuckwalla combseed
Brassicaceae	*Hirschfeldia incana**	short-pod mustard
	*Lobularia maritima**	sweet alyssum
	*Sisymbrium irio**	London rocket
Caryophyllaceae	*Spergularia* spp.	sandspurry
Celastraceae	*Euonymus japonicus**	Japanese spindletree
Chenopodiaceae	*Atriplex semibaccata**	Australian saltbush
	*Chenopodium murale**	nettle leaf goosefoot
	*Salsola tragus**	Russian thistle
Cistaceae	*Cistus incanus**	hairy rockrose
Crassulaceae	*Crassula connata*	pigmy weed
Euphorbiaceae	*Croton californicus*	California croton

Appendix A (cont.)
PLANT SPECIES OBSERVED

Family	Scientific Name	Common Name
Fabaceae	*Acmispon americanus*	Spanish lotus
	*Acacia redolens**	bank catclaw
	Lupinus succulentus	arroyo lupine
	*Melilotus indicus**	annual yellow sweetclover
	*Robinia pseudoacacia**	black locust
	*Trifolium hirtum**	rose clover
	Vicia villosa ssp. *varia**	winter vetch
Fagaceae	*Quercus agrifolia*	coast live oak
Geraniaceae	*Erodium botrys**	long beaked filaree
	*Erodium cicutarium**	redstem filaree
Lamiaceae	*Rosmarinus officinalis**	rosemary
Malvaceae	*Malva parviflora**	cheeseweed mallow
Myoporaceae	*Myoporum parvifolium**	slender myoporum
Myrtaceae	*Eucalyptus camaldulensis**	river red gum
Oleaceae	*Fraxinus uhdei**	Shamel ash
Orobanchaceae	*Castilleja exserta*	purple owl's clover
Oxalidaceae	*Oxalis corniculate**	creeping wood sorrel
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
	*Rumex crispus**	curly dock
Platanaceae	*Platanus × hispanica**	London plane
Rosaceae	*Heteromeles arbutifolia*	toyon
	*Pyracantha coccinea**	scarlet firethorn
	*Pyrus calleryana**	Callery pear
	*Rhaphiolepis indica**	Indian hawthorn
Rubiaceae	*Galium aparine*	common bedstraw
Salicaceae	*Salix exigua*	sandbar willow
	Salix gooddingii	Goodding's black willow
	Salix lasiolepis	arroyo willow
Solanaceae	*Nicotiana glauca**	tree tobacco
Scrophulariaceae	*Leucophyllum langmaniae*	Texas sage
Tamaricaceae	*Tamarix ramosissima**	saltcedar
Ulmaceae	*Ulmus pumila**	Siberian elm
Urticaceae	*Urtica dioica*	stinging nettle
ANGIOSPERMS - MONOCOTS		
Arecaceae	*Washingtonia robusta**	Mexican fan palm
Cyperaceae	*Schoenoplectus acutus*	hardstem bulrush
Poaceae	*Avena barbata**	slender oat
	*Bromus diandrus**	common ripgut grass
	*Bromus hordeaceus**	soft brome
	*Hordeum murinum**	hare barley
	*Bromus madritensis**	red brome
	Leptochloa fusca ssp. *uninervia*	Mexican sprangletop
	*Polypogon monspeliensis**	rabbitsfoot grass
	Stipa pulchra	purple needle grass
	*Vulpia myuros**	foxtail fescue
Typhaceae	*Typha* spp.	cattail

* Non-native species

Appendix B

Animal Species Observed or Detected

Appendix B
ANIMAL SPECIES OBSERVED OR DETECTED

Order	Family	Scientific Name	Common Name
INVERTEBRATES			
Insects			
Lepidoptera	Nymphalidae	*Junonia coenia*	common buckeye
		Nymphalis antiopa	mourning cloak
		Vanessa cardui	painted lady
	Papilionidae	*Papilio rutulus*	western tiger swallowtail
	Pieridae	*Pontia protodice*	checkered white
VERTEBRATES			
Reptiles			
Squamata	Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
		Uta stansburiana	common side-blotched lizard
Birds			
Accipitriformes	Accipitridae	*Accipiter cooperii*	Cooper's hawk
		Buteo jamaicensis	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
	Cathartidae	*Cathartes aura*	turkey vulture
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Spatula cyanoptera	cinnamon teal
Apodiformes	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
Columbiformes	Columbidae	*Streptopelia decaocto*	Eurasian collared dove
		Zenaida macroura	mourning dove
Cuculiformes	Cuculidae	*Geococcyx californianus*	greater roadrunner
Falconiformes	Falconidae	*Falco sparverius*	American kestrel
Gruiformes	Rallidae	*Fulica atra*	Eurasian coot
		Fulica americana	American coot
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Cardinalidae	*Passerina amoena*	lazuli bunting
		Pheucticus melanocephalus	black-headed grosbeak
	Corvidae	*Aphelocoma californica*	California scrub jay
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
		Spinus tristis	American goldfinch
	Hirundinidae	*Petrochelidon pyrrhonota*	cliff swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Icterus bullockii	Bullock's oriole
		Icterus cucullatus	hooded oriole
		Icteria virens	yellow-breasted chat
		Molothrus ater	brown-headed cowbird
		Sturnella neglecta	western meadowlark
	Mimidae	*Mimus polyglottos*	northern mockingbird
	Passerellidae	*Chondestes grammacus*	lark sparrow
		Pipilo maculatus	spotted towhee
	Parulidae	*Cardellina pusilla*	Wilson's warbler
		Geothlypis trichas	common yellowthroat

Appendix B (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

Order	Family	Scientific Name	Common Name
Birds (cont.)			
Passeriformes (cont.)	Parulidae (cont.)	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
		Setophaga petechia	yellow warbler
	Ptiliogonatidae	*Phainopepla nitens*	phainopepla
	Sturnidae	*Sturnus vulgaris*	European starling
	Troglodytidae	*Cistothorus palustris*	marsh wren
		Thryomanes bewickii	Bewick's wren
	Turdidae	*Turdus migratorius*	American robin
	Tyrannidae	*Empidonax traillii*	willow flycatcher
		Myiarchus cinerascens	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Sayornis saya	Say's phoebe
		Tyrannus verticalis	western kingbird
	Vireonidae	*Vireo bellii pusillus*	Least Bell's Vireo
		Vireo gilvus	warbling vireo
Pelecaniformes	Ardeidae	*Ardea alba*	great egret
		Ardea herodias	great blue heron
		Egretta thula	snowy egret
		Plegadis chihi	white-faced ibis
Piciformes	Picidae	*Colaptes auratus*	northern flicker
		Dryobates nuttallii	Nuttall's woodpecker
Mammals			
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Sciuridae	*Otospermophilus beecheyi*	California ground squirrel

Appendix C

Site Photographs

Photo 1. View of disturbed land in northern portion of the study area, facing southwest. Non-native vegetation can be seen on the left and right.

Photo 2. View of southwestern willow scrub habitat in the central portion of the study area, facing northwest.

Photo 3. View of developed land in the central portion of the study area, facing southwest. Diaz Road can be seen on the right.

Photo 4. View of the southern portion of the study area, facing south. Disturbed land can be seen on the lower right and non-native vegetation can be seen on the left. The intersection of Diaz Road and Rancho Way can be seen in the center.

Appendix D

Drainage Photographs

Photograph 1: Photograph of Drainage A located in the northern portion of the study area, facing northwest.

Photograph 2: Photograph of Drainage A1 located in the northern portion of the study area, facing east.

Photograph 3: Photograph of Drainage A2 located in the northern portion of the study area, facing northwest.

Photograph 4: Photograph of Drainage A2.1 located in the northern portion of the study area, facing southwest.

Photograph 5: Photograph of Drainages B located in the central portion of the study area, facing northeast.

Photograph 6: Photograph of Drainage C located in the central portion of the study area, facing north.

Photograph 7: Photograph of Drainage D located in the central portion of the study area, facing northeast.

Photograph 8: Photograph of Drainage E located in the central portion of the study area, facing northeast.

Photograph 9: Photograph of Drainage F located in the central portion of the study area, facing east.

Photograph 10: Photograph of Drainage G located in the central portion of the study area, facing northeast.

Photograph 11: Photograph of Drainage H located in the southern portion of the study area, facing northeast.

Photograph 12: Photograph of Drainage I located in the southern portion of the study area, facing northeast.

Photograph 13: Photograph of Drainage J located in the southern portion of the study area, facing east.

Photograph 14: Photograph of Drainage K located in the southern portion of the study area, facing east.

Appendix E

Rare Plant Species Potential to Occurs

Appendix E
Rare Plant Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Abronia villosa var. *aurita*	chaparral sand-verbena	CRPR 1B.1	Annual herb. Occurs on sandy floodplains or flats in generally inland, arid areas of sage scrub and open chaparral. Elevation range 0-1600 m. Flowering period Mar-Aug.	**None.** The study area does not support sage scrub or chaparral habitats.
Almutaster pauciflorus	alkali marsh aster	CRPR 2B.2	Perennial herb. Occurs in meadows and seeps on alkaline soil. Elevation range 200-700 m. Flowering period Jun-Oct.	**Low.** The study area supports highly disturbed mesic areas with alkaline soils. Although the study are supports disturbed habitat, this species has not been recorded in the region since 1937.
Ambrosia pumila	San Diego ambrosia	FE CRPR 1B.1 MSHCP Covered Species (b)	Perennial herb. Occurs on clay, sandy loam, and sometimes alkaline soils. Found in grasslands, valley bottoms, and dry drainages. Can occur on slopes, disturbed places, in coastal sage scrub and chaparral. Elevation range 50-600 m. Flowering period Apr-Jul.	**High.** The study area supports suitable sandy loam and alkaline soils, as well as disturbed habitat for this species. This species was recorded in CNDDB in 2010, approximately 0.8 mile to the southeast of the study area.
Arctostaphylos rainbowensis	rainbow manzanita	CRPR 1B.1 MSHCP Covered Species (e)	Shrub. Southern mixed chaparral is preferred habitat with a relatively dense canopy from 6 to 8 feet. Elevation range 150-800 m. Flowering period Jan-Feb.	**None.** The study area does not support chaparral habitat.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Astragalus pachypus var. *jaegeri*	Jaeger's bush milk-vetch	CRPR 1B.1	Perennial shrub. Occurs in sandy or rocky soils. Found in chaparral, cismontane woodland, coast scrub, and valley grassland habitats. Elevation 365-975 m. Flowering period Dec-Jun.	**None.** The study area does not support chaparral habitat. The study area is located outside oof this species' elevation range.
Brodiaea orcuttii	Orcutt's brodiaea	CRPR 1B.1 MSHCP Covered Species	Perennial herb. Occurs in vernally moist grasslands, mima mound topography, and vernal pool periphery are preferred habitat. Occasionally will grow on streamside embankments in clay soils. Elevation range 0-1600 m. Flowering period Apr-Jul.	**Low.** The study area supports highly disturbed mesic areas, including streamside embankments with clay soils. This species was recorded in CNDDB in 2003, approximately 5.8 miles to the southeast of the study area.
Brodiaea santarosae	Santa Rosa basalt brodiaea	CRPR 1B.2	Perennial herb. Occurs in soils derived from Santa Rosa Basalt within grassland habitat. Elevation range 580-1045 m. Flowering period May-Jun.	**None.** The study area is not located on Santa Rosa Basalt. The study area is located outside of this species' elevation range.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	CRPR 1B1	Annual herb. Occurs in sandy soils within coastal bluff scrub and coastal dunes. Elevation range 0-100 m. Flowering period Apr-Jul.	**None.** The study area does not support coastal bluff scrub or coastal dune habitats. The study area is located outside of this species' elevation range.
Calochortus weedii var. *intermedius*	intermediate mariposa lily	CRPR 1B.2 MSHCP Covered Species	Perennial herb. Occurs on dry, rocky slopes within openings in chaparral, coastal scrub, and grassland habitats. Elevation range 0-680 m. Flowering period Jun-Jul.	**None.** The study area does not support dry, rocky slopes.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Centromadia pungens ssp. *laevis*	smooth tarplant	CRPR 1B.1 MSHCP Covered Species (d)	Annual herb. Occurs within valley and foothill grasslands, particularly near alkaline locales. Elevation range 90-500 m. Flowering period Apr-Sep.	**Present.** The study supports suitable habitat for this species. This species was observed during the general biological survey.
Chorizanthe parryi var. *parryi*	Parry's spineflower	CRPR 1B.1 MSHCP Covered Species (e)	Annual herb. Occurs in sandy soil on flats and foothills in mixed grassland, coastal sage scrub, and chaparral communities. Elevation range 90-800 m. Flowering period May-Jun.	**Low**. The study area supports limited areas of highly disturbed sandy soils. This species was recorded on CNDDB in 2010, approximately 4.8 miles to the northeast of the study area.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	CRPR 1B.2 MSHCP Covered Species	Annual herb. Occurs within clay lenses largely devoid of shrubs. Can be occasionally seen on vernal pool and even montane meadows peripheries near vernal seeps. Elevation range 30-1500 m. Flowering period Apr-Jun.	**Low.** The study area supports highly disturbed mesic areas. This species was recorded on CNDDB in 2015, approximately 3.3 miles to the northwest of the study area within the Santa Rosa Plateau.
Clinopodium chandleri	San Miguel savory	CRPR 1B.2 MSHCP Covered Species (b)	Perennial herb. Occurs on Gabbro and metavolcanic soils in interior foothills, chaparral, and oak woodland. Elevation range 0-1100 m. Flowering period Mar-Jul.	**None.** The study area does not support Gabbro or metavolcanic soils.
Dudleya viscida	sticky dudleya	CRPR 1B.2 MSHCP Covered Species (f)	Perennial herb. Occurs on cliffs and bluffs within chaparral, coastal sage scrub, coastal bluff scrub, and cismontane woodland. Elevation range below 450 m. Flowering period May-Jun.	**None.** The study area does not support cliffs or bluffs.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE CRPR 1B.1 MSHCP Covered Species	Annual or perennial herb. Occurs in San Diego mesa hardpan and clay pan vernal pools, and southern interior basalt flow vernal pools. Elevation range 0-705 m. Flowering period May-Jun.	**None.** The study area is not within the geographic range of this species.
Hordeum intercedens	vernal barley	CRPR 3.2 MSHCP Covered Species	Annual grass. Saline flats and depressions in grasslands or in vernal pool basins. Elevation range 5-1000 m. Flowering period Mar.-Jun.	**Low.** The study area supports highly disturbed saline and mesic habitat. This species was recorded in the Consortium of California Herbaria's database in 2006, approximately 6.3 miles to the northeast of the study area.
Horkelia cuneata var. *puberula*	mesa horkelia	CRPR 1B.1	Perennial herb. Occurs in sandy or gravelly areas within chaparral, coastal sage scrub, and coastal mesas. Elevation range 70-870. Flowering period Mar-Jul.	**None.** The study area does not support chaparral, coastal sage scrub, or coastal mesa habitats.
Juncus luciensis	Santa Lucia dwarf rush	CRPR 1B.2	Annual grass-like herb. Occurs in mesic sandy soils within seeps, meadows, vernal pools, streams, and roadsides. Elevation 300-1900 m. Flowering period Apr-Jul.	**None.** The study area supports mesic areas. However, the regional occurrences are limited to the Santa Rosa Plateau, approximately 2.75 miles to west of the study area.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	CRPR 1B.1 MSHCP Covered Species (d)	Annual herb. Occurs in alkaline soils, sinks, and grasslands. Elevation range 0-1000 m. Flowering period Apr-May.	**Low.** The study area supports suitable mesic habitat with alkaline soils, although these areas are highly disturbed. This species was recorded on CNDDB in 1936, within a polygon that includes a small area in the southern portion of the study area.
Mielichhoferia shevrockii	Shevrock's copper moss	CRPR 1B.2	Moss. Occurs on rocks containing heavy metals and rocks along roadsides on mesic sites within cismontane woodland. Elevation range 750-1400 m. Capsules mature Apr-Jun. Flowering period N/A.	**None.** The study area is located outside of this species' the elevation range.
Myosurus minimus ssp. *apus*	little mousetail	CRPR 3.1 MSHCP Covered Species (d)	Annual herb. Vernal pools and alkaline marshes. This cryptic species typically grows in the deeper portions of vernal pool basins, sprouting immediately after the surface water has evaporated. Elevation range 20-640 m. Flowering period Mar-Jun.	**Low.** The study area does not support vernal pools but does support potential wetland within alkaline soils. This species was recorded in CNDDB in 1990, approximately 3.2 miles to the northwest of the project site within the Santa Rosa Plateau.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Navarretia fossalis	spreading navarretia	FT CRPR 1B.1 MSHCP Covered Species (b)	Annual herb. Occurs in vernal pools, vernal swales, or roadside depressions. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Elevation range 30-1300 m. Flowering period Apr-Jun.	**Low.** The study area supports some areas of highly disturbed roadside depressional areas with soils. This species was recorded in CNDDB in 1998, approximately 2.9 miles to the northwest of the study area.
Navarretia prostrata	prostrate vernal pool navarretia	CRPR 1B.1 MSHCP Covered Species (d)	Annual herb. Occurs in alkaline floodplain, meadows, seeps, and vernal pools within coastal scrub and valley and foothill grassland. Elevation range below 700 m. Flowering period Apr-Jul.	**Low.** The study area supports disturbed alkaline floodplain. This species was recorded in CNDDB in 2009, approximately 3.3 miles to the west of the study area.
Orcuttia californica	California Orcutt grass	FE/SE CRPR 1B.1 MSHCP Covered Species (b)	Annual herb. Occurs in or near vernal pools. This species tends to grow in wetter portions of the vernal pool basin but does not show much growth until the basins become somewhat desiccated. Elevation range 0-700 m. Flowering period Apr-Aug.	**None.** The study area does not support vernal pools.
Pseudognaphalium leucocephalum	white rabbit-tobacco	CRPR 2B.2	Biennial or short-lived perennial herb. Occurs in sandy and gravelly benches, dry stream and canyon bottoms within woodland, coastal scrub, and chaparral. Elevation range below 500 m. Flowering period Jul-Oct.	**None.** The study area does not support suitable dry streambed habitat.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Scutellaria bolanderi ssp. *austromontana*	southern mountain skullcap	CRPR 1B.2	Perennial herb. Occurs within gravelly soils along streambanks in oak and pine woodlands. Elevation 425-2000 m. Flowering period Jun-Aug.	**None.** The study area does not support suitable streambank oak or pine woodlands. The study area is located outside of this species' elevation range.
Symphyotrichum defoliatum	San Bernardino aster	CRPR 1B.2	Perennial herb. Occurs in vernally mesic soils within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, grasslands, streams, springs, and disturbed ditches. Elevation range 0-2050 m. Flowering period Jul-Nov.	**Low.** The study area does support a limited area of roadside depressional areas and disturbed ditches draining into Murrieta Creek. However, this species has not been recorded in the vicinity of the study area since 1923.
Tetracoccus dioicus	Parry's tetracoccus	CRPR 1B.2	Shrub. Occurs on stony, decomposed gabbro and dry slopes within chaparral and coastal scrub. Elevation below 1000 m. Flowering period Apr-May.	**None.** The study area does not support chaparral or coastal sage scrub habitats.

Appendix E (cont.)
Rare Plant Species Potential to Occur

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Tortula californica	California screw-moss	CRPR 1B.2	Moss. Occurs in sandy soils within chenopod scrub and grasslands. Elevation 10-1460 m. Flowering Period N/A	**None.** The study area does not support chenopod scrub or grasslands.

Source: HELIX (2021)

[1] Sensitive species reported within the Murrieta and Temecula quadrangles based on a database search conducted on CNDDB and CNPS.

[2] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened.
CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered. MSHCP Conditionally Covered Species (a) through (f): (a) surveys may be required for species as part of wetland mapping (MSHCP Section 6.1.2); (b) surveys may be required for species within Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3); (c) surveys may be required for species within locations shown on survey maps (MSHCP Section 6.3.2); (d) surveys may be required for species within Criteria Area Species Survey Area (MSHCP Section 6.3.2); (e) covered species will be considered to be covered species adequately conserved when conservation requirements identified in species-specific conservation objectives have been met (MSHCP Table 9-3); and (f) covered species will be conserved covered species adequately conserved when a Memorandum of Understanding is executed with the Forest Service that addresses management for these species on Forest Service Land (MSHCP Table 9-3).

[3] Potential to Occur is assessed as follows: **None**: Habitat suitable for species survival does not occur on the study area, the study area is not within geographic range of the species, and/or the study area is not within the elevation range of the species; **Low**: Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **Moderate**: Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **High**: Suitable habitat of sufficient extent is present on the study area and the species has been recorded recently on or near the study area, but was not observed during surveys for the current project. However, focused/protocol surveys are not required or have not been completed; **Presumed Present**: The species was observed during focused surveys for the current project and is assumed to occupy the study area; **Presumed Absent**: Suitable habitat is present on the study area but focused surveys for the species were negative.

Appendix F

Sensitive Animal Species Potential to Occur

Appendix F
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Insects				
Bombus crotchii	Crotch bumble bee	--/SCE	Coastal California east to the Sierra-Cascade crest and south into Mexico. Species' food genera include *Antirrhinum* sp., *Phacelia* sp., *Clarkia* sp., *Dendromecon* sp., *Eschscholzia* sp., *and Eriogonum* sp.	**None.** The study area does not support chaparral or coastal sage scrub habitat.
Euphydryas editha quino	quino checkerspot butterfly	FE/-- MSHCP Covered Species	Open, sunny areas within chaparral and coastal sage scrub. Host plants are *Plantago* spp., *Antirrhinum coulterianum*, and *Cordylanthus rigidus*.	**None.** The study area does not support chaparral or coastal sage scrub habitat.
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	FT MSHCP Covered Species (a)	Most commonly found in swale, earth slump, or basal-flow depression pools in unplowed grasslands. Requires cool-water pools.	**None.** The study area does not support vernal pools.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	Vernal pools. Endemic to mesas in San Diego and Orange Counties.	**None.** The study area does not support vernal pools.
Streptocephalus woottoni	Riverside fairy shrimp	FE MSHCP Covered Species (a)	Typically requires deep vernal pools and seasonal wetlands at least 30 centimeters deep.	**None.** The study area does not support vernal pools.
Fish				
Gila orcuttii	arroyo chub	SSC MSHCP Covered Species	Prefers slow moving streams or backwaters with sand or mud bottoms. Streams are typically deeper than 40 centimeters (16 inches). Primary food source is aquatic vegetation and invertebrates.	**None.** The study area does not support perennial stream habitat.

Appendix F (cont.)
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Amphibians				
Spea hammondii	western spadefoot	SSC MSHCP Covered Species	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires vernal pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* spp.)	**Moderate.** The study area supports limited areas of floodplain habitat within Murrieta Creek. However, there are no observations of this species recorded on CNDDB within Murrieta Creek. This species was recorded in CNDDB in 2017, approximately 0.8 mile to the west of the study area.
Taricha torosa	Coast Range newt	SSC MSHCP Covered Species	Breeds in ponds, reservoirs, and slow-moving stream pools; often found in riparian forest, woodlands, chaparral, or grassland within one kilometer of breeding habitat.	**Low.** The study area supports limited areas of habitat within Murrieta Creek. However, there are no observations of this species recorded in CNDDB within Murrieta Creek. This species was recorded in CNDDB in 2001, approximately 5.0 miles to the northwest of the study area within Cole Canyon.
Reptiles				
Anniella stebbinsi	Southern California legless lizard	SSC	Occurs in moist, warm, loose soil with plant cover. May be found in coastal sand dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Moderate.** The study area supports suitable moist soils with plant cover and sandy wash habitat. This species was recorded in CNDDB in 2000, approximately 5.4 miles to the northeast of the project site.
Arizona elegans occidentalis	California glossy snake	SSC	Most common in desert habitats, but also occurs in chaparral, arid scrub, and annual grassland. Associated with sandy open areas with sparse shrub cover, but can also occur in rocky habitats.	**None**. The study area does not support chaparral, grassland, or scrub habitat.

Appendix F (cont.)
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Aspidoscelis tigris stejnegeri	coastal whiptail	SSC MSHCP Covered Species	Open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	**High.** The study area supports suitable habitat within the southern willow scrub and cottonwood-willow riparian habitats. This species was recorded in CNDDB in 2001, approximately 1.9 miles the southeast of the study, at the confluence of Murrieta Creek and the Santa Margarita River.
Crotalus ruber	red diamond rattlesnake	SSC MSHCP Covered Species	Occurs in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**Moderate.** The study area supports suitable habitat within the southern willow scrub and southern cottonwood-willow riparian forest. The nearest occurrence recorded in CNDDB is an undated collection made approximately 2.5 miles to the southeast of the study area.
Actinemys pallida	southwestern pond turtle	SSC MSHCP Covered Species	Almost entirely aquatic; occurs in freshwater marshes, creeks, ponds, rivers and streams, particularly where basking sites, deep water retreats, and egg laying areas are readily available.	**Moderate.** The study area supports suitable aquatic habitat for this species. There is an occurrence recorded in CNDDB in 2015 located adjacent to the study area, downstream of the intersection of Diaz Road and Rancho California Road.
Phrynosoma blainvillii	coast horned lizard	SSC MSHCP Covered Species	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* spp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**None.** The study area does not support chaparral, oak woodlands, or coniferous forest habitats.

Appendix F (cont.)
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Thamnophis hammondii	two-striped gartersnake	SSC	Occurs in or near permanent fresh water bordered by dense riparian vegetation. Occasionally occurs in artificially created aquatic habitats, such as manmade lakes or stock ponds.	**Moderate.** The study area supports suitable aquatic habitat and riparian vegetation.
Birds				
Aquila chrysaetos	golden eagle	SFP MSHCP Covered Species	Typical foraging habitat includes grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation.	**None.** The study area does not support suitable open space for this species or remote cliffs for nesting.
Athene cunicularia	burrowing owl	SSC MSHCP Covered Species (c)	Typical habitat is grasslands, open scrublands, agricultural fields, and other areas where there are ground squirrel burrows or other areas in which to burrow.	**Presumed Absent.** The study area supports some limited areas of suitable habitat. Focused surveys performed in 2020 were negative.
Buteo swainsoni	Swainson's hawk	ST MSHCP Covered Species	Breeds in open grassland with scattered trees or groves within agricultural/ranch lands. Forages for small mammals, reptiles, birds, and insects in adjacent grassland and agricultural fields.	**Low.** The study area supports a small amount of suitable foraging habitat for this species. This species is not known to nest in southern California with the exception of populations in the Antelope Valley and Mojave Desert. An observation of this species was recorded in eBird in 2015, approximately 2.6 miles to the southwest of the study area within Temecula Creek.

Appendix F (cont.)
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Coccyzus americanus	western yellow-billed cuckoo	FT/SE MSHCP Covered Species (a)	Generally occurs along larger river systems, where it nests in riparian forest dominated by willows (*Salix* sp.) and cottonwoods (*Populus* sp.).	**None.** Small patches of riparian forest habitat exist on the study area within Murrieta Creek. However, this habitat is patchy and does not support perennial water. This species has not been recorded on CNDDB within the vicinity of the study area since 1950.
Elanus leucurus	white-tailed kite	SFP MSHCP Covered Species	Nests in trees with dense canopies within open grasslands, woodlands, and marshes. Forages for small mammals within lightly grazed/ungrazed pastures and grasslands.	**High.** The study area supports a small amount of suitable nesting habitat within the southwestern willow scrub, southern cottonwood-willow riparian forest, and eucalyptus woodland. An observation of this species within the study area was recorded in eBird in 2021.
Empidonax traillii extimus	southwestern willow flycatcher	FE/SE	Nests within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons. Migrants may be found among other shrubs in wetter areas.	**Presumed Absent.** The study area supports potentially suitable riparian habitat. Focused surveys performed in 2020 were negative.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC MSHCP Covered Species	Occurs in coastal sage scrub and very open chaparral.	**None.** The study area does not support coastal sage scrub or chaparral.
Vireo bellii pusillus	least Bell's vireo	FE/SE MSHCP Covered Species (a)	Inhabits riparian woodland and is most frequent in areas that combine an understory of dense, young willows or mule fat with a canopy of tall willows.	**Presumed Present.** The study area supports suitable southern willow scrub habitat. Focused surveys performed in 2020 detected four males and one pair within or adjacent to the study area.

Appendix F (cont.)
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Mammals				
Chaetodipus californicus femoralis	Dulzura pocket mouse	SSC	Primarily associated with mature chaparral. It has, however, been trapped in mule fat scrub and is known to occur in coastal sage scrub.	**None.** The study area does not support chaparral, mule fat scrub, or coastal sage scrub.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC MSHCP Covered Species	Herbaceous openings within coastal sage scrub, chaparral, grasslands, and desert scrub. Often associated with sandy, rocky, or gravelly substrates.	**None.** The study area does not support coastal sage scrub, chaparral, grasslands, or desert scrub.
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE/SSC MSHCP Covered Species (c)	Generally associated with alluvial fan sage scrub, but also occurs in sage scrub, chaparral, and grassland in proximity to alluvial fan sage scrub habitats.	**None.** The study area does not support alluvial fan sage scrub.
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST MSHCP Covered Species	Primarily occurs in sparsely vegetated areas within grassland habitats, but also found in open coastal scrub habitat. Feeds on filaree (*Erodium* sp.) and brome (*Bromus* sp.) seeds. Dig burrows in firm soil or use abandoned pocket gopher burrows.	**Moderate.** The study area supports suitable sparsely vegetated areas for this species. The nearest observation of this species was recorded in CNDDB in 1994, approximately 1.5 miles to the southeast of the study area.
Eumops perotis californicus	western mastiff bat	SSC	Roosts under exfoliating rock slabs on cliff faces and occasionally in large boulder crevices and building cracks. Forages in a variety of open areas, including washes, floodplains, chaparral, coastal sage scrub, woodlands, ponderosa pine forests, grassland, and agricultural areas.	**Low.** The study area does not support suitable roosting habitat but does support foraging habitat. This species was recorded on CNDDB in 2001, less than 0.3 mile to the southeast of the study area.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC MSHCP Covered Species	Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	**Low.** The study area supports a limited amount of suitable disturbed habitat with some shrub cover. This species was recorded on CNDDB in 2007, approximately 1.4 miles to the north of the study area.

Appendix F (cont.)
SENSITIVE ANIMAL SPECIES POTENTIAL TO OCCUR[1]

Species Name	Common Name	Status[2]	Habitat, Ecology, and Life History	Potential to Occur[3]
Perognathus longimembris brevinasus	Los Angeles pocket mouse	SSC MSHCP Covered Species (c)	Sandy, gravelly, or stony soils within coastal scrub, alluvial sage scrub, and grassland habitats.	**None.** The study area does not support suitable habitat for this species.

Source: HELIX (2021)

[1] Sensitive species reported within the Murrieta and Temecula quadrangles based on a database search conducted on CNDDB.

[2] Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; CT = Candidate Threated; FP = Fully Protected; SSC = State Species of Special Concern. MSHCP Conditionally Covered Species (a) through (f): (a) surveys may be required for species as part of wetland mapping (MSHCP Section 6.1.2); (b) surveys may be required for species within Narrow Endemic Plant Species Survey Area (MSHCP Section 6.1.3); (c) surveys may be required for species within locations shown on survey maps (MSHCP Section 6.3.2); (d) surveys may be required for species within Criteria Area Species Survey Area (MSHCP Section 6.3.2); (e) covered species will be considered to be covered species adequately conserved when conservation requirements identified in species-specific conservation objectives have been met (MSHCP Table 9-3); and (f) covered species will be conserved covered species adequately conserved when a Memorandum of Understanding is executed with the Forest Service that addresses management for these species on Forest Service Land (MSHCP Table 9-3).

[3] Potential to Occur is assessed as follows. **None**: Species is so limited to a particular habitat that it cannot disperse across unsuitable habitat (*e.g.* aquatic organisms), and habitat suitable for its survival does not occur on the study area; **Not Expected**: Species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur on the study area (includes species recorded during surveys but only as transients); **Low**: Suitable habitat is present on the study area but of low quality and/or small extent. The species has not been recorded recently on or near the study area. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **Moderate**: Suitable habitat is present on the study area and the species was recorded recently near the study area; however, the habitat is of moderate quality and/or small extent. Although the species was not observed during surveys for the current project, the species cannot be excluded with certainty; **High**: Suitable habitat of sufficient extent for residence or breeding is present on the study area and the species has been recorded recently on or near the study area, but was not observed during surveys for the current project. However, focused/protocol surveys are not required or have not been completed; **Presumed Present**: The species was observed during biological surveys for the current project and is assumed to occupy the study area; **Presumed Absent**: Suitable habitat is present on the study area but focused/protocol surveys for the species were negative.

Appendix G

Burrowing Owl Focused Survey Report

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October 15, 2020 DEA-12

Mr. Gavin Powell
David Evans and Associates, Inc.
41951 Remington Avenue, Suite 220
Temecula, CA 92590

Subject: 2020 Burrowing Owl (*Athene cunicularia*) Survey Report for the Diaz Road Expansion Project

Dear Mr. Powell:

This letter report presents the results of the 2020 focused burrowing owl (*Athene cunicularia;* BUOW) survey conducted by HELIX Environmental Planning, Inc. (HELIX) for the Diaz Road Expansion Project (project) located in the City of Temecula, Riverside County (County), California. The survey was conducted in accordance with the County's Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP; County of Riverside [County] 2006). This survey was conducted to meet applicable conditions under the MSHCP, which was approved in 2003 (Dudek and Associates [Dudek] 2003). The MSHCP is a comprehensive planning effort that includes the County of Riverside and multiple cities. As part of the MSHCP implementation, enrolled jurisdictions are required to impose terms of the MSHCP, including appropriate surveys in accordance with Volume 1, Section 6. The project site is located within the MSHCP BUOW Survey Area; therefore, surveys are required if suitable habitat is present (County 2006). This letter report describes the methods used to perform the survey and the survey results.

STUDY AREA LOCATION

The project site is located within the City of Temecula in Riverside County, California (Figure 1, *Regional Location*). It lies within Township 7 South, Range 3 West and Township 8 South, Range 3 West, on the U.S. Geological Survey (USGS) 7.5-minute Murrieta and Temecula quadrangle maps (Figure 2, *USGS Topography*). The project proposes to improve an approximately 2.2-mile segment of Diaz Road located west of Interstate (I-) 15, approximately between Cherry Street and Rancho California Road (Figure 3, *Aerial Photograph*). The survey area includes the project site plus an additional 500 feet (Figure 3).

PROJECT DESCRIPTION

The proposed project is for the development and improvement of Diaz Road.

PROJECT SITE DESCRIPTION

The topography of the study area is mostly flat with elevations on the study area range from approximately 1,016 feet (310 meters) above mean sea level (AMSL) near the northern boundary to a high of approximately 1,037 feet (316 meters) AMSL near the northern boundary. Representative photographs of the project site are depicted in Attachment A, *Site Photographs*.

Eight soil types are mapped on the project site, including Chino silt loam (drained, saline-alkaline), Domino silt loam (strongly saline-alkaline), Grangeville fine sandy loam (drained, 0 to 5 percent slopes), Grangeville fine sandy loam (saline-alkali, 0 to 5 percent slopes), Grangeville sandy loam (sand substratum, drained, 0 to 5 percent slopes), Riverwash, Willows silty clay (deep, saline-alkaline), Willows silty clay (deep, strongly saline-alkaline

Surrounding land uses include commercial development with some undeveloped parcels to the southwest. A park and Murrieta Creek exist along the northeast boundary of the study area. The western portion is bound by Diaz Road and commercial developments. (Figure 3). The project site is located approximately 2.5 miles east of the Santa Rosa Plateau Ecological Reserve.

METHODS

A Step I Habitat Assessment and Step II Locating Burrows and Burrowing Owls were conducted on the project site by HELIX biologists, Matthew Dimson and Daniel Torres between June 5 and August 6, 2020, in accordance with the County's survey protocol (County 2006). The specific survey information is provided in Table 1, *Survey Information.* The habitat assessment and focused burrow and BUOW surveys are described in detail below.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologists	Start/Stop Time	Start/Stop Weather Conditions	Survey Results
1[1]	06/05/20	Matthew Dimson	0515-0735	61°F, wind 0-1 mph, 0% clouds 75°F, wind 0-1 mph, 10% clouds	Suitable habitat and burrows observed; no BUOW detected.
2	07/08/20	Matthew Dimson	0545-0745	65°F, wind 1-2 mph, 100% clouds 66°F, wind 1-2 mph, 100% clouds	No BUOW detected.
3	07/21/20	Matthew Dimson	0550-0750	67°F, wind 1-2 mph, 50% clouds 69°F, wind 0-1 mph, 50% clouds	No BUOW detected.
4	08/06/20	Daniel Torres	0605 - 0800	59 °F, wind 1-2 mph, 100% clouds 61°F, wind 3-4 mph, 95% clouds	No BUOW detected.

[1] This visit included the habitat assessment, focused burrow survey, and first focused burrowing owl survey.

Step I – Habitat Assessment

The project site is located within an MSHCP BUOW survey area; therefore, a Step I Habitat Assessment was conducted to determine whether the project site supports suitable BUOW habitat. The habitat assessment was conducted prior to commencement of the Step II surveys described below. The assessment was conducted on the project site and within a 150-meter (approximately 500-foot) buffer zone around the periphery of the project site (collectively, the survey area). The survey area was slowly walked and assessed for suitable BUOW habitat, including:

- disturbed low-growing vegetation within grassland and shrublands (less than 30 percent canopy cover);
- gently rolling or level terrain;
- areas with abundant small mammal burrows, especially California ground squirrel burrows (*Otospermophilus beecheyi*);
- fence posts, rocks, or other low perching locations; and
- man-made structures, such as earthen berms, debris piles, and cement culverts.

Inaccessible areas of the survey area and buffer zone were visually assessed using binoculars.

Step II – Locating Burrows and Burrowing Owls

Since suitable habitat was observed during the habitat assessment, Step II surveys were conducted within the survey area. Step II surveys, which consist of a focused burrow survey (Part A) and four focused BUOW surveys (Part B), were conducted to determine whether the survey area supports suitable burrows and/or BUOW. The focused burrow survey was conducted concurrently with the first BUOW survey.

All potential burrows were checked for signs of recent owl occupation. Signs of occupation include:

- pellets/casting (regurgitated fur, bones, and/or insect parts);
- white wash (excrement); and/or
- feathers.

Since suitable burrows were observed within the survey area, three additional BUOW surveys were conducted. The biologists walked transects spaced no greater than 30 meters apart (approximately 100 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area. The biologists walked slowly and methodically, closely checking suitable habitat within the survey area for suitable burrows, BUOW diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance), and individual BUOW. Inaccessible areas of the survey area were visually assessed using binoculars. All suitable burrows, burrow surrogates, BUOW sign, and/or BUOW observations were recorded using a handheld Global Positioning System unit (Figure 4, *Suitable Burrow and Transect Locations*).

RESULTS

Suitable BUOW habitat was observed within the survey area, including disturbed habitat and non-native grasslands (Attachment A). Suitable burrows that could potentially be used by BUOW were observed within and adjacent to the survey area. No BUOW or sign of BUOW occupation were observed during

the four focused surveys. Therefore, BUOW does not currently occupy the survey area. Observed burrow locations and transects walked are shown on Figure 4.

CONCLUSION

No BUOWs were observed or detected within the survey area during the focused surveys. Burrows with potential to support BUOW were noted in the survey area, but no sign of BUOW occupation was observed. A pre-construction survey is required 30 days prior to ground disturbance pursuant to the County's survey protocol (County 2006). If ground-disturbing activities are delayed more than 30 days after the pre-construction survey has been completed, the survey area must be resurveyed.

If you have any questions regarding the information presented in this letter report, please contact Ezekiel Cooley (EzekielC@helixepi.com) or Lauren Singleton (LaurenS@helixepi.com) at (949) 234-8770.

Sincerely,

Matthew Dimson
Biologist

Daniel Torres
Biologist

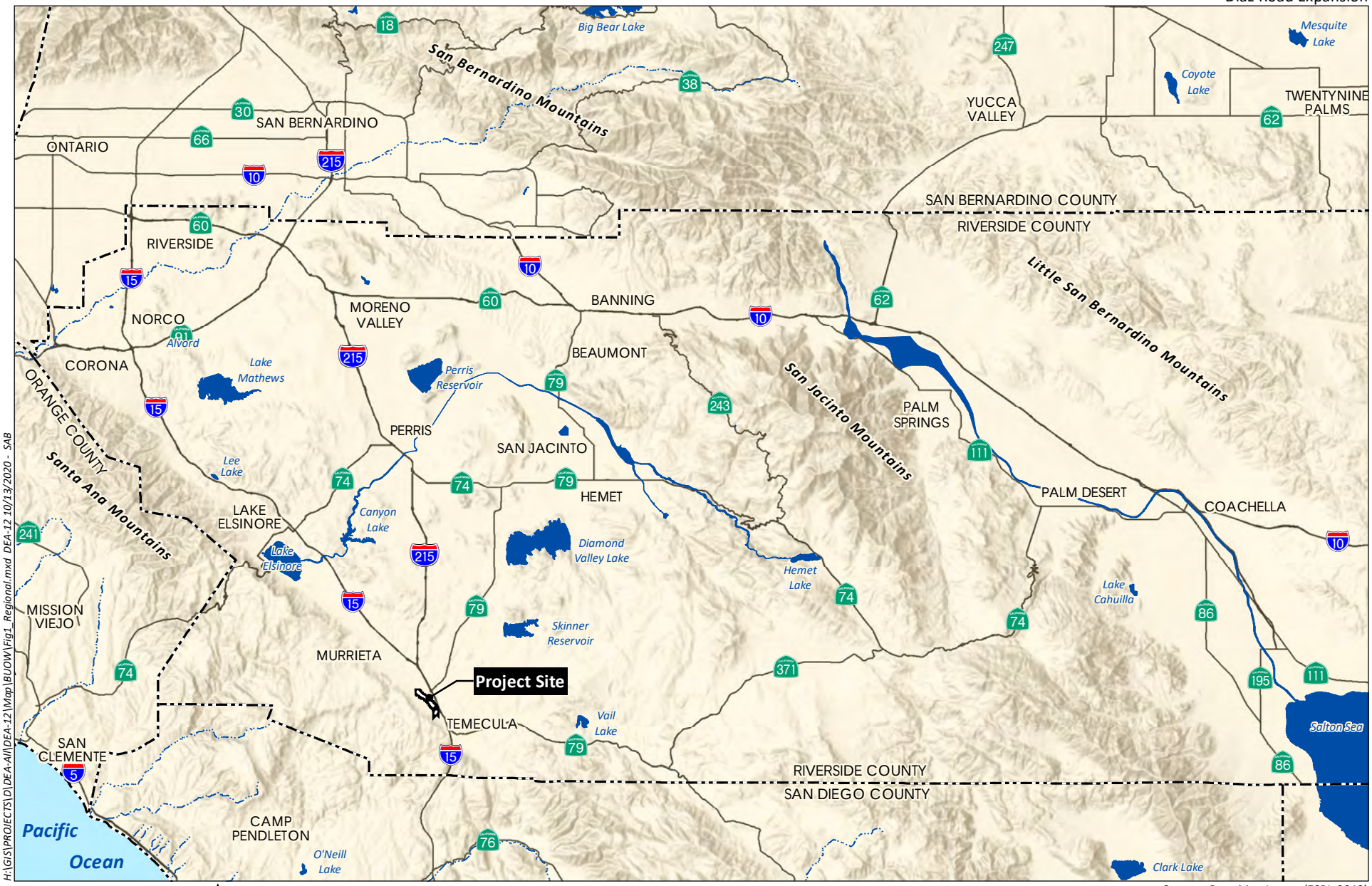
Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Photograph
Figure 4: Suitable Burrow and Transect Locations
Attachment A: Site Photographs

REFERENCES

Dudek and Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Final MSHCP Volume I. Prep. for County of Riverside, Transportation and Land Management Agency.

Riverside, County of. 2006. Environmental Programs Department. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Retrieved from: http://www.wrc-rca.org/species/survey_protocols/Birds/Burrowing%20Owl%20Survey%20Instructions%20complete.pdf. March 29. Accessed August 20, 2019.



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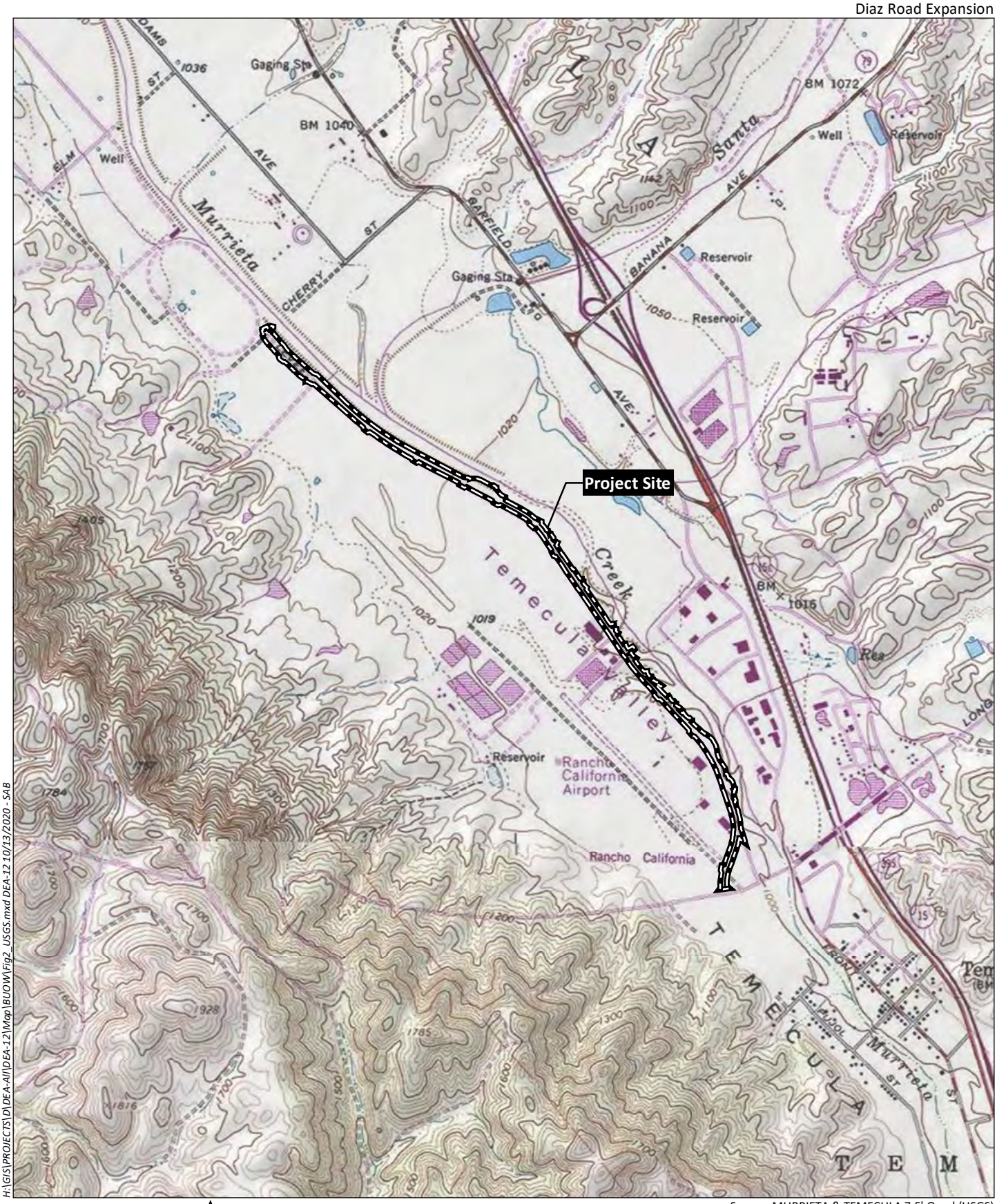
Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

Figure 1



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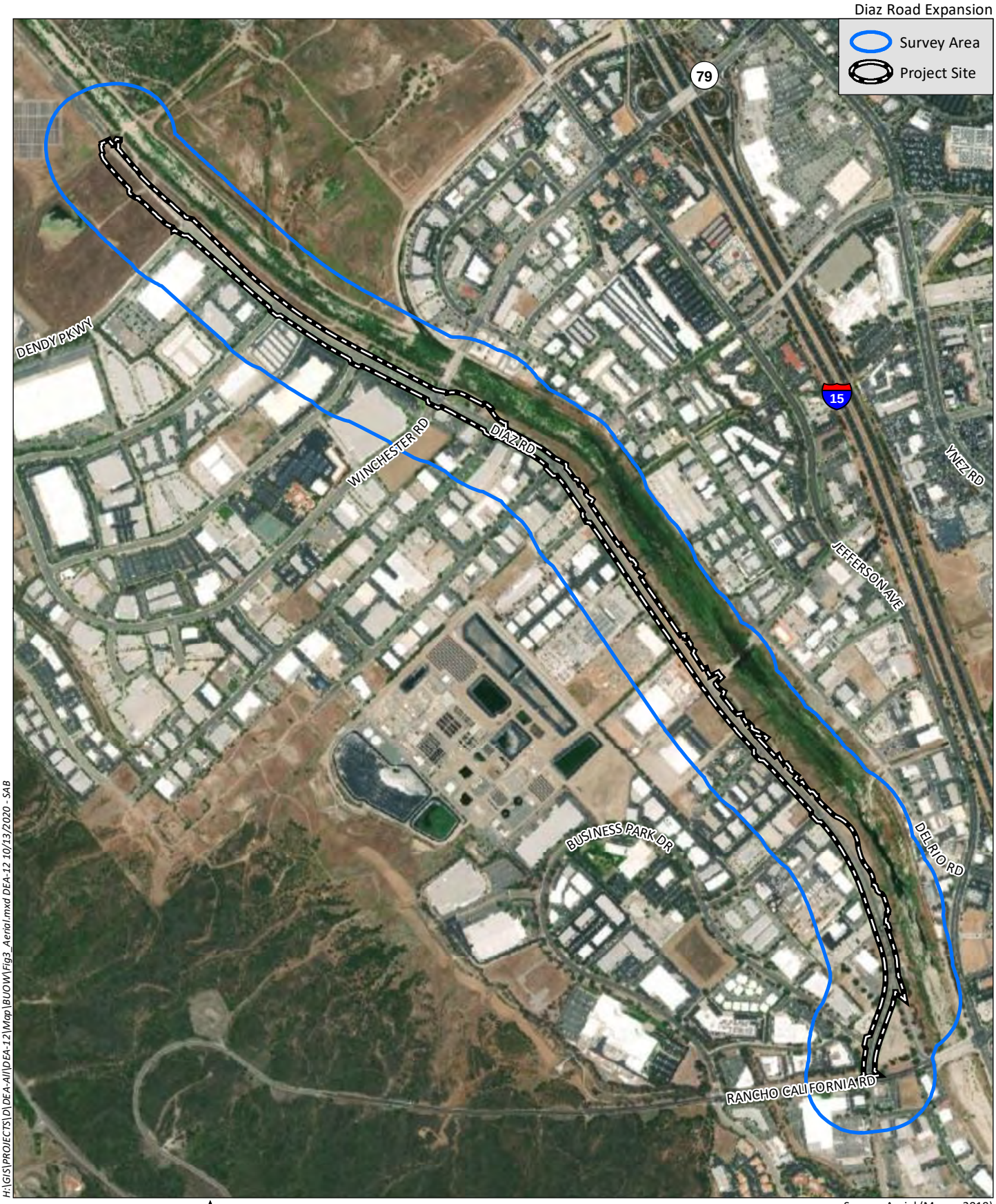
0 2,000 Feet

Source: MURRIETA & TEMECULA 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



HELIX Environmental Planning

Aerial Photograph

Figure 3

Diaz Road Expansion

Project Site
Survey Area

Warm Springs Creek
DATE ST
Tucalota Creek
Santa Gertrudis Creek
79
DENDY PKWY
Murrieta Creek
DIAZ RD
WINCHESTER RD
15
SOLANA WAY
YNEZ RD
JEFFERSON AVE
BUSINESS PARK DR
DEL RIO RD
OLD TOWN FRONT ST
NICOLE N

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\BUOW\Fig4_burrows_transect.mxd DEA-12 10/13/2020 - SAB

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Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

Suitable Burrow and Transect Locations

Figure 4

Photograph 1: View of a non-native grassland in the southern portion of the project site, facing southeast.

Photograph 2: View of a suitable burrow in the center of the project site, facing east.

Photograph 3: View of disturbed habitat in the northern portion of the project site, facing north.

Photograph 4: View of an open culvert in the center of the project, facing west.

Source: HELIX 2020

HELIX Environmental Planning

Representative Site Photographs

Attachment A

Appendix H

Least Bell's Vireo Focused Survey Report

HELIX Environmental Planning, Inc.
16485 Laguna Canyon Road
Suite 150
Irvine, CA 92618
949.234.8792 **tel.**
619.462.0552 **fax**
www.**helixepi**.com

August 27, 2020 DEA-12

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2020 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Report for the Diaz Road Expansion Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally endangered least Bell's vireo (*Vireo bellii pusillus*; LBVI) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Diaz Road Expansion Project (project). This letter describes the survey methods and results and is being submitted to the USFWS in accordance with protocol survey guidelines.

PROJECT LOCATION

The project is located in the City of Temecula, Riverside County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands in Township 7 South, Range 3 West and Township 8 South, Range 3 West, on the U.S. Geological Survey (USGS) 7.5-minute Murrieta and Temecula quadrangle maps (Figure 2, *USGS Topography*). The project proposes to improve an approximately 2.2-mile segment of Diaz Road located west of Interstate (I-) 15, approximately between Cherry Street and Rancho California Road (Figure 3, *Aerial Photograph*). The project study area includes the project site plus an additional 500 feet (Figure 3). The study area does not occur within or adjacent to USFWS-designated critical habitat for the species.

METHODS

The survey consisted of eight site visits conducted by HELIX biologists Erica Harris, Ezekiel Cooley, Daniel Torres, and Lauren Singleton between April 28 and July 27, 2020 (Table 1, *Survey Information*), in accordance with the current USFWS survey protocol[1]. The LBVI survey area included all suitable habitat

[1] U.S. Fish and Wildlife Service (USFWS). 2001. Least Bell's Vireo Survey Guidelines. January 19.

located within study area. Approximately 28.0 acres of the suitable LBVI habitat surveyed was composed of southern willow scrub located along Murrieta Creek, as well as southern cottonwood-willow riparian forest located in a tributary to Murrieta Creek (Figure 4, *2020 Least Bell's Vireo Survey Results*).

The surveys were conducted by walking along the edges of, as well as within, potential LBVI habitat in the survey area while listening for LBVI and viewing birds with the aid of binoculars. The survey route was designed to ensure complete survey coverage of habitat potentially occupied by LBVI.

A portion of the surveys were conducted on the same days as the protocol surveys for the southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL). During these survey visits, a permitted biologist for SWFL surveyed the entire survey area for both SWFL and LBVI; however, the surveys were not conducted concurrently. The LBVI survey was conducted sequentially after the SWFL survey. The surveyor surveyed for SWFL as they walked one direction along/within suitable SWFL habitat, and then surveyed for LBVI as they walked back the other direction. A separate survey report is being submitted for the SWFL surveys (HELIX in preparation).

Table 1, *Survey Information*, details the survey dates, times, weather conditions, and survey results.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
1	4/28/20	Ezekiel Cooley	0700/1030	28.0 ac/ 8.0 ac per hr.	60°F, wind 0-1 mph, 0% clouds 78°F, wind 0-1 mph, 0% clouds	• Male, presumably same male belonging to Pair No. 1, heard singing within northern portion of the study, approx. 1,100 feet northeast of Dendy Parkway. • Male (Male No. 1) heard singing in northern portion of the study area approx. 730 feet northeast of Dendy Parkway and 370 feet south of male from Pair No. 1 • Male No. 2 heard singing to east of intersection of Diaz Road and Dendy Parkway and approx. 820 feet south of Male No. 1. • Male No. 3 singing to east of Diaz Road approx. 1,300 feet north of Winchester Avenue., to south of confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard to east of Diaz Road approx. 765 feet southeast of Winchester Road.	0

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
2	5/9/20	Lauren Singleton	0730/1100	28.0 ac/ 8.0 ac per hr.	60°F, wind 2-3 mph, 30% clouds 72°F, wind 4-5 mph, 20% clouds	• Male and female from Pair No. 1 detected. Male heard singing in same general area. Female heard scolding and observed foraging with male within understory. • Male No. 1 heard singing in same general area at northern portion of site. • Male No. 2 heard singing in same general within northern portion of site. • Male No. 3 singing in same general areas near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area to southeast of Winchester Road.	4

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
3	5/21/20	Erica Harris[2]	0930/1100	28.0 ac/ 18.7 ac per hr.	60°F, wind 0-1 mph, 0% clouds 68°F, wind 0-1 mph, 0% clouds	• Male from Pair No. 1 heard singing in same general area within northern portion of study area. Counter-singing with Male. No. 1. • Male No. 1 heard singing in same general area in northern portion of study area. Counter-singing with the male from Pair No. 1 and Male No. 2. • Male No. 2 heard singing in same general area in northern portion of study area. Counter-singing with Male No. 1. • Male No. 3 singing in same general area near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area southeast of Winchester Road.	6

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
4	6/4/20	Erica Harris[2]	0900/1100	28.0 ac/ 14.0 ac per hr.	76°F, wind 0-1 mph, 55% clouds 88°F, wind 1-3 mph, 70% clouds	• Male and female from Pair No. 1 detected. Male heard singing in same general area. Female heard scolding and observed foraging with male within understory. • Male No. 1 heard singing in same general area in northern portion of study area. Counter-singing with the male from Pair No. 1 and Male No. 2. • Male No. 2 heard singing in same general area in northern portion of study area. Counter-singing with Male No.1. • Male No. 3 singing in same general area near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area southeast of Winchester Road.	7

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
5	6/19/20	Erica Harris[2]	0930/1100	28.0 ac/ 18.7 ac per hr.	65°F, wind 0-1 mph, 100% clouds 73°F, wind 1-2 mph, 10% clouds	• Male from Pair No. 1 heard singing in same general area within northern portion of study area. Counter-singing with Male. No. 1. • Male No. 1 heard singing in same general area in northern portion of study area. Counter-singing with the male from Pair No. 1 and Male No. 2. • Male No. 2 heard singing in same general area in northern portion of study area. Counter-singing with Male No. 1. • Male No. 3 singing in same general area near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area southeast of Winchester Road.	1

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
6	7/2/20	Erica Harris[2]	0930/1100	28.0 ac/ 18.7 ac per hr.	67°F, wind 0-1 mph, 100% clouds 73°F, wind 0-1 mph, 80% clouds	• Male from Pair No. 1 heard singing in same general area within northern portion of study area. Counter-singing with Male. No. 1. • Male No. 1 heard singing in same general area in northern portion of study area. Counter-singing with the male from Pair No. 1 and Male No. 2. • Male No. 2 heard singing in same general area in northern portion of study area. Counter-singing with Male No. 1. • Male No. 3 singing in same general area near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area southeast of Winchester Road.	3

Table 1 (cont.)
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Time (Start/Stop)	Approx. Acres Surveyed/ Acres Per Hour	Weather Conditions (Start/Stop)	Survey Results	
						Least Bell's Vireo (LBVI)	Brown-Headed Cowbird[1]
7	7/13/20	Erica Harris[2]	0930/1100	28.0 ac/ 18.7 ac per hr..	84°F, wind 0-1 mph, 0% clouds 89°F, wind 1-3 mph, 30% clouds	• Male from Pair No. 1 heard singing in same general area within northern portion of study area. Counter-singing with Male. No.1. • Male No. 1 heard singing in same general area in northern portion of study area. Counter-singing with the male from Pair No. 1 and Male No. 2. • Male No. 2 heard singing in same general area in northern portion of study area. Counter-singing with Male No. 1. • Male No. 3 singing in same general area near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area south of Winchester Road.	3
8	7/27/20	Daniel Torres	0645/1020	28.0 ac/ 7.8 ac per hr.	59°F, wind 1-2 mph, 0% clouds 72°F, wind 4-5 mph, 0% clouds	• Male No. 1 heard singing in same general area in northern portion of study area. • Male No. 3 singing in same general area near confluence of Santa Gertrudis Creek and Murrieta Creek. • Male No. 4 heard singing in same general area south of Winchester Road.	0

[1] Number of brown-headed cowbird (*Molothrus ater*) detected during survey.
[2] Southwestern willow flycatcher (*Empidonax traillii extimus*) biologist; Conducted surveys on same day as the flycatcher surveys.

SURVEY RESULTS

One vireo pair and four single male vireos were detected within the study area during the 2020 survey effort, though not all individuals were detected during each survey visit (Figure 4). One vireo pair (Pair No. 1) was observed within the northern portion of the study area, three male vireos were detected northwest of Winchester Road (Male No. 1, Male No. 2, and Male No. 3), and one male vireo was detected southeast of Winchester Road (Male No. 4) No banded individuals were observed during the survey; however, not all individuals were directly observed. A detailed description of LBVI locations and observations is included below.

One vireo pair (Pair No. 1) was detected within the northern portion of the study area, approximately 1,100 feet north of Dendy Parkway. Only the male was heard singing within the area during the first survey visit. The male and female were both observed foraging together during the second survey visit. A male was heard singing during the third survey visit in the same general area and was counter-singing with another male vireo (Male No. 1) to the south. Both the male and female were observed foraging together during the fourth survey visit; both individuals were observed to be unbanded. The male was heard singing during the fifth through seventh survey visits, often heard simultaneously with Male No. 1, but was not detected during the eighth survey.

A single, unbanded male vireo (Male No. 1) was detected in the northern portion of the study area, approximately 730 feet northeast of Dendy Parkway and 370 feet south of Pair No. 1 (Figure 4). The male was heard singing within the area during all eight survey visits, and was often heard simultaneously singing with the male from Pair No. 1 to the north and another male vireo (Male No. 2) to the south. The male was visually observed during the fourth survey and was confirmed to be unbanded.

A single, unbanded male vireo (Male No. 2) was detected in the northern portion of the study area, east of the Diaz Road and Dendy Parkway intersection and approximately 820 feet south of Male No. 1 (Figure 4). The male was heard singing within the area during the first seven survey visits, often heard simultaneously with the Male No. 1 to the north, but was not detected during the eight survey. The male was visually observed during the fourth survey and was confirmed to be unbanded.

A single male vireo (Male No. 3) was detected within the central portion of the study area, approximately 1,300 feet north of Winchester Avenue and south of the confluence of San Gertrudis Creek and Murrieta Creek (Figure 4). The male was heard singing on both the east and west banks of the creek during all eight survey visits.

A single male vireo (Male No. 4) was detected in the central portion of the study area approximately 765 feet southeast of Winchester Road (Figure 4). The male was heard singing during all eight survey visits.

The brown-headed cowbird (*Molothrus ater*; BHCO), a nest parasite of the LBVI, was detected during six of the eight surveys along Murrieta Creek (Figure 4). Observations of BHCO included singing and calling males, calling females, and individuals observed in courtship displays.

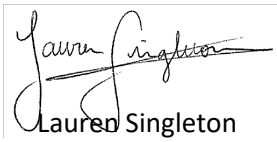
CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Shelby Howard or us at (619) 462-1515 should you have any questions.

Sincerely,

Erica Harris
Senior Scientist

Ezekiel Cooley
Biologist

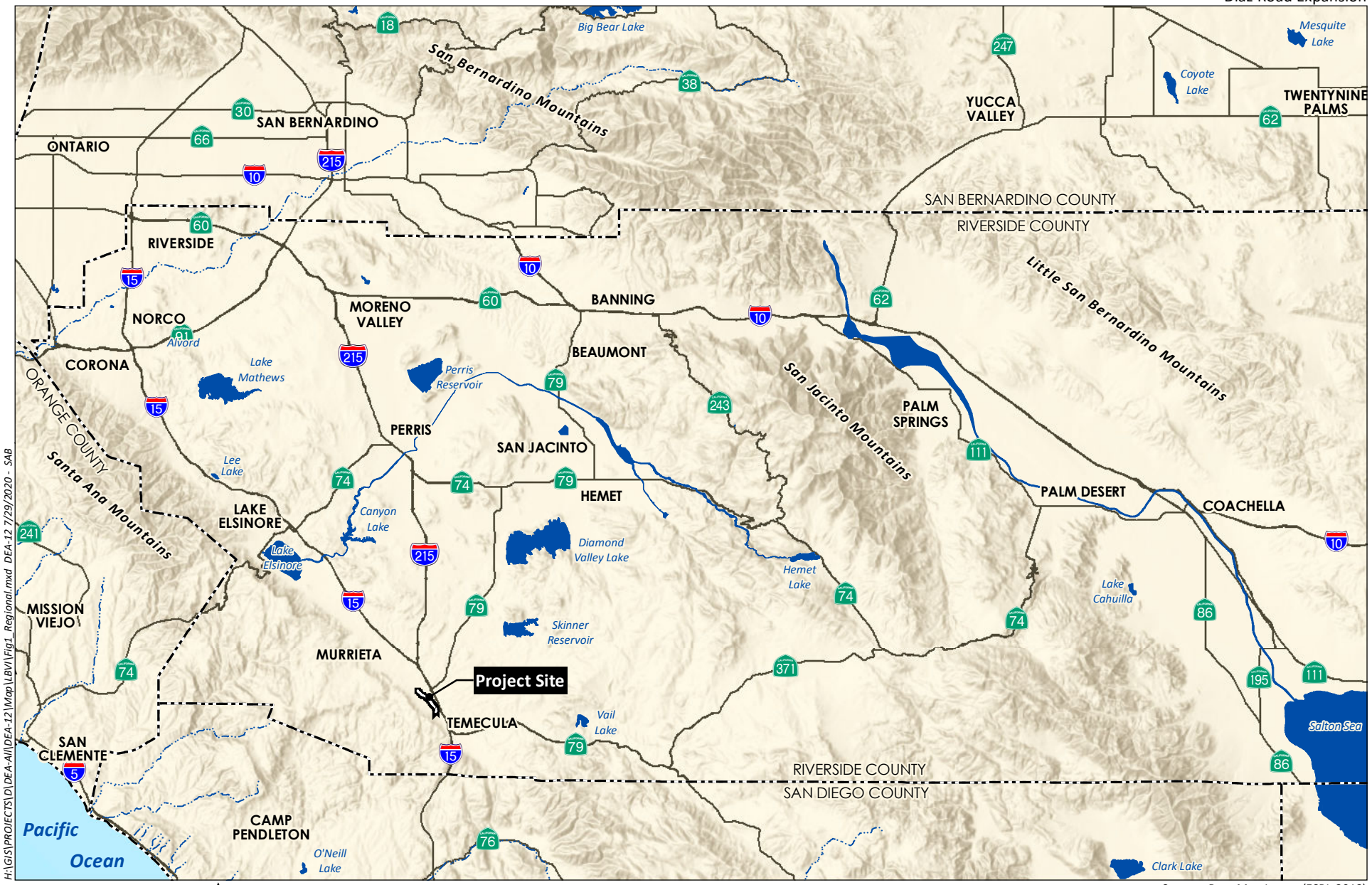


Lauren Singleton
Biologist

Daniel Torres
Biologist

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Photograph
Figure 4: 2020 Least Bell's Vireo Survey Results



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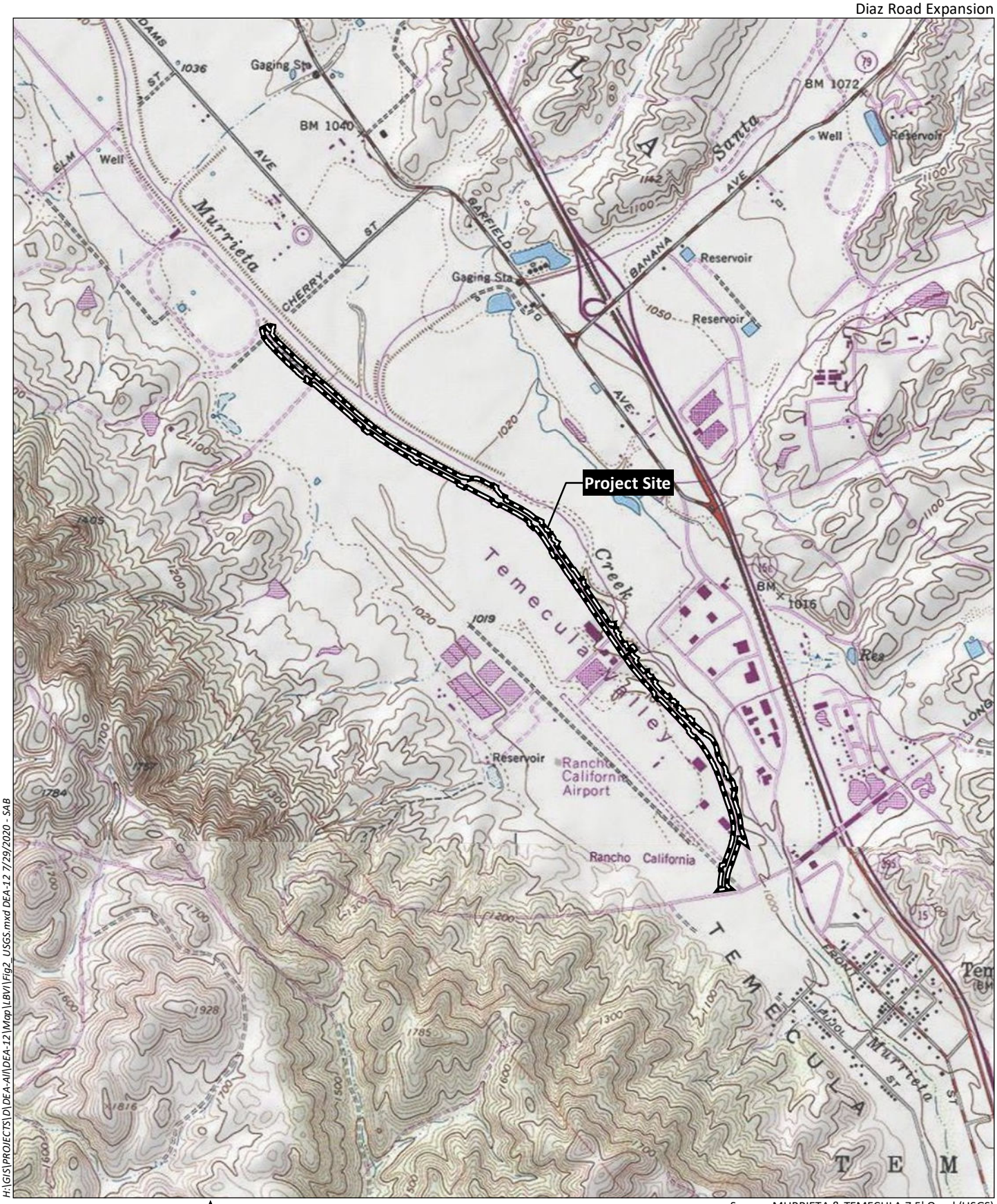
0 10 Miles

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

Regional Location

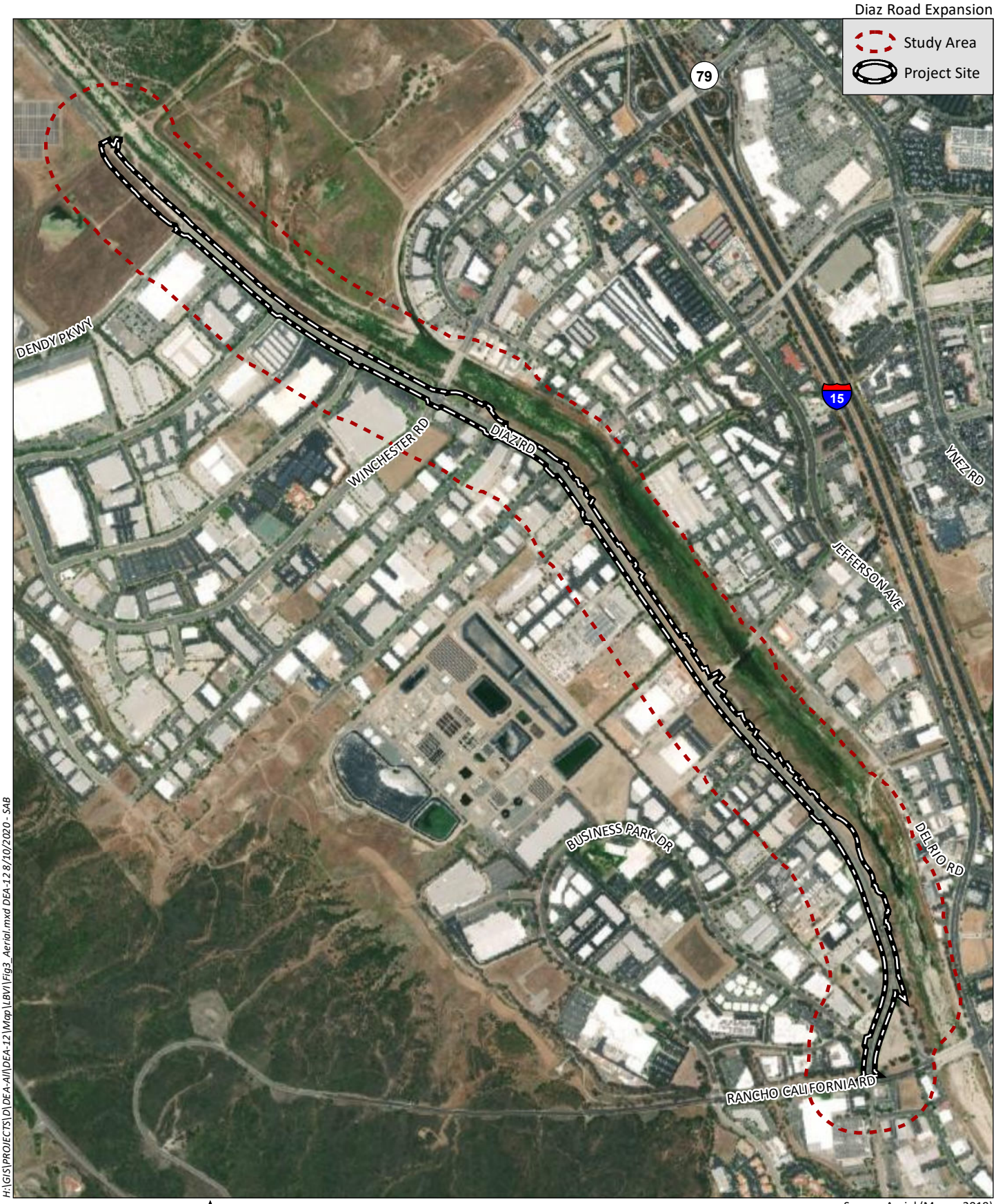
Figure 1



HELIX Environmental Planning

USGS Topography

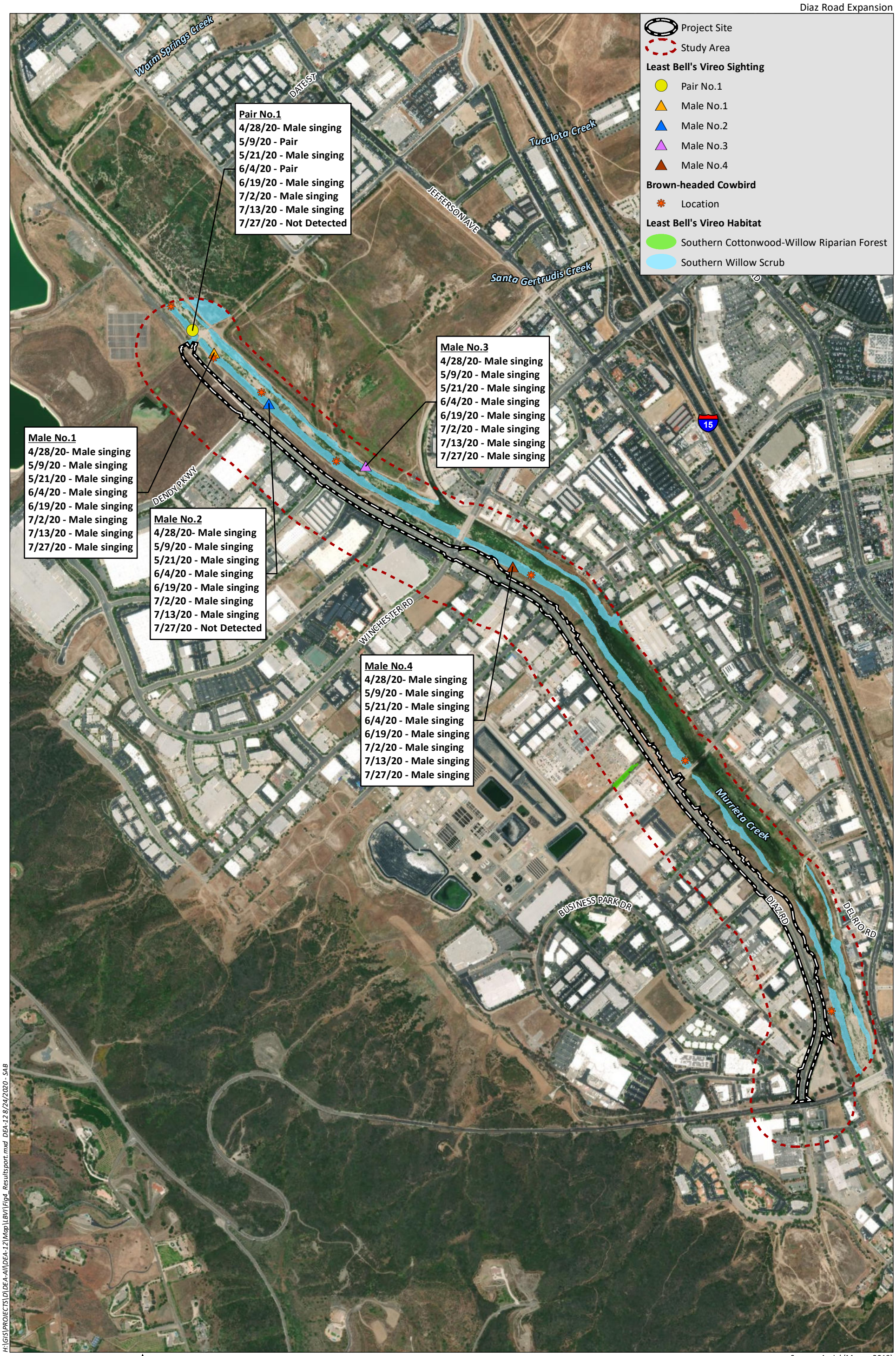
Figure 2



HELIX Environmental Planning

Aerial Photograph

Figure 3



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0 1,000 Feet

Source: Aerial (Maxar, 2019)

HELIX Environmental Planning

2020 Least Bell's Vireo Survey Results

Figure 4

Appendix I

Southwestern Willow Flycatcher Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com

August 27, 2020 DEA-12

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: 2020 Southwestern Willow Flycatcher (*Empidonax traillii extimus*) Survey Report for the Diaz Road Expansion Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the federally listed southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL) conducted by HELIX Environmental Planning, Inc. (HELIX) for the Diaz Road Expansion Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE-778195-14.

PROJECT LOCATION

The project is located in the City of Temecula, Riverside County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands in Township 7 South, Range 3 West and Township 8 South, Range 3 West, on the U.S. Geological Survey (USGS) 7.5-minute Murrieta and Temecula quadrangle maps (Figure 2, *USGS Topography*). The project proposes to improve an approximately 2.2-mile segment of Diaz Road located west of Interstate (I-) 15, approximately between Cherry Street and Rancho California Road (Figure 3, *Aerial Photograph*). The project study area includes the project site plus an additional 500 feet (Figure 3). The study area does not occur within or adjacent to USFWS-designated critical habitat for the species.

METHODS

The survey consisted of five site visits conducted by HELIX biologist Erica Harris (TE-778195-14) in accordance with the current USFWS approved survey protocol[1]. The SWFL survey area included all

[1] Sogge, Mark K., Ahlers, Darrell, and Sferra, Susan J. 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher: U.S. Geological Survey Techniques and Methods 2A-10.

suitable habitat located within the study area. Approximately 28.0 acres of potential SWFL habitat surveyed was composed of southern willow scrub located along Murrieta Creek, as well as southern cottonwood-willow riparian forest located in a tributary to Murrieta Creek (Figure 4, *2020 Southwestern Willow Flycatcher Survey Results*).

Survey protocol requires that five survey visits be conducted at least five days apart, between the hours of sunrise and 10:30 a.m., within the three specified survey periods. One survey was conducted during Survey Period 1 (May 15 to 31), two surveys were conducted during Survey Period 2 (June 1 to 24), and two surveys were conducted during Survey Period 3 (June 25 to July 17).

The surveys were conducted by walking within and along the perimeter of suitable SWFL habitat present within the study area. Surveys were conducted with binoculars to aid in bird detection. Recorded SWFL vocalizations were played every 20 to 30 meters followed by a one-minute silent period to listen for a response. The survey route was arranged to ensure complete survey coverage of habitat with potential for occupancy by SWFL.

The surveys were conducted on the same days as the protocol surveys for the least Bell's vireo (*Vireo bellii pusillus*; LBVI). The permitted biologist for SWFL surveyed the entire survey area for both SWFL and LBVI; however, the surveys were not conducted concurrently. The LBVI survey was conducted sequentially after the SWFL survey. The surveyor surveyed for SWFL as they walked one direction along/within suitable SWFL habitat, and then surveyed for LBVI as they walked back the other direction. A separate survey report is being submitted for the LBVI surveys (HELIX in preparation).

Table 1, *Survey Information*, details the survey dates, times, weather conditions, and survey results.

Table 1
SURVEY INFORMATION

Survey Period[1]	Site Visit	Survey Date	Biologist	Start/Stop Time	Approx. Acres Surveyed/ Acres Per Hour	Start/Stop Weather Conditions	Survey Results
1	1	5/21/20	Erica Harris[2]	0730/0930	28.0 ac/ 14.0 ac per hr.	60°F, wind 0-1 mph, 0% clouds 68°F, wind 0-1 mph, 0% clouds	• Single WIFL (Male No. 1) heard singing on eastern bank of Murrieta Creek between Dendry Parkway and Winchester Road near confluence of Santa Gertrudis Creek and Murrieta Creek.
2	2	6/4/20	Erica Harris[2]	0730/0930	28.0 ac/ 14.0 ac per hr.	70°F, wind 0-1 mph, 90% clouds 76°F, wind 0-1 mph, 55% clouds	No flycatchers observed
2	3	6/19/20	Erica Harris[2]	0730/0930	28.0 ac/ 14.0 ac per hr.	61°F, wind 0-1 mph, 100% clouds 65°F, wind 0-1 mph, 100% clouds	No flycatchers observed
3	4	7/2/20	Erica Harris[2]	0730/0930	28.0 ac/ 14.0 ac per hr.	64°F, wind 0-1 mph, 100% clouds 67°F, wind 0-1 mph, 100% clouds	No flycatchers observed
3	5	7/13/20	Erica Harris[2]	0730/0930	28.0 ac/ 14.0 ac per hr.	70°F, wind 0-1 mph, 0% clouds 84°F, wind 0-1 mph, 0% clouds	No flycatchers observed

[1] Survey Period 1 (May 15 to 31), Survey Period 2 (June 1 to 24), Survey Period 3 (June 25 to July 17).
[2] USFWS Permit TE-778195-14

SURVEY RESULTS

No breeding southwestern willow flycatchers were detected during the survey effort. One willow flycatcher (*Empidonax traillii*; WIFL) was detected during the first survey in May. A single, male WIFL (Male No. 1) was heard signing along the eastern bank of Murrieta Creek, between Dendry Road and Winchester Road, near its confluence with Santa Gertrudis Creek (Figure 4). As noted below, the male could not be identified to subspecies. The male was not detected during the subsequent four surveys and no other WIFLs were detected during any of the surveys. The single observation of a male WIFL is presumed to be a migrating individual.

The first survey period represents a time when other migratory subspecies of WIFL are moving through southern California, particularly northern breeding subspecies *Empidonax traillii brewsteri* and *E.t. adastus*, though migrants could still be travelling through the region during the second survey period. By the third survey period (beginning June 22nd), SWFL should be the only subspecies remaining within the southern California region, as the non-migrant period is generally considered from about June 15 to July 20[2]. The detection of the single WIFL within study area occurred on May 21 during the first survey window and no other WIFL were detected during subsequent surveys. Therefore, it can be concluded that this individual most likely represents a migratory individual. No breeding SWFL were documented within the Diaz Road study area. Furthermore, no documented breeding occurrences of southwestern willow flycatcher occur along Murrieta Creek[3,4].

A Willow Flycatcher Survey and Detection Form has been completed and is included as Attachment A, *Willow Flycatcher Survey and Detection Form*.

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Shelby Howard or me at (619) 462-1515 should you have any questions.

Sincerely,

Erica Harris
Senior Scientist

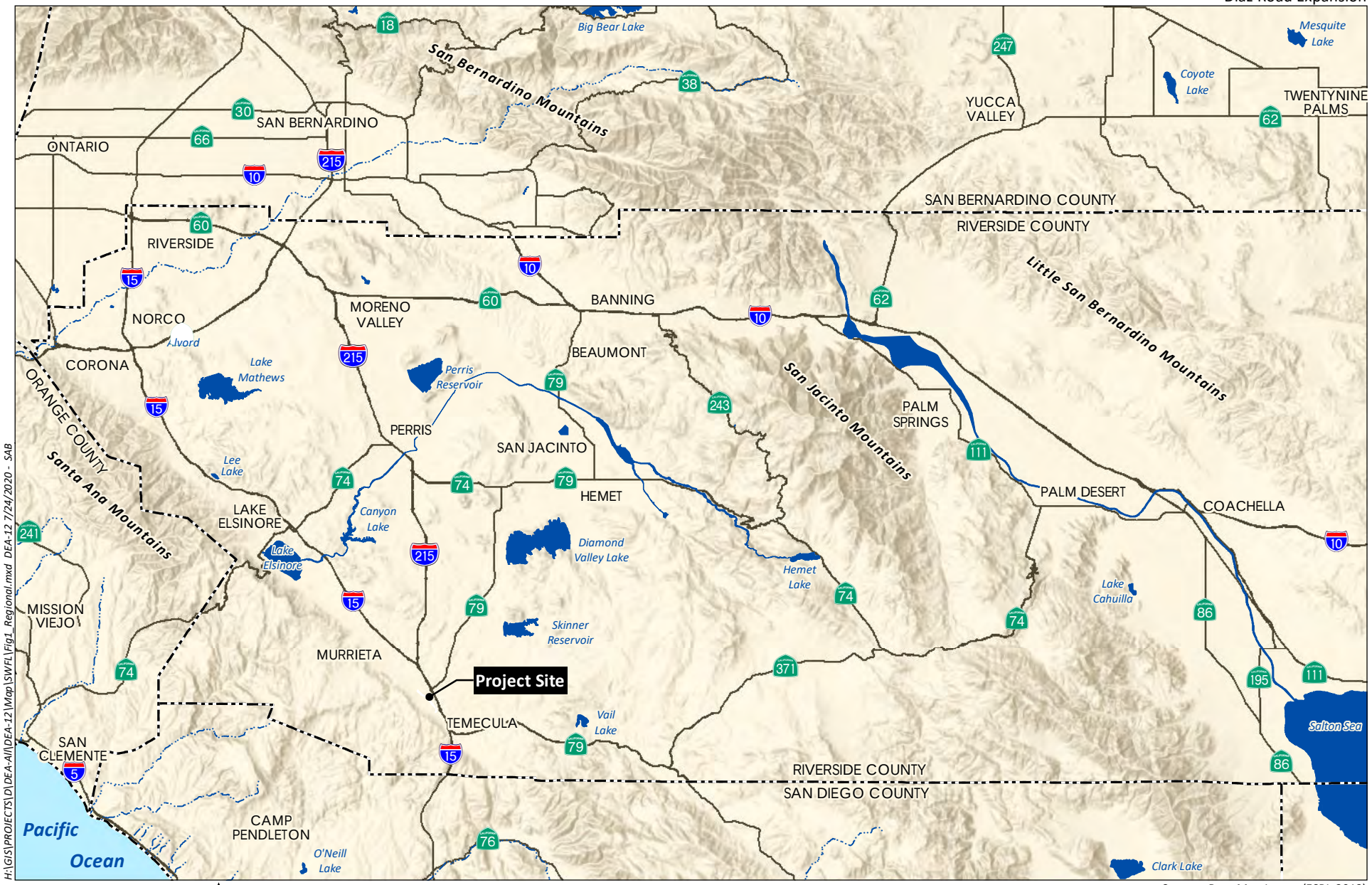
[2] Unitt, P., 1987, *Empidonax traillii extimus*: an endangered subspecies: Western Birds, v. 18, no. 3, p. 137-162.

[3] California Department of Fish and Wildlife. 2020. RareFind Database Program, Version 5.

[4] U.S. Fish and Wildlife Service. 2020. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office (CFWO). Retrieved from: http://www.fws.gov/carlsbad/gis/cfwogis.html

Attachments:

Figure 1: Regional Location
Figure 2: USGS Topography
Figure 3: Aerial Photograph
Figure 4: 2020 Southwestern Willow Flycatcher Survey Results
Attachment A: Willow Flycatcher Survey and Detection Form



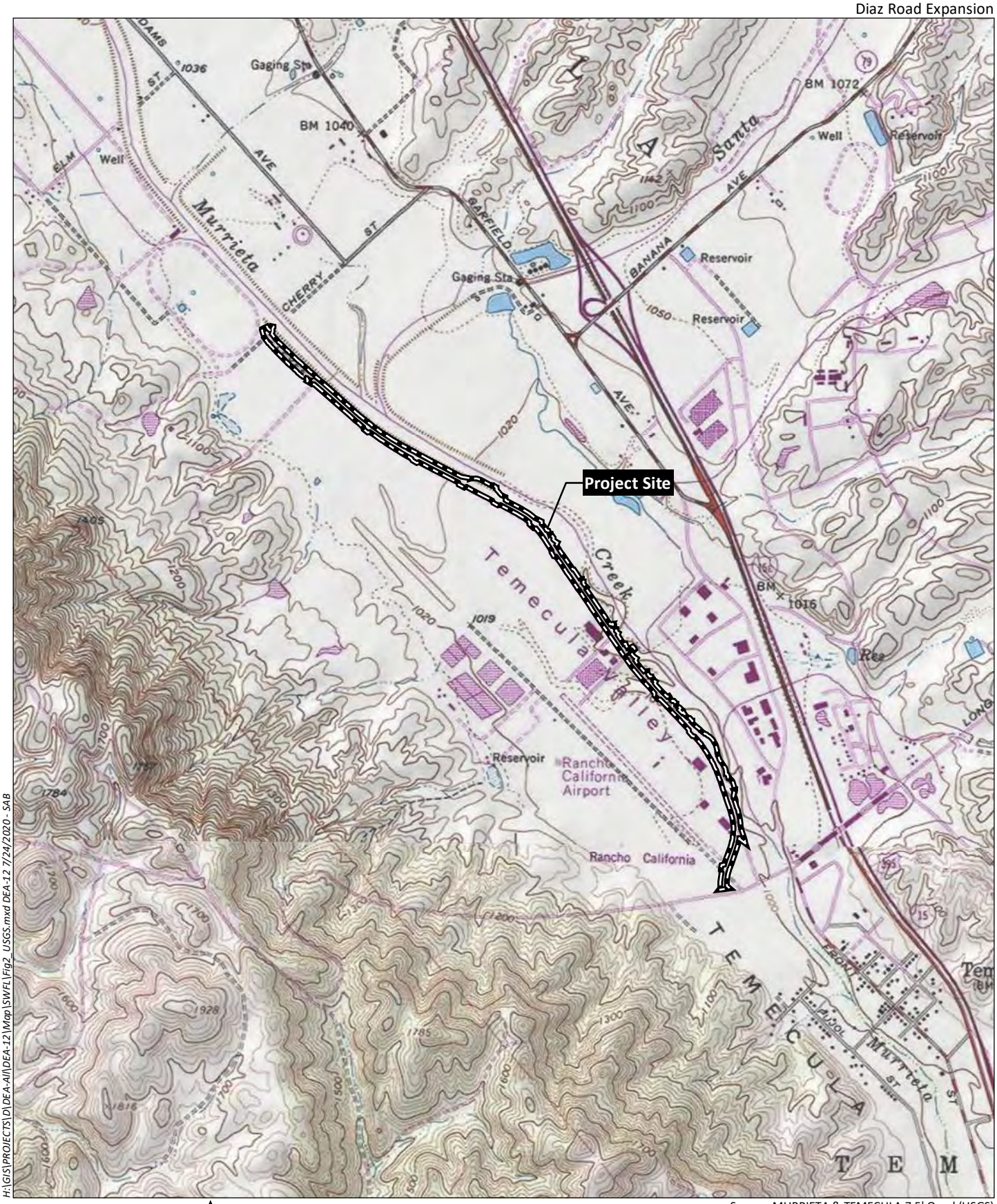
H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\SWFL\Fig1_Regional.mxd DEA-12 7/24/2020 - SAB

Source: Base Map Layers (ESRI, 2013)

HELIX Environmental Planning

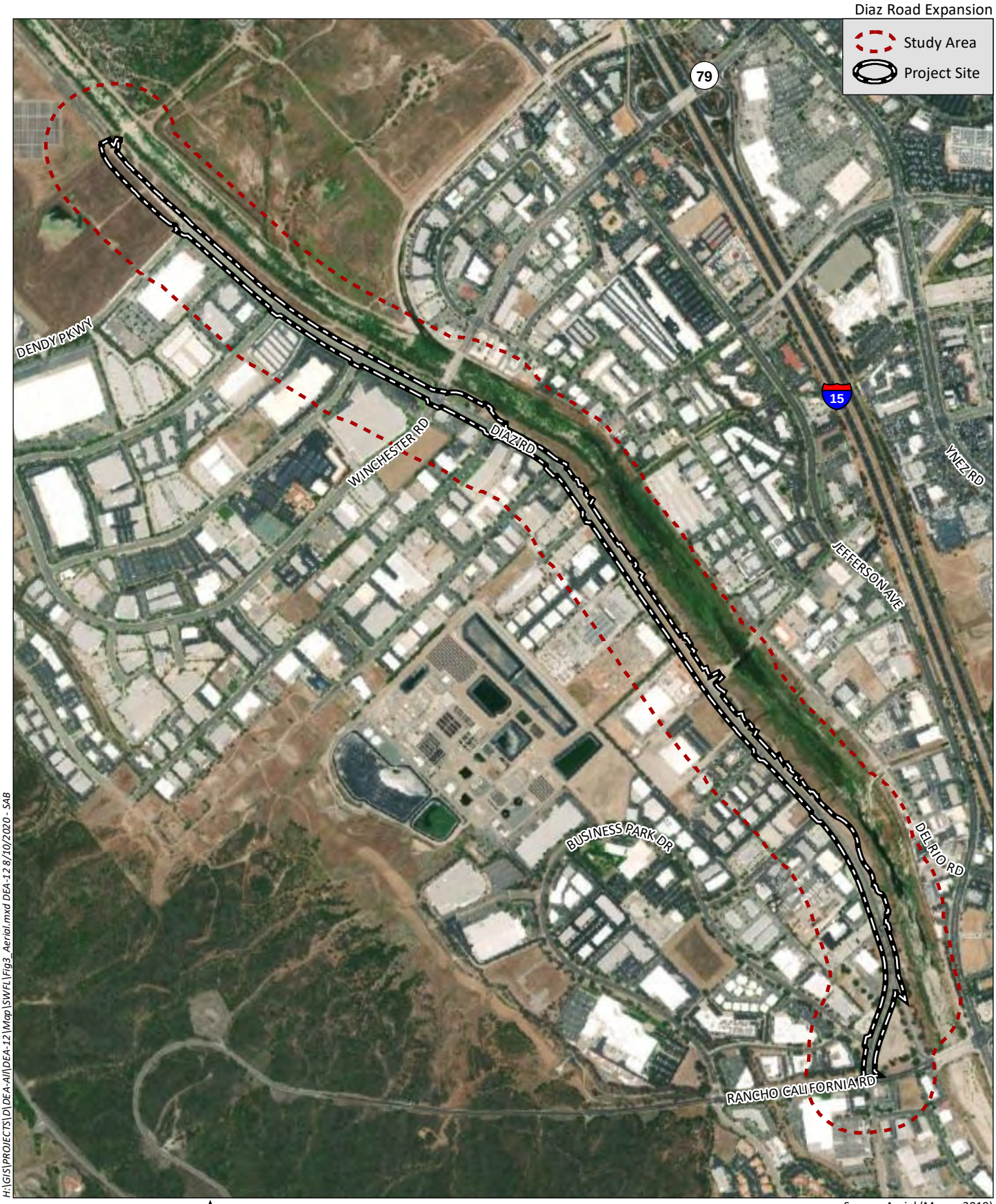
Regional Location

Figure 1



USGS Topography

Figure 2



HELIX Environmental Planning

Aerial Photograph

Figure 3

Diaz Road Expansion

H:\GIS\PROJECTS\D\DEA-All\DEA-12\Map\SWFL\Fig4_Results.mxd DEA-12 8/10/2020 - SAB

0 1,100 Feet

N

Source: Aerial (Maxar, 2019)

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2020 Southwestern Willow Flycatcher Survey Results

Figure 4

Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: **Diaz Road Expansion Project** State: **CA** County: **San Diego**

USGS Quad Name: **Murrieta/Temecula** Elevation: **310** (meters)

Creek, River, or Lake Name: **Murrieta Creek**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** **X** ***No*** ____

Survey Coordinates: Start: E **485622** N **3706614** UTM Datum: **WSG84** (See instructions)

Stop: E **483335** N **3709136** UTM Zone: **11N**

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

*****Fill in additional site information on back of this page*****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding;-potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1	Date: 5/21/2020	1	0	0	N	Male singing from east side of Murrieta Creek. Passively monitored individual for approximately 15 minutes during which the male continued to vocalize with short breaks. Only detected aurally. Not detected during subsequent survey visits. Presumed to be a migrating individual. Brown-headed cowbird present along Murrieta Creek.	1	M	483756	3708791
Observer(s): Erica Harris	Start: 7:30									
	Stop: 9:30									
	Total hrs.: 2.00									
Survey # 2	Date: 6/4/2020	0	0	0	N	n/a				
Observer(s): Erica Harris	Start: 7:30									
	Stop: 9:30									
	Total hrs.: 2.00									
Survey # 3	Date: 6/19/2020	0	0	0	N	n/a				
Observer(s): Erica Harris	Start: 7:30									
	Stop: 9:30									
	Total hrs.: 2.00									
Survey # 4	Date: 7/2/2020	0	0	0	N	n/a				
Observer(s): Erica Harris	Start: 7:30									
	Stop: 9:30									
	Total hrs.: 2.00									
Survey # 5	Date: 7/13/2020	0	0	0	N	n/a				
Observer(s): Erica Harris	Start: 7:30									
	Stop: 9:30									
	Total hrs.: 2.00									
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals.		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes ____ No **X** If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
Total survey hrs.: 10.00		0	0	0	0					

Reporting Individual: **Erica Harris** Date Report Completed: **8/27/2020**

US Fish & Wildlife Service Permit #: **TE-778195-14** State Wildlife Agency Permit #: ____

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual: **Erica Harris** Phone #: **619-462-1515**

Affiliation: **HELIX Environmental Planning, Inc.** E-mail: EricaH@helixepi.com

Site Name: **Diaz Road Expansion Project** Date report Completed: **8/27/2020**

Was this site surveyed in a previous year? Yes____ No__X__ Unknown____

Did you verify that this site name is consistent with that used in previous yrs? Yes____ No____ Not Applicable **X**

If name is different, what name(s) was used in the past? **N/A**

If site was surveyed last year, did you survey the same general area this year? Yes____ No____ If no, summarize below.

Did you survey the same general area during each visit to this site this year? Yes____ No____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County **X** State____ Tribal____ Private____

Name of Management Entity or Owner (e.g., Tonto National Forest) **City of Temecula/Riverside County Flood Control and Water Conseration District**

Length of area surveyed: **3.5** (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

____ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Salix lasiolepis, Schoenoplus acutus, Tamarix sp., *Salix gooddingii*

Average height of canopy (Do not include a range): **4.5** (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests;
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Stretch of Murrieta Creek between Cherry Street and Rancho California Road.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)
No territories present						

Attach additional sheets if necessary