

IS/MND Appendix B

Biological Technical Report

Hicks Canyon Wash Project

Biological Technical Report

October 2022 | 04663.00002.001

Submitted to:

City of Irvine

1 Civic Center Plaza
Irvine, CA 92606

Prepared for:

BFK Engineers

4675 MacArthur Court, Suite 400
Newport, CA 92660

Prepared by:

HELIX Environmental Planning, Inc.

16485 Laguna Canyon Road
Suite 150
Irvine, CA 92618

This page intentionally left blank

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION.....	1
1.1 Purpose of the Report.....	1
1.2 Project Location	1
1.3 Project Description	1
2.0 METHODS.....	2
2.1 Nomenclature	2
2.2 Literature Review.....	2
2.3 Field Surveys	3
2.3.1 General Biological Survey	3
2.3.2 Jurisdictional Assessment	4
2.3.3 Focused Surveys.....	5
2.3.4 Habitat Assessment	6
3.0 RESULTS	6
3.1 Environmental Setting	6
3.2 Vegetation Communities	7
3.2.1 Cottonwood Stand	7
3.2.2 Southern Willow Scrub	7
3.2.3 Parks and Ornamental Plantings.....	8
3.2.4 Disturbed	8
3.2.5 Urban	8
3.3 Jurisdictional Waters and Wetlands	8
3.4 Plants	9
3.5 Animals	9
3.6 Sensitive Biological Resources	10
3.6.1 Rare Plant Species.....	10
3.6.2 Sensitive Animal Species.....	10
3.6.3 Sensitive Vegetation Communities/Habitats.....	11
3.6.4 Habitat and Wildlife Corridor Evaluation.....	11
4.0 REGIONAL AND REGULATORY CONTEXT	12
4.1 Federal Regulations	12
4.1.1 Federal Endangered Species Act.....	12
4.1.2 Federal Clean Water Act.....	12
4.1.3 Migratory Bird Treaty Act	13
4.1.4 Critical Habitat	13

TABLE OF CONTENTS (cont.)

<u>Section</u>	<u>Page</u>
4.2	State Regulations 13
4.2.1	California Environmental Quality Act 13
4.2.2	California Endangered Species Act 13
4.2.3	California Fish and Game Code 14
4.3	Local Regulations 14
4.3.1	Special Area Management Plan 14
4.3.2	City of Irvine Tree Removal Ordinance 14
4.3.3	Orange County Central and Coastal Subregion NCCP/HCP 14
5.0	PROJECT EFFECTS 15
5.1	Sensitive Species 15
5.1.1	Rare Plant Species..... 15
5.1.2	Sensitive Animal Species..... 16
5.2	Sensitive Vegetation Communities..... 17
5.2.1	California Department of Fish and Wildlife Sensitive Vegetation Communities/Habitats..... 17
5.2.2	California Department of Fish and Wildlife Riparian Habitat and Streambed 18
5.3	U.S. Army Corps of Engineers Jurisdiction 18
5.4	Regional Water Quality Control Board Jurisdiction 19
5.5	Wildlife Movement and Migratory Species 20
5.5.1	Wildlife Movement..... 20
5.5.2	Migratory Species 20
5.6	Local policies and ordinances 20
5.7	Adopted Habitat Conservation Plans..... 21
6.0	AVOIDANCE/MINIMIZATION MEASURES..... 21
7.0	CERTIFICATION/QUALIFICATION..... 23
8.0	REFERENCES..... 24

LIST OF APPENDICES

A	Plant Species Observed
B	Animal Species Observed or Detected
C	Site Photographs
D	Burrowing Owl Focused Survey Report
E	Rare Plant Species Potential to Occur
F	Sensitive Animal Species Potential to Occur

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Follows Page</u>
1	Regional Location.....	2
2	USGS Topography	2
3	Aerial Photograph	2
4a-d	Proposed Project.....	2
5	Vegetation and Land Uses	8
6a-d	Jurisdictional Features	8
7	NCCP/HCP Context.....	12
8a-d	Impacts to Vegetation and Land Uses	18
9a-d	Impacts to Jurisdictional Features	18

LIST OF TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
1	Field Survey Summary.....	3
2	Vegetation Communities and Land Uses	7
3	Jurisdictional Features	9
4	Impacts to Vegetation and Land Uses	18
5	Impacts to CDFW Jurisdiction	18
6	Impacts to USACE Jurisdiction	19
7	Impacts to RWQCB Jurisdiction	19

This page intentionally left blank

ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
BMP	Best Management Practices
BUOW	burrowing owl
CSS	California sagebrush
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CIPCP	cast-in-place concrete pipe
City	City of Irvine
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
HELIX	HELIX Environmental Planning, Inc.
LF	Linear Feet
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
NCCP/HCP	Orange County Central Coastal Subarea Natural Community Conservation Plan and Habitat Conservation Plan
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
OCHCS	Orange County Habitat Classification System
OCPW	Orange County Public Works
project	Hicks Canyon Wash
RPW	Relatively Permanent Water Body
RWQCB	Regional Water Quality Control Board

ACRONYMS AND ABBREVIATIONS (cont.)

SAMP	Special Area Management Plan
SFP	State Fully Protected
SSC	Species of Special Concern
SWRCB	State Water Resources Control Board
TNW	Traditional Navigable Waters
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WTKI	white-tailed kite

EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) completed this biological technical report for the proposed Hicks Canyon Wash Project (project), which is proposed by the City of Irvine (City) and located in the City of Irvine, Orange County, California. The proposed project would regrade the landscape along the channel slopes through Hicks Canyon Wash in compliance with the 100-year flow management practices in order to prevent further erosion of the channel, stabilize the channel banks, and protect adjacent residential properties along the southern edge of the channel. The proposed project includes clearing the existing vegetation along the channel, recontouring to create a uniform slope along the channel, and connecting five existing storm drains to an existing 120-inch storm drain located to the north of the channel. Once construction is complete, the channel banks and bottom will be planted with a variety of native riparian species found within Hicks Canyon Wash and the vicinity. The sides of the channel will be planted with riparian vegetation that transitions into a dirt aggregate along the access and pedestrian roads. An earthen fill would be installed over the storm drain extensions and along the access road. The project would occur within a 13.5-acre study area, which is located 1.25 miles east of Interstate 5 and 0.6 mile south of State Route 261 in the City of Irvine.

The project site extends from Culver Drive at the western boundary to Eastwood Village at the eastern boundary, 1,650 feet past Yale Avenue. The study area falls within the Orange County Central and Coastal Sub-region Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP), specifically within the Central subarea of the NCCP/HCP (County 1996). Project activities would not conflict with the conservation goals of the Central and Coastal Sub-region NCCP/HCP.

A total of five vegetation communities/land uses were mapped on the study area, including cottonwood stand, southern willow scrub, parks and ornamental plantings, disturbed, and urban. Southern willow scrub is considered a sensitive community pursuant to the California Department of Fish and Wildlife (CDFW 2021). Hicks Canyon Wash, which is heavily disturbed, is a drainage feature that is largely developed on either side. The study area supports a total of 1.14 acres of USACE waters of the U.S., including 1.04 acres of non-wetland waters and 0.10 acre of wetland waters; a total of 1.29 acres of Regional Water Quality Control Board (RWQCB) waters of the State, including 1.19 acres of non-wetland waters and 0.10 acre of wetland waters; and 6.65 acres of CDFW jurisdictional streambed and habitat. One sensitive animal species, California legless lizard (*Anniella stebbinsi*), was determined to not be expected on the study area; two species were determined to have a low potential to occur on the study area, including coastal whiptail (*Aspidoscelis tigris stejnegeri*) and white-tailed kite (*Elanus leucurus*); one species is presumed present, yellow warbler (*Setophaga petechia*), and one species, burrowing owl (*Athene cunicularia*; BUOW), is presumed absent. The project would also comply with the City's Tree Removal Ordinance.

Potential significant impacts were identified for BUOW (if present during the take avoidance survey), jurisdictional resources (including southern willow scrub), City significant trees, and nesting bird species (including white-tailed kite). Permanent impacts are proposed to approximately, 0.05 acre of southern willow scrub, 2.03 acres of parks and ornamental plantings, 2.47 acres of disturbed habitat, and 0.01 acre of urban land use. Temporary impacts are proposed to 0.12 acre of parks and ornamental plantings and 0.05 acre of disturbed habitat. In addition, the project would permanently impact 0.86 acre of USACE waters of the U.S. located within Hicks Canyon Wash, 0.95 acre waters of the State, which include 0.85-acre of non-wetland waters and 0.10 acre wetland waters, and 3.84 acres of CDFW waters of the state and associated riparian vegetation located within Hicks Canyon Wash. Impacts anticipated

from temporary disturbance include 0.17 acre of CDFW streambed and riparian vegetation. The proposed project would not impact wildlife corridors or conflict with regional conservation plans.

Measures related to the following topics are proposed herein to fully mitigate potential impacts of the project: BUOW, jurisdictional resources (including southern willow scrub), City significant trees, and nesting birds (including yellow warbler). 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 Irvine (City; California Environmental Quality Act [CEQA] lead agency), regulatory agencies, and the public with current biological data to satisfy the review of the proposed Hicks Canyon Wash Project (project) located in the City of Irvine in Orange County, California. The purpose of this report is to document the existing biological conditions on and in the immediate vicinity of the project and 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 lead agency.

1.2 PROJECT LOCATION

The approximately 13.5-acre project site is generally located 1.25 miles east of Interstate 5 and 0.6 mile south of State Route 261 in the City of Irvine, California (Figure 1, *Regional Location*). The midpoint of the project site is located in the U.S. Geological Survey (USGS) 7.5-minute Tustin and El Toro quadrangle maps; the midpoint of the project is located within the Tustin quadrangle within Section 6, Township 5 South, Range 9 West (Figure 2, *USGS Topography*). Specifically, the project site consists of an approximately 1.2-mile segment of the Hicks Canyon Wash corridor extending from Culver Drive at the western boundary to 1,650 feet east of Yale Avenue (Eastwood Village), at the eastern boundary. The limits of the project site are depicted on Figure 3, *Aerial Vicinity*.

1.3 PROJECT DESCRIPTION

The project proposes to regrade and landscape along the channel slopes through Hicks Canyon Wash in compliance with the 100-year flow management practices in order to prevent further erosion of the channel, stabilize the channel banks, and protect adjacent residential properties along the southern edge of the channel. The project would also extend the five existing storm drains to connect to the existing 120-inch diameter pipe, thereby allowing the existing 120-inch diameter pipe to convey additional flows (Figures 4a-d, *Proposed Project*).

Channel Clearing and Recontouring

Under the proposed project, the length of the Hicks Canyon Wash would be cleared of excess vegetation, silt, and the existing abandoned concrete structures along the channel bottom. A total of 4.56 acres of vegetation would be removed through clearing and grubbing. This would also include the removal of all existing eucalyptus trees and decayed trunks from Hicks Canyon Wash and areas adjacent to the channel. The second component of the project proposes to recontour the channel to achieve a maximum slope of 2:1 on either side for a total elevation change of approximately 10 feet between the base of the channel and the height of the bank on either side. There would be a raw cut of 4,933 cubic yards and a raw fill of 2,359 cubic yards. Fill materials would also be applied to fill areas within Hicks Canyon Wash affected by the removal of the existing concrete structures and eucalyptus trees/trunks and associated root structures.

Extending Storm Drains

Each of the five existing storm drains would be extended to connect to the existing 120-inch diameter pipe to the north of Hicks Canyon Wash. At each storm drain extension, the channel bottom would be excavated to access the existing drainpipe. An additional pipe segment would be installed and connected to the 120-inch diameter pipe using a junction structure and concrete collar and attached to the existing storm drain pipe. The proposed grading would include creating a compacted fill berm over each pipe extension to provide a trail or access crossing.

Landscaping

Landscaping would be minimal and is intended to provide stabilization to the re-graded slopes. The channel banks and bottom will be planted with a combination of vegetation types consisting of a variety of native riparian species, as well as a temporary irrigation system to facilitate the establishment of the new landscaping. The sides of the channel will be planted with riparian vegetation that transitions into a dirt aggregate along the access and pedestrian roads. An earthen fill would be installed over the storm drain extensions and along the access road.

2.0 METHODS

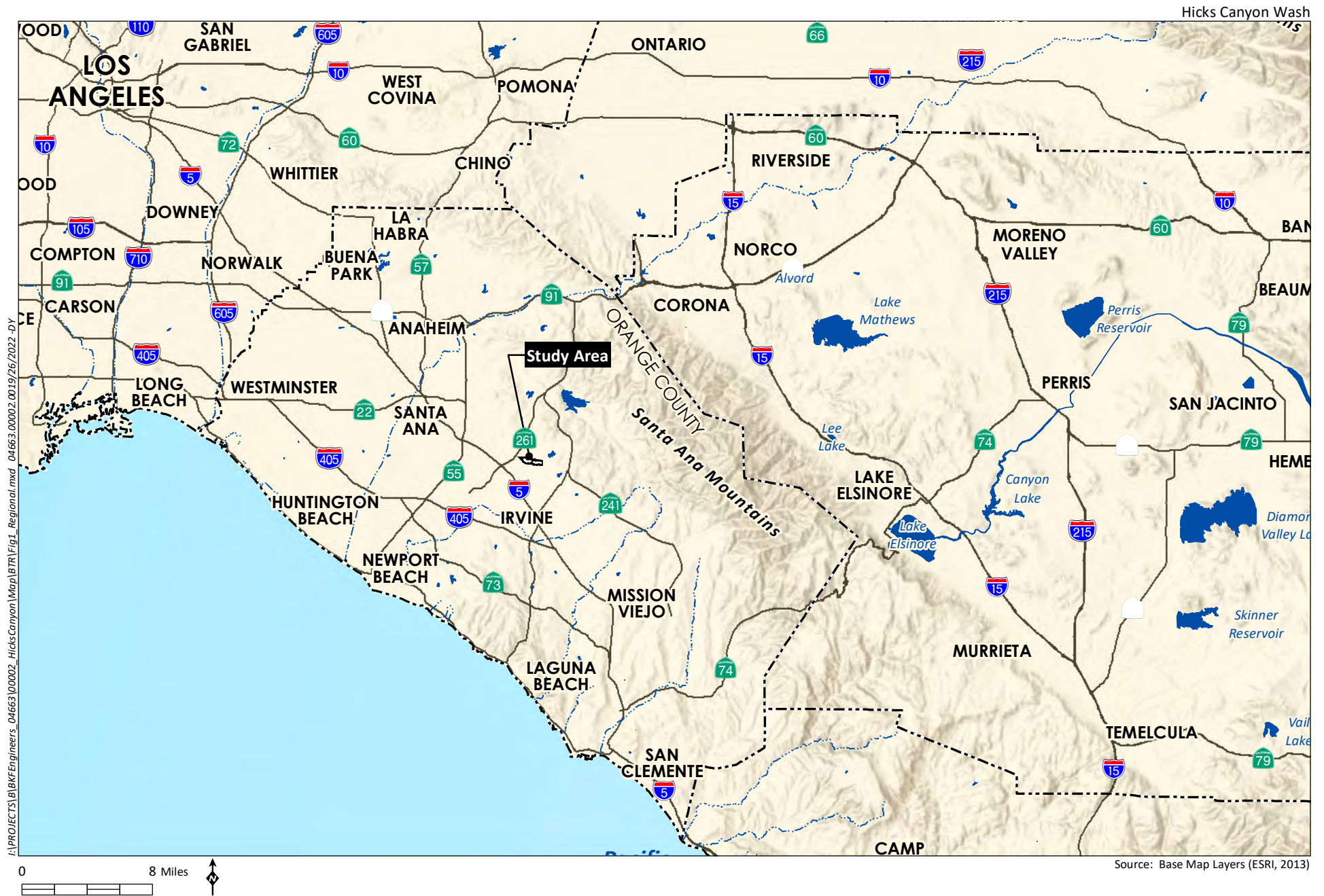
The project evaluation includes a review of project plans; a literature review of biological resources occurring on the project site and surrounding vicinity; a general biological survey, including vegetation mapping and a general habitat assessment; jurisdictional assessment; focused surveys for rare plant species and burrowing owl (*Athene cunicularia*; BUOW); and a habitat assessment for southwestern pond turtle (*Actinemys marmorata pallida*). The methods used to evaluate the biological resources present on the project site, the channel and top of the slope, and the adjacent trail and landscaping (collectively referred to as the “study area”), are discussed in this section.

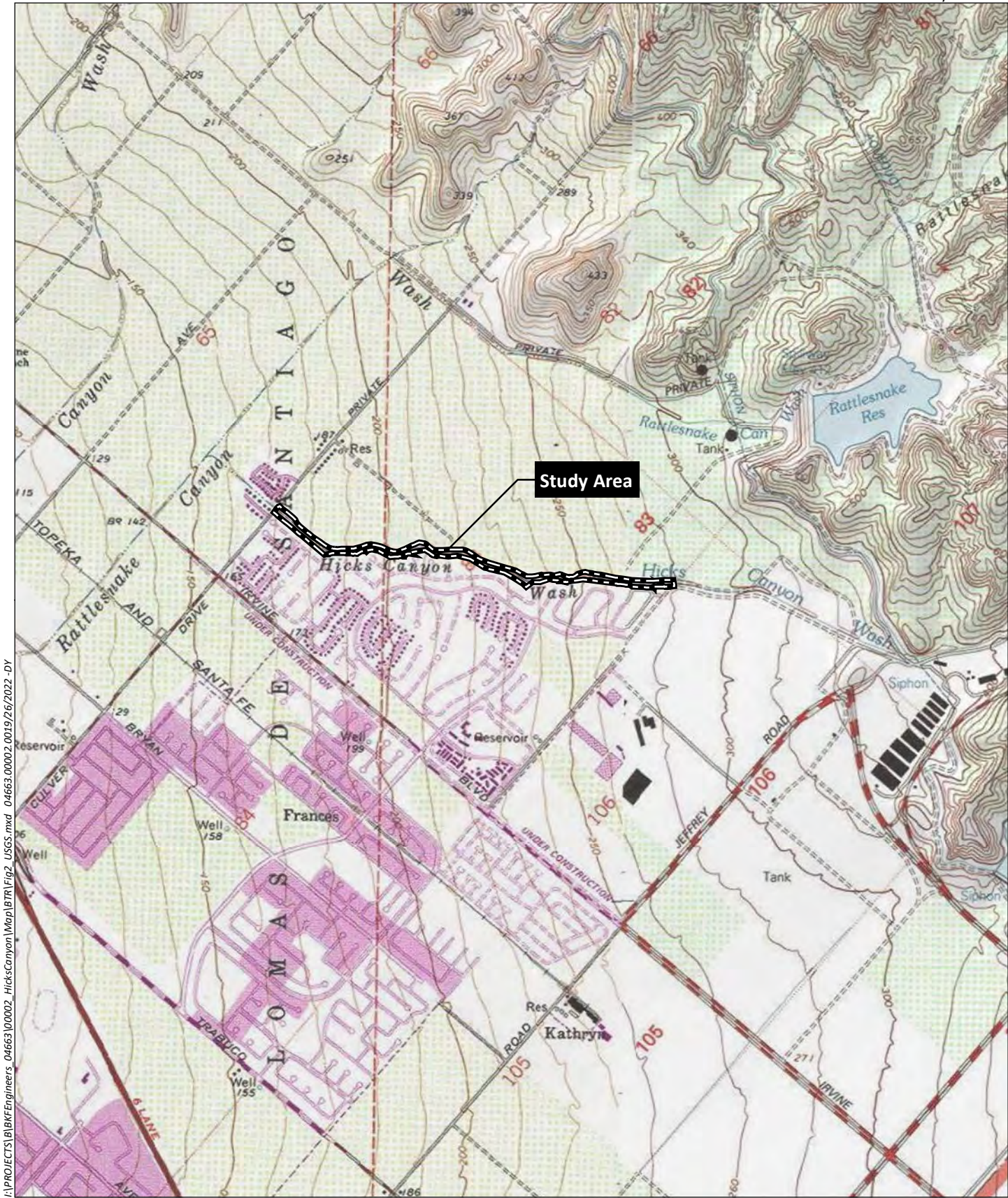
2.1 NOMENCLATURE

Nomenclature for this report follows Baldwin et al. (2012) for plants and the Orange County Habitat Classification System (OCHCS; Gray and Bramlet 1992) for vegetation community classifications, with additional vegetation community information taken from Manual of California Vegetation, Second Edition (MCV; Sawyer et al. 2009). Animal nomenclature follows Center for North American Herpetology (Taggart 2016) for reptiles and amphibians, American Ornithologists’ Society (2021) for birds, and Baker et al. (2003) for mammals. Rare plant and sensitive animal statuses are from the Inventory of Rare and Endangered Plants of California (California Native Plant Society [CNPS] 2021) and the California Natural Diversity Database (California Department of Fish and Wildlife [CDFW] 2021). Rare plant species’ habitats and flowering periods are from the Jepson Manual (Baldwin et al. 2012). Soil classifications were obtained from the Web Soil Survey (Natural Resources Conservation Service [NRCS] 2021).

2.2 LITERATURE REVIEW

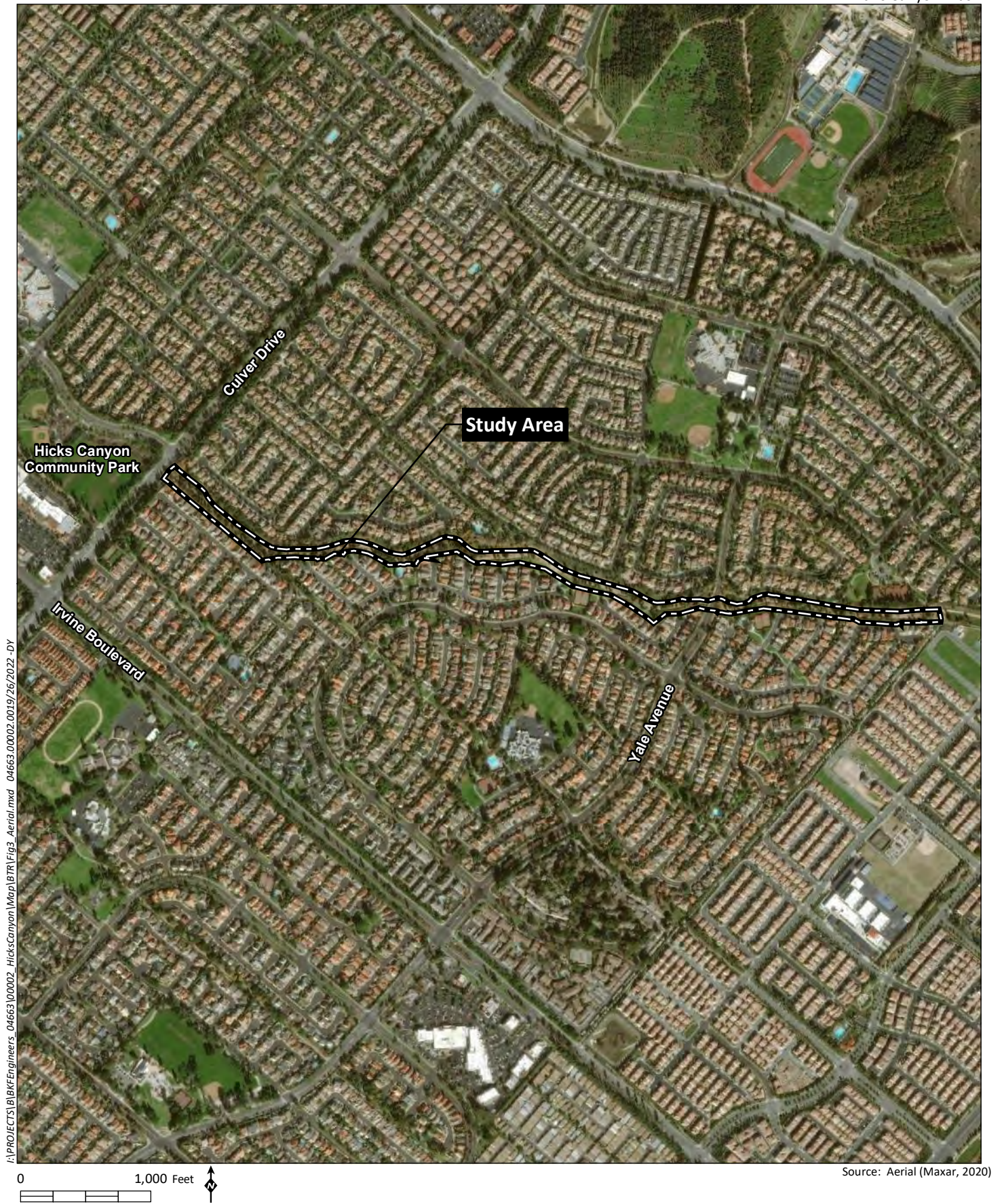
Prior to conducting the site visit, HELIX Environmental Planning, Inc. (HELIX) reviewed regional planning documents, Google Earth aerials (2021), Web Soil Survey (NRCS 2021), and sensitive species database records, including the Inventory of Rare and Endangered Plants of California (CNPS 2021), CNDDB (CDFW 2021), and critical habitat maps for endangered and threatened species (U.S. Fish and Wildlife Service [USFWS] 2021a). A two-quadrangle database search was conducted on CNDDB and CNPS, which





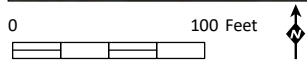
I:\PROJECTS\BIBK\Engineers_04663\00002_HicksCanyon\Map\BTR\Fig2_USGS.mxd 04663.00002.0019/26/2022 -DY

Source: Tustin, 7.5' Quad (USGS)

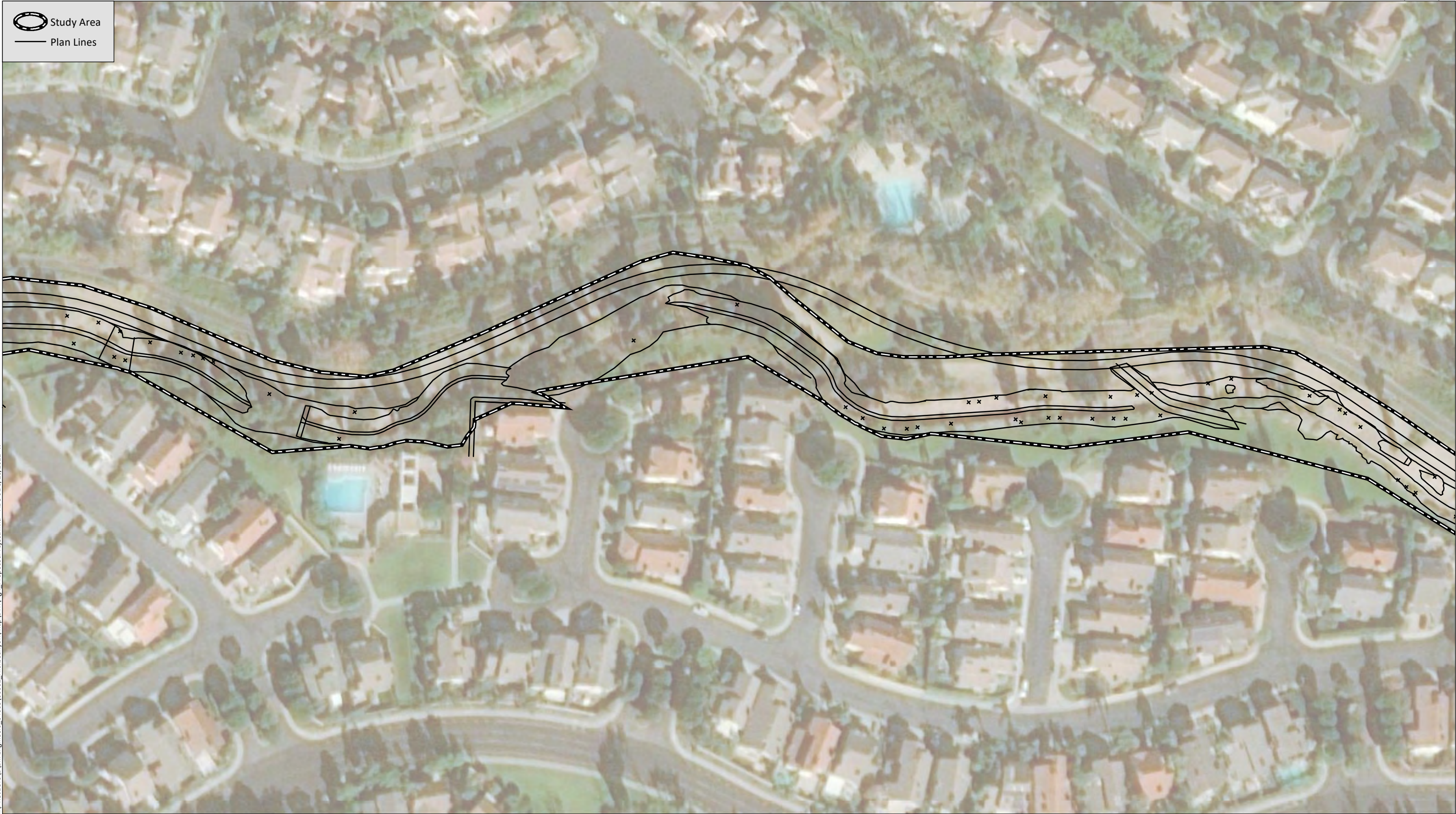




I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BTR\Fig4_ProposedProject.mxd ABC-01.9/26/2022 -I!



Source: Aerial (NAIP, 2018)



 Study Area
 Plan Lines

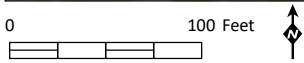
I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BTR\Fig4_ProposedProject.mxd ABC-01.9/26/2022 -II

0 100 Feet 

Source: Aerial (NAIP, 2018)



I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BTR\Fig4_ProposedProject.mxd ABC-01.9/26/2022 -II



Source: Aerial (NAIP, 2018)



I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BTR\Fig4_ProposedProject.mxd ABC-01.9/26/2022 -11

Source: Aerial (NAIP, 2018)

included the El Toro and Tustin quadrangles. In addition, the Central and Coastal Subregion of the Orange County Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP; County of Orange 1996) was consulted to ensure the project does not conflict with the NCCP/HCP.

2.3 FIELD SURVEYS

Field surveys were conducted to document the existing condition of the study area. A general biological survey and habitat assessment were conducted on the study area to map existing vegetation communities and to determine habitat suitability for sensitive plant and animal species. The lists 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. A jurisdictional assessment was also conducted to determine the existing jurisdictional limits regulated by the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW. Focused surveys for rare plant species and BUOW were conducted. A habitat assessment was also conducted to determine habitat suitability for southwestern pond turtle (*Actinemys marmorata pallida*). A summary of field surveys conducted is provided in Table 1, *Field Survey Summary*.

Table 1
FIELD SURVEY SUMMARY

Survey Type	Survey Date	Surveyor
General Biological Survey	3/20/20	Ezekiel Cooley
Jurisdictional Delineation	3/20/20 9/27/22	Ezekiel Cooley
Burrowing Owl Habitat Assessment	3/20/20	Ezekiel Cooley
Burrowing Owl Protocol Survey	5/18/21	Matthew Dimson
Rare Plant Survey	8/20/21	Matthew Dimson
Southwestern Pond Turtle Habitat Assessment	7/29/21	Matthew Dimson

2.3.1 General Biological Survey

HELIX Biologist and Regulatory Specialist Ezekiel Cooley conducted a general biological survey of the study area on March 20, 2020. Vegetation communities were classified and mapped in accordance with the OCHCS (Gray and Bramlet 1992), with additional information from the MCV (Sawyer et al. 2009). Vegetation was mapped on a 100-foot (1 inch = 100 feet) aerial photograph of the site. Vegetation communities were mapped by HELIX to one-hundredth of an acre (0.01 acre). The entire site 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 Jurisdictional Assessment

Prior to beginning fieldwork, aerial photographs (1 inch = 35 feet), topographic maps (1 inch = 35 feet), USGS quadrangle maps, and National Wetland Inventory maps (USFWS 2020b) were reviewed to assist in determining the location of potential jurisdictional waters on the study area. Mr. Cooley conducted the preliminary jurisdictional assessment field work on March 20, 2020, with a formal jurisdictional assessment conducted on September 27, 2022. The assessment was conducted to identify any jurisdictional waters potentially 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 potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the California Fish and Game (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 riparian vegetation, and/or other surface indications of streambed hydrology.

2.3.2.1 U.S. Army Corps of Engineers 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 assessment.

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 2021a). A significant nexus evaluation or preliminary jurisdictional delineation are typically only required for projects that propose impacts to potentially jurisdictional features and, therefore, require a Section 404 permit from the USACE.

2.3.2.2 Regional Water Quality Control Board Jurisdiction

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. The State Water Resources Control Board’s (SWRCB’s) State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), adopted on April 2, 2019 (SWRCB 2019), and implemented as of May 28, 2020, defines an area as wetland if, under normal

circumstances: (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation. The Water Code defines waters of the state broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state." Waters of the state include all waters of the U.S.

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. In the absence of federally regulated waters of the U.S., isolated drainage features may be regulated by the RWQCB pursuant to a Report of Waste Discharge authorization pursuant to the State Porter-Cologne Water Quality Control Act.

2.3.2.3 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; i.e., waters of the state). 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 waters of the state were defined by the top of bank. Vegetated CDFW habitats were mapped at the limits of streambed-associated vegetation, if present.

2.3.3 Focused Surveys

2.3.3.1 Rare Plant Species Survey

Rare plants investigated include those that are listed as threatened or endangered by the USFWS or the CDFW and those afforded a California Rare Plant Rank (CRPR) of 1 through 3 by CNPS.

HELIX Biologist Matthew Dimson conducted a summer rare plant survey on August 20, 2021. The survey was conducted in accordance with published agency guidelines (CDFW 2009, CDFW 2000, and USFWS 2000) and during the appropriate flowering period to maximize the detection of those rare plant species with the potential to occur on the study area. Survey methods incorporated a combination of meandering transects and focused searches in areas with the greatest potential to support rare plant species with the potential to occur on the study area. If observed, individual rare plants were mapped using a handheld Global Positioning System (GPS) unit. HELIX also recorded any rare plant species incidentally encountered during other field surveys.

2.3.3.2 Burrowing Owl

A habitat assessment was conducted on the study area by Mr. Dimson on May 18, 2021, to identify areas with potential BUOW habitat and eliminate those that did not contain habitat suitable to support the species. A focused burrow survey was conducted concurrently with the habitat assessment. All suitable burrows (i.e., greater than approximately four inches [11 cm] in height and width greater than approximately 59 inches [50 cm] in depth) and burrow surrogates were recorded using a handheld GPS

unit. The assessment was conducted on the study area and included an approximately 500-foot (150-m) buffer zone around the periphery of the study area. The study area was determined to support BUOW habitat and burrows; therefore, a focused survey was conducted as described below.

Mr. Dimson conducted a focused survey for BUOW between May 18 and July 6, 2021. The survey consisted of four breeding season (February 1 to August 31) surveys performed in accordance with the current CDFW survey guidelines. The surveys were spaced at least three weeks apart, with at least one survey conducted between February 12 and April 12 and one survey conducted between June 15 and July 15. Mr. Dimson slowly walked meandering transects spaces no greater than 60 feet (20 meters) apart through areas of potential habitat, visually searching for BUOW signs and BUOW individuals with the aid of binoculars. Fence posts, rocks, and other possible perching locations, as well as mammal burrows (especially those of California ground squirrel [*Otospermophilus beecheyi*]) potentially suitable for use by BUOW, were inspected. Burrows were searched for signs of recent BUOW occupation, including pellets with regurgitated fur, bones, and insect parts; whitewash (excrement); tracks; and feathers. If observed, BUOW signs and/or BUOW individuals were recorded with a handheld GPS unit. The finding for the BUOW survey is included as Appendix D, *Burrowing Owl Focused Survey Report*.

2.3.4 Habitat Assessment

2.3.4.1 Southwestern Pond Turtle

Mr. Dimson conducted a habitat assessment for the southwestern pond turtle on July 29, 2021. The southwestern pond turtle habitat assessment consisted of visually assessing the channel from the top of bank and within the wetted portions of the channel within the study area. Mr. Dimson searched the project site for signs of southwestern pond turtle, including but not limited to tracks, burrows, scratch or dig marks in the soil, and live turtles.

3.0 RESULTS

3.1 ENVIRONMENTAL SETTING

The study area encompasses a portion of Hicks Canyon Wash, which is located at the base of Lomas de Santiago foothills. The study area is dominated by mature eucalyptus (*Eucalyptus* sp.) trees and disturbed habitat, with small pockets of riparian vegetation. Two soil types are mapped on the study area, which include Mocho sandy loam (0 to 2 percent slopes, warm) and San Emigdio fine sandy loam (0 to 2 percent slopes). The study area consists of steep embankments and a gently sloped streambed that flows east to west.

Elevations on the study area range from approximately 169 feet (52 meters) above mean sea level (AMSL) near the western boundary to approximately 324 feet (99 meters) AMSL near the eastern boundary. The study area is bordered by residences to the north and south; Culver Drive and Hicks Canyon Community Park to the west; and the community of Eastwood Village to the east. Loma Ridge, Limestone Regional Park, and Santiago Canyon are located approximately two miles east of the study area.

3.2 VEGETATION COMMUNITIES

Five vegetation communities or land uses were mapped on the study area (Table 2, *Vegetation Communities and Land Uses*; Figure 5, *Vegetation and Land Uses*). The OCHCS Habitat Classification Numbers and CDFW CaCodes are provided in parentheses next to each community name, along with the MCV classifications in Table 2. A brief description of each vegetation community and land uses mapped on the study area is provided below.

Table 2
VEGETATION COMMUNITIES AND LAND USES

Habitat Type (OCHCS) ¹	Habitat Type (MCV) ²	Acres
Cottonwood stand (7.8)	Fremont cottonwood forest and woodland (61.130.06)	0.03
Southern willow scrub (7.2)	Goodding's willow riparian woodland and forest (61.211.01) ³	0.05
Parks and ornamental plantings (15.5)	Eucalyptus (globulus, camaldulensis) (79.100.02)	5.97
Disturbed (16.0)	Disturbed (N/A)	7.27
Urban (15.1)	Urban (N/A)	0.18
TOTAL		13.50

¹ Orange County Habitat Classification System (OCHCS).

² Manual of California Vegetation (MCV).

³ Sensitive habitats pursuant to the California Department of Fish and Wildlife (CDFW) Natural Communities List (2018).

3.2.1 Cottonwood Stand

Cottonwood stand is a community dominated by Fremont cottonwood (*Populus fremontii*) and Goodding's black willow (*Salix gooddingii*) with an intermittent to open shrub layer and a variable herbaceous layer. This community occurs on floodplains, along low-gradient rivers, perennial or seasonally intermittent streams, springs, in lower canyons in desert mountains, in alluvial fans, and in valleys with a dependable subsurface water supply that varies considerably during the year.

Within the study area, one small patch of cottonwood stand is located adjacent to the western boundary totaling 0.03 acre. This community is dominated by cottonwood trees and Goodding's black willow with ground cover consisting of common ripgut brome (*Bromus diandrus*), stinknet (*Oncosiphon piluliferum*), and common groundsel (*Senecio vulgaris*).

3.2.2 Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows, in association with mule fat (*Baccharis salicifolia*), scattered Fremont cottonwoods, and western sycamores (*Platanus racemose*). 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.

Within the study area, southern willow scrub is located within the western portion of the project site totaling 0.05 acre. This community consists of a few Goodding's black willow trees and smaller shrubs. Other scattered shrubs and trees of mention within this community include native mule fat, toyon

(*Heteromeles arbutifolia*), western sycamore (*Platanus racemose*) as well as non-native Mexican fan palm (*Washingtonia robusta*). The understory comprises a mixture of native and non-native herbaceous species, including cattails.

3.2.3 Parks and Ornamental Plantings

Parks and ornamental plantings consist primarily of introduced plantings of exotic, and sometimes native species, as landscaping that are actively maintained. This community consists primarily of eucalyptus species that are planted as trees, groves, windbreaks, naturalized on uplands or bottomlands, and adjacent to stream courses, lakes, or levees.

The majority of the study area is characterized by intermittent plantings of eucalyptus trees along the slopes of Hicks Canyon Wash, totaling 5.97 acres. Many of the mature eucalyptus trees along the project site have been removed by the City due to safety concerns with nearby homes and pedestrians and bikers using the trail. Additionally, non-native species such as jacaranda trees (*Jacaranda mimosifolia*), tamarisk (*Tamarix sp.*), and Peruvian peppertree (*Schinus molle*) were observed. One native species, toyon (*Heteromeles arbutifolia*), was also observed within this community.

3.2.4 Disturbed

Disturbed habitat includes mostly unvegetated land (e.g., dirt roads, eroded hillsides), 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.

Within the study area, disturbed habitat was observed within the channel and slopes, totaling 7.27 acres. The steep slopes were nearly unvegetated and appeared to be disturbed as a result of frequent erosion. A few scattered species were observed, including acacia (*Acacia sp.*), horseweed (*Erigeron canadensis*), and tree tobacco (*Nicotiana glauca*).

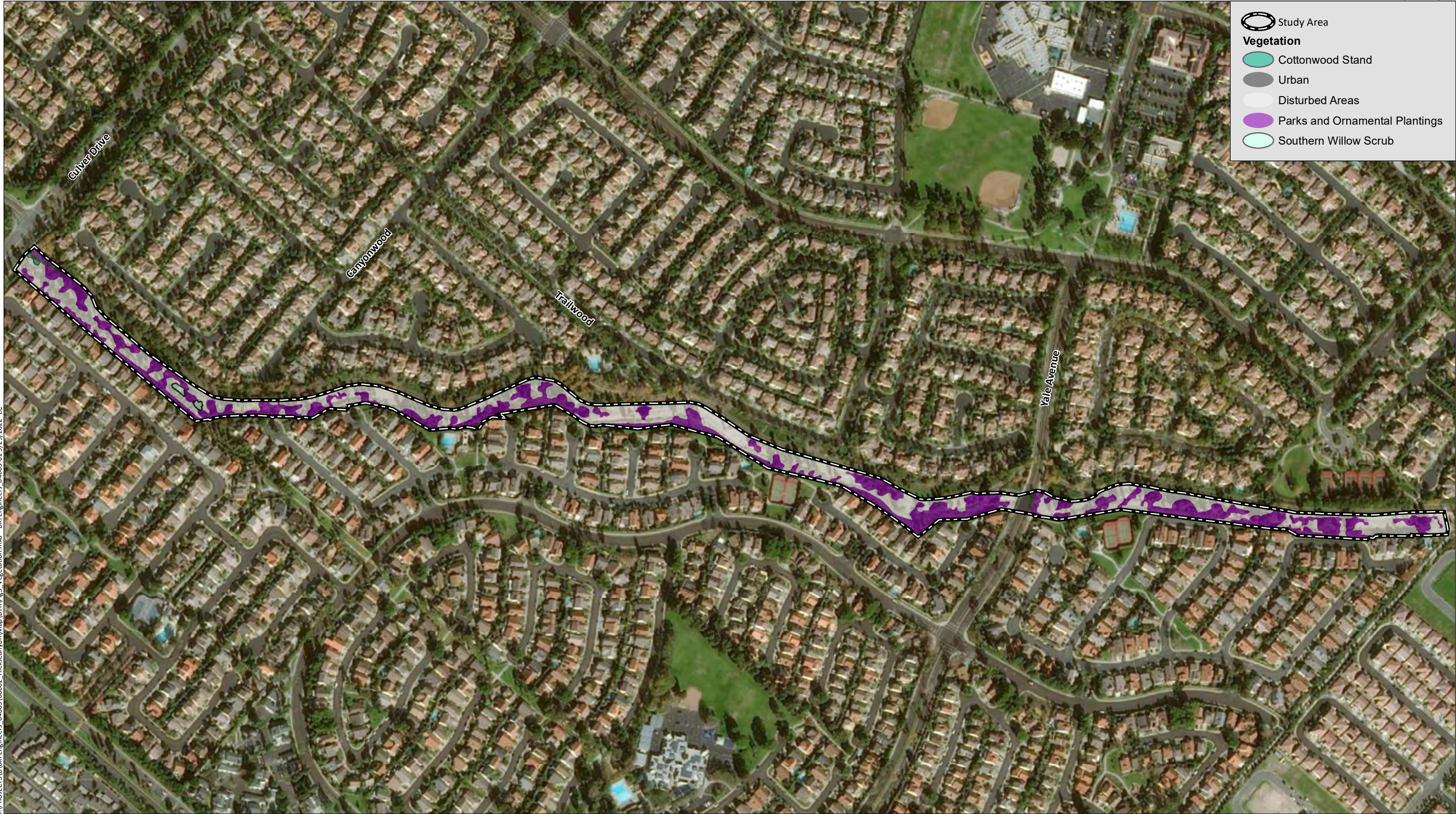
3.2.5 Urban

Urban land cover consists of areas occupied by permanent structures, paving, and other impermeable surfaces, which typically prevents the growth of vegetation.

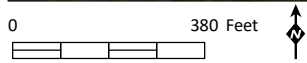
Within the study area, urban land use was observed on the northwestern boundary of the study area consisting of a paved bike path.

3.3 JURISDICTIONAL WATERS AND WETLANDS

Based on the results of the jurisdictional delineation, one major drainage feature was observed on the study area, Hicks Canyon Wash. The study area supports 1.14 acres/5,158 linear feet (LF) of USACE waters of the U.S., including 1.04 acres of non-wetland waters and 0.10 acre of wetland waters; a total of 1.29 acres/6,236 LF of RWQCB waters of the state, including 1.19 acres of non-wetland waters and 0.10 acre of wetland waters; and 6.65 acres of CDFW jurisdictional streambed and habitat (Figure 6 a-d, *Jurisdictional Features*; Table 3, *Jurisdictional Features*). No special aquatic features were observed in the study area.



I:\PROJECTS\B\BKEngineers_04663\00002_HicksCanyon\Map\BTR\Fig5_Vegetation.mxd BKEngineers_04663-01 9/29/2022 -EC

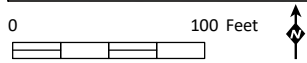


Source: Aerial (NAIP, 2018)





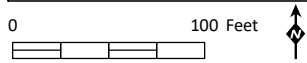
I:\PROJECTS\BKF\Engineers 04663\00002 - HickCanyon\Map\BTR\Fig6_Juris.mxd BKFEngineers 04663-01 10/4/2022-EC



Source: Aerial (NAIP, 2018)



I:\PROJECTS\BKF\Engineers 04663\00002 - HickCanyon\Map\BTR\Fig6_Juris.mxd BKFEngineers 04663-01 10/4/2022-EC



Source: Aerial (NAIP, 2018)



I:\PROJECTS\BKF\Engineers 04663\00002 - HickCanyon\Map\BTR\Fig6_Juris.mxd BKFEngineers 04663-01 10/4/2022-EC

Source: Aerial (NAIP, 2018)

Table 3
JURISDICTIONAL FEATURES

Drainage	USACE Non-wetland Acres¹	USACE Wetland Acres¹	RWQCB Non-wetland Acres¹	RWQCB Wetland Acres¹	CDFW Acres¹
Hicks Canyon Wash	1.04	0.10	1.19	0.10	6.65
TOTAL	1.04	0.10	1.19	0.10	6.65

¹ Acreage is rounded to the nearest hundredths.

3.3.1.1 Hicks Canyon Wash

Hicks Canyon Wash is an intermittent drainage that originates at the Lomas de Santiago foothills. Hicks Canyon wash flows southwesterly into Peters Canyon wash located 1.45 miles downstream, which is a tributary to the San Diego Creek 4.5 miles downstream. San Diego Creek empties into Upper Newport Bay and ultimately drains into the Pacific Ocean, approximately 12 miles southwest of the study area.

Hicks Canyon Wash is comprised of two conveyances consisting of an existing subsurface 120-inch diameter cast-in-place concrete pipe (CIPCP) to the north and a parallel earthen-sloped channel to the south. The 120-inch pipe begins at an inlet approximately 725 feet east of Portola Parkway. It continues to the west along the wash, where it joins with the Orange County Public Works' (OCPW) Hicks Canyon Channel (Facility Number F27) west of the study area.

The earthen channel begins approximately 1,650 feet east of Yale Avenue and travels to the west, where it joins OCPW's Hick's Canyon Channel. In the study area, the wash is an earthen trapezoidal channel with five storm drains and their inlets. The channel bottom varies from approximately three feet to eight feet wide, with a depth of approximately eight feet, and is mainly unvegetated with small pockets of riparian vegetation. The channel banks vary in steepness and are mainly dominated by ornamental trees (including stands of eucalyptus and Peruvian pepper trees). Mapped soils within the portion of Hicks Canyon Wash in the study area include Mocho sandy loam and San Emigdio fine sandy loam. Neither one of these soils are on the NRCS's Hydric Soils List for Orange County (2021).

Based on the delineation, the portion of Hicks Canyon Wash within the study area was determined to support 1.14 acres/5,158 LF of USACE waters of the U.S., including 1.04 acres of non-wetland waters and 0.10 acre of wetland waters; a total of 1.29 acres/6,236 LF of Regional Water Quality Control Board (RWQCB) waters of the state, including 1.19 acres of non-wetland waters and 0.10 acre of wetland waters; and 6.65 acres of CDFW jurisdictional streambed and habitat.

3.4 PLANTS

HELIX identified a total of 40 plant species during surveys to date, of which four (10 percent) are non-native species (Appendix A).

3.5 ANIMALS

A total of 18 bird species were identified on the study area during biological surveys, along with one mammal (Appendix B).

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 Orange 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 CRPR of 1, 2, or 3 or federally and state listed endangered and threatened species. Species with CRPR of 4 may be considered rare if a population is locally uncommon, at the periphery of the species' range, sustained heavy losses, shows unusual morphology, or occurs on unusual substrates (CNPS 2021).

A total of 21 rare plant species were recorded within the El Toro and Tustin quadrangles database search conducted on CNDDDB (CDFW 2021) and CNPS (CNPS 2021). These species are included in Appendix E, *Rare Plant Species Potential to Occur*. Of the 21 rare plant species recorded within the vicinity of the study area, 19 species were considered to have no potential to occur, based on geographic range, elevation range, and/or lack of suitable habitat. Two species, southern tarplant (*Centromadia parryi* ssp. *australis*), a CRPR 1B.1 species, and mud nama (*Nama stenocarpa*), a CRPR 2B.2 species, were considered to have the potential to occur on the project site based on the presence of potentially suitable habitat within the study area.

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.

A total of 36 sensitive animal species were recorded within the El Toro and Tustin database search conducted on CNDDDB (CDFW 2021). These species and an evaluation of their potential to occur in the study area are included in Appendix F, *Sensitive Animal Species Potential to Occur*. Of the 36 sensitive animal species recorded within the vicinity of the study area, 31 species were considered to have no potential to occur on the study area due to a lack of suitable habitat.

One species, the southern California legless lizard (*Anniella stebbinsi*), was determined to not be expected on the project site based on the presence of low-quality habitat and/or lack of recent observations within the immediate vicinity of the project area. The southern California legless lizard is an SSC.

Two species were determined to have a low potential to occur based on the presence of low-quality habitat, foraging opportunities, and/or lack of recent observations within the immediate vicinity of the project area. These species include coastal whiptail (*Aspidoscelis tigris stejnegeri*) and white-tailed kite (*Elanus leucurus*). The coastal whiptail lizard is an SCC and white-tailed kite is a state fully protected species (SFP).

One species, yellow warbler (*Setophaga petechia*), an SSC species, is presumed present based on the incidental sighting of the species during the focused BUOW survey on May 18, 2021.

One species, BUOW, was presumed absent from the study area, based on a protocol survey conducted by HELIX biologist Matt Dimson, as described in Section 2.3.3.2 above.

3.6.3 Sensitive Vegetation Communities/Habitats

Sensitive vegetation communities/habitats are considered either rare within the region or sensitive by CDFW (CDFW 2018). 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. The CDFW considers sensitive communities as those with a rank between S1 and S3.

The study area supports one sensitive plant community. Southern willow scrub is considered a sensitive habitat pursuant to CDFW. Approximately 0.05 acre of southern willow scrub was mapped on the study area.

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 comprises a portion of Hicks Canyon Wash. Hicks Canyon Wash is a stream that flows through both urban and open space areas within Orange County; it connects Limestone Canyon Regional Park to the San Diego Creek. Within the study area, eucalyptus trees, Peruvian pepper trees, cottonwood trees, and willow trees provide cover and foraging opportunities for resident wildlife as well as wildlife moving through the area.

Wildlife movement within this portion of Hicks Canyon Wash is likely limited to species that are adapted to human disturbance (e.g., raccoon [*Procyon lotor*], skunk [*Mephitis* sp.], cottontail rabbits [*Sylvilagus* spp.], and coyote [*Canis latrans*]), since the majority of Hicks Canyon Wash is adjacent to urban and developed areas, including surface streets such as Portola Parkway, Yale Avenue, and Culver Drive. Bird species may fly over surrounding development to nest and/or forage within the study area. However, movement of larger animals (e.g., mountain lion [*Puma concolor*]) through the study area is not expected since the study area is surrounded by heavy development within a high-traffic area. Larger open spaces dominated by native vegetation are located approximately two miles east of Hicks Canyon Wash, including Loma Ridge, Limestone Canyon Regional Park, and Santiago Canyon. These areas do not directly connect to the study area due to existing agriculture and residential development. Since the study area does not connect to two or more large habitat areas, the study area is not considered a regional wildlife corridor.

Additionally, the study area is not within any wildlife corridors or linkages identified by the South Coast Missing Linkages Project (South Coast Wildlands 2008). The nearest wildlife movement corridor to the study area identified by the South Coast Missing Linkages Project is the Santa Ana-Palomar Connection, located approximately 40 miles southeast of the study area. The study area is not within any area identified by the NCCP/HCP as a wildlife corridor, habitat linkage, or “special linkages” (County 1996).

The study area is not expected to facilitate regional wildlife movement since: (1) the surrounding areas are heavily urbanized; (2) Hicks Canyon Wash is located in a highly urbanized area between residential

development; and (3) the portion of Hicks Canyon Wash within the study area has not been identified as a regional wildlife corridor or habitat linkage by South Coast Wildlands or the NCCP/HCP (Figure 7, *NCCP/HCP Context*).

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 Federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), CWA, California Endangered Species Act (CESA), and CFG Code.

4.1 FEDERAL REGULATIONS

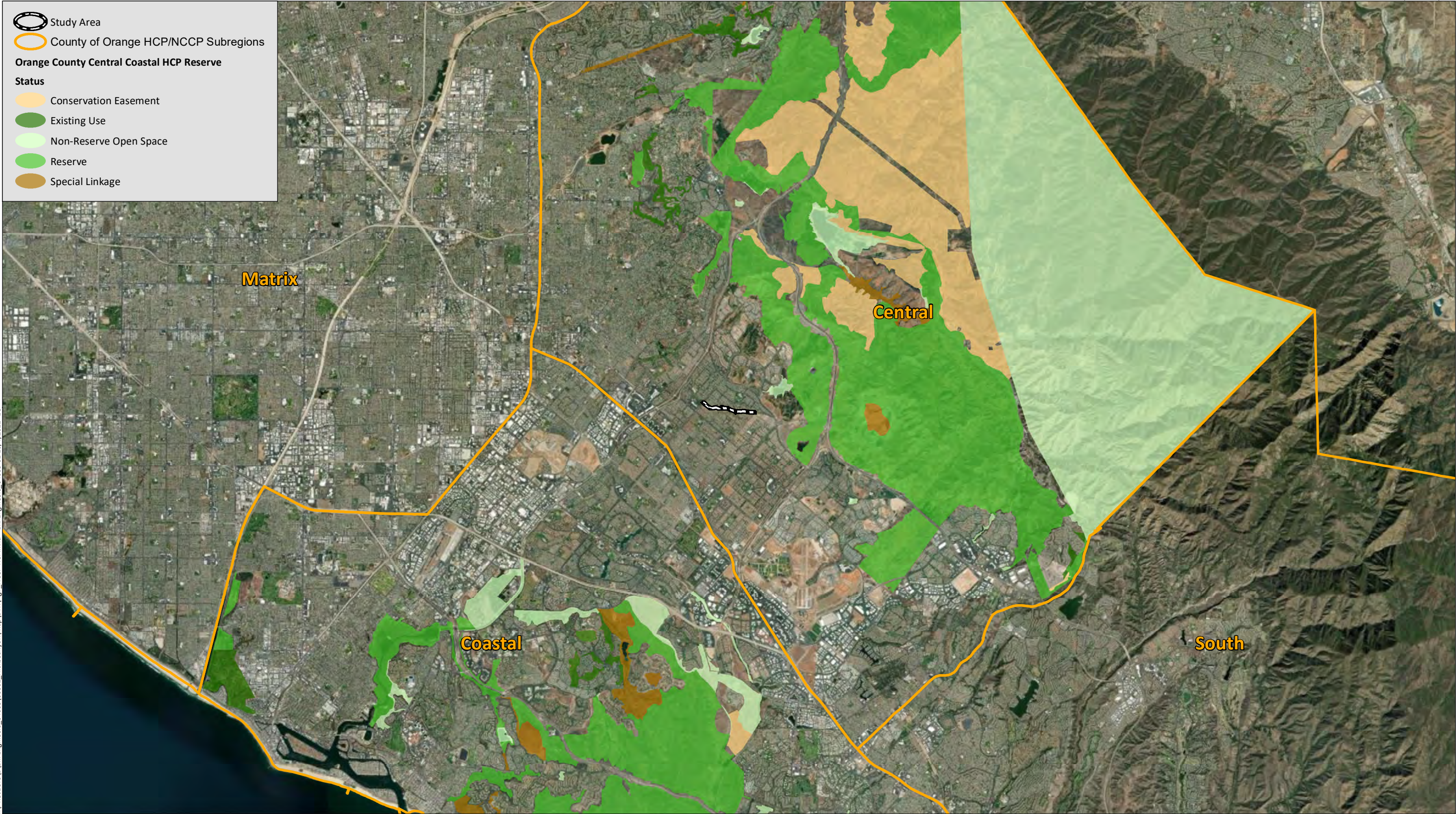
4.1.1 Federal Endangered Species Act

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 ESA 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 the 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.

4.1.2 Federal Clean Water Act

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 the disturbance of active bird nests during the nesting season, which is generally defined as February 15 to August 31 for songbirds. In addition, the USFWS commonly places restrictions on the disturbances allowed near active raptor nests during the nesting season, which is generally defined as 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 is coastal California gnatcatcher (*Polioptila californica californica*) critical habitat, which is approximately 3.3 miles to the southeast (USFWS 2021a). No suitable habitat for coastal California gnatcatcher exists within or adjacent to the study area.

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 the listing of species and regulating potential impacts to listed species. Section 2081 of the CESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. The golden eagle (*Aquila chrysaetos*) and white-tailed kite are considered SFP species. An SFP 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 CESA 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 CESA.

4.2.3 California Fish and Game Code

4.2.3.1 Protection of Raptor Species

Raptors (birds of prey) and owls and their active nests are protected by CFG 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.

4.2.3.2 Streambed Alteration Agreement

The CFG 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 Special Area Management Plan

The USACE Special Area Management Plan (SAMP) consists of identification and characterization of aquatic resources, evaluation of alternatives for proposed impacts to aquatic resources, and identification of an aquatic reserve program (USACE 2009). The SAMP is a watershed-specific permitting procedure, allowing the USACE to analyze potential impacts to waters of the United States at the watershed scale in order to identify priority areas for preservation, identify potential restoration areas, and determine the least environmentally damaging locations for proposed projects. The study area is located with the area covered by the SAMP.

4.3.2 City of Irvine Tree Removal Ordinance

Section 5-7-410 of the City's Urban Forestry Ordinance (Title 5, Planning, Division 7, Sustainability in Landscaping, Chapter 4, Urban Forestry, of the City's Municipal Code), requires a permit to remove any significant tree on public or private land. A significant tree is defined as all trees located within public or private landscapes and all trees in a eucalyptus windbreak or any tree included in a remnant of a eucalyptus windbreak (City 2016).

To obtain a tree removal permit, an application must be submitted to the City Community Development/Public Works Department. The application package must include the application form, a copy of the site plan showing the locations of the trees to be removed, a brief written narrative, a vicinity map showing access to the trees, and tree removal plans.

4.3.3 Orange County Central and Coastal Subregion NCCP/HCP

The study area is located within the Orange County Central and Coastal Subarea NCCP/HCP, which is a multi-jurisdictional conservation plan that includes portions of southern Orange County and multiple cities within the County. Rather than addressing sensitive species on an individual basis, the NCCP/HCP focuses on the conservation of California sagebrush (CSS) and adjacent habitats. Using a habitat-based conservation approach allows regional protection of CSS, CSS-associated species, and other covered habitats, as well as establishes a mechanism to fund and implement a reserve system. The NCCP/HCP habitat reserve system protects over 37,000 acres of habitat, including CSS, chaparral, grasslands, riparian, oak woodlands, cliff and rock, forest, and other habitats.

The NCCP/HCP allows Participating Entities to issue take permits for listed species so that individual applicants do not need to obtain their own permits from USFWS and/or CDFW. The Incidental Take Permit for the NCCP/HCP covers impacts to three target species that are the focus of the NCCP/HCP, including coastal California gnatcatcher, coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), and orange-throated whiptail (*Aspidoscelis hyperythra beldingi*). In addition to Target Species, the NCCP/HCP provides the conservation, protection, and management of 36 Identified Species and their habitats.

Although many of these species are not currently listed as endangered, threatened, or candidate species, the Incidental Take Permit would authorize impacts to these species if they are listed by the state in the future. Of the 36 Identified Species, 10 species are conditionally covered species, which require specific conditions to be met for the species to be considered covered under the NCCP/HCP.

The NCCP/HCP allows Participating Entities to pay a fee for incidental take of species covered under plans. The study area falls within the NCCP/HCP subregion, with the City of Irvine as a Participating Entity of the NCCP/HCP. Therefore, project activities are covered under the plan. The project would need to ensure activities are not in conflict with the conservation plan.

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 usually takes a longer time to become apparent.

The significance of impacts to biological resources present or those with the 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 region but declining elsewhere) could sustain some impact with a less than significant effect.

5.1 SENSITIVE SPECIES

5.1.1 Rare Plant Species

No Impacts

A total of 21 rare plant species were recorded within the El Toro and Tustin quadrangles; 19 were considered to not have a potential to occur based on geographic range, elevation range, and/or lack of suitable habitat (see Appendix E). The remaining two species, southern tarplant and mud nama, were presumed absent based on the focused rare plant survey conducted in August 2021. No permanent impacts or temporary disturbances are proposed to the two species; therefore, no mitigation is required.

5.1.2 Sensitive Animal Species

Less than Significant Impacts with Mitigation Incorporated

Of the 36 animal species recorded within the El Toro and Tustin quadrangles, 31 species do not have a potential to occur on the study area due to lack of suitable habitat for these species (see Appendix F). Therefore, no impacts to these sensitive animal species are anticipated by the project.

Of the remaining five species, two species have a low potential to occur, one is not expected to be found on the site, one is presumed present, and one species is presumed absent. These species are discussed in further detail below.

5.1.2.1 Low Potential Species

Two species were determined to have a low potential to occur on the study area based on the presence of low-quality habitat, limited acreage of habitat, and/or lack of recent observations within the immediate vicinity of the study area. These species include white-tailed kite (WTKI) and coastal whiptail.

WTKI is a fully protected species in California. The study area supports low-quality and limited suitable habitat, including one small 0.03-acre cottonwood stand and one small 0.05-acre area of southern willow scrub (total of 0.08 acre in total). The habitat does not support the structural diversity preferred by this species for nesting (dense oak, willow, or other tree stands). Moreover, suitable nesting habitat for WTKI is present in the nearby open space, upstream of Hicks Canyon Wash (CDFW 2005). Since suitable nesting habitat is adjacent to the study area, construction will occur outside of the nesting season (February 15 through August 31) to the greatest extent feasible to avoid potential indirect impacts to this species. If construction must occur within the nesting season, additional avoidance and minimization measures would be required as outlined in mitigation measure BIO-1.

Coastal whiptail is an SSC and is designated as a Covered Species under the NCCP/HCP. Permanent impacts are proposed to low-quality suitable habitat, including cottonwood stand and southern willow scrub (0.08 acre in total), for coastal whiptails. The City, as a participating entity of the NCCP/HCP, is provided take authorization of the species. Therefore, no additional mitigation is required for potential impacts to coastal whiptail.

5.1.2.2 Not Expected Species

Southern California legless is an SSC. The study area supports low-quality suitable habitat within the cottonwood stand and sandy wash. However, the species prefers loose soils with plant cover, and the majority of the study area is disturbed and lacks vegetation cover. The nearest observation of this species was recorded in CNDDDB in the 1970s, approximately 5.5 miles to the east of the study area; therefore, the species is not expected to occur on the project site, and no mitigation measures are required.

5.1.2.3 Presumed Present Species

Yellow warbler is an SSC. The species was observed during a field survey on May 18, 2021, foraging within the eucalyptus trees on site. Since the species is present within the project site, construction will occur outside of the nesting season (February 15 through August 31) to the greatest extent feasible to avoid potential indirect impacts to this species. If construction must occur within the nesting season,

additional avoidance and minimization measures would be required as outlined in mitigation measure BIO-1. With the implementation of BIO-1, potential impacts to the species will be avoided.

5.1.2.4 Presumed Absent Species

Focused surveys for BUOW (SSC) were conducted in 2021. Survey results were negative, and this species is presumed absent from the study area. Therefore, no direct or indirect impacts are anticipated to BUOW.

Since the study area supports suitable habitat, a take avoidance survey is required prior to ground disturbance in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012). An avoidance and minimization measure is included as BIO-2 in Section 6.0 below, which requires a take avoidance survey and avoidance of active nests and/or relocation of BUOW (if BUOW are observed).

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 study area supports native vegetation totaling 0.08 acre, including southern willow scrub (0.05 acre) and cottonwood stand (0.03 acre). The remainder of the study area comprises parks and ornamental plantings (5.97 acres), disturbed (7.27 acres), and urban (0.18 acre).

The project would result in a total of 4.56 acres of permanent impacts and 0.17 acre of temporary impacts (Figures 8a-d, *Impacts to Vegetation and Land Use*; Table 4, *Impacts to Vegetation and Land Uses*). Permanent impacts are proposed to southern willow scrub (0.05 acre), parks and ornamental planting (2.03 acre), disturbed (2.47 acres), and urban (0.01 acre). Permanent impacts are required for proper function and channel stability, which includes extending the existing storm drains, as well as re-contouring the channel and slopes, in order to prevent further erosion of the channel, stabilize the channel banks, and protect adjacent residential properties along the southern edge of the channel. Temporary disturbance to parks and ornamental plants (0.12 acre) and disturbed (0.05 acre) are also required to allow construction access to the work area and stage equipment.

Southern willow scrub is considered a sensitive community pursuant to CDFW, this habitat is presumed to be regulated as CDFW jurisdiction. Therefore, the project will provide mitigation for permanent impacts to 0.05 acre of southern willow scrub through compensatory mitigation for impacts to CDFW jurisdiction as outlined in BIO-3 included in Section 6.0 below. Temporary disturbance areas will be returned to pre-project conditions.

Table 4
IMPACTS TO VEGETATION AND LAND USES

Vegetation Community	Existing (acres)	Temporary Disturbance (acres)	Permanent Impact (acres)
Cottonwood Stand	0.03	0.00	0.00
Southern Willow Scrub	0.05	0.00	0.05
Parks and Ornamental Plantings	5.97	0.12	2.03
Disturbed	7.27	0.05	2.47
Urban	0.18	0.00	0.01
TOTAL	13.5	0.17	4.56

5.2.2 California Department of Fish and Wildlife Riparian Habitat and Streambed

Less than Significant with Mitigation Incorporated

The project would result in permanent impacts to approximately 3.84 acres of CDFW waters of the state and associated riparian vegetation, which excludes 0.19 acre of grouted riprap, within Hicks Canyon Wash (Figures 9a-d, Impacts to Jurisdictional Features; Table 5, Impacts to CDFW Jurisdiction). Permanent impacts to CDFW non-wetland waters of the state are required for proper function and channel stability, which includes extending the existing storm drains as well re-contouring the channel and slopes, in order to prevent further erosion of the channel, stabilize the channel banks, and protect adjacent residential properties along the southern edge of the channel. Temporary disturbance is also proposed to 0.17 acre of CDFW non-wetland waters of the state. The temporary disturbance is necessary to allow construction access to the work area and stage equipment. During construction, a qualified biologist will assist the contractor in determining the least damaging access route and staging areas to avoid injury to native species (measure BIO-3).

Impacts to CDFW jurisdiction, including southern willow scrub, require the issuance of a Section 1602 Stream Alteration Agreement from the CDFW, as described in measure BIO-3 included in Section 6.0 below. Compensatory streambed mitigation for permanent impacts to CDFW jurisdiction will be required as part of subsequent Section 1602 permitting requirements. Temporary disturbance areas will be returned to pre-project conditions.

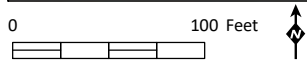
Table 5
IMPACTS TO CDFW JURISDICTION

Drainage	Existing Acres¹	Grouted riprap Acres	Temporary Disturbance Acres	Permanent Impacts Acres
Hicks Canyon Wash	6.65	0.19	0.17	3.84

¹ Acreage is rounded to the nearest hundredths.

5.3 U.S. ARMY CORPS OF ENGINEERS JURISDICTION

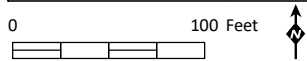
The project would result in permanent impacts to approximately 0.86 acre of USACE waters of the U.S., which excludes 0.03 acre of grouted riprap, within Hicks Canyon Wash (Figures 9a-d; Table 6, *Impacts to USACE Jurisdiction*). Permanent impacts to USACE non-wetland waters of the U.S. are required to



Source: Aerial (NAIP, 2018)



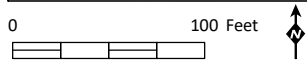
I:\PROJECTS\BKFEngineers_04663\00002_HickCanyon\Map\BTR\Fig8_VegImpacts.mxd BKFEngineers_04663-01_9/29/2022-EC



Source: Aerial (NAIP, 2018)



I:\PROJECTS\BKF\Engineers_04663\00002_HickCanyon\Map\BTR\Fig8_VegImpacts.mxd BKFEngineers_04663-01/9/29/2022-EC

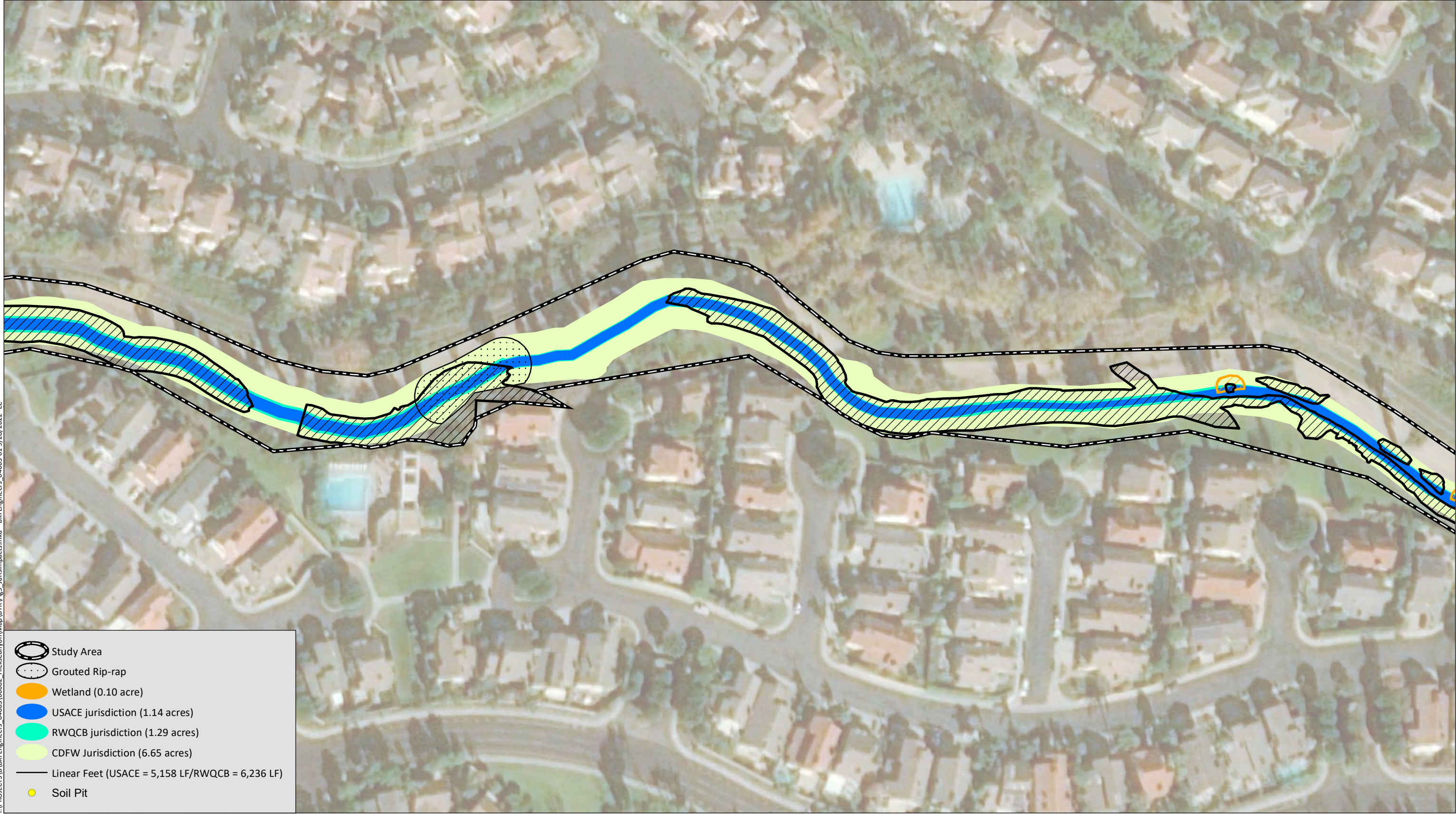


Source: Aerial (NAIP, 2018)



Source: Aerial (NAIP, 2018)





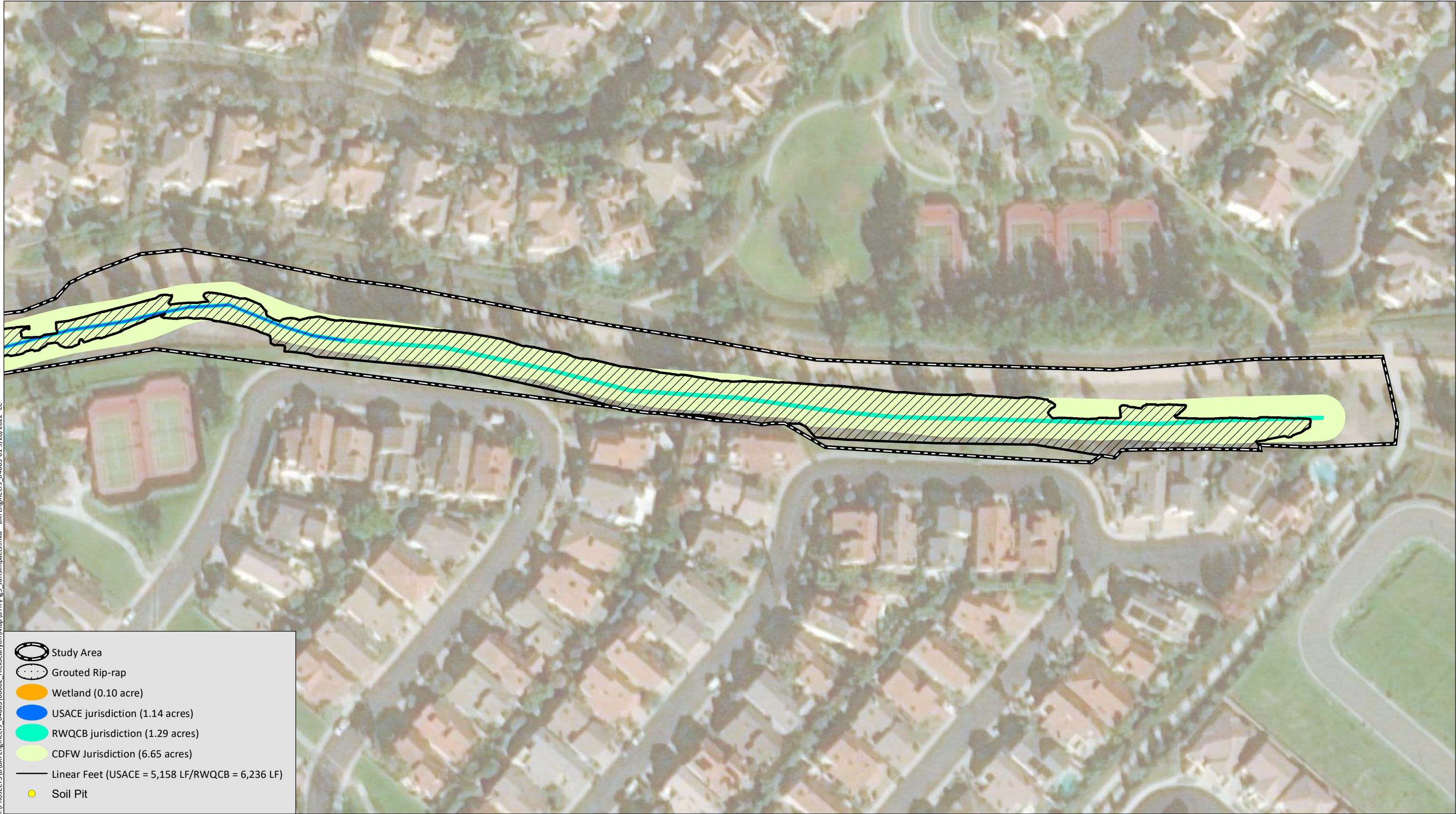
I:\PROJECTS\BKF\Engineers_04663\00002 - HickCanyon\Map\BTR\Fig9_JurisImpacts.mxd BKFEngineers_04663-01_9/28/2022-EC



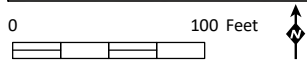
Source: Aerial (NAIP, 2018)



Source: Aerial (NAIP, 2018)



I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BTR\Fig9_JurisImpacts.mxd BKFEngineers_04663-01_9/28/2022-EC



Source: Aerial (NAIP, 2018)

regrade the channel slopes in compliance with the 100-year flow management practices, in order to prevent further erosion of the channel, stabilize the channel banks, and protect adjacent residential properties along the southern edge of the channel. The project would also extend the five existing storm drains to connect to the existing 120-inch diameter pipe, thereby allowing the existing 120-inch diameter pipe to convey additional flows. The project will not result in any temporary disturbance to USACE waters of the U.S.

Impacts to USACE jurisdiction would require a Section 404 Letter of Permission (LOP) from USACE as described in measure BIO-3 included in Section 6.0 below. The project will mitigate for permanent impacts to waters of the U.S. Compensatory streambed mitigation for permanent impacts to USACE jurisdiction will be required as part of subsequent Section 404 permitting requirements.

Table 6
IMPACTS TO USACE JURISDICTION

Drainage	Existing Acres ¹	Grouted Riprap Acres	Temporary Disturbance Acres	Permanent Impacts Acres
Hicks Canyon Wash	1.14	0.03	0.00	0.86

¹ Acreage is rounded to the nearest hundredths.

5.4 REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Hicks Canyon Wash is considered a jurisdictional streambed pursuant to Section 401 of the CWA as regulated by RWQCB. The project would result in permanent impacts to 0.95 acre of waters of the state, which excludes 0.03 acre of grouted riprap. Permanent impacts to 0.95 acre of waters of the state include 0.85-acre of non-wetland waters and 0.10 acre of wetland waters (Figures 9a-d; Table 7, *Impacts to RWQCB Jurisdiction*). Permanent impacts to RWQCB waters of the state are required to regrade the channel slopes in compliance with the 100-year flow management practices, in order to prevent further erosion of the channel, stabilize the channel banks, and protect adjacent residential properties along the southern edge of the channel. The project would also extend the five existing storm drains to connect to the existing 120-inch diameter pipe, thereby allowing the existing 120-inch diameter pipe to convey additional flows. The project will not result in any temporary disturbance to the RWQCB waters of the state.

Impacts to RWQCB jurisdiction would require a Section 401 Water Quality Certification from RWQCB as described in measure BIO-3 included in Section 6.0 below. The project will mitigate for permanent impacts to waters of the U.S. Compensatory streambed mitigation for permanent impacts to RWQCB jurisdiction will be required as part of subsequent Section 401 permitting requirements.

Table 7
IMPACTS TO RWQCB JURISDICTION

Drainage	Existing Acres ¹	Grouted Riprap Acres	Temporary Disturbance Acres	Permanent Impacts Acres (non-wetland)	Permanent Impacts Acres (wetland)
Hicks Canyon Wash	1.29	0.03	0.00	0.85	0.10

¹ Acreage is rounded to the nearest hundredths.

5.5 WILDLIFE MOVEMENT AND MIGRATORY SPECIES

5.5.1 Wildlife Movement

Less than Significant

The study area is not part of a regional corridor and does not serve as a nursery site. The study area is not identified as being part of a local or regional corridor or linkage by the South Coast Missing Linkages (South Coast Wildlands 2008) or the HCP (County 2006). The study area currently has no direct connectivity to two or more large blocks of habitat and is constrained by existing development. The study area does support native upland vegetation, but has a few small patches of native riparian vegetation, which provide habitat for local wildlife movement and migratory birds passing through the study area. Some reptiles, small mammals, and occasionally larger mammals may access the study area from undeveloped land to the east (Loma Ridge, Limestone Regional Park, or Santiago Canyon). Birds may fly over existing development to access the study area for foraging and/or nesting. Therefore, the study area provides habitat for local wildlife movement, but does not serve as a regional wildlife corridor.

The study area is confined by existing development to the north, south, and west. Wildlife movement through Hicks Canyon Wash downstream of the study area is much more restricted as Hicks Canyon Wash is urbanized and discontinuous, with developed areas bisecting the channel. Although vegetation will be removed from Hicks Canyon Wash, these areas will be replanted with native riparian vegetation following construction. Although the implementation of the project may result in some temporary disturbance to local wildlife movement from construction noise, implementation of the project would have a less than significant impact to wildlife movement, and no mitigation measures would be required.

5.5.2 Migratory Species

Less than Significant Impacts with Mitigation Incorporated

The study area has the potential to support songbird and raptor nests due to the presence of shrubs, ground cover, and trees. Project activities 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. The nesting season is generally defined as February 15 through August 31 for songbirds and January 15 to August 31 for raptors. An avoidance and minimization measure is provided as BIO-1 in Section 6.0 below, which would ensure the project complies with MBTA regulations.

5.6 LOCAL POLICIES AND ORDINANCES

Less Than Significant with Mitigation Incorporated

The project is expected to remove trees that are subject to a tree removal permit. In accordance with mitigation measure BIO-4, the City will ensure consistency with the City's tree ordinance, which would reduce any direct impacts to City-protected trees to less than significant.

5.7 ADOPTED HABITAT CONSERVATION PLANS

No impacts

The study area is within the Central and Coastal Subregion of the NCCP/HCP. Implementation of the project is not in conflict with the conservation plan. In addition, the study area is not located within any reserves identified by the NCCP/HCP; therefore, the project would not conflict with the conservation goals of the plans.

6.0 AVOIDANCE/MINIMIZATION MEASURES

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

BIO-1 Nesting Birds: Construction activities (i.e., earthwork, clearing, and grubbing) shall occur outside of the general bird nesting season for migratory birds, which is February 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 and raptors (January 15 and August 31), the City shall retain a qualified biologist to perform a pre-construction survey of potential nesting habitat within the study area 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 the qualified biologist and submitted to the City.

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 or propose other recommendations in order to minimize disturbance to nesting birds.

BIO-2 Burrowing Owl. In compliance with the CDFW *Staff Report on Burrowing Owl Mitigation* (2012), a take avoidance survey shall be conducted on the study area within 14 days prior to ground disturbance to determine the presence of BUOW. If the take avoidance survey is negative and BUOW is confirmed absent, then ground-disturbing activities shall be allowed to commence, and no further mitigation would be required.

If BUOW are observed during the take avoidance survey, active burrows shall be avoided by the project in accordance with the CDFW's Staff Report (2012). The CDFW shall be immediately informed of any BUOW observations. A Burrowing Owl Protection and Relocation Plan (plan) shall be prepared by a qualified biologist, which must be sent for approval by CDFW prior to initiating ground disturbance. 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).

BIO-3

Jurisdictional Resources: Prior to impacts to jurisdictional resources, the City shall obtain regulatory permits from USACE, RWQCB, and CDFW (collectively, the “Resource Agencies”). Temporary impacts to jurisdictional resources shall be returned to pre-project contours once the project has been completed. Compensatory mitigation for permanent impacts to jurisdiction resources shall be required as part of subsequent Section 404, Section 401, and Section 1602 permitting requirements. Permanent impacts to jurisdictional resources shall be mitigated through on-site enhancement, restoration, and/or creation of jurisdictional streambed at a ratio no less than 1:1. The following minimization measures will be implemented during construction:

- Use of standard Best Management Practices (BMPs) to minimize the impacts during construction.
- Construction-related equipment will be stored in developed areas, outside of drainages.
- 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

Tree Removal Permit: Prior to impacting any trees within the project, the City will confirm compliance with the City of Irvine Tree Removal Ordinance (Section 5-7-410 of the City’s Ordinance No. 16-04).

7.0 CERTIFICATION/QUALIFICATION

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

Kristina Beck	B.S., Environmental Science, Technology, and Policy, California State University Monterey Bay, 2012
Ezekiel Cooley	B.S., Natural Resources, emphasis in Wildlife, Central Michigan University, 2004
Matthew Dimson	B.S., Environmental Science and Policy, California State University Long Beach, 2017
Linda Garcia	M.A., English, National University, San Diego, 2012 B.A., Literatures in English, University of California, San Diego, 2003
Amy Lee	B.A., Environmental Studies, University of California, Santa Barbara, 2007 B.A., History of Art and Architecture, emphasis on Environment, University of California, Santa Barbara, 2007
Beth Martinez	M.S., Environmental Studies, emphasis on Policy and Planning, California State University Fullerton, 2002 B.A., Philosophy, University of California, Irvine, 1992
Daniel Young	Graduate Certificate, GIS, San Diego Mesa College 2019 B.S., Wildlife and Fisheries Science, Pennsylvania State University, 2006

8.0 REFERENCES

- American Ornithologists' Society 2021. Check-list of North and Middle American Birds. Retrieved from: <http://checklist.aou.org/taxa/>. Baker, R.J., L.C. Bradley, R.D. Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones. 2003. Revised checklist of North American mammals north of Mexico. Occasional Papers of the Museum, Texas Tech University 223.
- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson manual: Vascular plants of California. 2nd ed. University of California Press, Berkeley.
- California Department of Fish and Wildlife (CDFW). 2021. California Natural Diversity Database and Rarefind. California Department of Fish and Wildlife: Sacramento, California. Retrieved from: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed November 22, 2021.
2018. California natural community list. The Vegetation Classification and Mapping Program. Wildlife & Habitat Data Analysis Branch. January 2018. Retrieved from: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline>. Accessed August 31, 2018.
2009. Protocols for surveying and evaluating impacts to special status native plant populations and natural communities. State of California, California Natural Resources Agency. November 24, 2009.
2005. California Habitat Relationship System, White-tailed Kite. February.
2000. Guidelines for assessing the effects of proposed projects on rare, threatened, and endangered plants and natural communities. State of California, The Resources Agency. December 9, 1983 revised May 8, 2000.
- California Native Plant Society. 2021. Inventory of rare and endangered plants of California. California Native Plant Society. Retrieved from: <http://www.rareplants.cnps.org/>. Accessed November 22, 2021.
- Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Technical report Y-87-1. Vicksburg (MS): U.S. Army Engineer Waterways Experiment Station. 100 p. with Appendices.
- Google Earth. 2021. Aerial Imagery of the Hicks Canyon Study Area, 33.724325°, -117.767652°. Aerial Imagery from November 2021. Available from: <http://www.google.com/earth/index.html>. Accessed November 18, 2021.
- Gray, J. and D. Bramlet. 1992. Habitat Classification System: Natural Resources Geographic Information System (GIS) Project. Environmental Management Agency. County of Orange, Irvine, California.
- Grumbles, B.H. and J.P. Woodley, Jr. 2007. Memorandum: Clean Water Act jurisdiction following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States. June 5. 12 p.

- Irvine, City of. (City). 2016. City of Irvine Municipal Code. July 12. Retrieved from: https://library.municode.com/ca/irvine/codes/code_of_ordinances?nodeId=IRMUCO.
- Natural Resources Conservation Service (NRCS). 2021. Web Soil Survey. United States Department of Agriculture (USDA). Retrieved from: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed November 23, 2021.
- Orange, County of. 1996. County of Orange Central & Coastal Subregion Natural Community Conservation Plan & Habitat Conservation Plan. July 17. Retrieved from: <https://cpep.uci.edu/community/pdf/nccpparts-i-ii-plan-srchbl.pdf>.
- Riley, D.T. 2005. Ordinary High Water Mark. RGL No. 05-05. 4 p.
- Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. A manual of California vegetation. 2nd Ed. Sacramento: California Native Plant Society.
- South Coast Wildlands. 2008. South Coast missing linkages: A wildland network for the South Coast ecoregion. Retrieved from: <http://www.scwildlands.org/reports/SCMLRegionalReport.pdf>. March 2008.
- State Water Resources Control Board (SWRCB). 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Adopted April 2, 2019.
- Taggart, T.W. 2016. The Center for North American Herpetology: The Academic Portal to North American Herpetology. Retrieved from: <http://www.cnah.org/>.
- U.S. Army Corps of Engineers (USACE). 2009. A Special Area Management Plan (SAMP) for the San Diego Creek Watershed Orange County, California. February 2008 (Revised December 2009).
- 2008a. Regional supplement to the Corps of Engineers wetland delineation manual: Arid west region (Version 2.0). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERCD/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- 2008b. A field guide to the identification of the ordinary high water mark (OHWM) in the Arid West region of the United States. Technical Report TR-08-12, Ed. R.W. Lichvar, S.M. McColley. Hanover, New Hampshire: Cold Regions Research and Engineering Laboratory.
2007. Questions and Answers for Rapanos and Carabell Decisions. June 5. 21 pp.
- and EPA. 2007. Jurisdictional Determination Form Instructional Guidebook. May 30. 60 pp.
- U.S. Fish and Wildlife Service (USFWS). 2021a. Critical habitat mapping. GIS files provided by USFWS. Retrieved from: <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>. Accessed November 22, 2021.
2000. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. United States Fish and Wildlife Service. January 2000.

This page intentionally left blank

Appendix A

Plant Species Observed

Family	Scientific Name	Common Name
EUDICOTS		
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry
Anacardiaceae	<i>Schinus molle</i>	Peruvian peppertree
	<i>Schinus terebinthifolius</i> *	Brazilian peppertree
Asteraceae	<i>Baccharis salicifolia</i>	mule fat
	<i>Erigeron canadensis</i>	horseweed
	<i>Oncosiphon piluliferum</i>	stinknet
	<i>Senecio vulgaris</i>	common groundsel
	<i>Taraxacum officinale</i> *	common dandelion
Brassicaceae	<i>Lepidium didymum</i>	wart cress, spine cress
Bignoniaceae	<i>Jacaranda mimosifolia</i>	jacaranda
Caprifoliaceae	<i>Lonicera ciliosa</i>	orange honeysuckle
Cupressaceae	<i>Hesperocyparis</i> sp.	cypress
Euphorbiaceae	<i>Chamaesyce albomarginata</i>	rattlesnake weed
Fabaceae	<i>Acacia</i> sp.*	acacia
	<i>Trifolium</i> sp.	clover
Lythraceae	<i>Lagerstromia indica</i>	crepe myrtle
Myrsinaceae	<i>Anagallis arvensis</i>	scarlet pimpernel
Myrtaceae	<i>Eucalyptus</i> sp.	eucalyptus
Pittosporaceae	<i>Pittosporum</i> sp.	cheesewood
Plantaginaceae	<i>Antirrhinum nuttallianum</i>	Nuttall snapdragon
Platanaceae	<i>Platanus racemosa</i>	western sycamore
Polygonaceae	<i>Polygonum</i> sp.	knotweed
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon
Salicaceae	<i>Populus</i> sp.	cottonwood
	<i>Salix gooddingii</i>	Goodding's black willow
Sapindaceae	<i>Koeleruteria bipinnata</i>	goldenrain tree
Solanaceae	<i>Nicotiana glauca</i> *	tree tobacco
Tamaricaceae	<i>Tamarix</i> sp.	tamarisk
MONOCOTS		
Agavaceae	<i>Agave</i> sp.	agave
Arecaceae	<i>Phoenix canariensis</i>	Canary Island date palm
	<i>Washingtonia robusta</i>	Mexican fan palm
Cyperaceae	<i>Cyperus involucratus</i> *	umbrella sedge
	<i>Cyperus odoratus</i>	fragrant nutsedge
Poaceae	<i>Bromus diandrus</i>	common ripgut grass
	<i>Cynodon dactylon</i>	Bermuda grass
	<i>Hordeum murinum</i>	hare barley
	<i>Pennisetum</i> sp.	fountain grass
	<i>Schismus barbatus</i>	schismus grass
Strelitziaceae	<i>Strelitzia nicolai</i>	white bird of paradise
Typhaceae	<i>Typha</i> sp.	cattail

* Non-native species

Appendix B

Animal Species Observed or Detected

Taxon		Scientific Name	Common Name
Order	Family		
VERTEBRATES			
Birds			
Anseriformes	Anatidae	<i>Anas platyrhynchos</i>	mallard
Caprimulgiformes	Trochilidae	<i>Calypte anna</i>	Anna's hummingbird
		<i>Selasphorus sasin</i>	Allen's hummingbird
Columbiformes	Columbidae	<i>Zenaida macroura</i>	mourning dove
Passeriformes	Aegithalidae	<i>Psaltiriparus minimus</i>	bushtit
	Corvidae	<i>Corvus brachyrhynchos</i>	American crow
	Fringillidae	<i>Haemorhous mexicanus</i>	house finch
	Mimidae	<i>Mimus polyglottos</i>	northern mockingbird
	Passerellidae	<i>Melospiza crissalis</i>	California towhee
		<i>Pipilo maculatus</i>	spotted towhee
	Parulidae	<i>Setophaga petechia</i> †	yellow warbler
	Turdidae	<i>Sialia mexicana</i>	western bluebird
		<i>Turdus migratorius</i>	American robin
	Tyrannidae	<i>Sayornis nigricans</i>	black phoebe
		<i>Tyrannus vociferans</i>	Cassin's kingbird
Piciformes	Picidae	<i>Dryobates nuttallii</i>	Nuttall's woodpecker
		<i>Melanerpes formicivorus</i>	acorn woodpecker
Psittaciformes	Psittacidae	<i>Amazona viridigenalis</i>	red-crowned parrot
Mammals			
Rodentia	Sciuridae	<i>Otospermophilus beecheyi</i>	California ground squirrel

† Sensitive

Appendix C

Site Photographs



Photo 1: Cottonwood stand located adjacent to the western boundary of the project site, looking northwest.



Photo 2: Southern willow scrub within the channel with disturbed habitat in the foreground, looking north.

G:\PROJECTS\BIBKE\Engineers_04663\00002_Hicks Canyon\Photos\Photo Pages



Photo 3: Wetland within the channel with grouted riprap, looking northwest.



Photo 4: Parks and ornamental planting planted with Peruvian pepper trees with bike trail, looking west.



Photo 5: Parks and ornamental planting along the channel slopes, looking east.



Photo 6: Disturbed habitat dominating the channel and slopes, looking west.

Appendix D

Burrowing Owl 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



July 27, 2021

04663.00002.001

Mr. Daniel Villines
BKF Engineers
4675 MacArthur Court, Suite 400
Newport Beach, CA 92660

Subject: 2021 Burrowing Owl (*Athene cunicularia*) Survey Report for the Hicks Canyon Wash Project

Dear Mr. Villines:

This letter report presents the results of the 2021 focused burrowing owl (*Athene cunicularia*; BUOW) survey conducted by HELIX Environmental Planning, Inc. (HELIX) for the Hicks Canyon Wash Project (project) located in the City of Irvine, Orange County, California. The survey was conducted in accordance with the California Department of Fish and Wildlife (CDFW; previously California Department of Fish and Game [CDFG]) Staff Report on Burrowing Owl Mitigation (CDFG 2012). This letter report describes the methods used to perform the survey and the survey results.

PROJECT SITE LOCATION

The project site is located within an approximately 1.6-mile reach of Hicks Canyon Wash, north of Irvine Boulevard between Culver Drive and Portola Road in the City of Irvine, Orange County, California. (Figure 1, *Regional Location*). The project site is within the Tustin, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 2, *Vicinity Map*). Specifically, the project site is located directly southeast of the intersection of Viewpark Avenue and Culver Drive (Figure 3, *Aerial Photograph*).

PROJECT SITE DESCRIPTION

The topography of the project site consists of gently graded drainage with moderately steep slopes. Elevations on the project site range from approximately 175 feet above mean sea level (amsl) on the western edge of the project to approximately 285 feet above amsl on the eastern edge. Two soil types are mapped on the project site, including Mocho sandy loam and San Emigdio fine sandy loam.

The entire project is surrounded by residential developments. (Figure 3). The project site is located approximately 1.7 miles to the west of Limestone Canyon Regional Park and 2.6 miles to the south of Peters Canyon Regional Park.

Representative photographs of the project site are shown on Attachment A, *Site Photographs*.

METHODS

The focused BUOW survey was conducted based on the CDFW BUOW survey guidelines (CDFG 2012), which includes Part I Habitat Assessment and Focused Burrow Survey and Part II Focused BUOW Surveys. The CDFW BUOW survey guidelines are described in further detail below.

Part I: Habitat Assessment and Focused Burrow Survey

Prior to conducting the habitat assessment, HELIX consulted the California Natural Diversity Database (CNDDDB) to determine the nearest BUOW occurrence(s). A habitat assessment was conducted by HELIX biologist Matthew Dimson on May 18, 2021, to determine whether the project site supports suitable BUOW habitat. A focused burrow survey was conducted concurrently with the habitat assessment. All suitable burrows (i.e., greater than 11 centimeters [cm] in height and width and greater than 150 cm in depth) and burrow surrogates were recorded using a handheld Global Positioning System (GPS) unit (Figure 4, *Suitable Burrow and Transect Locations*). The habitat assessment and focused burrow survey were conducted prior to the commencement of the BUOW focused surveys. 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 (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 (*Otospermophilus beecheyi*) burrows;
- fence posts, rocks, or other low perching locations; and
- man-made structures, such as earthen berms, debris piles, and cement culverts.

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

- pellets/casting (regurgitate fur, bones, and/or insect parts);
- whitewash (excrement); and/or
- feathers.

Part II: Locating Burrowing Owls

Since suitable habitat and burrows were observed within the survey area, focused BUOW surveys were conducted to determine whether the survey area supports BUOW. The focused surveys consisted of four breeding season surveys that were performed by HELIX biologist Matthew Dimson between May 18

and July 6, 2021. CDFW Burrowing Survey Protocol states that surveys be spaced at least three weeks apart, with at least one survey conducted between February 15 and April 15 and three surveys conducted between April 15 and July 15. Due to project timing, protocol surveys commenced in May. (Table 1, *Survey Information*).

The biologist walked transects spaced no greater than 20 meters apart (approximately 65 feet) to allow for 100 percent visual coverage of all suitable habitat within the survey area (Figure 4). The biologist walked slowly and methodically, closely checking suitable habitat within the survey area for BUOW diagnostic sign (e.g., molted feathers, pellets/castings, or whitewash at or near a burrow entrance) and individual BUOW. If observed, BUOW sign and BUOW observations were recorded with a GPS unit. Inaccessible areas of the survey area were visually assessed using binoculars.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist	Start/Stop Time	Start/Stop Weather Conditions	Survey Results
1 ¹	05/18/21	Matthew Dimson	0700 - 0900	58°F, wind 0-1 mph, 100% clouds 62°F, wind 1-2 mph, 95% clouds	Suitable habitat and burrows present.
2	06/10/21	Matthew Dimson	0705 - 0840	61°F, wind 1-2 mph, 50% clouds 65°F, wind 2-3 mph, 50% clouds	No BUOW detected.
3	06/24/21	Matthew Dimson	0645 - 0820	65°F, wind 0-1 mph, 100% clouds 73°F, wind 1-2 mph, 100% clouds	No BUOW detected.
4	07/06/21	Matthew Dimson	0635 - 0750	66°F, wind 0-1 mph, 100% clouds 67°F, wind 0-1 mph, 100% clouds	No BUOW detected.

¹ Part I Habitat Assessment and focused burrowing survey.

RESULTS

No BUOW have been previously recorded on the project site. The nearest BUOW observation record in CNDDDB was observed in 2010, approximately three miles to the southeast of the survey area (CDFW 2010).

Suitable BUOW habitat was observed within the survey area, including bare, disturbed areas within the channel (Attachment A). Several burrows that could potentially be used by BUOW were observed within the survey area and suitable foraging habitat was observed within and adjacent to the survey area. No BUOW or sign of BUOW occupation were observed within the survey area during the four focused surveys. Therefore, BUOW do not currently occupy the survey area. Observed burrow locations and transects walked are shown on Figure 4.

CONCLUSION

No BUOW were observed or detected within the survey area during the focused surveys. Burrows with potential to support BUOW were noted on the project site, but no sign of BUOW occupation was observed. A take avoidance (pre-construction) survey is required to be conducted within 14 days prior to ground disturbance in accordance with CDFW Staff Report on Burrowing Owl Mitigation (2012). If ground-disturbing activities are delayed more than 14 days after the pre-construction survey has been completed, the project site must be resurveyed.

Letter to Mr. Daniel Villines
July 27, 2021

Page 4 of 5

If you have any questions regarding the information presented in this letter report, please contact Matthew Dimson (MattD@helixepi.com) or Amy Lee (AmyL@helixepi.com) at (949) 234-8770.

Sincerely,



Matthew Dimson
Biologist

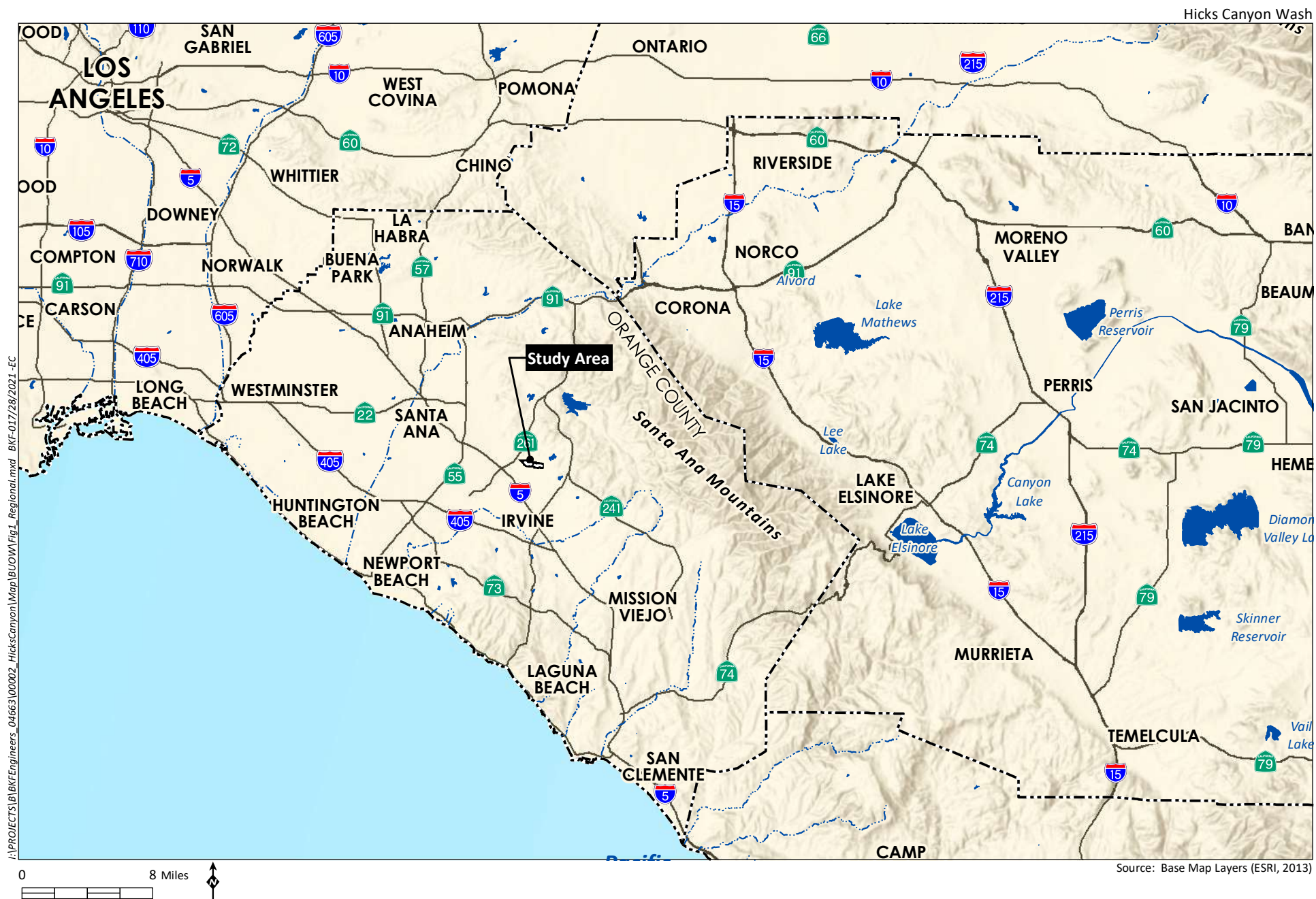
Enclosures:

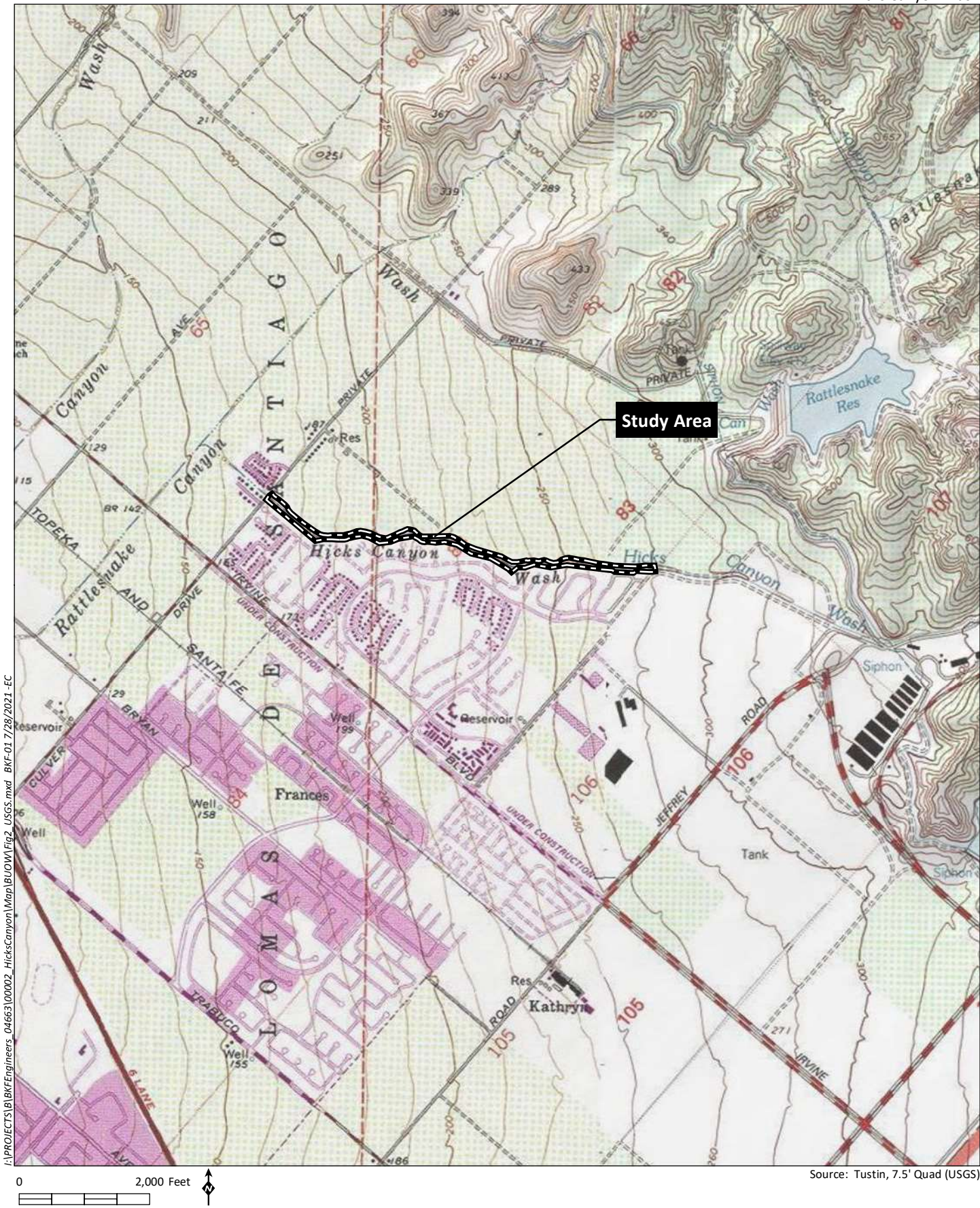
Figure 1: Regional Location
Figure 2: Vicinity Map
Figure 3: Aerial Photograph
Figure 4: Suitable Burrow and Transect Locations
Attachment A: Site Photographs

REFERENCES

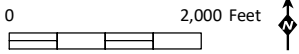
California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resource Agency. March 7.

California Department of Fish and Wildlife. 2010. California Natural Diversity Database and Rarefind. California Department of Fish and Wildlife: Sacramento, California. Retrieved from: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed July 22, 2021.

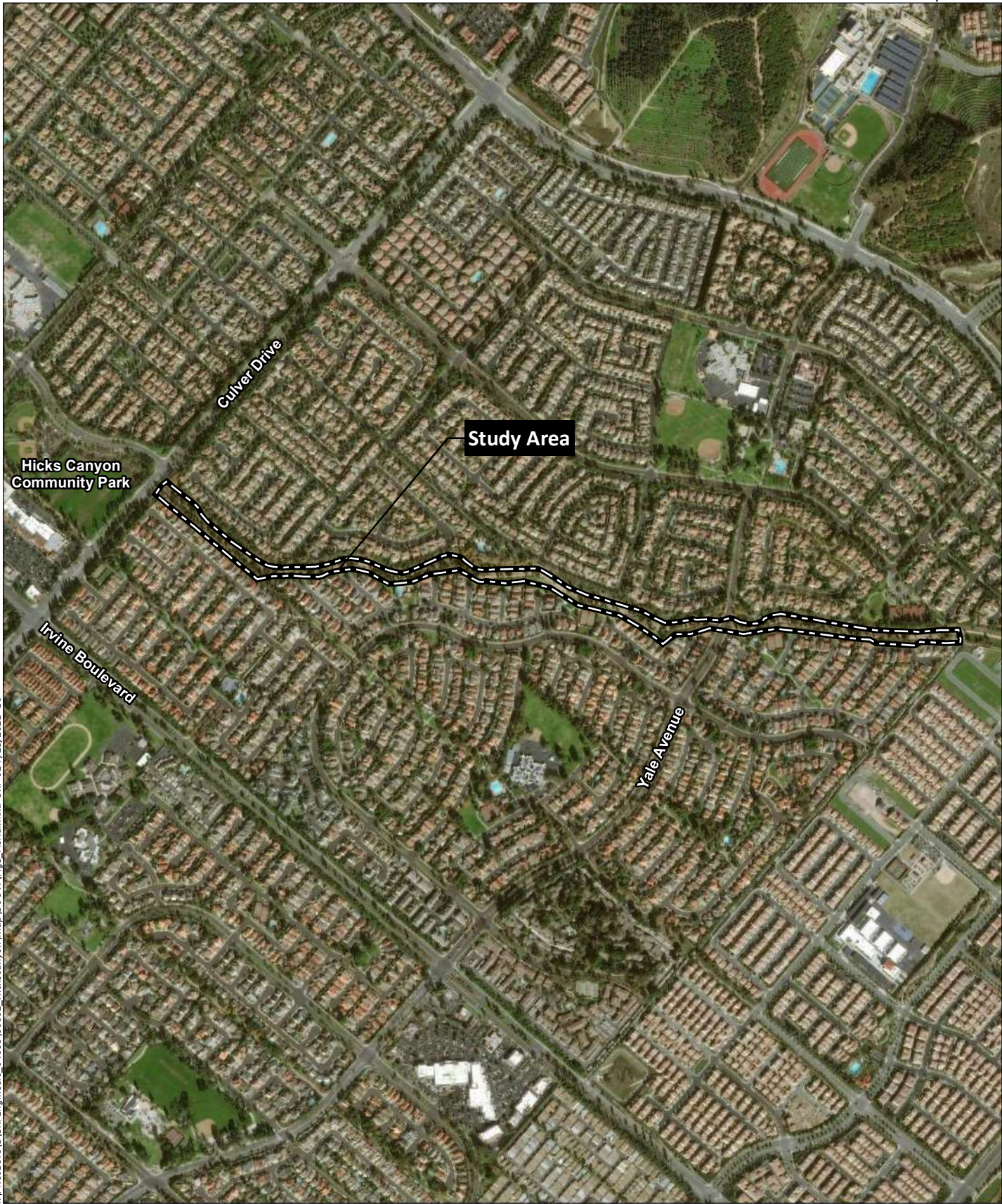




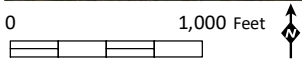
I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BUOW\Fig2_USGS.mxd BKF-01 7/28/2021 -EC



Source: Tustin, 7.5' Quad (USGS)



I:\PROJECTS\B\BKFEngineers 04663\00002 HicksCanyon\Map\BUOW\Fig3 Aerial.mxd BKF-01 7/28/2021 -EC



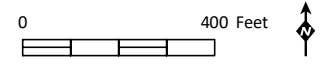
Source: Aerial (NAIP 2018)



Hicks Canyon Wash

-  Study Area
-  Transect
-  Suitable Burrow

I:\PROJECTS\BKF\Engineers_04663\00002_HicksCanyon\Map\BUOW\Fig4_Burrows.mxd 04663.00002.001 7/28/2021 -DY



Source: Aerial (Maxar, 2020).



Photograph 1. Photograph of suitable burrows in the center of the project site, looking south.



Photograph 2. Photograph of a suitable burrow surrogate (culvert) in the eastern portion of the project site, looking southwest.



Photograph 3. Photograph of a suitable burrow in the western portion of the project site, looking east.



Photograph 4. Photograph of suitable burrows in the center of the project site, looking south.

Appendix E

Rare Plant Species Potential to Occur

Species Name ¹	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	FE CRPR 1B.1	Perennial herb. Occurs in chaparral, coastal scrub, valley, and foothill grassland. Flowering period Jan-Aug.	None. The study area does not support chaparral or grasslands.
<i>Atriplex coulteri</i>	Coulter's saltbush	CRPR 1B.2	Perennial herb. Occurs in chaparral, coastal bluff scrub, valley grasslands, and coastal sage scrub. Elevation below 440 m. Flowering period Mar-Oct.	None. The study area does not support chaparral, coastal bluff scrub, valley grasslands and coastal sage scrub.
<i>Atriplex pacifica</i>	south coast saltscale	CRPR 1B.2	Perennial herb. Occurs in xeric coastal scrub on bluffs, alkaline flats, and playas. Elevation below 300 meters.	None. The study area does not support xeric coastal scrub on bluffs, alkaline flats, and playas.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	CRPR 1B.2	Annual herb. Occurs on highly alkaline lowlands with saline soil in coastal bluff scrub and coastal scrub. Elevation range 10–200 m. Flowering period Apr–Oct.	None. The study area does not support alkaline lowlands, coastal bluff scrub and coastal scrub.
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	FT/SE CRPR 1B.1	Perennial herb. Occurs in vernal 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.	None. The study area does not support vernal moist grasslands, mima mounds, or vernal pools.

Species Name ¹	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Calochortus weedii</i> var. <i>intermedius</i>	intermediate mariposa lily	CRPR 1B.2	Medium perennial herb. Occurs on dry, rocky slopes within openings in chaparral, coastal scrub, and grassland habitats. Elevation range 0-680 m. Flowering period Jun-Oct.	None. The study area does not support chaparral, coastal scrub, or grassland habitats.
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	CRPR 3.2	Annual herb. Occurs in sandy or clay soils within coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland habitats. Elevation range 0-300 m. Flowering period March- May (June).	None. The study area does not support coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, or valley and foothill grassland habitats.
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant	CRPR 1B.1	Annual herb. Occurs in seasonally moist (saline) grasslands. Mesic areas in valley and foothill grasslands, alkaline locales, and peripheral salt marsh are utilized. Elevation below 200 meters. Flowering period May – November.	Presumed Absent. The study area supports some suitable habitat, however a rare plant survey done during the blooming period and this species was not present
<i>Dudleya multicaulis</i>	many-stemmed dudleya	CRPR 1B.2	Medium perennial herb. Occurs in heavy soils (often clay) and sandstone outcrops. Often associated with dry, stony places within coastal sage scrub, valley grasslands, and coastal plains. Elevation range 0-600 m. Flowering period May-Jun.	None. The study area does not support coastal sage scrub, valley grasslands, or coastal plains habitats.

Species Name ¹	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	CRPR 1A	Perennial herb. Occurs in wetlands, freshwater and saltmarsh, coastal and wetland-riparian communities. Flowering period Aug-Oct.	None. The study area does not support wetlands, freshwater and saltmarsh, coastal and wetland-riparian communities.
<i>Hordeum intercedens</i>	vernal barley	CRPR 3.2	Small annual grass. Saline flats and depressions in grasslands or in vernal pool basins. Elevation range 5-1000 m. Flowering period Mar.-Jun.	None. The study area does not support saline flats or depressional areas within grassland habitat, or vernal pool basins.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	CRPR 1B.1	Annual herb. Occurs in alkali sinks, coastal salt marshes, freshwater wetlands, and wetland-riparian communities, specifically saltmarsh, vernal pools, and coastal habitats. Elevation below 1,000 meters. Flowering period Feb-Jun.	None. The study area does not support alkali sinks, coastal salt marshes, freshwater wetlands, and wetland-riparian communities.
<i>Monardella hypoleuca</i> ssp. <i>intermedia</i>	intermediate monardella	CRPR 1B.3	Medium perennial herb. Typically occurs within understory of chaparral and cismontane woodland habitats. Occasionally observed within in lower montane coniferous forest habitat. Elevation range 400-1250 m. Flowering period Jun-Sep.	None. The study area is too low in elevation, and it does not support chaparral, cismontane woodland, or lower montane coniferous forest habitats.
<i>Nama stenocarpa</i>	mud nama	CRPR 2B.2	Medium annual or perennial herb. Occurs in marshes and swamps and along lake margins and riverbanks. Elevation range 5-500 m. Flowering period Mar-Oct.	Presumed Absent. The study area supports some suitable habitat, however a rare plant survey done during the blooming period and this species was not present.

Species Name ¹	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Nasturtium gambelii</i>	Gambel's water cress	FE/ST CRPR 1B.1	Perennial herb. Occurs in wetlands, marshes, and swamps. Flowering period April-Oct.	None. This study area does not support wetlands, marshes, and swamps.
<i>Nolina cismontana</i>	chaparral nolina	CRPR 1B.2	Large shrub. Occurs on sandstone, shale, and gabbro substrates within chaparral and coastal scrub. Elevation range 200-1300 m. Flowering period May-Jul.	None. The study area does not support chaparral or coastal scrub habitats.
<i>Pentachaeta aurea</i> ssp. <i>allenii</i>	Allen's pentachaeta	CRPR 1B.1	Small annual herb. Occurs in openings of coastal scrub and valley and foothill grassland habitats. Elevation range 75-520 m. Flowering period Mar-May.	None. The study area does not support coastal scrub or valley and foothill grassland habitats.
<i>Senecio aphanactis</i>	chaparral ragwort	CRPR 2B.2	Small annual herb. Occurs on alkaline flats and dry, open, rocky areas within chaparral, cismontane woodland, and coastal scrub. Elevation 10-550 m. Flowering period Feb-May.	None. The study area does not support alkaline flat, chaparral woodland, or coastal scrub habitats.
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	CRPR 2B.2	Perennial herb. Occurs in alkaline springs, marshes, and playas. Elevation below 1,500 meters. Flowering period April – June.	None. The study area does not support alkaline springs, marshes, and playas.
<i>Suaeda esteroa</i>	estuary seablite	CRPR 1B.2	Perennial herb. Occurs in coastal salt marsh and wetland-riparian communities. Elevation below 5 m. Flowering period is May-Oct.	None. The study area is too high in elevation, and it does not support coastal salt marsh and wetland-riparian communities.

Species Name ¹	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	CRPR 1B.2	Perennial rhizomatous herb. Occurs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley, and foothill grassland (vernally mesic), and near ditches, streams, and springs. Elevation below 2,050 m. Flowering period Jul-Nov.	None. The study area does not support cismontane woodland, coastal scrub, coniferous forest, meadows, and swamps.

Source: HELIX (2022)

1 Sensitive species reported within the El Toro and Tustin quadrangles in California Natural Diversity Database and California Native Plant Society databases.

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; 3 – more information on distribution, endangerment, ecology, and/or taxonomic validity is needed. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

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

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
Invertebrates				
<i>Bombus crotchii</i>	Crotch bumble bee	SCE	Coastal California east to the Sierra-Cascade crest and south into Mexico, associated with grassland and scrub habitats near the coast. Species' food genera include <i>Antirrhinum</i> spp., <i>Clarkia</i> spp., <i>Dendromecon</i> spp., <i>Eriogonum</i> spp., <i>Eschscholzia</i> spp., <i>Lupinus</i> spp., <i>Medicago</i> spp., <i>Phacelia</i> spp., and <i>Salvia</i> spp. Nests are underground and commonly consist of abandoned rodent nests.	None. The study area does not contain suitable grassland and scrub habitats for this species. The study area does not support any found source genera.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE NCCP/HCP Covered Species (b)	Typically occurs in deep vernal pools and seasonal wetlands at least 30 centimeters deep.	None. The study area does not support vernal pools.
Fish				
<i>Oncorhynchus mykiss irideus</i> pop. 10	steelhead – southern California DPS	FE	Refers to populations from Santa Maria River to San Mateo Creek. Migrates from the Pacific Ocean to breed in south coast streams. Southern steelhead have a greater tolerance to warmer water and variable conditions.	None. The study area does not support suitable habitat for this species.
<i>Rhinichthys osculus</i> ssp. 3	Santa Ana speckled dace	SSC	Occurs in south coast flowing waters within Los Angeles, San Gabriel, and Santa Ana River Watersheds. Requires permanent flowing streams with temperatures ranging between 17 and 20° C range. Usually inhabits shallow cobble and gravel riffles.	None. The study area does not support suitable habitat, permanent flowing water, for this species.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
Amphibians				
<i>Anaxyrus californicus</i>	arroyo toad	FE/SSC NCCP/HCP Covered Species (b)	Found on banks with open-canopy riparian forest characterized by willows (<i>Salix</i> spp.), cottonwoods (<i>Populus</i> spp.), or western sycamores (<i>Platanus racemosa</i>); breeds in shallow, slowly moving streams with sandy soils. Requires adjacent sandy terraces for foraging and burrowing.	None. Although the study area supports a few cottonwood trees, the study area does not contain suitable adjacent sandy terraces needed for burrowing. There are no records of this species near Hicks Canyon.
<i>Spea hammondi</i>	western spadefoot	SSC NCCP/HCP Covered Species (a)	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (<i>Rana catesbiana</i>) or crayfish (<i>Procambarus</i> spp.)	None. The study area does not support pools suitable for breeding. There is no suitable upland habitat for burrowing on the study area.
Reptiles				
<i>Actinemys pallida</i>	southwestern pond turtle	SSC	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.	None. The study area does support suitable habitat within the riparian herb habitat. Water is not present in channel year-round and channel banks are steep along majority of channel. The nearest observation of this species was recorded in CNDDDB in 1993 in Peter's Canyon Wash, less than three miles to the west of the study area.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Anniella stebbinsi</i>	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 western sycamores, cottonwoods, or oaks.	Not Expected. The study area supports loose soil with cottonwoods. However, the study area lacks preferred terraces for this species to burrow due it being adjacent to urban and disturbed areas. The nearest observation of this species was recorded in CNDDDB in the 1970s, approximately 5.5 miles to the east of the study area.
<i>Arizona elegans occidentalis</i>	California glossy snake	SSC	Most common in desert habitats, but also occurs in chaparral, sagebrush, valley-foothill hardwood, pine-juniper, 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 suitable upland habitat for this species.
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	SSC NCCP/HCP Covered Species (a)	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.	Low. The study area contains low quality habitat; however, this species was not observed during initial surveys.
<i>Crotalus ruber</i>	red diamond rattlesnake	SSC NCCP/HCP Covered Species (a)	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.	None. The study area does not support suitable upland habitat for this species.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Phrynosoma blainvillii</i>	coast horned lizard	SSC	Coastal sage scrub and open areas in chaparral, oak (<i>Quercus</i> sp.) woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (<i>Pogonomyrmex</i> spp.), and are generally excluded from areas invaded by Argentine ants (<i>Linepithema humile</i>).	None. The study area does not support suitable upland habitat for this species.
<i>Salvadora hexalepis virgulata</i>	coast patch-nosed snake	SSC	Primarily found in chaparral but also inhabits coastal sage scrub and areas of grassland mixed with scrub.	None. The study area does not support suitable upland habitat for this species.
<i>Thamnophis hammondi</i>	two-striped gartersnake	SSC	Occurs along perennial and intermittent streams bordered by dense riparian vegetation. Occasionally occurs in artificially created aquatic habitats, such as manmade lakes or stock ponds.	None. The study area does not support suitable riparian habitat for this species.
Birds				
<i>Agelaius tricolor</i>	tricolored blackbird	ST/SSC	Breeds in dense stands of cattails (<i>Typha</i> sp.) or bulrushes (<i>Schoenoplectus</i> sp./ <i>Scirpus</i> sp.) located within large freshwater marshes. Forages in adjacent open habitats, such as agricultural fields, pastures, or grasslands.	None. The study area does not support suitable breeding or foraging habitat.
<i>Ammodramus savannarum</i>	grasshopper sparrow	SSC	Occurs in grasslands. Favors native grasslands with a mix of grasses and forbs and few or no shrubs.	None. The study area does not support suitable breeding or foraging habitat.
<i>Athene cunicularia</i>	burrowing owl	SSC	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 contains suitable burrows; however, protocol surveys were conducted, and this species was not observed.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	SSC NCCP/HCP Covered Species (a)	Occurs in coastal sage scrub with large cactus for nesting.	None. The study area does not support cactus patches.
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	FT/SE	Occurs along larger river systems, where it nests in riparian forest dominated by willows and cottonwoods. In California, species is most likely to be found in patches of riparian habitat greater than 200 ac in size, and they rarely use patches less than 49 ac in size.	None. The study area is approximately 13.5 acres and does not support the expansive habitat this species prefers. The nearest observation of this species was recorded in CNDDDB in 1918, approximately five miles away.
<i>Coturnicops noveboracensis</i>	yellow rail	SSC	Occur in shallow marshes with short vegetation. Often nest among sedges	None. The study area does not support marsh habitat.
<i>Elanus leucurus</i>	white-tailed kite	SFP	Nests in trees with dense canopies within open grasslands, woodlands, and marshes. Forages for small mammals within lightly grazed/ungrazed pastures and grasslands.	Low. The study area supports a few trees that could provide suitable nesting habitat for this species. However, there is no suitable foraging habitat within or directly adjacent to the study area. The nearest observation of this species was recorded in CNDDDB in 2009, approximately 5 miles to the south of the study area.
<i>Icteria virens</i>	yellow-breasted chat	SSC	Occurs in mature riparian woodland. Nests in low, dense riparian consisting of willow, blackberry, and wild grape. Forages and nests within 10 feet of the ground.	None. The study area does not support suitable dense riparian woodland habitat.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST/SFP	Occur in high coastal marshes to freshwater marshes along the lower Colorado River. Along the coast, favors marshland with unrestricted tidal influence (estuarine, intertidal, emergent, and regularly flooded). Primarily nest in pickleweed.	None. The study area does not support suitable marsh habitat for this species.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	SE	Generally found in salt marshes. Nests on the ground in natural depression or scrape, primarily in pickleweed habitat at the higher levels of the marsh, above the reach of the highest spring tides.	None. The study area does not support suitable salt marsh or nesting habitat for this species.
<i>Polioptila californica californica</i>	coastal California gnatcatcher	FT/SSC NCCP/HCP Covered Species (a)	Occurs in coastal sage scrub and very open chaparral.	None. The study area does not support suitable coastal sage scrub or chaparral habitat.
<i>Rallus obsoletus levipes</i>	light-footed Ridgway's rail	FE/SE	Occurs in coastal marshes, lagoons and maritime environments with dense vegetation and shallow waters.	None. The study area does not support suitable marsh habitat for this species.
<i>Setophaga petechia</i>	yellow warbler	SSC	Breeds in lowland and foothill riparian woodland, dominated by cottonwoods, alder (<i>Alnus</i> spp.), or willows.	Presumed Present. This species was incidentally observed during surveys on-site.
<i>Sternula antillarum browni</i>	California least tern	FE/SE	Nest in colonies on relatively open beaches kept free of vegetation by natural scouring from tidal action. Found along the Pacific Coast of California.	None. The study area is not located near the Pacific coast.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE/SE NCCP/HCP Covered Species (a)	Inhabits riparian woodland and is most frequent in areas that combine an understory of dense, young willows or mule fat (<i>Baccharis salicifolia</i>) with a canopy of tall willows.	None. The study area does not support suitable riparian habitat for this species.
Mammals				
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	SSC	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 suitable upland habitat for this species.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	SSC	Occurs in desert, montane, riparian, and pinyon-juniper habitats. Generally found roosting in desert canyons, deep caves, mines, rock crevices, or abandoned buildings. Feeds on nectar and pollen, mainly from cactus and agaves.	None. The study area does not support this species' preferred roosting habitat or open areas suitable for foraging.
<i>Eumops perotis californicus</i>	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.	None. The study area does not support this species' preferred roosting habitat or open areas suitable for foraging.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	SSC MSHCP Covered Species NCCP/HCP Covered Species (a)	Open chaparral, coastal sage scrub, pinyon-juniper, and Joshua tree habitats. This species builds large, stick nests in rock outcrops or around clumps of cactus or yucca.	None. The study area does not support any suitable upland habitat for this species.
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	SSC	Sandy valley floors within desert scrub habitat with low to moderate shrub cover and friable soils, but also found in coastal scrub and chaparral habitats.	None. The study area does not support suitable upland habitat for this species.
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE/SSC NCCP/HCP Covered Species (a)	Fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces	None. The study area does not support coastal habitat for this species.

Species Name	Common Name	Status ²	Habitat, Ecology, and Life History	Potential to Occur ³
<i>Sorex ornatus salicornicus</i>	southern California saltmarsh shrew	SSC	Occurs in tidal marshes and brackish marshes with dense, low-lying cover. Forages on small invertebrates.	None. The study area does not support suitable marsh habitat for this species.

Source: HELIX (2022)

¹ Sensitive species reported within the El Toro and Tustin quadrangles in California Natural Diversity Database.

² Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; CT = Candidate Threatened; FP = Fully Protected; SSC = State Species of Special Concern. Central and Coastal Covered Species (a) and (b): (a) fully covered and (b) conditionally covered.

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.