BIOLOGICAL TECHNICAL REPORT

for the

San Diego River Trail

Carlton Oaks Golf Course Segment Project

~~March~~ June 2017

Prepared for:

San Diego Association of Governments
401 B Street, Suite 800
San Diego, California 92101

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, California 91942

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

APPENDICES

TABLE OF CONTENTS (cont.)

TABLES

FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

This biological technical report provides a project-specific analysis of the effects on biological resources from construction of the San Diego Association of Governments' (SANDAG's) San Diego River Trail – Carlton Oaks Golf Course Segment Project (herein referred to as "proposed project"). The Biological Study Area (BSA) for the proposed project encompasses approximately 80.94 acres, while the proposed project impact footprint (the area where surface-disturbing activities would occur) covers approximately 18.59 acres, including permanent and temporary impacts. The BSA was delineated to capture areas with potential to be directly and indirectly affected by the proposed project.

The San Diego River Trail (SDRT) is a collaborative effort between SANDAG, the San Diego River Conservancy, and the cities of San Diego and Santee. The San Diego River Park Foundation also provides support for development of the trail. The San Diego River Park Master Plan, which was adopted by the City of San Diego (City) in 2013, envisions a continuous trail along the San Diego River as it passes through the City, with the trail ultimately connecting from the river's headwaters to the Pacific Ocean. SANDAG is leading the effort to complete the Carlton Oaks Golf Course segment of the SDRT, which is a component of the Regional Bike Network that stretches from the ocean east through the City of Santee.

The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and along the southern edge of the Carlton Oaks Golf Course.

The proposed project would impact sensitive vegetation communities/habitat types, as well as areas potentially under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). The USACE, RWQCB, and CDFW make the final determination of wetland and water resources within their jurisdiction. The project also has the potential to impact special status plant and animal species as recognized by the U.S. Fish and Wildlife Service (USFWS) and/or CDFW.

The following sensitive vegetation communities/habitat types would be affected by the proposed project: southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, broom baccharis-dominated sage scrub, flat-topped buckwheat scrub, and non-native grassland.

The following potential USACE, RWQCB, and/or CDFW jurisdictional habitats or features would be affected by the proposed project: southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, and non-wetland waters of the U.S./unvegetated streambed.

The project would impact the following special status plant species: two San Diego marsh-elder (*Iva hayesiana*) individuals.

The project has potential to impact the following species status animal species: least Bell's vireo (*Vireo bellii pusillus*), Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*).

Impacts to sensitive vegetation communities/habitat types and potential USACE, RWQCB, and/or CDFW jurisdictional habitats or features would be mitigated through a combination of revegetation, re-establishment, enhancement and/or preservation, and establishment, as determined through consultation with the resource agencies.

Direct effects on habitat for least Bell's vireo, yellow warbler, yellow-breasted chat, Cooper's hawk, and white-tailed kite would be mitigated through mitigation for impacts to southern riparian forest and southern willow scrub, which will be finalized during consultation with the USACE, RWQCB, CDFW, and/or USFWS. Direct effects on these species will be avoided by grubbing and clearing vegetation outside the breeding season whenever feasible, and conducting pre-construction breeding season surveys and establishing setbacks from active nests if clearing must occur during the breeding season.

Potential indirect effects resulting from noise during construction would be avoided by conducting pre-construction breeding season surveys and establishing setbacks from active nests. Potential indirect effects from invasive plant species would be avoided by ensuring that invasive species are not included in the landscape or erosion control plans and revegetating all temporary disturbance areas with native plant species or non-invasive ornamental plant species. Indirect effects from night lighting would not occur as the only lighting associated with the project would be low-voltage safety lighting that would be selectively placed, shielded, and directed away from sensitive habitats.

1.0 INTRODUCTION

This report provides a project-specific analysis of the effects on biological resources from construction of the San Diego River Trail – Carlton Oaks Golf Course Segment Project (herein referred to as "proposed project"). The Biological Study Area (BSA) for the proposed project encompasses approximately 80.94 acres, while the proposed project impact footprint (the area where surface-disturbing activities would occur) covers approximately 18.59 acres, including permanent and temporary impacts. The BSA was delineated to capture areas with potential to be directly and indirectly affected by the proposed project.

THIS PAGE INTENTIONALLY LEFT BLANK

2.0 PROPOSED PROJECT

The San Diego River Trail (SDRT) is a collaborative effort between SANDAG, the San Diego River Conservancy, and the cities of San Diego and Santee. The San Diego River Park Foundation also provides support for development of the trail. The San Diego River Park Master Plan (City of San Diego 2013), which was adopted by the City of San Diego (City) in 2013, envisions a continuous trail along the San Diego River as it passes through the City, with the trail ultimately connecting from the river's headwaters to the Pacific Ocean. SANDAG is leading the effort to complete the Carlton Oaks Golf Course segment of the SDRT, which is a component of the Regional Bike Network that stretches from the ocean east through the City of Santee. The project would contribute to the vision of the San Diego Regional Bike Plan (SANDAG 2010), which is to make riding a bicycle a useful form of transportation for everyday travel. This vision includes building a regional system of interconnected bicycle corridors, support facilities, and programs to enable residents to ride with greater safety and convenience within and between major activity centers. The Regional Bike Plan supports the implementation of San Diego Forward: The Regional Plan (SANDAG 2015a), which calls for more transportation choices and a balanced regional transportation system that supports smart growth and a more sustainable region. The bike plan provides a critical component of that balanced system, as well as the programs that are necessary to support it..

2.1 PROJECT LOCATION AND DESCRIPTION

The project site is located within the cities of San Diego and Santee in western San Diego County, California (Figure 1). The BSA is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues along the southern edge of the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park, just east of Carlton Hills Boulevard (Figure 2). The southern boundary of the BSA is bordered by State Routes 52 and 125, and by Mission Trails Regional Park to the west. The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 3). The proposed project occurs partially within the boundaries of the City of San Diego's adopted Multiple Species Conservation Program (MSCP) Subarea Plan, within portions of the Multi-Habitat Planning Area (MHPA [Figure 4]). The project also is partially within the boundaries of the City of Santee's MHPA pursuant to the City's Draft MSCP Subarea Plan, which is not approved or adopted. The project alignment is located outside the Coastal Zone (CZ).

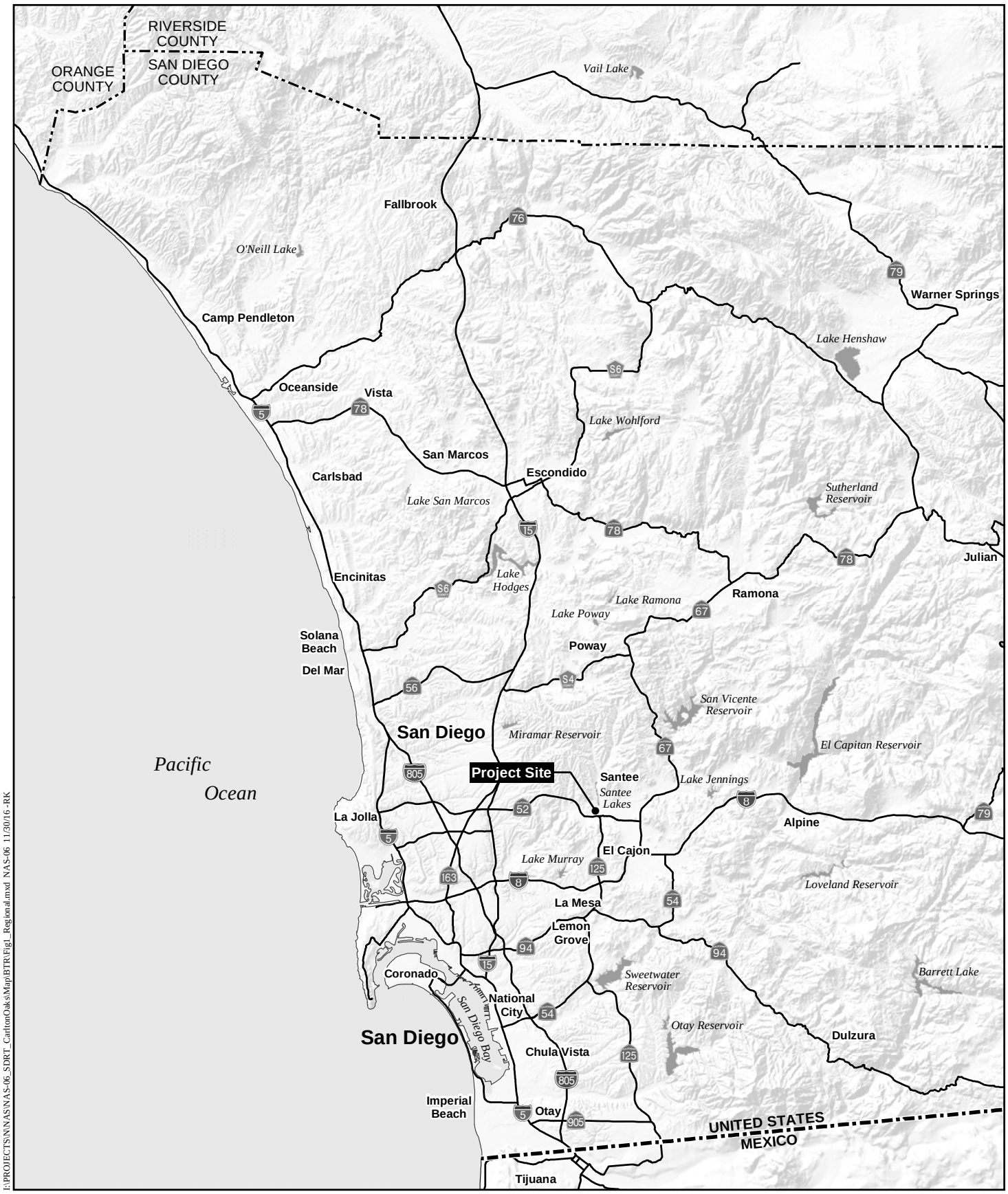
The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing decomposed granite (DG) trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing DG trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk

along West Hills Parkway. In general, the proposed project would include a 10-foot-wide all-weather paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of affected golf course play facilities (e.g., tee boxes), retaining walls, and other minor improvements.

There are three options being considered for the connection to West Hills Parkway at the western end of the bike path alignment. One option entails a switchback ramp that would ascend north and then south along the slope adjacent to the roadway, with a connection point to the sidewalk near the westbound SR-52 overcrossing structure (herein referred to as Switchback Ramp Option). Another option would include construction of a curvilinear ramp that would ascend northward along the slope and then curve west to connect perpendicularly to the sidewalk. This option (herein referred to as Curvilinear Ramp Option) could also be used for construction access. The third option consists of a linear ramp along the western edge of the golf course that would gradually ascend northward and connect to the sidewalk just south of the intersection of West Hills Parkway and Carlton Oaks Drive (herein referred to as Linear Ramp Option). Each of these options would include a staircase at the bottom of the ramp that would connect to the West Hills Parkway sidewalk on the west.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive (herein referred to as Padre Dam Easement Construction Access); and/or from the parking lot at Mast Park, which could require excavation to a depth of approximately three feet under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before they could be used for construction access.



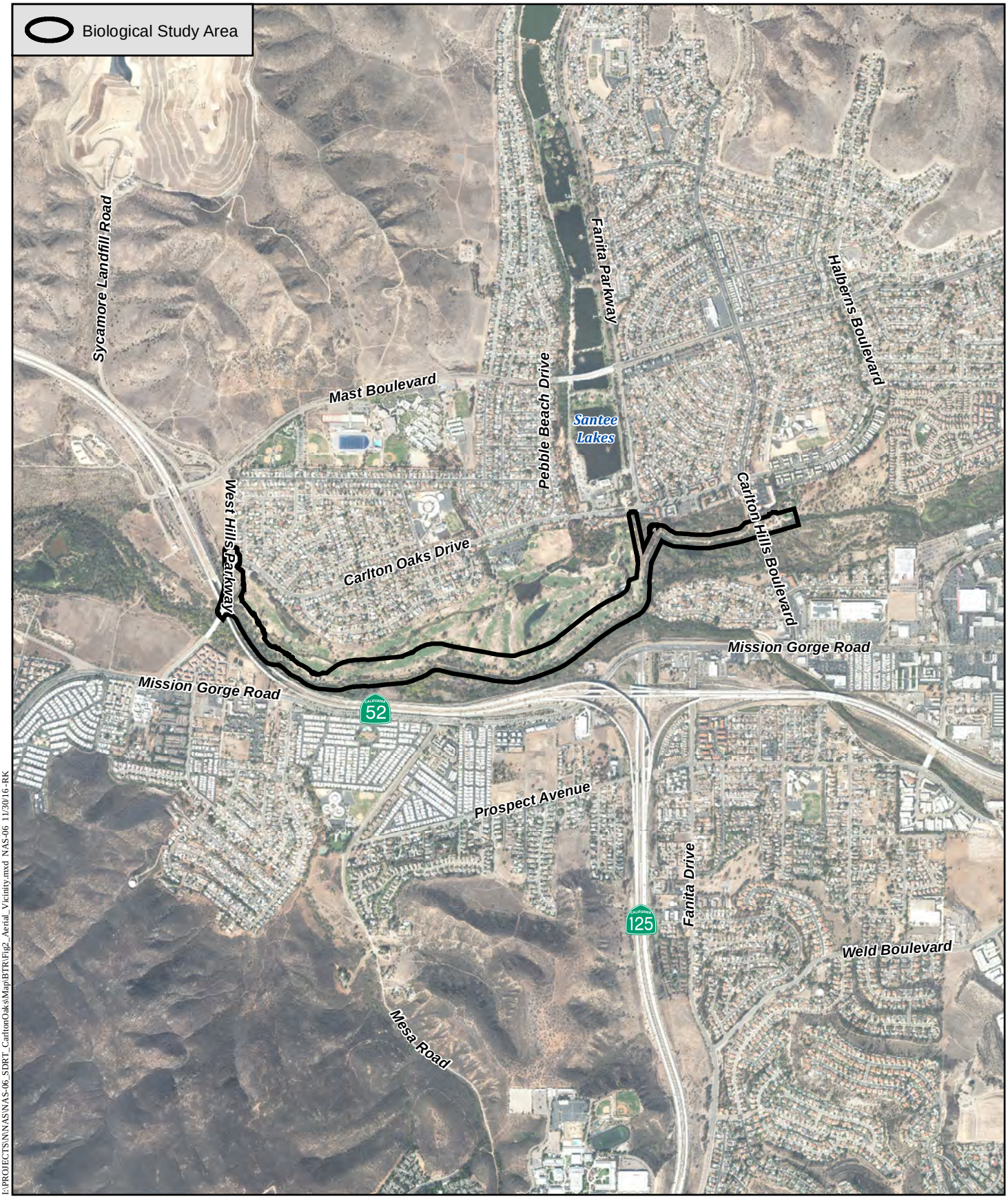
I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig1_Regional.mxd NAS-06 11/30/16 RK

Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 8 Miles

Figure 1



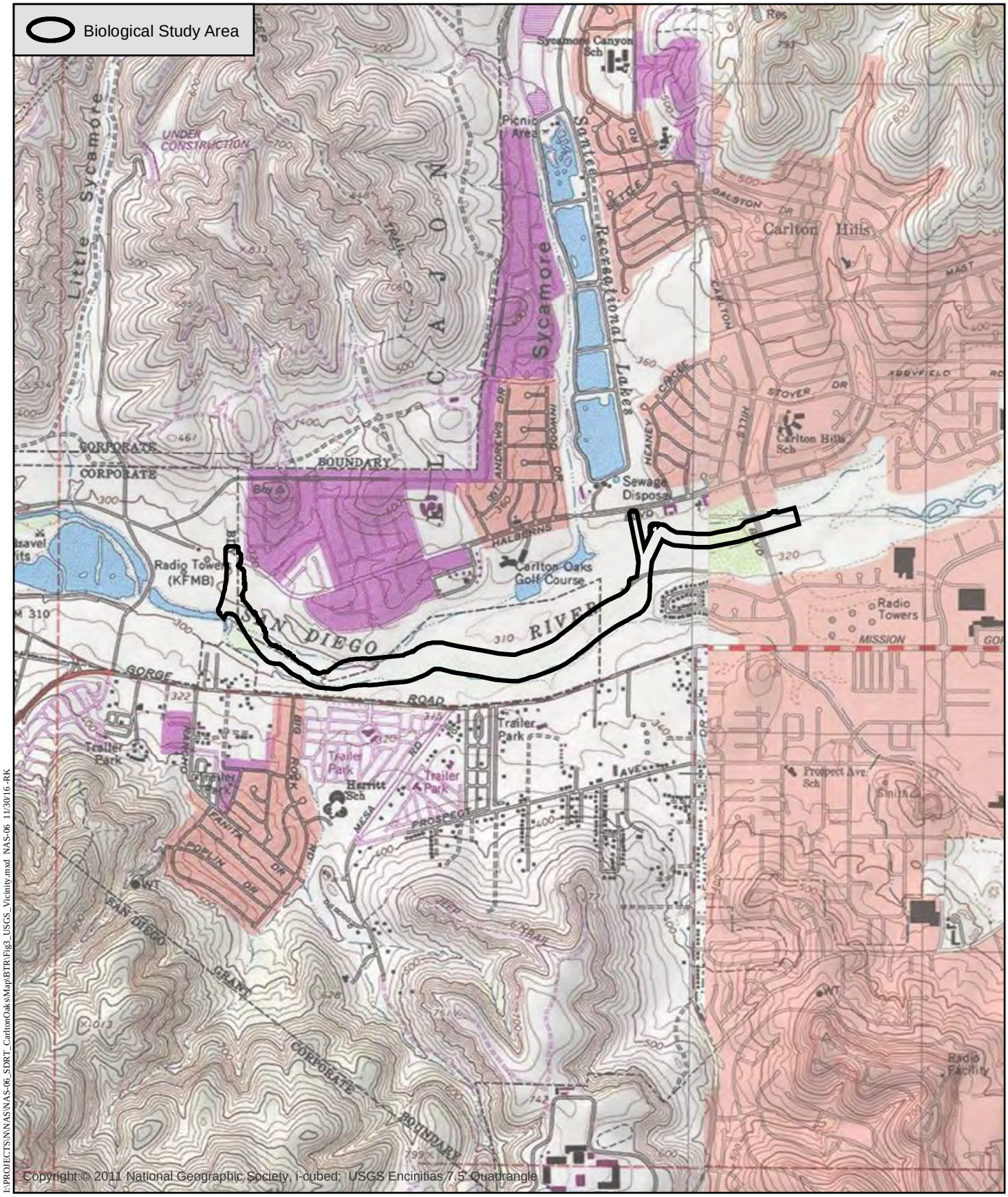
I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig2_Aerial_Vicinity.mxd NAS-06 11/30/16 -RK

Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 2



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig3_USGS_Vicinity.mxd NAS-06 11/30/16 -RK

Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 3

I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig4_RegionalConservation.mxd NAS-06 11/30/16 - RK

Regional Conservation Planning Context

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 4

3.0 STUDY METHODS

This chapter discusses the methods used to document general biological resources and special status species potentially occurring within the BSA.

3.1 LITERATURE AND BIOLOGICAL DATABASE REVIEW

Prior to conducting biological field surveys, HELIX conducted a search of sensitive species and habitats databases for information regarding sensitive species known to occur within two miles of the project site, including the U.S. Fish and Wildlife Service (USFWS) species records (USFWS 2016), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2016a), and California Native Plant Society (CNPS) Electronic Inventory (CNPS 2016). Recent aerial imagery, topographic maps, soils maps (Natural Resource Conservation Service [NRCS] 2016 and Bowman 1973), and other maps of the project site and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting. In addition, an alignment study for the project (SANDAG 2015b) was reviewed prior to conducting surveys.

Nomenclature for this report is from Holland (1986) and Oberbauer (2008) for vegetation communities; Baldwin et al. (2012) and the CNPS (2016) for plants, Collins and Taggart (2006) for reptiles and amphibians; American Ornithologists' Union (2014) for birds; and Baker et al. (2003) for mammals. Sensitive plant species status is taken from CNPS (2016). Sensitive animal species status is taken from CDFW's CNDDB (2016).

3.2 GENERAL BIOLOGICAL SURVEY AND VEGETATION MAPPING

A general biological survey of the BSA was conducted on June 22 and 23, 2016. Biological resources mapped for the 2015 alignment study were used as a baseline for the updated 2016 HELIX vegetation mapping. Vegetation was mapped on a 1"=100'-scale aerial photograph. The BSA was surveyed on foot with the aid of binoculars, and all observed or detected plant and animal species were recorded in field notes and/or on the aerial photograph. Animal identifications were made in the field by direct, visual observation, or indirectly by detection of calls, burrows, tracks, or scat. All plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs. Data from the field maps were digitized into a geographic information system (GIS) using ArcGIS 9.2. Survey personnel and dates are summarized in Table 1. Representative site photographs are presented in Appendix A.

Table 1
BIOLOGICAL SURVEYS

SURVEY TYPE	DATE	PERSONNEL[1]
Year 2016		
General biological survey, vegetation mapping, jurisdictional delineation	June 22	Stacy Nigro, Talaya Rachels
	June 23	
Coastal California gnatcatcher	May 20	Erica Harris, Summer Schlageter[2]
	May 26	Erica Harris
	June 3	Erica Harris
	June 10	Jason Kurnow
	June 17	Jason Kurnow
	June 24	Erica Harris
Least Bell's vireo	May 4	Laura Moreton
	May 16	Katie Bellon
	May 26	Laura Moreton
	June 6	Laura Moreton
	June 16	Laura Moreton
	June 27	Ben Rosenbaum
	July 7	Summer Schlageter
	July 18	Laura Moreton
Southwestern willow flycatcher	May 26	Bonnie Peterson[3]
	June 6	
	June 16	
	June 27	
	July 7	
Rare plant	May 23	Talaya Rachels, Hannah Sadowski
	June 24	Talaya Rachels

[1]All HELIX biologists unless otherwise noted
[2]Supervised individual
[3]Subcontracted biologist

3.3 JURISDICTIONAL DELINEATION

A jurisdictional delineation was conducted on June 22 and June 23, 2016. Prior to beginning fieldwork, aerial photographs (1"=100' scale), topographic maps (1"=100' scale), the local soil survey, U.S. Geological Survey (USGS) quadrangle maps, and previous vegetation mapping (SANDAG 2015b) were reviewed to determine the location of potential jurisdictional areas that may be affected by the proposed project. The delineation was conducted to identify and map water and wetland resources potentially subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), RWQCB pursuant to Section 401 of the CWA, and riparian and streambed habitats potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the California Fish and Game Code (CFG Code). Areas generally

characterized by depressions, drainage features, and riparian and wetland vegetation were evaluated. The USACE, RWQCB, and CDFW make the final determination of wetland and water resources within their jurisdiction.

3.3.1 U.S. Army Corps of Engineers Jurisdiction

Potential USACE-jurisdictional waters of the U.S. (WUS) were delineated in accordance with the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Sampling points were located within representative uplands and wetlands, and mapping of drainage features was performed in the field based on the ordinary high water mark (OHWM) and surface indications of hydrology. Areas were determined to be potential wetland WUS if there was a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology indicators. Areas were determined to be non-wetland WUS if there was evidence of regular surface flow within an OHWM, but the vegetation and/or soils criterion were not met.

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. Potential RWQCB jurisdiction and waters of the State found within the BSA have the same boundaries as potential WUS under USACE jurisdiction.

3.3.2 California Department of Fish and Wildlife Jurisdiction

Potential CDFW-jurisdictional waters of the State were determined based on the presence of riparian vegetation or regular surface flow. 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 having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). Riparian habitat is not defined in Title 14, but the section refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream.

3.4 RARE PLANT SURVEY

Rare plant surveys were conducted in the BSA on May 23 and June 24, 2016. Opportunistic inspections for rare plant species were also made during the other biological surveys performed to date (Table 1). Searches were made for those species that are listed as threatened or endangered by the USFWS or CDFW, and those with a Rare Plant Rank 1 through 4 designated by the CNPS. The surveys were conducted on foot and all habitat areas were inspected for the presence of rare plant species. Special status plant species encountered were mapped using a hand-held Global Positioning System (GPS) unit and/or on an aerial photograph. The 2016 focused survey report for rare plants is presented in Appendix G.

3.5 COASTAL CALIFORNIA GNATCATCHER

HELIX biologists conducted a survey for the coastal California gnatcatcher in accordance with the *Coastal California Gnatcatcher Presence/Absence Survey Protocol* (USFWS 1997). The survey consisted of six one-day site visits made from May 20 through June 24, 2016 (Table 1). The survey area consisted of all potential coastal California gnatcatcher habitats occurring on site (i.e., Diegan coastal sage scrub-disturbed, flat-topped buckwheat scrub, and broom baccharis-dominated sage scrub). The survey was conducted by walking through the vegetation or on adjacent paths, and viewing birds with the aid of binoculars, where necessary. If the coastal California gnatcatcher was not detected passively, a digital coastal California gnatcatcher call-prompt was briefly played. The 2016 focused survey report for coastal California gnatcatcher is presented in Appendix H.

3.6 LEAST BELL'S VIREO

Surveys for least Bell's vireo were conducted in accordance with *Least Bell's Vireo Survey Guidelines* (USFWS 2001). The survey consisted of eight site visits made from May 4 through July 18, 2016 (Table 1). The survey area consisted of potential least Bell's vireo riparian habitat (i.e., southern riparian forest, southern willow scrub, and mule fat scrub), and covered all areas of potential habitat within the BSA. The survey was conducted by walking along the edges of, as well as within, potential least Bell's vireo habitat while listening for least Bell's vireo vocalizations and while viewing birds with the aid of binoculars. All least Bell's vireo locations, along with other special status riparian bird species locations (and those of the brown-headed cowbird [*Molothrus ater*; a nest parasite]) were mapped on an aerial photograph. The 2016 focused survey report for least Bell's vireo is presented in Appendix I.

3.7 SOUTHWESTERN WILLOW FLYCATCHER

HELIX subcontractor Bonnie Peterson conducted a survey for the southwestern willow flycatcher in accordance with USFWS-approved survey protocol (Sogge et al. 2010). The survey consisted of five site visits made from May 26 through July 7, 2016 (Table 1). The survey area consisted of potential southwestern willow flycatcher riparian habitat (i.e., southern riparian forest, southern willow scrub, and mule fat scrub), and covered all areas of potential habitat within the BSA. The survey was conducted by walking along the edges of, as well as within, potential southwestern willow flycatcher habitat while listening for flycatcher vocalizations and viewing birds with the aid of binoculars. All flycatcher locations, along with other special status riparian bird species locations (and those of the brown-headed cowbird, a nest parasite) were mapped on an aerial photograph. The 2016 focused survey report for southwestern willow flycatcher is presented in Appendix J.

4.0 EXISTING CONDITIONS

4.1 BIOLOGICAL STUDY AREA

The 80.94-acre BSA consists of a linear corridor varying in width from approximately 100 feet (ft) to 400 ft along its approximately two-mile length from West Hills Parkway to Mast Park. The San Diego River flows from east to west through the BSA, and is bordered by the Carlton Oaks Golf Course along the western two-thirds of its length. Sycamore Creek flows through the golf course, and two short reaches of the creek occur within the BSA. The BSA is located partially within the City of San Diego's and City of Santee's MHPA (Figure 4). The MHPA is the planned habitat preserve within the MSCP Subarea for each City. The City of Santee's draft Subarea Plan has not been adopted. Nearly all of the BSA is identified as USFWS-designated critical habitat for least Bell's vireo.

The BSA consists of ornamental, disturbed, and developed lands associated with the golf course and existing roads, which together make up 48.62 acres (60 percent) of the BSA, and riparian habitats that make up 31.82 acres (39 percent) of the BSA. The remaining 0.50 acre (one percent) consists of small patches of native and naturalized upland habitats. Ornamental vegetation is the most prevalent habitat type in the BSA within the golf course, while riparian forest is dominant along the San Diego River. Native habitats within the BSA are associated primary with the San Diego River, which supports a riparian corridor that is constrained by development on both sides, including the golf course, SR 52 and other roadways, and single-family residential development.

There is an existing dirt trail through Mast Park West and directly east of the golf course, and there is an informal dirt trail along the top of the berm that separates the golf course from the San Diego River along much of the BSA. Hikers, walkers, and bicyclists have been observed using these trails.

General land use within the BSA includes the Carlton Oaks Golf Course, paved public roads, a dirt trail, a portion of Mast Park, and undeveloped lands along the San Diego River. General land uses adjacent to the BSA include residential and commercial development and roads. The portion of this segment generally between the Carlton Hills Boulevard bridge and the Carlton Oaks Golf Course is subject to a conservation easement held by the California Department of Fish and Wildlife (CDFW). Among other things, the conservation easement governs allowable uses of this property.

4.2 PHYSICAL CONDITIONS

Elevations within the BSA range from approximately 296 to 334 ft above mean sea level (amsl). Nine soil types representing six soil series (Grangeville, Redding-Urban land, Riverwash, Salinas, Tujunga, and Visalia) are mapped in the BSA (NRCS 2016).

The BSA is located within the 440-square mile San Diego Hydrologic Unit (HU), one of 12 HUs identified in San Diego County by the RWQCB. It is further located within portions of the Santee Hydrologic Subarea (HSA) in the Lower San Diego Hydrologic Area (HA; [Hydrologic

Unit Code 907.12]). The San Diego River conveys flows westward from the BSA to the Pacific Ocean near the community of Ocean Beach.

4.3 BIOLOGICAL CONDITIONS

4.3.1 Vegetation Communities/Land Use Types

A total of 13 vegetation communities or land use types were mapped within the BSA: southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, disturbed Diegan coastal sage scrub, broom baccharis dominated sage scrub, flat-topped buckwheat scrub, non-native grassland, ornamental, disturbed habitat, and developed lands (Table 2; Figures 5a through 5e).

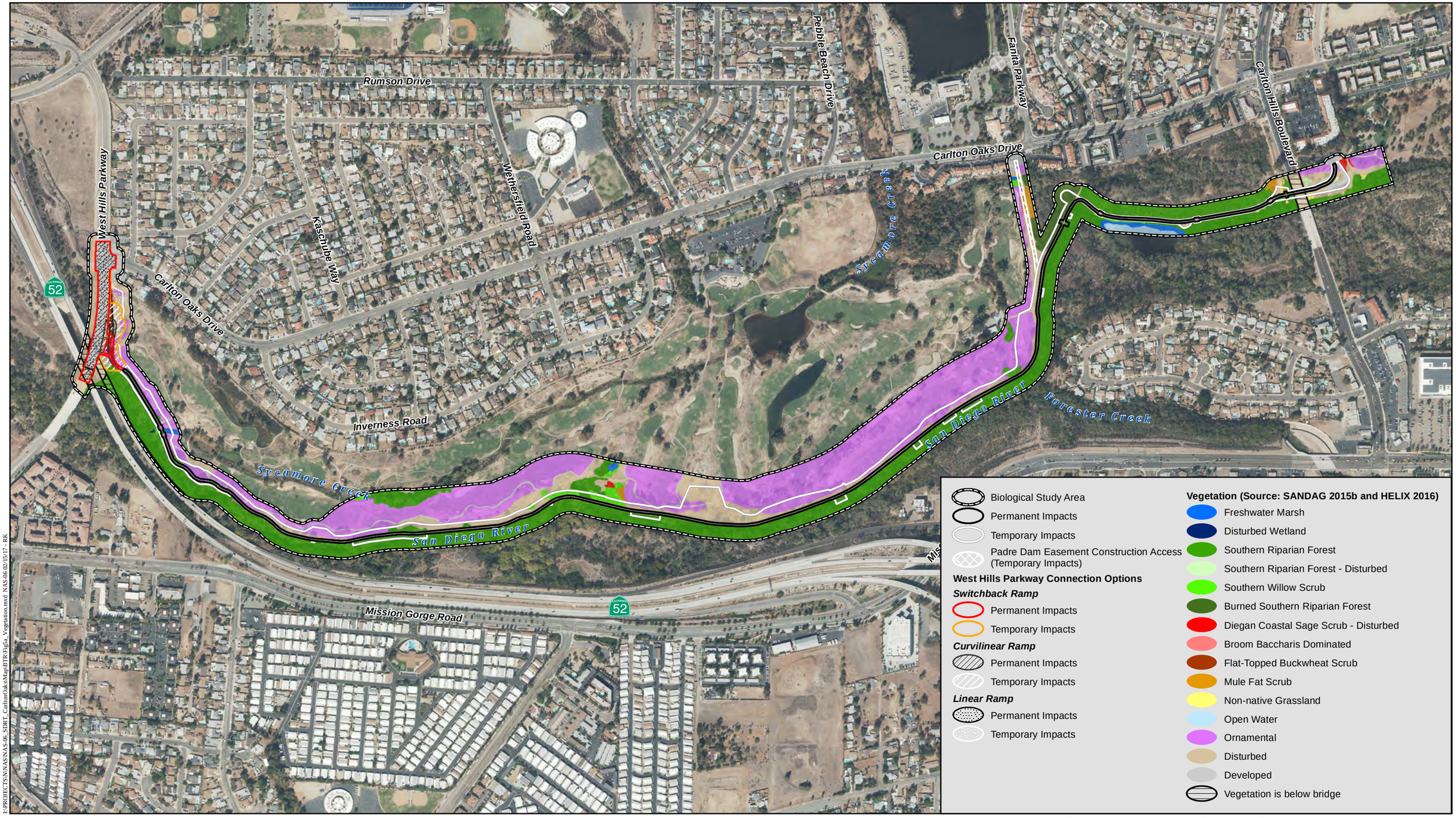
Table 2
EXISTING VEGETATION COMMUNITIES/LAND USE TYPES IN THE BIOLOGICAL STUDY AREA

VEGETATION COMMUNITY/LAND USE TYPE	ACREAGE
Southern Riparian Forest (including disturbed and burned)	29.14
Southern Willow Scrub	1.10
Mule Fat Scrub	0.51
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Open Water	0.52
Diegan Coastal Sage Scrub - disturbed	0.13
Broom Baccharis-dominated Sage Scrub	0.06
Flat-topped Buckwheat Scrub	0.16
Non-native Grassland	0.15
Ornamental	29.22
Disturbed Habitat	15.47
Developed	3.93
TOTAL	**80.94**

Southern Riparian Forest (including disturbed and burned)

Southern riparian forest (including southern riparian woodlands) is composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species in this habitat in the BSA include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), western cottonwood (*Populus fremontii*), box-elder (*Acer negundo*),

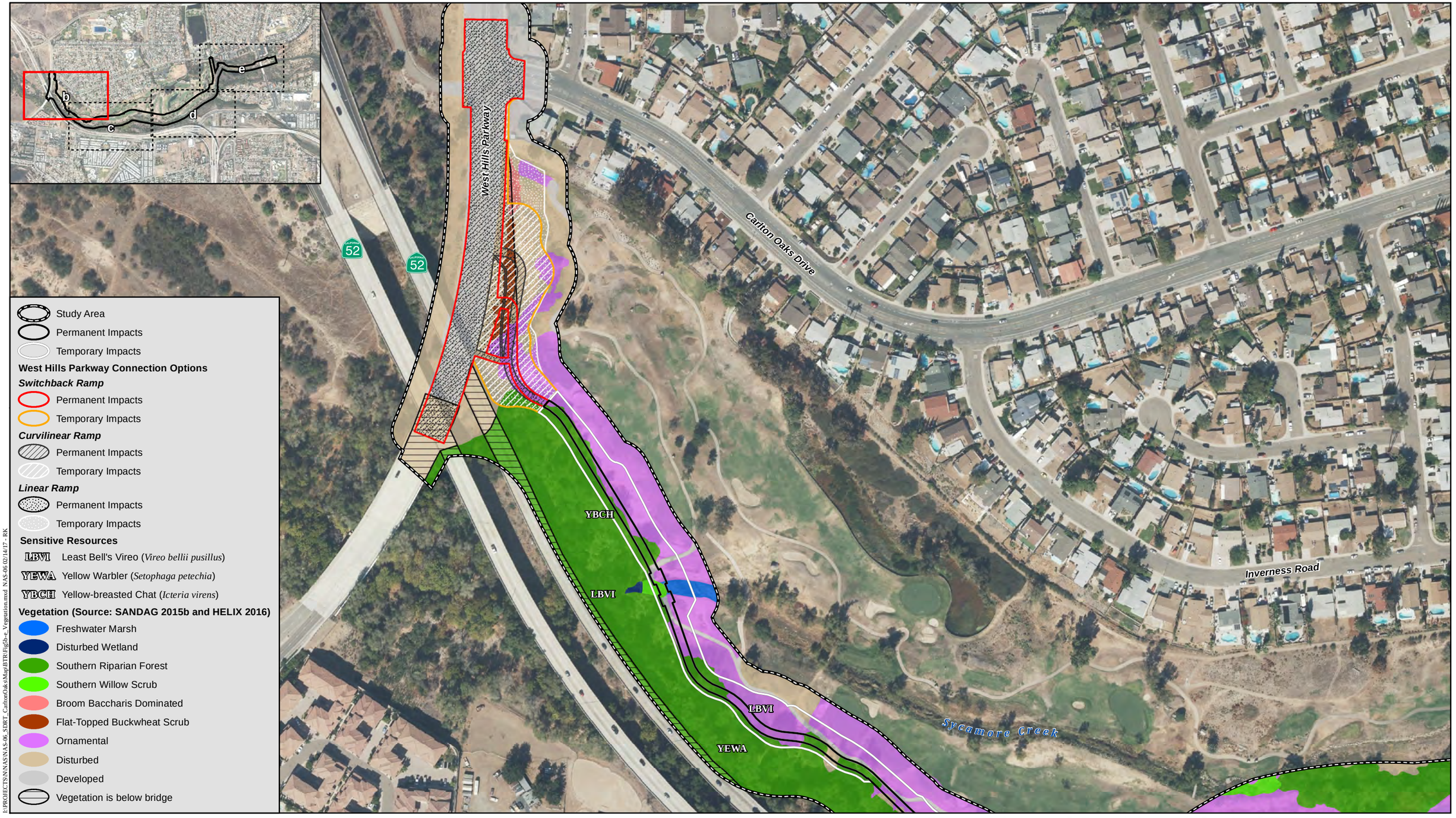


I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOak\sMap\BTR\Fig5a_Vegetation.mxd NAS-06 02/15/17 - RK

Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 5a



I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig5b-c_Vegetation.mxd NAS-06 02/14/17 - RK

Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 5b

Inverness Road

Sycamore Creek

San Diego River

YEWA

YBCH

COHA

YEWA

52

52

Mission Gorge Road

b

c

d

e

Study Area

Permanent Impacts

Temporary Impacts

Sensitive Resources

COHA Cooper's Hawk (*Accipiter cooperii*)

YEWA Yellow Warbler (*Setophaga petechia*)

YBCH Yellow-breasted Chat (*Icteria virens*)

Vegetation (Source: SANDAG 2015b and HELIX 2016)

Freshwater Marsh

Southern Riparian Forest

Southern Willow Scrub

Diegan Coastal Sage Scrub - Disturbed

Mule Fat Scrub

Ornamental

Disturbed

Developed

N

0 200 Feet

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig5b-e_Vegetation.mxd NAS-06 02/14/17 - RK

Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 5c

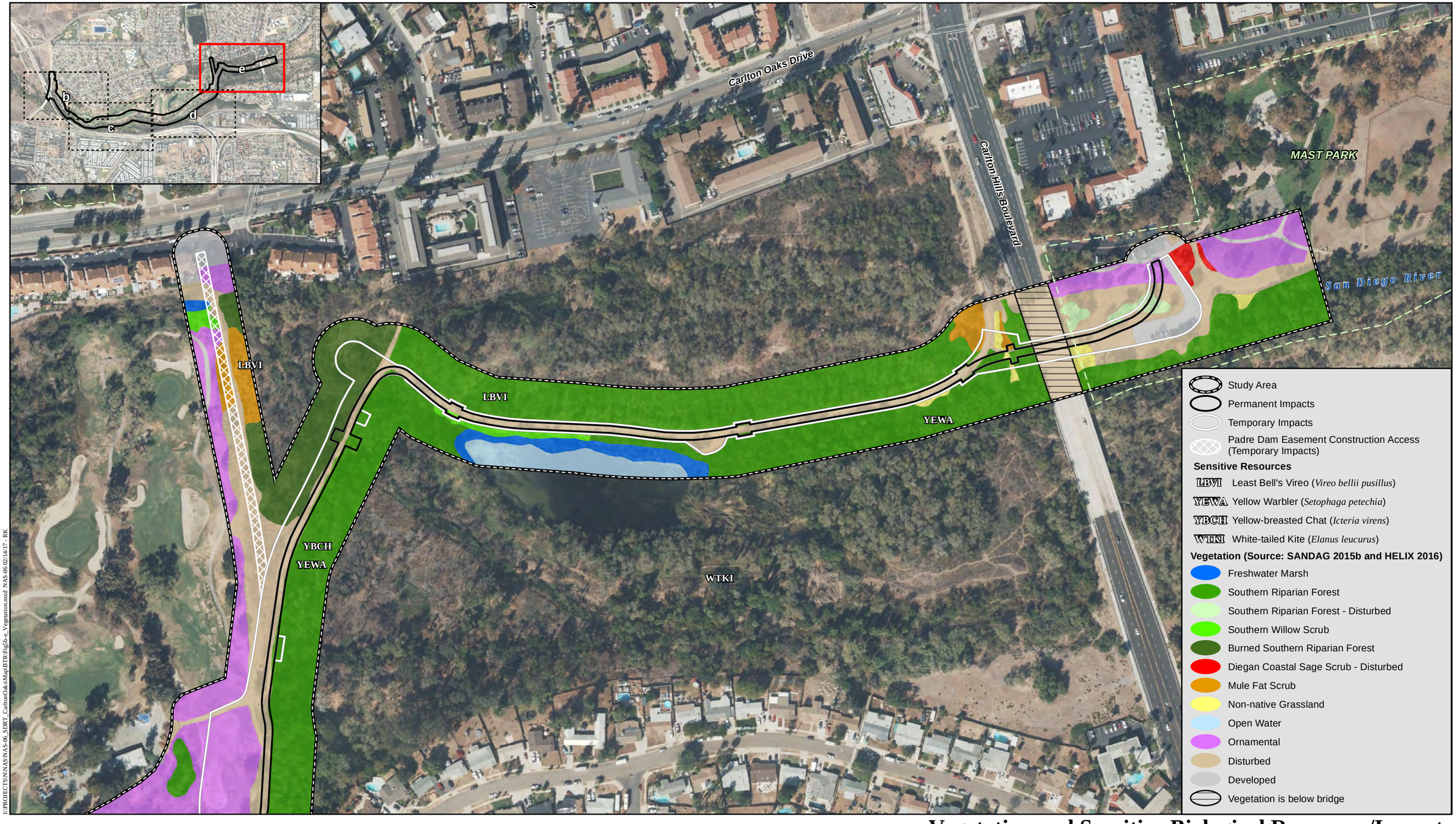
I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig5b-e_Vegetation.mxd NAS-06 02/14/17 - RK

Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 5d



I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig5b-e_Vegetation.mxd NAS-06 02/14/17 - RK

Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 5e

and wild grape. Burned southern riparian forest was affected by fire in 2014. Disturbed southern riparian forest is composed of two small stands of western cottonwood trees that have been cleared of understory species by maintenance activities conducted within Mast Park. These two stands are immediately east of Carlton Hills Boulevard. Southern riparian forest is the dominant vegetation community along the San Diego River and Sycamore Creek within the BSA. A total of 29.14 acres of southern riparian forest occurs within the BSA. Of this, 0.14 acre is disturbed and 1.40 acres burned in 2014.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows.

Southern willow scrub within the BSA consists of small stands of arroyo willow, black willow, and sandbar willow (*Salix exigua*). These stands are located in the south-central portion of the BSA north of the berm separating the San Diego River from the golf course, as well as in scattered locations east of the golf course as well as along Sycamore Creek in the north-central portion of the BSA. A total of 1.10 acres of southern willow scrub occur within the BSA.

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table.

Small stands of mule fat scrub occur in the south-central portion of the BSA, where it occurs in association with stands of southern willow scrub, and in the eastern portion of the BSA just west of Carlton Hills Boulevard and along the eastern edge of the golf course. A total of 0.51 acre of mule fat scrub occurs within the BSA.

Freshwater Marsh

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots, five to 13 ft tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.), along with umbrella sedges (*Cyperus* sp.), rushes (*Juncus* sp.), and spike-sedge.

Small stands of freshwater marsh occur in four locations within the BSA. One stand occurs along Sycamore Creek in the western portion of the BSA, one stand occurs north of the berm separating the San Diego River from the golf course in the central portion of the BSA, the third stand occurs in the northeastern corner of the golf course, and the fourth stand occurs along the fringes of the open water pond in the eastern portion of the BSA. Cattails are the dominant

species in this habitat within the BSA. A total of 0.54 acre of freshwater marsh occurs within the BSA.

Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora.

Disturbed wetland occurs as a single stand of habitat in the western portion of the BSA, adjacent to southern riparian forest. Water primrose (*Ludwigia grandiflora*) is the dominant species present. A total of 0.01 acre of disturbed wetland occurs within the BSA.

Open Water

Open water in the BSA consists of a portion of a pond excavated within the San Diego River in the eastern portion of the BSA. A total of 0.52 acre of open water occurs within the BSA.

Diegan Coastal Sage Scrub – disturbed

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect.

Disturbed Diegan coastal sage scrub occurs as three small stands of habitat in the BSA, one of which is in the central portion of the BSA, and the other two are within Mast Park in the eastern portion of the BSA. The habitat supports sparse shrub cover with a high proportion of non-native annual species. Characteristic species observed include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Bacchris pilularis*), California encelia (*Encelia californica*), and broom baccharis (*Baccharis sarothroides*). A total of 0.13 acre of disturbed Diegan coastal sage scrub occurs within the BSA.

Broom Baccharis Dominated Sage Scrub

Broom baccharis dominated sage scrub is an upland community dominated by broom baccharis (*Baccharis sarothroides*). It is considered a subtype of coastal sage scrub. Broom baccharis scrub occurs as a single small stand in the northwestern portion of the BSA. A total of 0.06 acre of broom baccharis dominated sage scrub occurs within the BSA.

Flat-Topped Buckwheat Scrub

Flat-topped buckwheat scrub is a subtype of coastal sage scrub dominated by California buckwheat. This vegetation community is often found in disturbed areas in the coastal and

foothill areas of San Diego County. A small narrow stand of this habitat is located in the far western portion of the BSA near West Hills Parkway. A total of 0.16 acre of flat-topped buckwheat scrub occurs within the BSA.

Non-Native Grassland

Non-native grassland typically supports a sparse to dense cover of annual grasses often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual, introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These grasslands are common throughout San Diego County.

This habitat occurs as several small, scattered patches in the easternmost portion of the BSA. Dominant species present include wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and western ragweed (*Ambrosia psilostachya*). A total of 0.15 acre of non-native grassland occurs within the BSA.

Ornamental

Ornamental plantings within the BSA consist of maintained portions of the golf course, including irrigated turf areas, sand traps, etc., and associated landscaping and scattered native and non-native trees within the maintained golf course areas. Similar areas also occur within Mast Park in the eastern portion of the BSA. A total of 29.22 acres of ornamental vegetation occur within the BSA.

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, particularly where the soil has been heavily compacted by prior development or where agricultural lands have been abandoned. Disturbed habitat is generally dominated by non-native weedy species that adapt to frequent disturbance, and may also consist of dirt trails and roads.

Disturbed habitat within the BSA includes dirt roads and trails, and areas made up of non-native, weedy vegetation such as shortpod mustard (*Hirschfeldia incana*), white sweet clover (*Melilotus albus*), Russian thistle (*Salsola tragus*), and common sow thistle (*Sonchus oleraceus*). A total of 15.47 acres of disturbed habitat occur within the BSA.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

Developed land within the BSA includes paved golf cart paths, buildings, and roads. A total of 3.93 acres of developed land occur within the BSA.

4.3.2 Plant Species

A total of 80 plant species were observed within the BSA during surveys, of which 34 (43 percent) are non-native. Appendix B contains a comprehensive list of all plant species encountered within the BSA.

4.3.3 Animal Species

A total of 70 animal species were observed or detected within the BSA during surveys: 10 invertebrates including eight butterfly, one amphibian, three reptile, 51 bird, and five mammal species. Appendix C contains a comprehensive list of all animal species observed or otherwise detected within the BSA.

4.3.4 Jurisdictional Waters and Wetlands

Potential jurisdictional wetlands, habitats, and other resources observed in the BSA include southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, and ephemeral and perennial streams. Depictions of resources within the BSA potentially subject to USACE, RWQCB, and/or CDFW jurisdiction are presented in Figures 6a through 6e and 7a through 7e.

U.S. Army Corps of Engineers Jurisdiction

Potential WUS under the jurisdiction of the USACE in the BSA total 10.40 acres, made up of 8.14 acres of wetland and approximately 2.26 acres of non-wetland waters (Figures 6a through 6e; Table 3).

Table 3
POTENTIAL USACE JURISDICTION
WITHIN THE BIOLOGICAL STUDY AREA

POTENTIAL USACE JURISDICTION	ACREAGE*
Wetland Waters of the U.S.	
Southern Riparian Forest (including burned)	7.50
Southern Willow Scrub	0.09
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Subtotal	***8.14***
Non-wetland Waters of the U.S.	
Open Water	0.52
Ephemeral Stream	0.03
Perennial Stream	1.71
Subtotal	***2.26***
TOTAL	**10.40**

*Acreage is rounded to the nearest 0.01 acre.

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig6a_USACE.mxd NAS-06 02/14/17 - RK

Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N

0 600 Feet

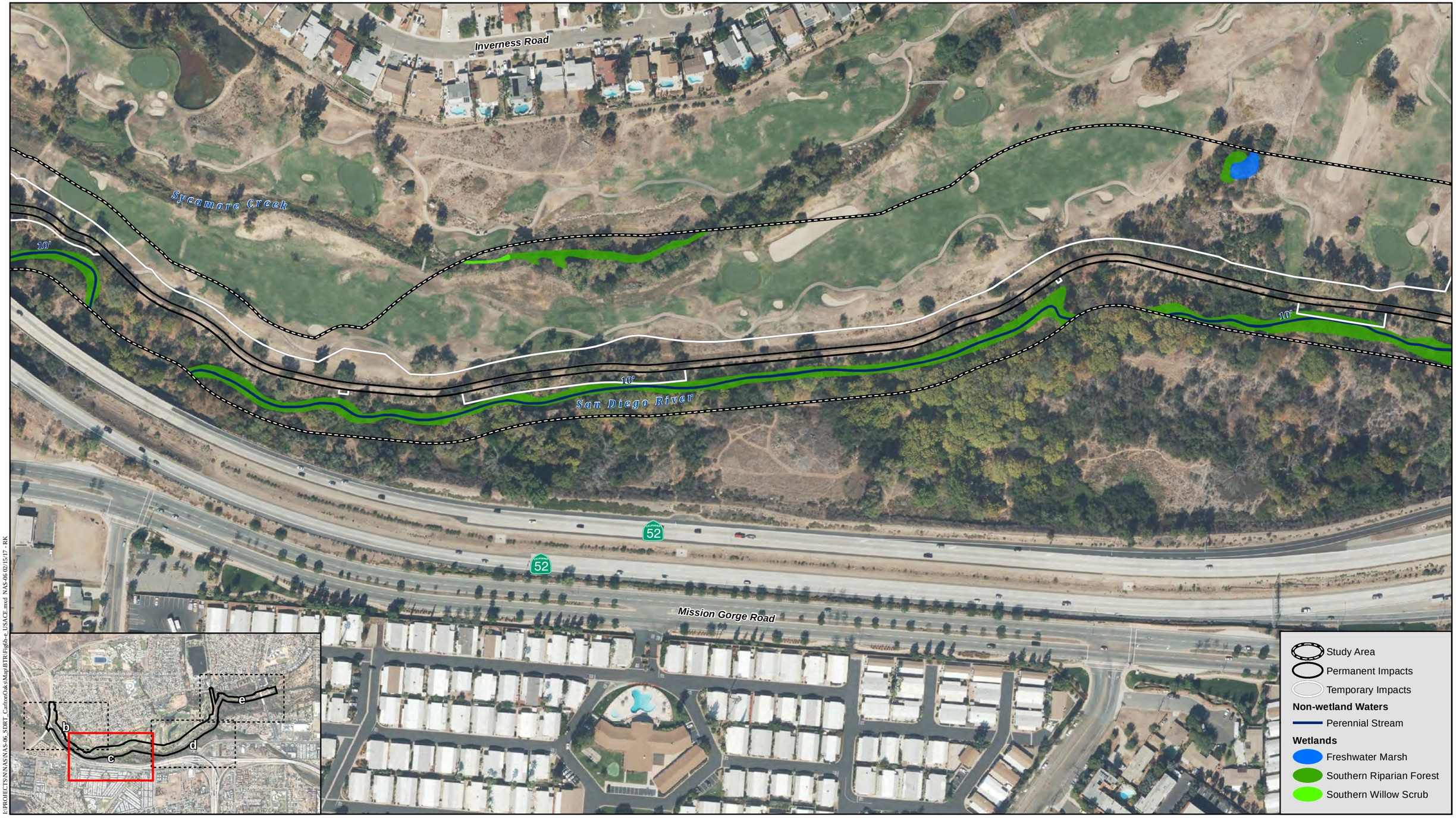
Figure 6a

Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6b



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig6b-e_USACE.mxd NAS-06 02/15/17 - RK

Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 6c

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Figth-e_USACE.mxd NAS-06 02/15/17 - RK

Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

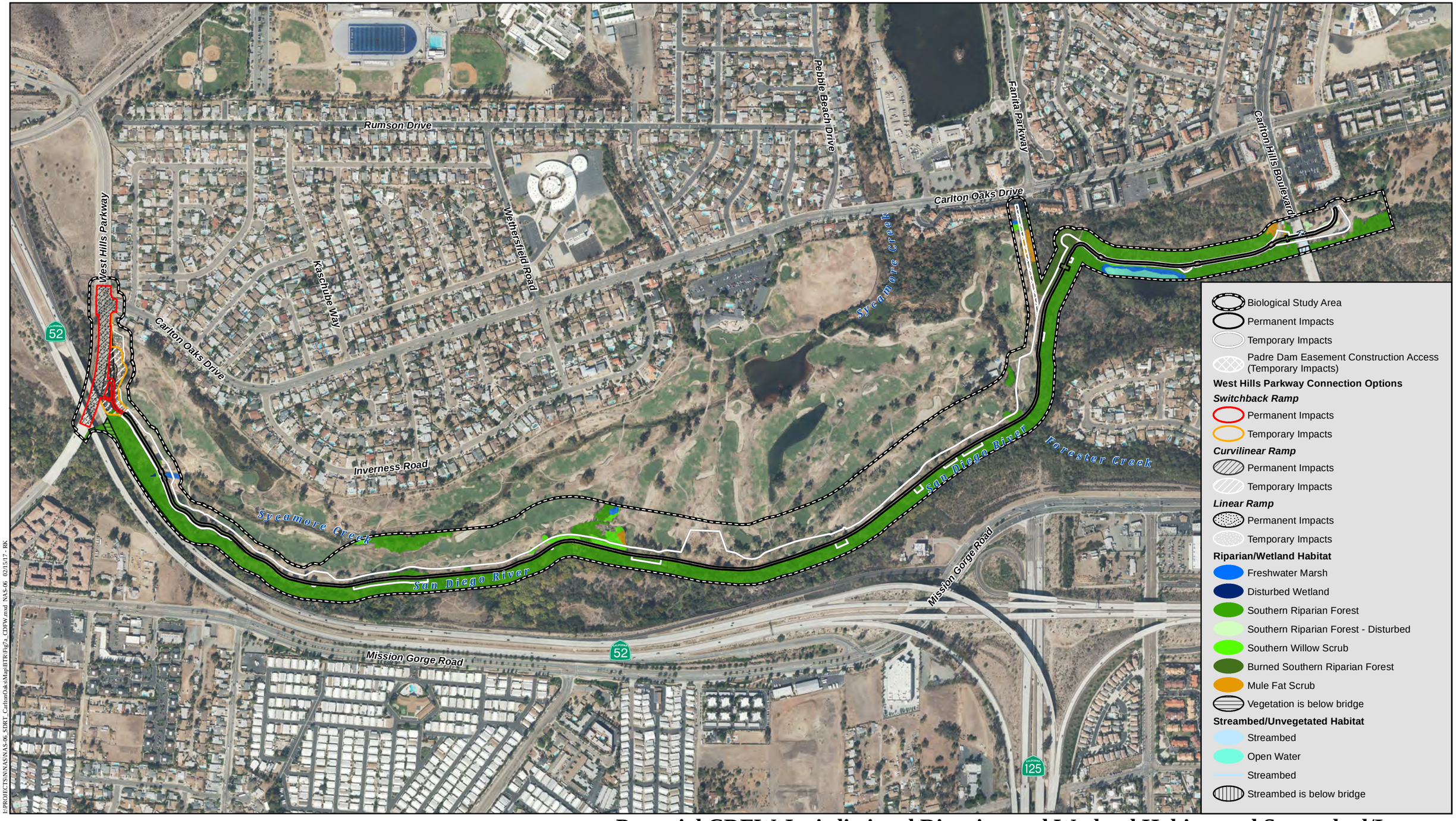
Figure 6d

E:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\sMap\BTR\Fig6b-e_USACE.mxd NAS-06 02/15/17 - RK

Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 6e



E:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig7a_CDFW.mxd NAS-06 02/15/17 - RK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 600 Feet

Figure 7a

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 7b

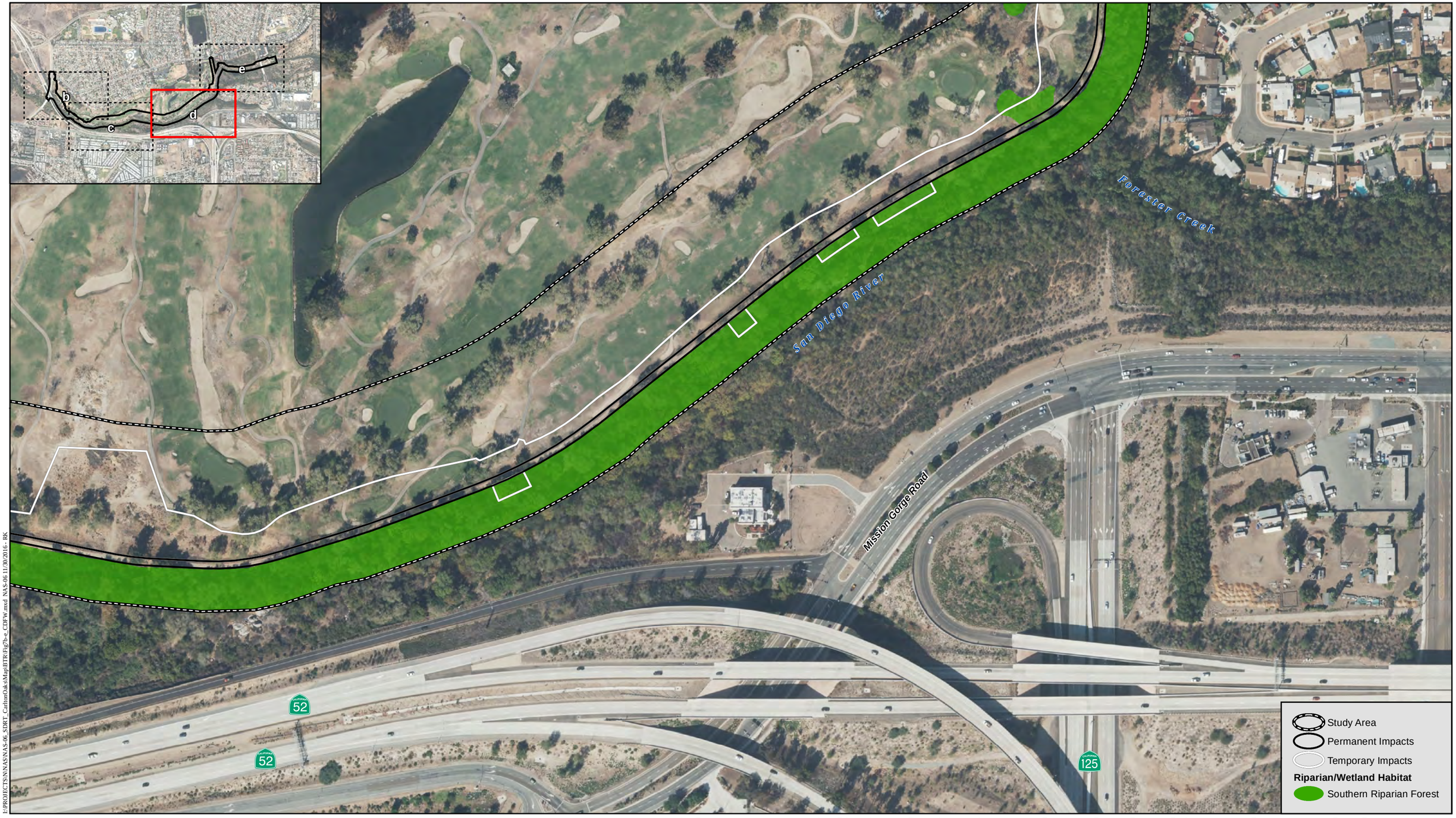
I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig7b-c_CDFW.mxd NAS-06 11/30/2016 - RK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7c



I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig7b-e_CDFW.mxd NAS-06 11/30/2016 - BK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7d

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig7e-e_CDFW.mxd NAS-06 11/30/2016 - RK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N

0 200 Feet

Figure 7e

Potential RWQCB jurisdiction within the BSA follows the same boundaries of potential USACE jurisdiction for wetland and non-wetland WUS. There are no isolated waters of the State within the BSA subject to exclusive RWQCB jurisdiction pursuant to the State Porter-Cologne Water Quality Control Act.

California Department of Fish and Wildlife Jurisdiction

Potential CDFW jurisdiction within the BSA totals 31.91 acres, and is made up of 31.30 acres of wetland/riparian habitat and approximately 0.61 acre of unvegetated stream channel or open water (Table 4; Figure 7a through 7e).

Table 4
POTENTIAL CDFW JURISDICTION
WITHIN THE BIOLOGICAL STUDY AREA

POTENTIAL CDFW JURISDICTION	ACREAGE*
Riparian/Wetland Habitat	
Southern Riparian Forest (including burned and disturbed)	29.14
Southern Willow Scrub	1.10
Mule Fat Scrub	0.51
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Subtotal	***31.30***
Stream Channel/Unvegetated Habitat	
Open Water	0.52
Streambed	0.09
Subtotal	***0.61***
TOTAL	**31.91**

*Acreage is rounded to the nearest 0.01 acre.

4.3.5 Wildlife Corridors and Movement

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. 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. A corridor is a specific route that is used for the movement and migration of species, and may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

The San Diego River functions as a wildlife corridor within the BSA, facilitating movement of wildlife between Mission Trails Regional Park to the west and Mast Park and other areas further to the east of the BSA.

4.4 REGIONAL SPECIES AND HABITATS OF CONCERN

4.4.1 Sensitive Vegetation Communities/Habitat Types

Sensitive vegetation communities/habitat types are lands that support unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the California Environmental Quality Act (CEQA) Guidelines.

Sensitive vegetation communities/habitat types mapped in the BSA include southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, Diegan coastal sage scrub, flat-topped buckwheat scrub, broom baccharis dominated sage scrub, and non-native grassland.

4.4.2 Special Status Plant Species

Special status plant species have been afforded special status and/or recognition by the USFWS and/or CDFW and may also be included in the CNPS' Inventory of Rare and Endangered Plants as California Rare Plant Rank (CRPR) 1 or 2 species. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations.

CRPR 4 species also were recorded during project surveys, including Palmer's sagewort (*Artemisia palmeri*), southern California black walnut (*Juglans californica* var. *californica*), and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). CRPR 4 species are considered watch list species. They are not afforded special status or recognition by the USFWS or CDFW, but may be considered sensitive by local jurisdictions. Impacts to CRPR 4 species are not considered impacts to special status species under CEQA unless required by a local jurisdiction. None of these three observed CRPR 4 species are identified as sensitive in the City of San Diego's MSCP Subarea Plan or the City of Santee's draft MSCP Subarea Plan.

One special status plant species was observed in the BSA during 2016 surveys: San Diego marsh elder (*Iva hayesiana*). Explanations of status codes are included as Appendix F.

San Diego marsh elder (*Iva hayesiana*)
Listing: --/--; CRPR List 2B.2
Distribution: San Diego County; Baja California, Mexico
Habitat: Creeks of intermittent streambeds are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized.
Presence on site: A total of 17 individuals were observed in southern riparian scrub adjacent to the existing trail in the southeastern portion of the BSA (Figure 5d).

Palmer's sagewort (*Artemisia palmeri*)
Listing: --/--; CRPR List 4.2
Distribution: Coastal San Diego County; Baja California, Mexico
Habitat: Stream courses, often within coastal sage scrub and southern mixed chaparral
Presence on site: A total of four individuals were observed in southern riparian forest adjacent to the existing trail in the southern portion of the BSA (Figures 5c and 5d).

Southern California black walnut (*Juglans californica* var. *californica*)
Listing: --/--; CRPR List 4.2; CA Endemic
Distribution: Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties
Habitat: This tree grows between 20 and 50 feet tall in open savannah, often in habitat best labeled walnut woodland. May be more tolerant of clay soils than most native trees and shrubs. Shows preference for deep alluvial soils with high water-retention capacity and tends to grow in creek beds, alluvial terraces, and north-facing slopes.
Presence on site: A total of 28 individuals were documented in the BSA (Figures 5b and 5c). This species occurs in the southeast portion of the BSA as a grouping of trees and isolated individuals primarily within southern riparian forest, as well as several scattered individuals in open disturbed habitat along the existing trail.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)
Listing: --/--; CRPR List 4.2
Distribution: Los Angeles, San Bernardino, San Luis Obispo, Ventura, and San Diego counties; Baja California, Mexico
Habitat: Moist, saline, or alkaline soils in coastal salt marshes and riparian marshes
Presence on site: Approximately 200 individuals were observed in southern riparian forest in the northeastern portion of the BSA with scattered individuals observed in the southeast along the banks of the river (Figures 5d and 5e).

Special status plant species and CRPR 4 plant species that were not observed but may have potential to occur in the BSA are listed in Appendix D.

4.4.3 Special Status Animal Species

Special status animal species include those that have been afforded special status and/or recognition by the USFWS and/or CDFW. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

A total of five special status animal species were detected in or near the BSA during 2016 surveys: Cooper's hawk (*Accipiter cooperii*), least Bell's vireo, white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*). These species are further discussed below. Explanations of status codes are included as Appendix F.

Cooper's Hawk (*Accipiter cooperii*)
Status: --/WL
Distribution: Occurs year-round throughout San Diego County's coastal slope where stands of trees are present
Habitat(s): Oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests
Presence on Site: One individual was observed perched in southern riparian forest in the western portion of the BSA (Figure 5c). Suitable nesting habitat for this species occurs within the BSA.

Least Bell's Vireo (*Vireo bellii pusillus*)
Status: FE/SE
Distribution: Observed throughout coastal southern California in the breeding season, south of Santa Barbara, but in smaller numbers in foothills and mountains
Habitat(s): Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub
Presence on Site: Species was detected in five locations within and adjacent to the BSA (Figures 5b, 5d, and 5e). Suitable nesting habitat for this species occurs within the BSA.

White-tailed Kite (*Elanus leucurus*)
Status: --/Fully Protected
Distribution: Primarily occurs throughout coastal slopes of San Diego County
Habitat(s): Riparian woodlands and oak or sycamore groves adjacent to grassland
Presence on site: One individual was observed flying over southern riparian forest south of the eastern portion of the BSA (Figure 5e). Suitable nesting habitat for this species occurs within the BSA.

Yellow-breasted Chat (*Icteria virens*)
Status: --/SSC
Distribution: Occurs throughout San Diego County's coastal lowlands in the breeding season.
Habitat(s): Mature riparian woodland
Presence on Site: Species was detected in two locations in southern riparian forest in the western portion of the BSA (Figures 5b and 5c). Suitable nesting habitat for this species occurs within the BSA.

Yellow Warbler (*Setophaga petechia*)
Status: BCC/SSC
Distribution: Observed throughout California during the breeding season with rare sightings in winter.
Habitat(s): Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub
Presence on Site: Yellow warbler was detected in riparian forest in six locations within the BSA, ranging from the western to the eastern portions of the alignment (Figures 5b through 5e). Suitable nesting habitat for this species occurs within the BSA.

Special status animal species that were not observed but may have potential to occur in the BSA are listed in Appendix E.

5.0 REGULATORY REQUIREMENTS

5.1 FEDERAL

5.1.1 Federal Endangered Species Act

The federal Endangered Species Act and subsequent amendments (16 U.S.C. § 1531 et seq.) provide guidance for the conservation of endangered and threatened species and the ecosystems on which they depend.

Section 7 of the federal Endangered Species Act requires federal agencies, in consultation with and with the assistance of, the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modifications of critical habitat for these species. The USFWS and the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) share responsibilities for administering the federal Endangered Species Act.

Under Section 7, federal agencies must review their actions and determine whether the action may affect federally listed and proposed species or proposed or designated critical habitat. To accomplish this, federal agencies must request from the USFWS a list of species and critical habitat that may be in the project area or they can request USFWS concurrence with their species list. The USFWS must respond to either request within 30 days.

Once a species list is obtained or verified as accurate, federal agencies need to determine whether their actions may affect any of those species or their critical habitat. If no species or their critical habitat is affected, no further consultation is required. If they may be affected, consultation with the USFWS is required. This consultation will conclude either informally with written concurrence from the USFWS or through formal consultation with a biological opinion provided to the federal agency. A total of 75.5 acres of the BSA is within critical habitat for least Bell's vireo (Figure 8).

Section 9 of the federal Endangered Species Act lists those actions that are prohibited under the federal Endangered Species Act. The "take" of a species listed in accordance with the federal Endangered Species Act is prohibited. A take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct of any listed species."

5.1.2 Clean Water Act

The USACE regulates impacts to WUS under Section 404 of the CWA (33 U.S.C. 401 et seq.; 33 U.S.C. 1344; U.S.C. 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323). The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. A federal CWA Section 404 Permit would be required for a project to place fill in WUS. Projects impacting WUS could be permitted on an individual basis or 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 one year) to review and approve, while nationwide permits are pre-approved if a project meets appropriate conditions. Linear transportation projects may be authorized under CWA Section 404 Nationwide Permit (NWP) 14, which does not place a limit on impacts to linear feet of WUS. A CWA Section 401 Water Quality Certification administered by the RWQCB must be issued prior to issuance of a Section 404 Permit.

5.1.3 Migratory Bird Treaty Act

All migratory bird species native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA; 16 U.S.C. §§ 703–712), as amended under the Migratory Bird Treaty Reform Act (MBTRA) of 2004 (FR Doc. 05-5127; USFWS 2004). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers, or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take and is potentially punishable by fines or imprisonment.

5.2 STATE OF CALIFORNIA

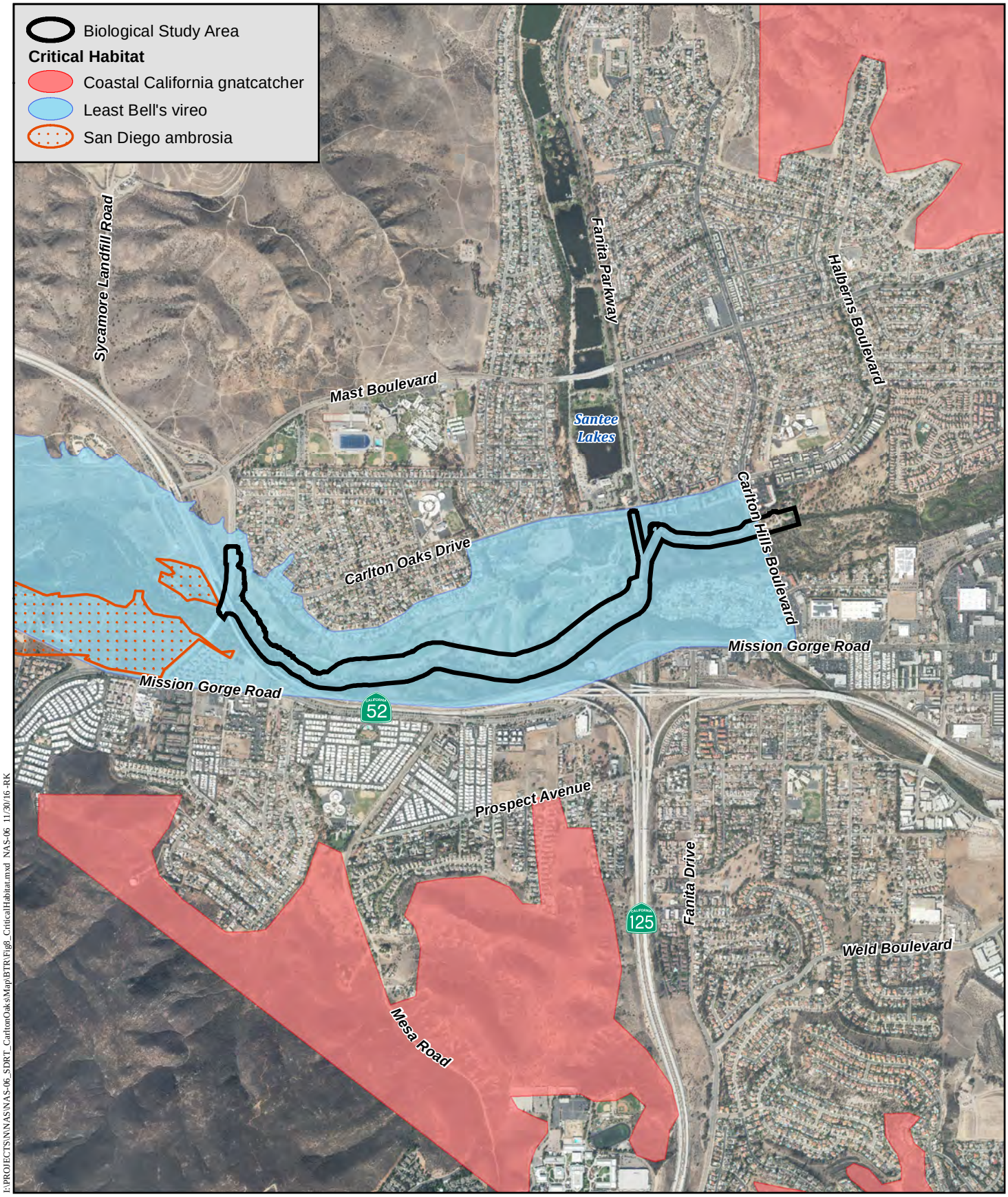
5.2.1 California Environmental Quality Act

The Environmental Checklist Form in Appendix G of the CEQA Guidelines lists the following as potential CEQA issues related to biological resources: substantial adverse effects to a candidate, sensitive, or special status species of animal or plant; substantial adverse effects to riparian, wetland, or other sensitive natural communities; substantial interference with the movement of any resident or migratory fish or wildlife species; and conflict with local policies or ordinances or the provisions of an adopted habitat conservation plan.

Under most circumstances, significant impacts to wildlife species listed by federal or state agencies as threatened or endangered ("listed species") are assessed under CEQA (Cal. Pub. Res. Code §§ 21000-21189.3). Significant impacts to listed species could be direct (e.g., the loss of a species) or indirect (e.g., affecting the species' habitat), with impacts to rare or uncommon (sensitive) habitats also considered significant based on their level of sensitivity and magnitude of their projected impact. The significance of impacts to habitat is based on factors such as the area affected, on-site species diversity, integrity of habitat or level of disturbance, connection of the site to areas with habitat value, and its regional context and extent and significance of impact.

5.2.2 Native Plant Protection Act

The Native Plant Protection Act (NPPA; California Fish and Game Code [CFG Code] §§ 1900-1913) enacted a process by which plants are listed as rare or endangered. The NPPA regulates collection, transport, and commerce in plants that are listed. The California Endangered Species Act followed and is similar to the NPPA in that it provides a process by which sensitive species are listed. It is a process by which plants and animals can be recognized as being endangered or threatened with extinction (plants listed as rare under the NPPA were designated threatened under the California Endangered Species Act).



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig8_CriticalHabitat.mxd NAS-06 11/30/16 -RK

USFWS Critical Habitat

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 8

5.2.3 California Endangered Species Act

The California Endangered Species Act (CFG Code §§ 2050-2116) established that it is state policy to conserve, protect, restore, and enhance state endangered species and their habitats. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. The California Endangered Species Act authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the federal and California Endangered Species Acts, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with the California Endangered Species Act (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of CFG Code authorizes the CDFW to issue an Incidental Take Permit for state listed threatened and endangered species if specific criteria are met.

5.2.4 California Fish and Game Code

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities.

Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors 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. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

THIS PAGE INTENTIONALLY LEFT BLANK

6.0 PROJECT IMPACTS

This section identifies direct, indirect, and cumulative impacts that would result from the proposed project. Direct impacts associated with proposed project construction would include temporary impacts and permanent impacts. Direct temporary impacts are those that would be caused by construction activity, but vegetation/habitat would be re-established in place following completion of construction. Direct permanent impacts are those where the ground disturbance would be permanent; the biological resources would be replaced by the proposed project.

Indirect impacts are actions that are not a direct result of the proposed project, but affect biological resources either as a secondary effect of the direct impacts (e.g., construction noise, runoff, nighttime lighting, fugitive dust, etc.) or as the cause of degradation of a biological resource over time (e.g., edge effects).

Cumulative impacts refer to the incremental effect of the project's impacts when added to the effects of other closely related projects.

6.1 DIRECT IMPACTS

Impacts resulting from the proposed project would extend along an approximately 2-mile distance beginning at the Mast Park parking lot at the east end of the project alignment and terminating at West Hills Parkway at the west end of the alignment/Carlton Oaks Golf Course. The majority of project impacts are identical along the length of the alignment, with differences in impacts based solely on the different connection options to West Hills Parkway, as well as the potential inclusion of the Padre Dam Easement Construction Access route.

As previously discussed under Section 2.1, the three options being considered for the connection to West Hills Parkway at the western end of the bike path alignment are the Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option. Each of these options would include a staircase at the bottom of the ramp that would connect to the West Hills Parkway sidewalk on the west. Access during construction may be provided via a utility easement along the eastern boundary of the golf course; construction access along this potential route could result in temporary impacts. Access during construction could also be provided from West Hills Parkway and/or from the parking lot at Mast Park. Direct temporary impacts associated with construction access from either of these locations were analyzed as part of the temporary impact analysis for the Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option. Direct temporary and direct permanent impacts to vegetation communities resulting from these options are presented in Table 5. Direct temporary and direct permanent impacts to potential USACE and CDFW jurisdictional areas resulting from these options are presented in Tables 7 and 8, respectively.

6.1.1 Vegetation Communities/Land Use Types

Switchback Ramp and Curvilinear Ramp Options

The Switchback Ramp and Curvilinear Ramp Options would result in direct permanent impacts to approximately 0.59 acre of sensitive vegetation communities. Direct permanent impacts to sensitive vegetation communities include the following: 0.50 acre of southern riparian forest (including disturbed and burned), 0.04 acre of southern willow scrub, 0.004 acre of mule fat scrub, 0.003 acre of freshwater marsh, 0.03 acre of flat-topped buckwheat scrub, and 0.01 acre of non-native grassland (Figures 5a through 5e; Table 5).

The Switchback Ramp and Curvilinear Ramp Options also would result in direct temporary impacts to approximately 2.78 acres of sensitive vegetation communities (Figures 5a through 5e; Table 5). Direct temporary impacts to sensitive vegetation communities include the following: 2.08 acres of southern riparian forest (including disturbed and burned), 0.44 acre of southern willow scrub, 0.03 acre of mule fat scrub, 0.04 acre of freshwater marsh, 0.01 acre of broom baccharis-dominated sage scrub, 0.13 acre of flat-topped buckwheat scrub, and 0.05 acre of non-native grassland.

Impacts to sensitive vegetation communities would require mitigation. Mitigation for impacts to sensitive vegetation communities is presented in Section 7.1 of this report (BIO-1 through BIO-7).

Linear Ramp Option

Direct permanent impacts to sensitive vegetation communities under Linear Ramp Option would result in 0.12 acre of additional impacts to flat-topped buckwheat scrub and 0.02 acre of additional impacts to broom baccharis-dominated sage scrub relative to the Switchback Ramp and Curvilinear Ramp Options.

Direct temporary impacts to sensitive vegetation communities under the Linear Ramp Option would result in 0.12 acre fewer impacts to flat-topped buckwheat scrub and 0.03 acre of additional impacts to broom baccharis-dominated sage scrub relative to the Switchback Ramp and Curvilinear Ramp Options.

Padre Dam Easement Construction Access

The Padre Dam Easement Construction Access route would not result in any additional direct permanent impacts; only direct temporary impacts would differ. Direct temporary impacts to sensitive vegetation communities resulting from the Padre Dam Easement Construction Access route would result in 0.01 acre of additional impacts to southern willow scrub and 0.06 acre of additional impacts to mule fat scrub. These direct temporary impacts would not occur if this utility easement is not used for construction access.

Table 5
DIRECT IMPACTS TO VEGETATION COMMUNITIES/LAND USE TYPES FROM THE PROPOSED PROJECT OPTIONS

Vegetation Community	Impact Acreages[1]							
	Project with Switchback Ramp Option		Project with Curvilinear Ramp Option		Project with Linear Ramp Option		Padre Dam Easement Construction Access	
	T	P	T	P	T	P	T	P
Southern Riparian Forest (including disturbed and burned)	2.08	0.50	2.08	0.50	2.08	0.50	0	-
Southern Willow Scrub	0.44	0.04	0.44	0.04	0.44	0.04	0.01	-
Mule Fat Scrub	0.03	<0.01	0.03	<0.01	0.03	<0.01	0.06	-
Freshwater Marsh	0.04	<0.01	0.04	<0.01	0.04	<0.01	0	-
Disturbed Wetland	0	0	0	0	0	0	0	-
Open Water	0	0	0	0	0	0	0	-
Diegan Coastal Sage Scrub – disturbed	0	0	0	0	0	0	0	-
Flat-topped Buckwheat Scrub	0.13	0.03	0.13	0.03	0.01	0.15	0	-
Broom Baccharis - dominated Sage Scrub	0.01	0	0.01	0	0.04	0.02	0	-
Non-native Grassland	0.05	0.01	0.05	0.01	0.05	0.01	0	-
Ornamental	4.35	0.42	4.35	0.42	4.37	0.47	0.04	-
Disturbed Habitat	5.22	3.31	5.28	3.26	5.29	3.38	0.22	-
Urban/Developed	0.38	1.56	0.38	1.56	0.38	1.56	0.02	-

[1] Rounded to the nearest 0.01; thus, totals reflect rounding
T = temporary impacts: P = permanent impacts

6.1.2 Jurisdictional Waters and Wetlands

Project implementation would result in direct permanent and temporary impacts to jurisdictional waters and wetlands as discussed below.

Impacts to jurisdictional waters and wetlands would require mitigation. Mitigation for impacts to jurisdictional waters and wetlands is presented in Section 7.2 of this report (BIO-8).

U.S. Army Corps of Engineers Jurisdiction

Implementation of any of the options (i.e., Switchback Ramp Option, Curvilinear Ramp Option, or Linear Ramp Option) would result in direct permanent impacts to approximately 0.03 acre of WUS, consisting of 0.02 acre of wetlands and 0.01 acre of non-wetland waters, as well as direct temporary impacts to approximately 0.18 acre of WUS, consisting of 0.17 acre of wetlands and 0.01 acre of non-wetland waters (Table 6; Figures 6a through 6e). Implementation of the Padre Dam Easement Access Option would not result in additional direct temporary impacts to WUS.

Impacts to WUS would also represent impacts to waters of the State subject to RWQCB jurisdiction pursuant to CWA Section 401. Impacts to WUS would require CWA Section 404 and 401 permits from the USACE and RWQCB, respectively.

Table 6
DIRECT IMPACTS TO USACE JURISDICTIONAL AREAS
FROM THE PROPOSED PROJECT OPTIONS

Vegetation Community	Impact Acreages[1]							
	Project with Switchback Ramp Option		Project with Curvilinear Ramp Option		Project with Linear Ramp Option		Padre Dam Easement Construction Access	
	T	P	T	P	T	P	T	P
Wetland Waters of the U.S.								
Southern Riparian Scrub (including disturbed and burned)	0.12	0.01	0.12	0.01	0.12	0.01	0	-
Southern Willow Scrub	0.01	0.01	0.01	0.01	0.01	0.01	0	-
Freshwater Marsh	0.04	<0.01	0.04	<0.01	0.04	<0.01	0	-
Subtotal	**0.17**	**0.02**	**0.17**	**0.02**	**0.17**	**0.02**	**0**	
Non-wetland Waters of the U.S.								
Ephemeral Stream	0.01	<0.01	0.01	<0.01	0.01	<0.01	0	-
Subtotal	**0.01**	**<0.01**	**0.01**	**<0.01**	**0.01**	**<0.01**	**0**	**-**
TOTAL	**0.18**	**0.03**	**0.18**	**0.03**	**0.18**	**0.03**	**0**	**-**

[1] Rounded to the nearest 0.01; thus, totals reflect rounding
T = temporary impacts: P = permanent impacts

California Department of Fish and Wildlife Jurisdiction

Implementation of any of the options (i.e., Switchback Ramp Option, Curvilinear Ramp Option, or Linear Ramp Option) would result in direct permanent impacts to approximately 0.55 acre of

CDFW jurisdictional areas, consisting of 0.55 acre of wetland or riparian habitats and 0.001 acre of stream channel, as well as direct temporary impacts to approximately 2.59 acres of wetland or riparian habitats and 0.003 acre of stream channel (Table 7; Figures 7a through 7e). Implementation of the Padre Dam Easement Access Option would result in additional direct temporary impacts to 0.07 acre of wetland and riparian habitat.

Impacts to CDFW jurisdictional habitat would require issuance of a Streambed Alteration Agreement by CDFW.

Table 7
DIRECT IMPACTS TO CDFW JURISDICTIONAL AREAS FROM THE PROPOSED PROJECT OPTIONS

Vegetation Community	Impact Acreages[1]							
	Project with Switchback Ramp Option		Project with Curvilinear Ramp Option		Project with Linear Ramp Option		Padre Dam Easement Construction Access	
	T	P	T	P	T	P	T	P
Riparian/Wetland Habitat								
Southern Riparian Scrub (including disturbed and burned)	2.08	0.50	2.08	0.50	2.08	0.50	0	-
Southern Willow Scrub	0.44	0.04	0.44	0.04	0.44	0.04	0.01	-
Mule Fat Scrub	0.03	<0.01	0.03	<0.01	0.03	<0.01	0.06	-
Freshwater Marsh	0.04	<0.01	0.04	<0.01	0.04	<0.01		-
Subtotal	**2.59**	**0.55**	**2.59**	**0.55**	**2.59**	**0.55**	**0.07**	**-**
Stream Channel/Unvegetated Habitat								
Streambed	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0	
Subtotal	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**0**	
TOTAL	**2.59**	**0.55**	**2.59**	**0.55**	**2.59**	**0.55**	**0.07**	**-**

[1] Rounded to the nearest 0.01; thus, totals reflect rounding
T = temporary impacts: P = permanent impacts

6.1.3 Special Status Plant Species

The project would result in direct permanent impacts to one special status plant species: San Diego marsh-elder, a CRPR List 2B.2 species. These impacts are further described below.

Implementation of any of the project options would impact two San Diego marsh-elder individuals. Proposed impacts would not affect the regional long-term survival of this species, which is known from other portions of the BSA as well as other locations in the project vicinity. In addition, this species is not identified as sensitive in the City of San Diego's MSCP Subarea Plan or the City of Santee's draft MSCP Subarea Plan.

6.1.4 Special Status Animal Species

The project would result in impacts to riparian habitat areas used by five special status animal species determined to occupy and use portions of the site for breeding and/or roosting: Cooper's hawk, least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler.

Mitigation measures addressing impacts to special status animal species are presented in Section 7.3 (BIO-9 through BIO-12).

Cooper's Hawk

Cooper's hawk, a CDFW Watch List species, was observed perched in southern riparian forest in the western portion of the BSA. The project would result in 0.50 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this raptor species.

Least Bell's Vireo

Least Bell's vireo, a federal and state listed endangered species, was detected in five locations within and adjacent to the BSA. The project would result in the following impacts to riparian habitats that may be used by this species for breeding and nesting: 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, 0.04 acre of permanent impact and 0.44 acre of temporary impact to southern willow scrub, and 0.004 acre of permanent impact and 0.03 acre of temporary impact to mule fat scrub.

The project also would result in approximately 5.7 acres of direct permanent impacts to USFWS-designated critical habitat for least Bell's vireo, of which approximately 0.52 acre are to wetland or riparian habitats that are potentially suitable habitat for vireo. The remaining impacts within critical habitat are to upland habitats or developed lands. Impacts to 0.52 acre of critical habitat suitable for supporting least Bell's vireo would be mitigated through implementation of Measure BIO-1 in Section 7.1 and Measure BIO-9 in Section 7.3, as well as being addressed through Section 7 consultation initiated by the USACE as described in Measure BIO-12. Consultation with USFWS on impacts to critical habitat is only required when there is an associated federal action. The project would require a CWA 404 permit from the USACE.

White-tailed Kite

White-tailed kite, a State Fully Protected Species, was observed flying over southern riparian forest south of the eastern portion of the BSA. The project would result in 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this raptor species.

Yellow-breasted Chat

Yellow breasted chat, a State Species of Special Concern, was detected in two locations in southern riparian forest in the western portion of the BSA. The project would result in 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this species.

Yellow Warbler

Yellow warbler, a federal Bird of Conservation Concern and State Species of Special Concern, was detected in southern riparian forest in six locations within the BSA, ranging from the western to the eastern portions of the alignment. The project would result in 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this species.

6.1.5 Wildlife Corridors and Movement

The project would not constrain east-west wildlife movement through the area. The project is not anticipated to have a significant effect on wildlife corridors or movement since the majority of the trail would be constructed on or adjacent to an existing berm paralleling the southern edge of the golf course, thus not fragmenting the river corridor, and the portions of the trail east of the golf course would be constructed along an existing dirt trail that already traverses this habitat. A few limited areas on the north side of the trail adjacent to the golf course may be fenced with chain link or other taller protective fence where it is most likely trail users would benefit from protection from airborne golf balls. All other fencing along the edges of the trail would allow passage of wildlife and not result in barriers to wildlife movement. Wildlife movement through this area is primarily in an east-west direction, as wildlife movement south of the river is already constrained by SR-52 and residential development, and wildlife movement north of the river is already constrained by the golf course, residential and commercial development, and roadways.

6.2 INDIRECT IMPACTS

Potential indirect impacts from the proposed project evaluated in this section include those that may result from construction-related noise, increased human activity, colonization by invasive plants, presence of nuisance animals, increased nighttime lighting, decreased water quality, and fugitive dust.

6.2.1 Construction Noise

Construction-related noise from such sources as clearing, grubbing, and grading would be a temporary impact to wildlife. Breeding birds and mammals may temporarily or permanently leave their territories to avoid disturbances from construction activities, which could lead to reduced reproductive success and increased mortality. Potential short-term noise impacts could result from construction for the proposed project if construction noise levels exceed a level of 60 dB L_{eq} hourly average or ambient (whichever is greater) adjacent to nesting sensitive bird species, including raptors. Potential adverse effects from noise impacts during construction would be addressed through implementation of Measure BIO-10 identified in Section 7.3.

6.2.2 Human Activity

Increases in human activity in the area could result in degradation of habitat adjacent to the proposed trail and associated indirect impacts on sensitive species through the creation of unauthorized trails and removal of vegetation.

Increases in human activity resulting from the proposed trail are not expected to result in adverse effects on adjacent habitat and sensitive species as the project proposes to install permanent fencing to clearly define the boundaries of the trail, and the trail will be of sufficient width to accommodate two-way bicycle traffic. Furthermore, human activity is already present in the area from the adjacent golf course and along existing established and informal segments of the trail.

6.2.3 Invasive Plants

The BSA already contains a wide variety of non-native species, including many invasive species, and project implementation is not anticipated to increase colonization by non-native plants. However, the proposed project would incorporate measures to ensure that the project does not increase colonization of invasive species. These measures are presented as BIO-4 and BIO-7 in Section 7.1.

6.2.4 Nuisance Animals

Domesticated animals (e.g., dogs and cats) are known to affect native wildlife, particularly in habitats immediately adjacent to development. Since standard practice prohibits construction workers from bringing pets to the work site, indirect effects associated with domesticated animals during construction would not occur. Furthermore, since the project is not residential in nature, it would not result in an increase in free-roaming domesticated cats in the project vicinity.

It is anticipated that leashed dogs would be allowed on the completed trail. Leashed dogs are not expected to have an effect on wildlife since they will be restricted to the established trail.

For the reasons described above, the project would not result in adverse indirect effects from nuisance animals.

6.2.5 Nighttime Lighting

Nighttime lighting has potential to spill over into native habitats, exposing wildlife species to an unnatural light regime and potentially altering their behavior patterns which can result in lower reproductive success, thus reducing species diversity. In addition, nighttime lighting can provide nocturnal predators with an unnatural advantage over their prey.

Project construction would occur during daylight hours. Permanent lighting may be installed as part of the project. Any such lighting would be low-voltage safety lighting of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from sensitive habitat. As such, the project would not result in adverse indirect effects from nighttime lighting.

6.2.6 Water Quality

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the proposed project prior to construction in order to obtain CWA Section 402 National Pollutant Discharge Elimination System permit coverage for storm water discharges. The SWPPP Best Management Practices (BMPs) would be implemented to ensure that construction does not adversely affect

water quality from the use, for example, of petroleum products (e.g., fuels, oil, and lubricants) and erosion of land cleared during construction.

The proposed project qualifies as exempt from City of San Diego and City of Santee Priority Development Project (PDP) storm water requirements because it consists of a new bike and pedestrian trail that would direct storm water runoff to adjacent vegetated areas or other non-erodible permeable areas. As a result, the project is not required to include pollutant treatment or hydromodification controls (Nasland Engineering 2016).

Per City of San Diego requirements, PDP exempt projects are still required to comply with site design and source control BMP requirements as described in the City of San Diego Storm Water Standards Manual.

Per City of Santee requirements, PDP exempt projects are still required to comply with site design BMP requirements, source control BMP requirements, and prepare a Standard Development Project Storm Water Quality Management Plan.

No impacts to water quality are anticipated during project construction as the project would prepare and implement a SWPPP. No impacts to water quality are anticipated from the completed bikeway, as the project does not have uses that would contribute pollutants and also would comply with City of San Diego and City of Santee site design and source control BMP requirements.

6.2.7 Fugitive Dust

Dust released during construction activities could cover vegetation in adjacent habitat areas. The resulting dust covering could reduce native plant productivity, in turn displacing native vegetation, reducing diversity, and affecting wildlife dependent on the vegetation.

The project would avoid indirect impacts to plants and wildlife from fugitive dust by implementing standard air quality control measures that are routinely implemented as part of all SANDAG construction contracts to effectively reduce emissions during construction. The control measures may include, but are not limited to, application of soil stabilizers (water) to disturbed areas, termination of soil disturbance during high wind events, and covering material stock piles. As such, the project would not result in adverse indirect effects from fugitive dust.

6.3 CUMULATIVE IMPACTS

6.3.1 Sensitive Vegetation Communities

The project would contribute to the cumulative impact on sensitive vegetation communities, including southern riparian forest, southern willow scrub, mule fat scrub, freshwater marsh, flat-topped buckwheat scrub, broom baccharis-dominated sage scrub, and non-native grassland. The project's contribution to these cumulative impacts would be mitigated through the implementation of habitat mitigation requirements, as identified in Measures BIO-1 and BIO-2 in Section 7.1. Mitigation for habitat loss is required to compensate for direct impacts as well as cumulative loss of habitat.

6.3.2 Jurisdictional Waters and Wetlands

The proposed project's contribution to cumulative impacts to jurisdictional waters and wetlands would be fully mitigated in accordance with regulatory permit requirements to be negotiated with the USACE, RWQCB, and CDFW. Required mitigation, as identified in Measure BIO-8 in Section 7.2, would reduce the project's cumulative impacts on jurisdictional waters and wetlands.

6.3.3 Special Status Plant Species

The project would not contribute to the cumulative impact on special status plant species given the low numbers of individuals impacted and presence of these species in other portions of the BSA and region.

6.3.4 Special Status Animal Species

The project has the potential to contribute to the cumulative impact on Cooper's hawk, least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler through loss of habitat. The project's contribution to these cumulative impacts would be mitigated through the implementation of habitat mitigation requirements at ratios determined through consultation with the resource agencies, as well as avoiding direct, inadvertent take of these species through implementation of avoidance measures. Applicable mitigation measures are identified in Section 7.1 (Measures BIO-1 and BIO-2) and Section 7.3 (Measures BIO-9, BIO-10, and BIO-12).

7.0 AVOIDANCE AND COMPENSATORY MITIGATION MEASURES

This section identifies avoidance and compensatory mitigation measures for the proposed project's direct, indirect, and cumulative impacts to sensitive vegetation communities, jurisdictional waters and wetlands, and special status plant and animal species within the BSA. The proposed project has been designed to avoid and substantially lessen impacts to sensitive biological resources to the extent practicable; much of the proposed path would be located along an existing unpaved trail and on top of an existing berm. This section also identifies measures that will be incorporated into the project to avoid impacts to biological resources. However, complete avoidance of all sensitive biological resources is not feasible. As a result, this section identifies compensatory mitigation measures for impacts that cannot feasibly be avoided.

7.1 SENSITIVE VEGETATION COMMUNITIES

Proposed habitat mitigation ratios and corresponding acreages for impacts to sensitive vegetation communities are presented in Tables 9 and 10 for the proposed project options. The Switchback Ramp Option and Curvilinear Ramp Option have the same direct impacts to sensitive vegetation communities (3.37 acres, comprised of 0.59 acre of permanent impact and 2.78 acres of temporary impact) and the same habitat mitigation requirements (4.40 acres comprised of 2.73 acres for temporary impacts and 1.67 acres for permanent impacts; [Table 8]). The Linear Ramp Option would require an additional 0.05 acre of habitat mitigation compared to the Switchback Ramp or Curvilinear Ramp Options, for a total mitigation requirement of 4.45 acres comprised of 2.63 acres for temporary impacts and 1.82 acres for permanent impacts (Table 9). The direct temporary impact Padre Dam Easement Construction Access was not analyzed in a stand-alone table. Implementation of this alternative would temporarily impact an additional 0.01 acre of southern willow scrub and 0.06 acre of mule fat scrub, resulting in an increase of 0.07 acre in required wetland habitat mitigation when combined with any of the other project options.

Table 8
PROPOSED MITIGATION REQUIREMENTS
FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES
FROM THE SWITCHBACK RAMP OR CURVILINEAR RAMP
PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Southern Riparian Forest	2.08	1:1	2.08
Southern Willow Scrub	0.44	1:1	0.44
Mule Fat Scrub	0.03	1:1	0.03
Freshwater Marsh	0.04	1:1	0.04
Flat-topped Buckwheat Scrub	0.13	1:1	0.13
Broom Baccharis dominated Sage Scrub	0.01	1:1	0.01
Non-native Grassland	0.05	-	0[2]
Total Temporary	**2.78**	**--**	**2.73**

Table 8 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES FROM THE SWITCHBACK RAMP OR CURVILINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Permanent Impacts			
Southern Riparian Forest	0.50	3:1	1.50
Southern Willow Scrub	0.04	3:1	0.12
Mule Fat Scrub	<0.01	2:1	0.01
Freshwater Marsh	<0.01	3:1	0.01
Flat-topped Buckwheat Scrub	0.03	1:1	0.03
Broom Baccharis dominated Sage Scrub	0	--	0
Non-native Grassland	0.01	1:1	0[3]
Total Permanent	**0.59**	**--**	**1.67**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.
[2] No mitigation for temporary impacts to non-native grassland would be required, as all areas of non-native grassland that would be temporarily impacted by the proposed project would be revegetated with a native grassland and forb palette as an erosion control measure.
[3] Permanent impacts to 0.01 acre of non-native grassland are considered de minimis and mitigation is not proposed.

Table 9
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES FROM THE ~~SWITCHBACK RAMP OR CURVILINEAR~~LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Southern Riparian Forest	2.08	1:1	2.08
Southern Willow Scrub	0.44	1:1	0.44
Mule Fat Scrub	0.02	1:1	0.02
Freshwater Marsh	0.04	1:1	0.04
Flat-topped Buckwheat Scrub	0.01	1:1	0.01
Broom Baccharis dominated Sage Scrub	0.04	1:1	0.04
Non-native Grassland	0.04	-	0[2]
Total Temporary	**2.67**	**--**	**2.63**

Table 9 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES FROM THE ~~SWITCHBACK RAMP OR CURVILINEAR~~LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Permanent Impacts			
Southern Riparian Forest	0.50	3:1	1.50
Southern Willow Scrub	0.04	3:1	0.12
Mule Fat Scrub	0.01	2:1	0.02
Freshwater Marsh	<0.01	3:1	0.01
Flat-topped Buckwheat Scrub	0.15	1:1	0.15
Broom Baccharis dominated Sage Scrub	0.02	1:1	0.02
Non-native Grassland	0.01	1:1	0[3]
Total Permanent	**0.74**	**--**	**1.82**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.
[2] No mitigation for temporary impacts to non-native grassland would be required, as all areas of non-native grassland that would be temporarily impacted by the proposed project would be revegetated with a native grassland and forb palette as an erosion control measure.
[3] Permanent impacts to 0.01 acre of non-native grassland are considered de minimis and mitigation is not proposed.

Measures BIO-1 through BIO-7 have been identified to avoid sensitive vegetation communities impacts to the extent feasible, and compensate for sensitive vegetation community impacts that cannot feasibly be avoided.

BIO-1 Direct temporary impacts to southern riparian forest, southern willow scrub, mule fat scrub, and freshwater marsh would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, preservation, and/or establishment/re-establishment. Direct permanent impacts to southern riparian forest, southern willow scrub, and freshwater marsh would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank.

BIO-2 Direct temporary impacts to flat-topped buckwheat scrub and broom baccharis-dominated sage scrub would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, or preservation. Temporarily impacted areas would be revegetated with a Diegan coastal sage scrub plant palette. Mitigation for direct permanent impacts to flat-topped buckwheat scrub and broom baccharis-dominated sage scrub would occur at a 1:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, preservation, or purchase of credits at an approved mitigation bank.

BIO-3 Whenever feasible, native vegetation shall be trimmed to the ground surface rather than uprooted.

BIO-4 The project landscape/erosion control plans shall not include invasive species (as listed in the California Invasive Plant Council (Cal-IPC) Invasive Plant Inventory [Cal-IPC 2006, or as updated]. Native plant species shall be used in all revegetation and landscaping areas outside of the existing golf course. Native or non-invasive ornamental plant species shall be used for landscaping and revegetation within the existing golf course.

BIO-5 A qualified biologist shall be responsible for overseeing compliance with all laws, regulations, permit conditions, mitigation measures, and any other biological resources requirements during project construction. Prior to the start of construction, a qualified biologist shall conduct environmental awareness training for all construction personnel. Topics to be included in the training include, but are not limited to, the construction limits, sensitive habitats, features, plants, and animal species to avoid, mitigation measure and/or permit condition requirements, seasonal or other time-related restrictions on construction, and measures related to erosion control and spill prevention. The qualified biologist shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of field experience.

BIO-6 Sensitive vegetation communities, jurisdictional waters and wetlands, and other sensitive biological resources located outside of permanent and temporary impact areas shall be identified on the final construction plans as "environmentally sensitive areas" and protected with temporary fencing (e.g., orange snow fence). A qualified biologist shall monitor the installation of the temporary fencing and ensure it is installed prior to the start of construction. A qualified biologist shall regularly inspect the temporary fencing to ensure it remains in place throughout construction.

BIO-7 SANDAG shall prepare a revegetation plan showing how a~~A~~ll areas of temporary disturbance within sensitive vegetation communities shall be revegetated with appropriate native species. Appropriate species include those that are (1) native, and (2) characteristic of the impacted type of vegetation community (e.g. southern riparian forest and southern willow scrub would be revegetated with willows and other native riparian vegetation; mule fat scrub would be revegetated with mule fat and other species associated with this community; freshwater marsh would be revegetated with cattail and/or bulrush or other native marsh species; buckwheat and baccharis scrub would be revegetated with coastal sage scrub-associated species; and non-native grassland would be revegetated with native grasses and forbs). The goal of the revegetation plan shall be to meet or exceed pre-project conditions.

7.2 JURISDICTIONAL WATERS AND WETLANDS

Measure BIO-8 would mitigate for impacts to jurisdictional waters and wetlands that cannot feasibly be avoided.

BIO-8 Direct temporary impacts to southern riparian forest, southern willow scrub, mule fat scrub, and freshwater marsh would be mitigated on site at a 1:1 ratio through one or

more of the following as determined through resource agency consultation: restoration, enhancement, preservation, and/or establishment/re-establishment. Direct temporary impacts to non-wetland WUS/CDFW streambed would occur through returning these areas to their pre-construction contours and conditions. Direct permanent impacts to southern riparian forest, southern willow scrub, and freshwater marsh would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank. Direct permanent impacts to non-wetland WUS/CDFW streambed would occur at a 1:1 ratio through on- and/or off-site restoration, enhancement, and/or establishment/re-establishment. The USACE, RWQCB, and CDFW would determine the final mitigation requirements for impacts to jurisdictional waters and wetlands.

Proposed mitigation ratios and corresponding acreages for impacts to USACE jurisdictional habitat are presented in Table 10. The Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option have the same impacts to USACE jurisdictional habitat (0.21 acre, comprised of 0.03 acre of permanent impact and 0.18 acre of temporary impact) and the same habitat mitigation requirements (0.25 acre comprised of 0.18 acre for temporary impacts and 0.07 acre for permanent impacts; [Table 10]).

Table 10
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO USACE JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Wetland Waters of the U.S.			
Southern Riparian Forest	0.12	1:1	0.12
Southern Willow Scrub	0.01	1:1	0.01
Freshwater Marsh	0.04	1:1	0.04
Subtotal	**0.17**	--	**0.17**
Non-wetland Waters of the U.S.			
Ephemeral Stream	0.01	1:1	0.01
Subtotal	**0.01**	--	**0.01**
Total Temporary	**0.18**	--	**0.18**
Permanent Impacts			
Wetland Waters of the U.S.			
Southern Riparian Forest	0.01	3:1	0.03
Southern Willow Scrub	0.01	3:1	0.03
Freshwater Marsh	<0.01	3:1	0.01
Subtotal	**0.02**	--	**0.07**

Table 10 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO USACE JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Non-wetland Waters of the U.S.			
Ephemeral Stream	<0.01	1:1	<0.01
Subtotal	**<0.01**	**--**	**<0.01**
Total Permanent	**0.03**	**--**	**0.07**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.

Proposed mitigation ratios and corresponding acreages for impacts to CDFW jurisdictional habitat are presented in Table 11. The Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option have the same impacts to CDFW jurisdictional habitat (3.14 acres, comprised of 0.55 acre of permanent impact and 2.59 acres of temporary impact) and the same habitat mitigation requirements (4.24 acres comprised of 2.59 acres for temporary impacts and 1.65 acres for permanent impacts; Table 11). The Padre Dam Easement Construction Access route would result in direct temporary impacts to an additional 0.01 acre of southern willow scrub and 0.06 acre of mule fat scrub. Since direct temporary impacts to southern willow scrub and mule fat scrub would likely be mitigated at a 1:1 ratio, inclusion of the Padre Dam Easement Construction Access route in the proposed project would require an additional 0.07 acre in required wetland habitat mitigation.

Table 11
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO CDFW JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Riparian/Wetland Habitat			
Southern Riparian Forest	2.08	1:1	2.08
Southern Willow Scrub	0.44	1:1	0.44
Mule Fat Scrub	0.03	1:1	0.03
Freshwater Marsh	0.04	1:1	0.04
Subtotal	**2.59**	**--**	**2.59**
Stream Channel/Unvegetated Habitat			
Streambed	<0.01	1:1	<0.01
Subtotal	**<0.01**	**--**	**<0.01**
Total Temporary	**2.59**	**--**	**2.59**

Table 11 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO CDFW JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Permanent Impacts			
Riparian/Wetland Habitat			
Southern Riparian Forest	0.50	3:1	1.50
Southern Willow Scrub	0.04	3:1	0.12
Mule Fat Scrub	<0.01	2:1	0.01
Freshwater Marsh	<0.01	3:1	0.01
Subtotal	**0.55**	**--**	**1.64**
Stream Channel/Unvegetated Habitat			
Streambed	<0.01	--	<0.01
Subtotal	**<0.01**	--	**<0.01**
Total Permanent	**0.55**	**--**	**1.65**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.

7.3 SPECIAL STATUS ANIMAL SPECIES

Measure BIO-9 is identified to compensate for the impacts to special status bird species habitats that cannot feasibly be avoided. Measure BIO-10 is identified to substantially lessen the indirect impacts of construction noise on special status bird species. Mitigation measure BIO-11 is identified to avoid direct impacts to migratory birds protected under the MBTA. Mitigation measure BIO-12 is identified to compensate for impacts to USFWS-designated critical habitat for least Bell's vireo.

BIO-9 If feasible, no trimming, grubbing, or clearing of riparian trees or vegetation shall occur during the breeding season for least Bell's vireo (March 15-September 15), yellow-breasted chat and yellow warbler (February 15-August 31), or raptors (January 15-July 15. If riparian tree and vegetation trimming, grubbing, or clearing cannot feasibly occur outside of these breeding seasons, then pre-construction nesting surveys, as described below, would be conducted by a qualified biologist prior to initiating vegetation trimming, clearing, or grubbing activities. The vireo nesting survey shall consist of three surveys spaced seven to ten days apart, with the final survey occurring no more than three days prior to initiating trimming, clearing, or grubbing activities. If nesting vireos are detected on or within 500 feet of planned clearing or grubbing activities, then clearing or grubbing on or within 500 feet of the nesting vireos shall be postponed until a qualified biologist determines that the young have fledged or the nest is no longer active. The nesting survey for yellow-breasted chat, yellow warbler, and raptors shall consist of one pre-construction nesting survey conducted no more than seven days prior to the commencement of vegetation trimming, clearing or grubbing to determine if active nests of these species are present in the affected areas. If nesting yellow warbler, yellow-breasted chat, or

raptors are detected on or within 300 feet of the impact area during pre-construction surveys, construction on or within 300 feet of the nest shall be postponed until after the young have fledged or the nest is no longer active. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.

BIO-10 If feasible, operation of construction equipment (e.g. backhoes, loaders, bulldozers, excavators, skid steers, graders) shall not occur during the breeding seasons for the least Bell's vireo (March 15-September 15), yellow warbler and yellow-breasted chat (February 15-August 31), or nesting raptors (January 15-July 15). If it is not feasible to avoid operation of construction equipment during any of these breeding seasons, then one pre-construction nesting survey shall be conducted by a qualified biologist no more than seven days prior to the start of construction to determine if active nests of these species are present within the areas potentially impacted by noise. The "noise impact area" is defined as up to 500 feet from the noise source for least Bell's vireo and up to 300 feet from the noise source for yellow warbler, yellow-breasted chat, and raptors. The pre-construction survey can either be combined with or conducted separately from surveys conducted for Measure BIO-9. If it is determined at the completion of pre-construction surveys that active nests belonging to least Bell's vireo, yellow warbler, yellow-breasted chat, or raptors are absent from the noise impact area, construction shall be allowed to proceed. If pre-construction surveys determine the presence of active nests belonging to any of these sensitive species, then construction shall either: (1) be postponed within the noise impact area until a qualified biologist determines any nests are no longer active or until after the respective breeding season; or (2) not occur until a temporary noise barrier or berm is constructed at the edge of the construction limits and/or around the piece of equipment to ensure that noise levels within the noise impact area are reduced to below one-hour average of 60 dBA or ambient, whichever is greater, at the nest location. Decibel output will be confirmed by a qualified noise specialist and intermittent monitoring by a qualified biologist will be required to ensure that conditions have not changed. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.

BIO-11 If feasible, no grubbing, trimming, or clearing of vegetation shall occur during the general avian breeding season (February 15-August 31). If grubbing, trimming, or clearing cannot feasibly occur outside of the general avian breeding season, then one pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to the commencement of vegetation clearing or grubbing to determine if active bird nests are present in the affected areas. The pre-construction survey can either be combined with or conducted separately from surveys conducted for Measure BIO-9. Should an active migratory bird nest be located, the project biologist would direct vegetation clearing away from the nest until it has been determined by the project biologist that the young have fledged or the nest has failed.

If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.

BIO-12 Mitigation for direct impacts to 0.52 acre of riparian habitat identified by the USFWS as critical habitat for least Bell's vireo, including 0.48 acre of southern riparian forest, 0.04 acre of southern willow scrub, and less than 0.01 acre of mule fat scrub, would be addressed through Section 7 consultation as part of the CWA 404 permitting process and the Fish and Game Code Section 2080 Incidental Taker Permit (if required). The results of the Section 7 consultation and conditions of the Incidental Take Permit (if required) would determine the need, if any, for special conditions or habitat mitigation beyond the mitigation identified for impacts to riparian habitat identified in BIO-1. As described in BIO-1, direct permanent impacts to southern riparian forest and southern willow scrub would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank.

THIS PAGE INTENTIONALLY LEFT BLANK

8.0 REFERENCES

American Ornithologists' Union (AOU). 2014. List of the 2,046 Bird Species (with Scientific and English Names) Known from the AOU Check-list Area. Available at: http://www.aou.org/checklist/index.php3.

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, second edition. University of California Press, Berkeley.

Bowman, R. 1973. Soil Survey of the San Diego Area. USDA in cooperation with the USDI, C Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

California Department of Fish and Wildlife. California Natural Diversity Data Base (CNDDB). 2016. RareFind Database Program, Version 5.

California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory. URL: http://cal-ipc.org/paf/.

California Native Plant Society. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. http://www.rareplants.cnps.org.

City of San Diego. San Diego River Park Master Plan. Approved by the City Planning Commission on April 18, 2013, Resolution No. 4897-PC. Adopted by the City Council on May 20, 2013, Resolution No. R-308196.

Collins, Joseph T. and Travis W. Taggart. 2006. The Center for North American Herpetology (CNAH): The Academic Portal to North American Herpetology. URL: http://www.cnah.org/index.asp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.

Holland R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento. 156 pp.

Nasland Engineering. 2016. Water Quality Analysis for the San Diego River Trail Carlton Oaks Golf Course Segment, Cities of San Diego and Santee, CA. December 21.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R.F. Holland, 1986. 73 pp.

San Diego Association of Governments (SANDAG). 2015a. San Diego Forward: The Regional Plan. October. Available at: http://www.sdforward.com.

2015b. San Diego River Trail: Carlton Oaks Segment – Alternative Alignment Study.

2010. Riding to 2050, the San Diego Regional Bicycle Plan.

Sogge, M.K., Ahlers, Darrell, and S.J. Sferra. 2010. *A natural history summary and survey protocol for the southwestern willow flycatcher*. U.S. Geological Survey Techniques and Methods 2A-10. 38 p.

U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Eds. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center. September.

U.S. Fish and Wildlife Service. 2016. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office (CFWO). Available at: http://www.fws.gov/carlsbad/gis/cfwogis.html

2001. Least Bell's Vireo Survey Guidelines. January 19.

1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. August 6.

Appendix A

Site Photographs

Photo 1. Looking south at freshwater marsh and southern willow scrub along Sycamore Creek in the western portion of the study area.

Photo 2. Looking east at the existing dirt trail on top of the berm in the western portion of the study area.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Photo 3. Looking east at southern willow scrub in the central portion of the study area. This habitat is north of the berm that abuts the San Diego River.

Photo 4. Looking east at the existing dirt trail on top of the berm in the central portion of the study area.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Photo 5. Looking west at the San Diego River channel and associated riparian forest habitat in the central portion of the study area.

Photo 6. Looking southwest at a stand of southern riparian forest adjacent to the golf course in the eastern portion of the study area.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Photo 7. Looking north at a small stand of southern riparian forest east of the golf course maintenance building in the eastern portion of the study area.

Photo 8. Looking north at the existing San Diego River Trail just east of the golf course.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Photo 9. Looking east at the existing San Diego River Trail just east of the golf course.

Photo 10. Looking south at riparian forest along the existing San Diego River Trail in the eastern portion of the study area.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Photo 11. Looking east at a small bridge crossing of non-wetland Waters of the U.S. and CDFW riparian habitat in the eastern portion of the study area.

Photo 12. Looking east at the undeveloped trail below the Carlton Hills Boulevard bridge in the eastern portion of the study area.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Photo 13. Looking northwest at disturbed southern riparian forest in Mast Park, just east of Carlton Hills Boulevard.

Photo 14. Looking east at an existing dirt trail in Mast Park in the eastern portion of the study area.

G:\PROJECTS\N\NAS-06_SDRT_CarltonOaksGC_Photos\0622_23_16_SN

Appendix B

Plant Species Observed

Appendix B
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species		
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	blue elderberry
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus integrifolia	lemonadeberry
Asteraceae	*Ambrosia psilostachya*	western ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Artemisia palmeri†	San Diego sagewort†
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	Baccharis sarothroides	broom baccharis
	Encelia californica	California encelia
	Erigeron canadensis	horseweed
	Helianthus annuus	western sunflower
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	goldenbush
	Iva hayesiana†	San Diego marsh-elder†
	Pseudognaphalium sp.	everlasting
	Xanthium strumarium	cocklebur
Boraginaceae	*Heliotropium curassavicum* var. *occulatum*	salt heliotrope
Cactaceae	*Opuntia littoralis*	coastal prickly pear
Cucurbitaceae	*Cucurbita foetidissima*	calabazilla
	Marah macrocarpa	wild cucumber
Cyperaceae	*Scirpus* sp.	bulrush
Euphorbiaceae	*Croton californicus*	California croton
Fabaceae	*Acmispon americanus*	Spanish-clover
	Amorpha fruticosa	false indigo
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak
Juglandaceae	*Juglans californica* var. *californica*†	Southern California black walnut†
Juncaceae	*Juncus acutus* ssp. *leopoldii*†	southwestern spiny rush†
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow
Onagraceae	*Camissoniopsis* sp.	sun cup
	Epilobium ciliatum ssp. *ciliatum*	willow herb
	Oenothera elata ssp. *hookeri*	great marsh evening-primrose

Appendix B (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species (cont.)		
Papaveraceae	*Eschscholzia californica*	California poppy
Platanaceae	*Platanus racemose*	western sycamore
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Rosaceae	*Heteromeles arbutifolia*	toyon
	Rosa californica	California rose
Salicaceae	*Populus fremontii*	western cottonwood
	Salix exigua	narrow-leaved willow
	Salix lasiolepis	arroyo willow
Sapindaceae	*Acer negundo*	box-elder
Saururacaea	*Anemopsis californica*	yerba mansa
Solanaceae	*Datura wrightii*	jimson weed
Typhaceae	*Typha* sp.	cattail
Vitaceae	*Vitis girdiana*	desert wild grape
Non-native Species		
Aizoaceae	*Carpobrotus edulis*	hottentot-fig
Anacardiaceae	*Schinus terebinthifolius*	Brazilian pepper tree
Apiaceae	*Apium graveolens*	celery
	Foeniculum vulgare	fennel
Arecaceae	*Washingtonia robusta*	Mexican fan palm
Asparagaceae	*Asparagus asparagoides*	bridal creeper
Asteraceae	*Erigeron bonariensis*	flax-leaf fleabane
	Helminthotheca echioides	bristly ox-tongue
	Lactuca serriola	wild lettuce
	Sonchus oleraceus	common sow thistle
Brassicaceae	*Hirschfeldia incana*	short-pod mustard
	Raphanus sativus	wild radish
	Sisymbrium irio	London rocket
Chenopodiaceae	*Chenopodium album*	pigweed
	Salsola tragus	Russian thistle
Euphorbiaceae	*Euphorbia peplus*	petty spurge
	Ricinus communis	castor bean
Fabaceae	*Melilotus albus*	white sweet clover
Moraceae	*Ficus carica*	edible fig

Appendix B (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Non-native Species (cont.)		
Oleaceae	*Fraxinus uhdei*	shamel ash
Onagraceae	*Ludwigia grandiflora*	large-flowered water primrose
Plantaginaceae	*Plantago major*	common plantain
Poaceae	*Avena* sp.	wild oat
	Bromus diandrus	common ripgut grass
	Bromus madritensis ssp. *rubens*	red brome
	Cortaderia jubata	pink pampasgrass
	Cynodon dactylon	Bermuda grass
	Paspalum dilatatum	dallis grass
	Pennisetum setaceum	purple fountain grass
	Stipa miliacea	smilo grass
Polygonaceae	*Rumex crispus*	curly dock
Solanaceae	*Nicotiana glauca*	tree tobacco
Tamaricaceae	*Tamarix* sp.	tamarisk
Tropaeolaceae	*Tropaeolum majus*	garden nasturtium

†Sensitive species

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix C

Animal Species Observed or Detected

Appendix C
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES			
Order	Family		
Decapoda	Cambaridae	*Procambarus* sp.	crayfish
Lepidoptera	Lycaenidae	*Icaricia acmon acmon*	acmon blue
	Nymphalidae	*Danaus plexippus*	monarch
		Nymphalis antiopa	mourning cloak
	Pieridae	*Pieris rapae*	cabbage white
		Pontia sisymbrii	spring white
	Papilionidae	*Papilio eurymedon*	pale swallowtail
		Papilio rutulus	western tiger swallowtail
		Papilio zelicaon	anise swallowtail
Odonata	Libellulidae	*Libellula saturata*	flame skimmer
VERTEBRATES			
Amphibians			
Order	Family		
Anura	Ranidae	*Lithobates catesbeianus*	American bullfrog
Reptiles			
Order	Family		
Squamata	Colubridae	*Masticophis flagellum*	western coachwhip
	Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
		Uta stansburiana	side-blotched lizard
Birds			
Order	Family		
Accipitriformes	Accipitridae	*Accipiter cooperii†*	Cooper's hawk†
		Buteo jamaicensis	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
		Elanus leucurus†	white-tailed kite†

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Aix sponsa	wood duck
Apodiformes	Apodidae	*Aeronautes saxatalis*	white-throated swift
	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
	Laridae	*Larus* sp.	gull
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Zenaida macroura	mourning dove
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Bombycillidae	*Bombycilla cedrorum*	cedar waxwing
	Cardinalidae	*Pheucticus melanocephalus*	black-headed grosbeak
		Piranga ludoviciana	western tanager
	Corvidae	*Aphelocoma californica*	western scrub jay
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Emberizidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
		Pipilo maculatus	spotted towhee
	Estrildidae	*Lonchura punctulata*	scaly-breasted munia
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Hirundinidae	*Petrochelidon pyrrhonota*	cliff swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
		Tachycineta bicolor	tree swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Icterus cucullatus	hooded oriole
		Molothrus ater	brown-headed cowbird
	Parulidae	*Geothlypis trichas*	common yellowthroat
		Icteria virens†	yellow-breasted chat†
		Oreothlypis celata	orange-crowned warbler
		Setophaga petechia†	yellow warbler†

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Passeriformes (cont.)	Sittidae	*Sitta carolinensis*	white-breasted nuthatch
	Sturnidae	*Sturnus vulgaris*	European starling
	Sylviidae	*Chamaea fasciata*	wrentit
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
		Troglodytes aedon	house wren
	Turdidae	*Sialia mexicana*	western bluebird
		Turdus migratorius	American robin
	Tyrannidae	*Empidonax difficilis*	pacific-slope flycatcher
		Myiarchus cinerascens	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Tyrannus vociferans	Cassin's kingbird
	Vireonidae	*Vireo bellii pusillus*†	least Bell's vireo†
Pelecaniformes	Ardeidae	*Ardea alba*	great egret
		Butorides virescens	green heron
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Mammals			
Order	Family		
Artiodactyla	Cervidae	*Odocoileus hemionus*	mule deer
Carnivora	Procyonidae	*Procyon lotor*	raccoon
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Muridae	*Neotoma* sp.	woodrat
	Sciuridae	*Spermophilus beecheyi*	California ground squirrel

†Special Status Species

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix D

Special Status Plant Species Potential to Occur

Appendix D
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Adolphia californica	San Diego adolphia	--/-- CRPR 2B.1	Perennial shrub. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks. Flowering period December-April. Elevation 20-655 feet (6-200 meters).	**Low.** Very little suitable habitat is present on site. Species would likely have been observed if present.
Ambrosia pumila	San Diego ambrosia	FE/-- CRPR 1B.1	Small perennial herb. Occurs primarily on upper terraces of rivers and drainages. Within these areas it is typically found in grassland and within openings in coastal sage scrub, on sandy loam or clay soils. Flowering period April-October. Elevation 100-2,001 feet (30-610 meters).	**Low.** Suitable soils and habitat present on portions of the site but species was not observed during focused rare plant surveys or other biological surveys.
Artemisia palmeri	San Diego sagewort	--/-- CRPR 4.2	Shrub. Typically found along stream courses, often within coastal sage scrub and southern mixed chaparral. Flowering period May-September. Elevation 16-3,540 feet (5-1,080 meters).	**Present.** A total of four individuals were observed in southern riparian forest adjacent to the existing trail in the southern portion of the Biological Study Area (BSA).

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Bloomeria clevelandii	San Diego goldenstar	--/-- CRPR 1B.1	Perennial bulbiferous herb. Habitat includes clay soils on valley grasslands, particularly near mima mound topography or in the vicinity of vernal pools. Flowering period April-May. Elevation 164-1,525 feet (50-465 meters).	**None.** Suitable clay soils and habitat do not occur on the project site.
Brodiaea orcuttii	Orcutt's brodiaea	--/-- CRPR 1B.1	Small perennial herb. Occurs only on clay and serpentine soils in vernally moist environments, usually near vernal pools, meadows, and seeps. Flowering period May-July. Elevation 330-5,740 feet (100-1750 meters).	**None.** Suitable soils and habitat do not occur on the project site.
Centromadia pungens ssp. *laevis*	Smooth tarplant	--/-- CRPR 1B.1	Annual herb blooming April-September. Occurs in chenopod scrub, meadows, seeps, playas, riparian woodlands, and grasslands. Usually found in alkaline soils. Elevation 165-2,890 feet (50-880 meters).	**None.** Suitable alkaline soil and wet meadows do not occur on site.
Dudleya variegata	Variegated dudleya	--/-- CRPR 1B.2	Small perennial succulent blooming April-June. Occurs on dry hillsides and mesas in chaparral, valley grassland, foothill woodland, coastal sage scrub and freshwater wetlands. Elevation 0-985 feet (0-300 meters).	**None.** Suitable dry hillsides and mesas do not occur on site.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	--/-- CRPR 1B.1	Large evergreen shrub. Occurs in coastal drainages, mesic chaparral, and occasionally in coastal sage scrub. Flowering period July-November. Elevation 165-1,700 feet (50-520 meters).	**Low.** Limited areas of suitable habitat are present on site. Species would have been detectable during rare plant and other biological surveys, but was not observed.
Ferocactus viridescens	San Diego barrel cactus	--/-- CRPR 2B.1	Perennial stem succulent blooming May-June. Optimal habitat for this cactus appears to be Diegan coastal sage scrub hillsides, often at the crest of slopes and growing among cobbles. Occasionally found on vernal pool periphery and mima mound topography. Elevation 10-1,476 feet (3-450 meters).	**Low.** Coastal sage scrub on site is limited and disturbed. Appropriate hillsides and cobbles not present on site.
Harpagonella palmeri	Palmer's grappling hook	--/-- CRPR 4.2	Annual herb blooming March-May. Occurs on clay soils in annual grasslands and coastal sage scrub. Elevation 42-3,970 feet (13-1,210 meters).	**None.** Suitable clay soils not present on site.
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	--/-- CRPR 1B.2	Perennial shrub blooming April-November. Occurs in coastal sage scrub habitat intermixed with grassland, and is more partial to clay soils than other closely related varieties. Elevation 32-442 feet (10-135 meters).	**None.** Suitable clay soils not present on site.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Iva hayesiana	San Diego marsh elder	--/-- CRPR 2B.2	Perennial herb. Intermittent stream channels are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized. Flowering period April-October. Elevation 32-1,640 feet (10-500 meters).	**Present.** A total of 17 individuals were observed in southern riparian forest adjacent to the existing trail in the southern portion of the BSA.
Juglans californica var. *californica*	California black walnut	--/-- CRPR 4.2	Perennial deciduous tree occurring in alluvial habitats. Elevation 16-5,870 feet (5-1,790 meters).	**Present.** A total of 29 individuals were observed in southern riparian forest and adjacent habitat in the southern portion of the BSA.
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	--/-- CRPR 4.2	Perennial rhizomatous herb. Occurs in alkaline meadows and seeps, coastal salt marshes, and coastal dunes. Flowering period March-June. Elevation 0-3,117 feet (0-950 meters).	**Present.** Approximately 200 individuals were observed in southern riparian forest in the northern portion of the BSA.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Lepidium virginicum var. *robinsonii*	Robinson's peppergrass	--/-- CRPR 4.3	Annual herb. Grows in openings in chaparral and sage scrub at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Flowering period is January -July. Elevation 65-4,400 feet (20-1340 meters).	**Low.** Very little potentially suitable habitat is present on site and species was not observed during rare plant or other biological surveys.
Monardella viminea	Willowy monardella	FE/SE CRPR 1B.1	Cespitose subshrub blooming June-August. Occurs in rocky washes with cobbles and two alluvial benches at elevations from 0-1300 feet (0-400 meters)	**None.** Suitable rocky washes and alluvial benches not present on site.
Quercus dumosa	Nuttall's scrub oak	--/-- CRPR 1B.1	Perennial evergreen shrub. Chaparral with a relatively open canopy cover is the preferred habitat in flat terrain (also found in coastal scrub). On north-facing slopes, may grow in dense monotypic stands. Flowering period February-August. Elevation 49-1,312 feet (15-400 meters).	**Low.** Very little potentially suitable habitat is present on site and species was not observed during rare plant or other biological surveys.
Selaginella cinerascens	Ashy spike-moss	--/-- CRPR 4.1	Perennial rhizomatous herb occurring in chaparral and coastal scrub habitats. Elevation 25-2,035 feet (8-620 meters).	**Low.** Very little potentially suitable habitat is present on site and species was not observed during rare plant or other biological surveys.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Senecio aphanactis	Chaparral ragwort	--/-- CRPR 2B.2	Small annual herb blooming from January-April. Occurs in alkaline flats and dry open rocky areas in foothill woodland, northern coastal scrub and coastal sage scrub. Elevation 32-1800 feet (10-550 meters).	**None.** Suitable alkaline soils and open rocky areas not present on site.
Stemodia durantifolia	Purple stemodia	--/-- CRPR 2B.1	Small perennial herb blooming year round. Occurs on wet sand or rocks and drying streambeds in riparian habitats. Elevation 0-1310 feet (0-400 meters).	**Moderate.** Appropriate habitat is present on site, however species was not observed during focused rare plant surveys or other biological surveys.

[1]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 – presumed extirpated in California but more common elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution.
Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix E

Special Status Animal Species Potential to Occur

Appendix E
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Amphibians and Reptiles				
Actinemys marmorata	Southwestern pond turtle	--/SSC	Almost entirely aquatic; occurs in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Requires basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Low.** Species could potentially occupy ponded streams on site, although suitable basking sites are limited.
Anaxyrus californicus	Arroyo toad	FE/SSC	Requires rivers with sandy banks, willows, cottonwoods, and sycamores. Breeds in areas with shallow, slowly moving streams, but burrows in adjacent uplands during dry months.	**Not expected.** Riparian habitat on site is likely too dense to support this species. Species is not known from the project vicinity.
Anniella pulchra pulchra	Silvery legless lizard	--/SSC	Areas with loose soil, particularly in sand dunes and or otherwise sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	**Moderate.** Potentially suitable habitat is present on site, although species was not observed during biological surveys.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Amphibians and Reptiles (cont.)				
Cnemidophorus hyperythrus	Orange-throated whiptail	--/SSC	Coastal sage scrub, chaparral, edges of riparian woodlands, and washes. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas, shaded areas, and abundant insect prey base, particularly termites (*Reticulitermes* sp.).	**High.** Suitable habitat is present on site and species is known from the project vicinity.
Crotalus ruber ruber	Northern red diamond rattlesnake	--/SSC	Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**Not expected.** Suitable chaparral and sage scrub habitat with rock outcroppings are not present on site.
Eumeces skitonianus interparietalis	Coronado skink	--/SSC	Occurs in grasslands, coastal sage scrub, and open chaparral where there is abundant leaf litter or low herbaceous growth.	**Low.** Suitable grassland and sage scrub habitats are very limited on site.
Phrynosoma coronatum blainvillii	San Diego horned lizard	--/SSC	Coastal sage scrub, chaparral, grassland, and woodlands up to 6,000 ft. Not common where Argentine ants (*Linepithema humile*) have excluded native harvester ants (*Pogonomyrmex* sp.).	**Low.** Suitable habitat present on site, but species unlikely to occur due to lack of typical prey species. Harvester ant colonies were not observed during biological surveys.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Amphibians and Reptiles (cont.)				
Salvadora hexalepis virgultea	Coast patch-nosed snake	--/SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	**Not expected.** Suitable brushy habitat within canyons and rocky hillsides are not present on site.
Spea hammondii	Western spadefoot	--/SSC	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).	**Low.** Suitable temporary pools for breeding are not present on site.
Thamnophis hammondii	Two-striped garter snake	--/SSC	Typical habitat is along permanent and intermittent streams bounded by dense riparian vegetation; also found associated with vernal pools and stock ponds.	**High.** Suitable habitat is present along the San Diego River, and limited areas of suitable habitat occur along Sycamore Creek.
Thamnophis sirtalis novum	South coast garter snake	--/SSC	Typically found in woodlands, grasslands, coniferous forests, and scrublands near water. Found in the coastal plain from Ventura County to San Diego County, from sea level to about 850 m.	**High.** Suitable habitat is present along the San Diego River, and limited areas of suitable habitat occur along Sycamore Creek.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds				
Accipiter cooperii	Cooper's hawk	--/WL	Occurs year-round throughout San Diego County's coastal slope where stands of trees are present Found in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.	**Present.** One individual was observed perched in southern riparian forest in the western portion of the BSA. Suitable nesting habitat for this species occurs within the BSA.
Agelaius tricolor	Tricolored blackbird	BCC/SSC	Generally found in large freshwater marshes with dense stands of cattails or bulrushes. Forages in open habitats such as farm fields, pastures, and large lawns.	**Low.** Suitable foraging habitat is present on site; however large freshwater marshes are absent from the site. This species was not observed or otherwise detected during multiple site surveys.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	--/WL	Occurs in coastal sage scrub and sparse mixed chaparral on rocky hillsides and in canyons; also found in open sage scrub/grassy areas of successional growth.	**Not expected.** Suitable habitat on rocky hillsides and canyons not present on site.
Buteo swainsoni	Swainson's hawk	BCC/ST	Nests in riparian woodland and forages over grassland. Once a common species in San Diego County, now a rare migrant, observed primarily in Borrego Valley. Species no longer nests in southern California (Unitt 2004).	**Low.** Suitable riparian woodland habitat is present; however, species is unlikely to occur on site given its rarity in San Diego County.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds (cont.)				
Camphylorhynchus brunnicapillus couesi	Coastal cactus wren	--/SSC	Occurs in coastal sage scrub with large cacti for nesting.	**Not expected.** Suitable stands of large cacti for nesting do not occur on site.
Circus cyaneus	Northern harrier	--/SSC	Within San Diego County, distribution is primarily scattered throughout lowlands but can also be observed in foothills, mountains, and desert. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. Typical habitat consists of open grassland and marsh.	**Moderate.** Small areas of suitable marsh habitat are present on site. Species could also forage over the golf course.
Coccyzus americanus occidentalis	Yellow-billed cuckoo	FT/SE	Generally 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 (Halterman et al 2015).	**Low.** Sufficient expanses of suitable riparian habitat do not occur on site. Species is not known from the project vicinity.

Appendix E (cont.) **SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR**				
Species Name	**Common Name**	**Status[1]**	**Habitat Associations**	**Potential to Occur**
Birds (cont.)				
Elanus leucurus	White-tailed kite	--/FP	Riparian woodlands and oak or sycamore groves adjacent to grassland.	**Present.** One individual was observed flying over southern riparian forest south of the eastern portion of the BSA. Suitable nesting habitat for this species occurs within the BSA.
Empidonax traillii extimus	Southwestern willow flycatcher	BCC/SE	Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons. One of the most important characteristics of the habitat appears to be the presence of dense vegetation, usually throughout all vegetation layers present. Almost all breeding habitats are within close proximity of water or very saturated soil.	**Absent.** Protocol surveys conducted in 2016 were negative for this species.
Falco mexicanus	Prairie falcon	--/WL	Nests on cliff or bluff ledges or occasionally in old hawk or raven nests; forages in grassland or desert habitats. Observed year-round in San Diego County but more commonly during winter.	**Low**. Suitable dry, open habitat occurs on the project site; however, this species was not observed or otherwise detected during multiple project surveys. This species has potential to forage over the site.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds (cont.)				
Icteria virens	Yellow-breasted chat	--/SSC	Occurs in mature riparian woodland, typically returning to San Diego County in mid-April to breed.	**Present.** Species was detected in two locations in southern riparian forest in the western portion of the BSA. Suitable nesting habitat for this species occurs within the BSA.
Pandion haliaetus	Osprey	--/WL	Found near rivers, lakes and the coast with large numbers of fish present. Species is more numerous in San Diego during migration and winter than in the breeding season. Rarely breeds in San Diego County.	**High.** Species has high potential to forage over open water areas on site. Species is not expected to nest within the project site.
Plegadis chihi	White-faced ibis	--/WL	Occurs in large marshes, with nesting colony hidden in inaccessible reedbed or willow-covered area.	**Moderate.** Species could forage in marsh habitat adjacent to open water in the eastern portion of the site.
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC	Occurs in coastal sage scrub with California sagebrush (*Artemesia californcia*) as a dominant or co-dominant species, at elevations below 2,500 feet.	**Absent.** Protocol surveys conducted in 2016 were negative for this species. Very little sage scrub occurs within the BSA.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds (cont.)				
Rallus obsoletus levipes (formerly Rallus longirostris levipes)	California Ridgway's rail (formerly Light-footed Clapper Rail)	FE/SE	Inhabits extensive coastal salt and freshwater marshes containing cordgrass, cattails, or tules, and rushes.	**Not Expected**. Very little marsh habitat occurs on site and this species is not known from the project vicinity. Populations of this species are located much further west along the San Diego River, near San Diego Bay.
Setophaga petechia	Yellow warbler	BCC/SSC	Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub are typical habitats.	**Present.** Species was detected in riparian forest in six locations within the BSA, ranging from the western to the eastern portions of the alignment. Suitable nesting habitat for this species occurs within the BSA.
Vireo bellii pusillus	Least Bell's vireo	FE/SE	Occurs in riparian thickets, usually willow and cottonwood. Summer resident of Southern California. Typically arrives in San Diego County during the third week of March (Unitt 2004).	**Present.** Species was detected in five locations within and adjacent to the BSA during protocol surveys conducted in 2016. Suitable nesting habitat for this species occurs within the BSA.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Mammals				
Antrozous pallidus	Pallid bat	--/SSC	Locally common species of low elevations in California. Rocky, mountainous areas and near water; also found over more open, sparsely vegetated grasslands, and prefers foraging in the open. Uses three different roosts: 1) the day roost is in a warm, horizontal opening such as rock cracks; 2) the night roost is in the open, near foliage; and 3) the hibernation roost, which is in caves or cracks in rocks.	**High.** Suitable open space for foraging and roosting habitat present on site.
Chaetodipus californicus femoralis	Dulzura pocket mouse	--/SSC	Variety of habitats including coastal scrub, chaparral, and grasslands in San Diego County. Often associated with grass-chaparral edges.	**Low.** Very little suitable grassland habitat is present on site. No sign of this species was observed during surveys.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	--/SSC	Occurs in open areas of coastal sage scrub and weedy growth, often on sandy substrates.	**Low.** Very limited suitable habitat is present on site. No sign of this species was observed during surveys.
Lasiurus blosservillii	Western red bat	--/SSC	Riparian areas dominated by cottonwoods, oaks, sycamores, and walnuts.	**High.** Suitable riparian habitat is present on site.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Mammals (cont.)				
Lepus californicus bennettii	San Diego black-tailed jackrabbit	--/SSC	Found primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	**Low.** Although potentially suitable open habitat is present on site, there is ongoing anthropogenic disturbance due to the golf course and this area is unlikely to support this species.
Neotoma lepida intermedia	San Diego desert woodrat	--/SSC	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	**Not Expected.** Very little sage scrub occurs on site and rock outcrops are not present. Conspicuous nests of this species were not observed during multiple site surveys.

[1]Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; C=Candidate; R = Rare; FP = Fully Protected; BCC = Bird of Conservation Concern; SSC = State Species of Special Concern; WL = Watch List.

Appendix F

Explanation of Status Codes from Plant and Animal Species

Appendix F
EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

FEDERAL, STATE, AND LOCAL CODES

U.S. Fish and Wildlife Service (USFWS)

FE	Federally listed endangered
FT	Federally listed threatened
FC	Federal candidate for listing
BCC	Birds of Conservation Concern (discussed in more detail, below)

California Department of Fish and Wildlife (CDFW)

SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List

Fully Protected	Fully Protected species refer to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

OTHER CODES AND ABBREVIATIONS

USFWS Birds of Conservation Concern (BCC)

This report from 2002 aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities and draw attention to species in need of conservation action. USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. The report is available online at http://migratorybirds.fws.gov/reports/bcc2002.pdf.

OTHER CODES AND ABBREVIATIONS (cont.)

California Native Plant Society (CNPS) California Rare Plant Ranking (CRPR)

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but more common elsewhere.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 – Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly endangered in California (20 to 80 percent occurrences threatened)

.3 – Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Appendix G

2016 Rare Plant Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

August 25, 2016 NAS-06

Mr. Stephan Vance
Sr. Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Subject: 2016 Rare Plant Survey Report for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Mr. Vance:

This report presents the results of the Year 2016 Rare Plant Surveys conducted by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment Project (project). This report describes the methods used to perform the survey and the results.

PROJECT LOCATION AND DESCRIPTION

The project is located within the Cities of Santee and San Diego, California (Figure 1). The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 2). The project's study area is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues through the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park West. The southern boundary is bordered by State Routes (SR-) 52 and 125 and Mission Trails Regional Park to the west (Figure 3). The project consists of approximately two miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in the City of Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway.

STUDY AREA DESCRIPTION

The San Diego River flows from east to west through the approximately 30.47-acre survey area. The western two-thirds of the survey area is bordered by the Carlton Oaks Country Club golf course to the north, and SR-52 to the south, which ranges from approximately 370 feet away to directly adjacent to the survey area. East of Carlton Hills Boulevard the survey area is surrounded by Mast Park. Between Carlton Hills Boulevard and the golf course, the San Diego River is bordered by approximately 1,000 feet of riparian scrub, some of which burned in 2014. Elevation on site ranges from approximately 90 to 110 meters (300 to 360 feet) above mean sea level (amsl).

Six soil series made up of nine soil units are mapped within the study area (USDA 2016; Table 1). The Grangeville series consists of very deep, somewhat poorly drained fine sandy loams that formed from granitic alluvium; they are found on alluvial fans and floodplains. Soils in the Redding series consist of well-drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan. They occur in old mixed cobbly and gravelly alluvium. Riverwash soil material is typically sandy, gravelly or cobbly and is excessively drained and permeable. Soils in the Salinas series consist of well-drained clay loams that formed in sediments washed from a variety of other soil series. They occur on flood plains and alluvial fans. Soils in the Tujunga series are deep and well drained, formed in alluvium from granitic sources. They occur on alluvial fans, floodplains, and urban areas. Soils in the Visalia series consist of well drained, very deep sandy loams derived from granitic alluvium. They occur on alluvial fans and flood plains (Bowman 1973).

Table 1
MAPPED SOILS IN THE STUDY AREA*

SOIL SERIES	SOIL UNIT
Grangeville	Grangeville fine sandy loam, 0 to 2 percent slopes
Redding	Redding cobbly loam, 9 to 30 percent slopes
	Redding-Urban land complex, 2 to 9 percent slopes
	Redding Urban land complex, 9 to 30 percent slopes
Riverwash	Riverwash
Salinas	Salinas clay loam, 0 to 2 percent slopes
Tujunga	Tujunga sand, 0 to 5 percent slopes
Visalia	Visalia gravelly sandy loam, 2 to 5 percent slopes
	Visalia gravelly sandy loam, 5 to 9 percent slopes

*USDA 2016

METHODS

The purpose of the rare plant surveys was to document the presence, abundance, and sensitivity status of rare plants within the study area. The surveys were conducted by HELIX biologists on May 23 and June 24, 2016 (Table 2). Rare plants investigated included those that are federally or state listed, and species that are considered special by the California Department of Fish and Wildlife

(CDFW) California Natural Diversity Database (CNDDB). A previous alignment study (KTU+A, 2015) was reviewed prior to this survey. Previously mapped biological resources from this study were used as a baseline for the updated 2016 HELIX vegetation mapping.

Table 2
RARE PLANT SURVEY INFORMATION

DATE	PERSONNEL
May 23, 2016	Talaya Rachels, Hannah Sadowski
June 24, 2016	Talaya Rachels

Prior to conducting the surveys, HELIX conducted a preliminary review of the U.S. Fish and Wildlife Service (USFWS), CNDDB, California Native Plant Society (CNPS), City of San Diego Multiple Species Conservation Plan (MSCP), and CALFLORA databases for special status (i.e., sensitive) plant species that have potential to occur on site.

The study area was traversed on foot and all accessible habitat areas were inspected for the presence of rare plant species. All parcels within the study area were accessible. When encountered, sensitive plants were counted and mapped using handheld Geographic Positioning System devices. Plants were identified according to The Jepson Manual: Vascular Plants of California (Baldwin, et.al. 2012); Rebman and Simpson (2014) was used to update plant nomenclature.

VEGETATION COMMUNITIES

A total of 13 vegetation communities or land use types were mapped within the study area: freshwater marsh, disturbed wetland, southern riparian forest (including disturbed and burned), southern willow scrub, disturbed Diegan coastal sage scrub, broom baccharis dominated, flat-topped buckwheat scrub, mule fat scrub, non-native grassland, open water, ornamental, disturbed habitat, and developed lands (Table 3; Figures 4a through 4e). Vegetation communities were mapped according to Holland (1986), as modified by Oberbauer (2008). Descriptions of vegetation communities and land uses found on site are provided below.

Table 3
EXISTING VEGETATION COMMUNITIES
IN THE STUDY AREA

VEGETATION COMMUNITY/HABITAT	ACREAGE*
Wetland/Riparian	
Southern riparian forest	27.87
Southern riparian forest - burned	1.02
Southern riparian forest - disturbed	0.14
Southern willow scrub	1.20
Mule fat scrub	0.24
Freshwater marsh	0.55
Disturbed wetland	0.18
Open water	0.59
Subtotal	**31.79**
Uplands	
Diegan coastal sage scrub - disturbed	0.1
Flat-topped buckwheat scrub	0.2
Broom baccharis dominated scrub	0.05
Non-native grassland	0.2
Ornamental	33.1
Disturbed habitat	14.4
Developed	5.7
Subtotal	**53.62**
TOTAL	**85.4**

*Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, totals reflect rounding.

Diegan Coastal Sage Scrub – Disturbed

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Dominant species found in the project site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Bacchris pilularis*), and broom baccharis (*Baccharis sarothroides*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native annual species.

Flat-Topped Buckwheat Scrub

Flat-topped buckwheat scrub is a community of coastal sage scrub dominated by California buckwheat. This vegetation community is often found in disturbed areas in the coastal and foothill areas of San Diego County. This species occurs at the western portion of the site along West Hills Parkway.

Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species within the project site include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.).

Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora. Within the project site this community is dominated by large-flowered water primrose (*Ludwigia grandiflora*).

Southern Riparian Forest (including disturbed and burned)

Southern riparian woodlands and forests are composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species do overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species on the project site include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), western cottonwood (*Populus fremontii*), box-elder (*Acer negundo*), and wild grape (*Vitis girdiana*). Disturbed southern riparian forest is composed of a higher percentage of non-native species while burned southern riparian forest was previously burned in past.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Southern willow scrub occurs in the central-eastern portion of the site and this habitat is dominated by arroyo willow, black willow, and sandbar willow (*Salix exigua*).

Broom Baccharis Dominated

Broom baccharis dominated scrub is an upland community recognized by resource agencies as a subtype of coastal sage scrub that develops under a variety of circumstances following Diegan coastal sage scrub disturbance. Broom baccharis scrub occurs in the northwestern portion of the site.

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. Within the project site, this vegetation community is dominated by mule fat.

Non-Native Grassland

Non-native grassland typically supports a sparse to dense cover of annual grasses often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual, introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These grasslands are common throughout San Diego County. On the project site, dominant species include wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and western ragweed (*Ambrosia psilostachya*).

Open Water

Open water within the project area consists of man-made ponds located within the Carlton Oaks golf course and along the San Diego River.

Ornamental

Ornamental plantings within the project site consist of maintained portions of the golf course, including irrigated turf areas, sand traps, etc., and associated landscaping and scattered native and non-native trees within the maintained golf course areas. Similar areas also occur within Mast Park.

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, particularly where the soil has been heavily compacted by prior development or where agricultural lands have been abandoned. Disturbed habitat is generally dominated by non-native weedy species that adapt to frequent disturbance, and may also consist of dirt trails and roads.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Within the project site this includes paved golf cart paths, buildings, and roads.

RESULTS

Of the 81 plant species that were documented during surveys to date, a total of four sensitive plant species were observed, none of which are state or federally listed. Sensitive plant species observed are as follows: Palmer's sagewort (*Artemisia palmeri*), southern California black walnut (*Juglans californica* var. *californica*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and San Diego marsh elder (*Iva hayesiana*). These species are listed in Table 4 and further discussed below, with their locations depicted on Figures 4a through 4e. A list of all plant species observed during surveys to date is included as Attachment A. San Diego marsh elder is considered a California Rare Plant Rank (CRPR) List 2B.2 species. List 2 species are considered rare, threatened or endangered in California, but more common elsewhere. The remaining sensitive species observed are considered CRPR List 4.2 species. List 4 represents a watch list for species of limited distribution; which require monitoring for changes in population status. The second portion of the status codes reflect that the species is considered moderately threatened in California (20 to 80 percent of occurrences are threatened).

Table 4
SENSITIVE PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Artemisia palmeri	Palmer's sagewort
Juglans californica var. *californica*	Southern California black walnut
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush
Iva hayesiana	San Diego marsh elder

Palmer's sagewort (*Artemisia palmeri*)
Listing: --/--; CRPR List 4.2
Distribution: Coastal San Diego County; Baja California, Mexico
Habitat: Stream courses, often within coastal sage scrub and southern mixed chaparral
Status on site: A total of four individuals were observed in southern riparian scrub adjacent to the existing trail in the southern portion of the study area (Figures 4c and 4b).

Southern California black walnut (*Juglans californica* var. *californica*)
Listing: --/--; CRPR List 4.2; CA Endemic
Distribution: Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties
Habitat: This tree grows between 20 and 50 feet tall in open savannah, often in habitat best labeled walnut woodland. May be more tolerant of clay soils than most native trees and shrubs. Shows preference for deep alluvial soils with high water-retention capacity and tends to grow in creek beds, alluvial terraces, and north-facing slopes.
Status on site: A total of 28 individuals were documented in the study area (Figures 4a and 4b). This species occurs in the southeast portion of the study area as a grouping of trees and isolated individuals primarily within southern riparian forest, as well as several scattered individuals in open disturbed habitat along the existing trail.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)
Listing: --/--; CRPR List 4.2
Distribution: Los Angeles, San Bernardino, San Luis Obispo, Ventura, and San Diego counties; Baja California, Mexico
Habitat: Moist, saline, or alkaline soils in coastal salt marshes and riparian marshes
Status on site: Approximately 200 individuals were observed in southern riparian forest in the northeastern portion of the study area with scattered individuals observed in the southeast along the banks of the river (Figures 4e and 4c).

San Diego marsh elder (*Iva hayesiana*)
Listing: --/--; CRPR List 2B.2
Distribution: San Diego County; Baja California, Mexico
Habitat: Creeks of intermittent streambeds are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized.
Status on site: A total of 17 individuals were observed in southern riparian scrub adjacent to the existing trail in the southeastern portion of the study area (Figure 4c).

Please contact me or Tom Huffman at (619) 462-1515 if you have any questions.

Sincerely,

Talaya Rachels
Biologist

Enclosures:

Figure 1	Regional Location Map
Figure 2	Project Vicinity (USGS Topography)
Figure 3	Project Vicinity (Aerial Photograph)
Figures 4a-4e	Vegetation/Rare Plants
Attachment A	Plant Species Observed

REFERENCES

Baldwin, B. G., Goldman, D. H., Keil D. J., Patterson R., Rosatti, T. J. and Wilken, D. H. (eds.). 2012. The Jepson Manual: Vascular Plants of California. Second edition. Berkeley, CA: University of California Press. 1568 pp.

Bowman, R. 1973. Soil Survey of the San Diego Area. USDA in cooperation with the USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

CALFLORA. 2016. Calflora: Information on California plants for education, research and conservation (web application). Berkeley, California: The Calflora Database (a non-profit organization). Available: http://www.calflora.org/

California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB). 2016. RareFind Database Program, Version 5.1.1.

California Native Plant Society. 2010. The Online CNPS Inventory of Rare and Endangered Plants. December. Available at: http://www.rareplants.cnps.org/

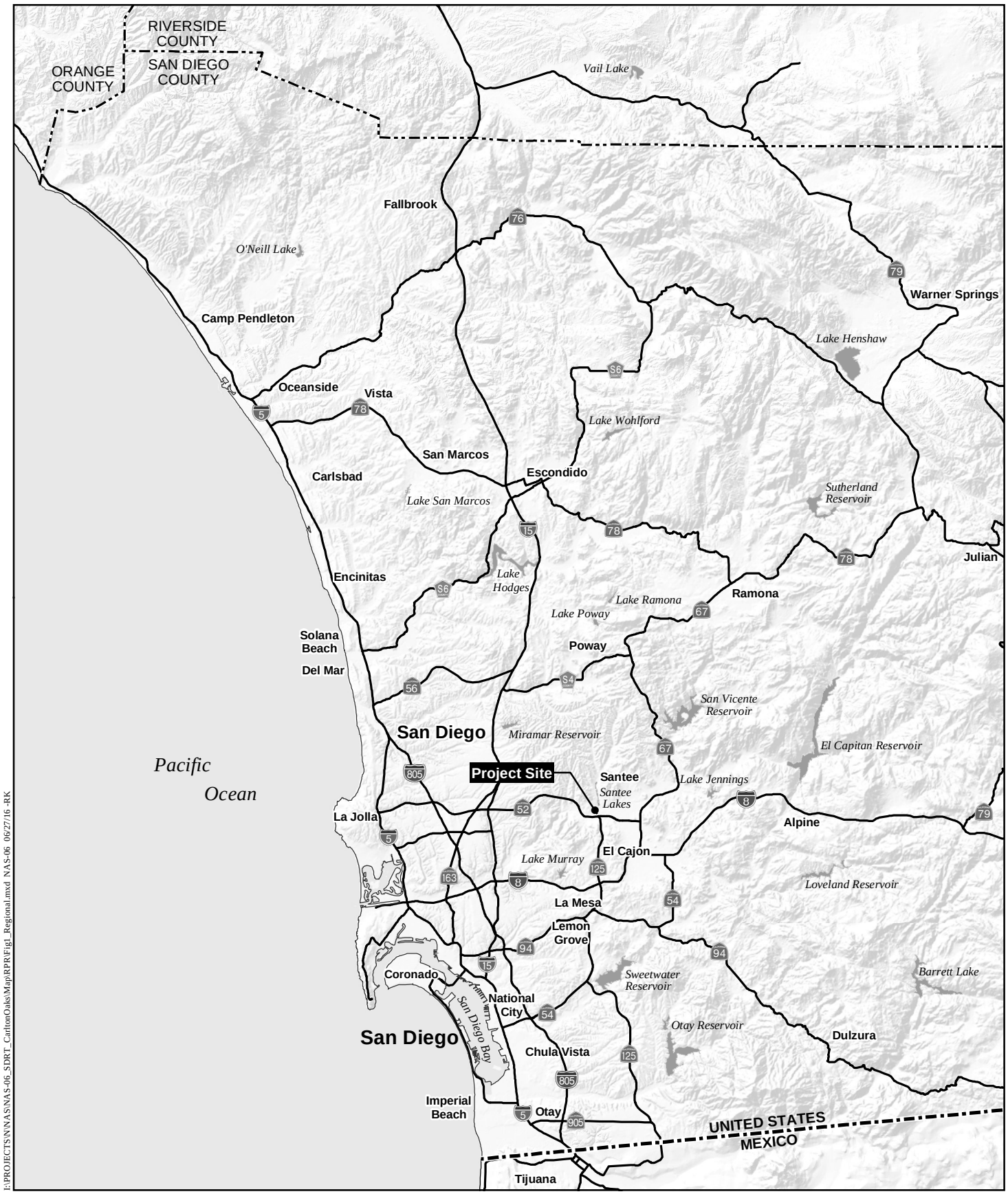
Holland R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento.

KTU+A: Planning and Landscape Architecture. 2015. San Diego River Trail: Carlton Oaks Segment – Alternative Alignment Study.

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on “Preliminary Descriptions of the Terrestrial Natural Communities of California”, Robert F. Holland, Ph.D., October 1986.

Rebman, Jon P. and Michael G. Simpson. 2014. Checklist of the Vascular Plants of San Diego County. 5th Edition. San Diego Natural History Museum, San Diego, California. 132 pp.

U.S. Department of Agriculture (USDA) Natural Resource Conservation Service. 2016. Web Soil Survey for San Diego County. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaksMap\RPRFig1_RegionalLmxd NAS-06 06/27/16 -RK

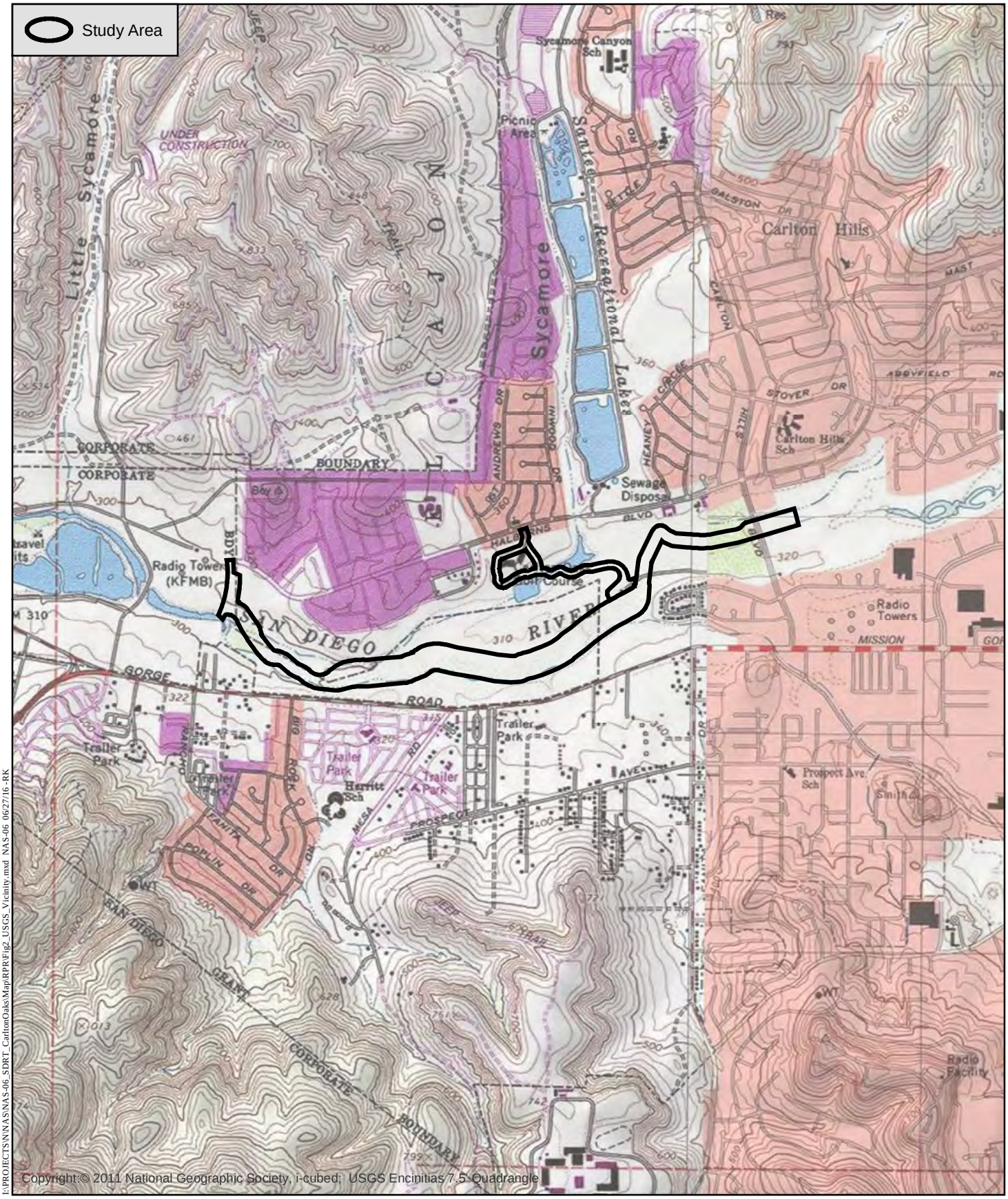
Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 8 Miles

Figure 1



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaksMap\RPRFig2_USGS_Vicinity.mxd NAS-06 06/27/16 -RK

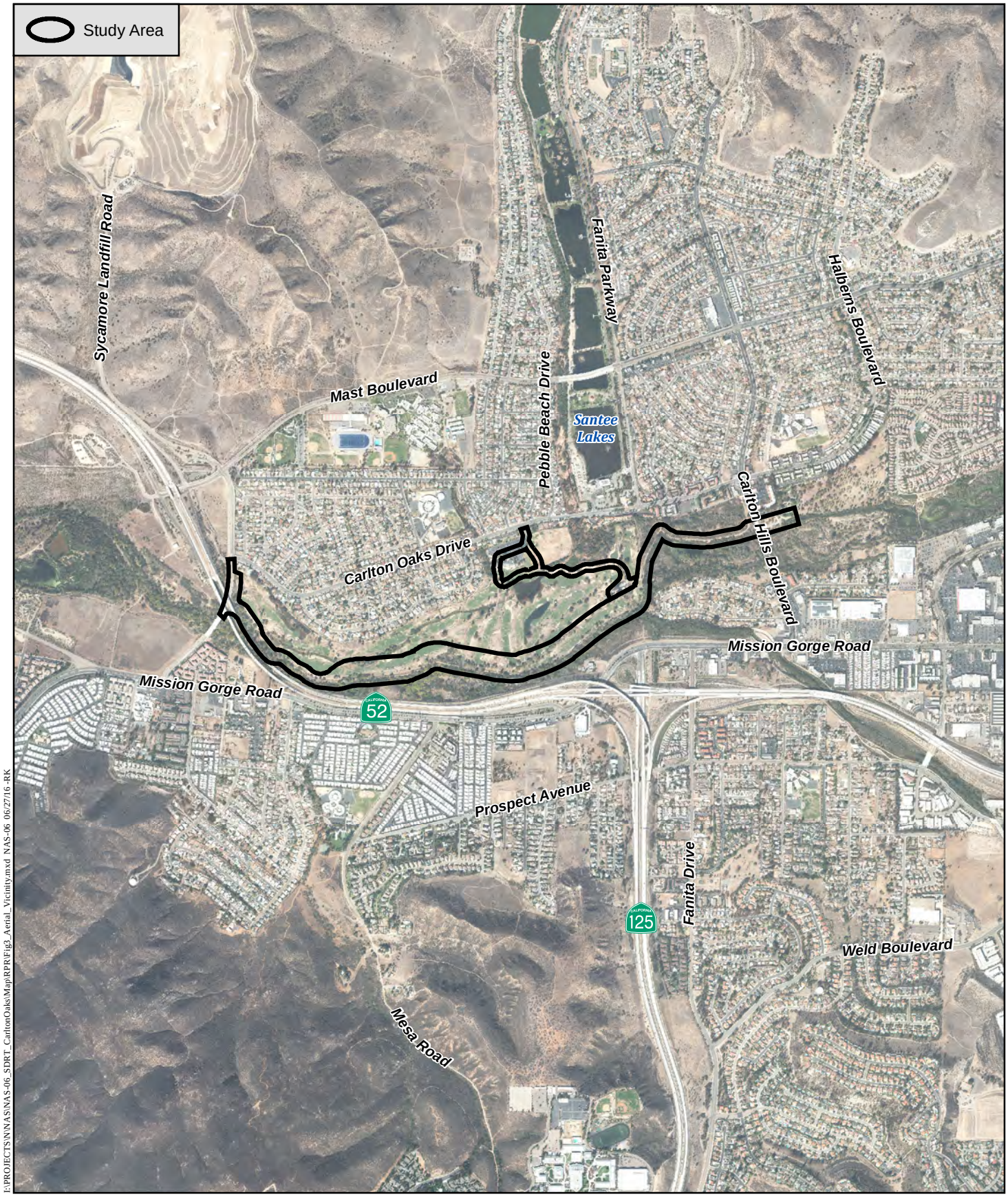
Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaksMap\RPRFig3_Aerial_Vicinity.mxd NAS-06 06/27/16 -RK

Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 3

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Disturbed Wetland
- Southern Riparian Forest
- Southern Willow Scrub
- Broom Baccharis Dominated
- Flat-Topped Buckwheat Scrub
- Ornamental
- Disturbed
- Developed
- Vegetation is below bridge

Rare Plants

- Jc California Black Walnut (*Juglans californica*)

West Hills Parkway

Carlton Oaks Drive

Inverness Road

Sycamore Creek

52

Jc (2)

Jc (2)

Jc (3) Jc (2)

Jc (3)

Jc Jc (3)

Jc (2)

a b c d e

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\RPR\Fig4_VegRarePlants.mxd NAS-06 08/29/2016 - RK.FV

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

0 200 Feet

Figure 4a

Inverness Road

Sycamore Creek

San Diego River

Jc
Jc (2)
Jc
Ap
Jc
Jc
Jc (3)

52
52

Mission Gorge Road

a
b
c
d
e

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Southern Riparian Forest
- Southern Willow Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Mule Fat Scrub
- Ornamental
- Disturbed
- Developed

Rare Plants

- Jc California Black Walnut (*Juglans californica*)
- Ap San Diego Sagewort (*Artemisia palmeri*)

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaksMap\RPRFig4_VegRarePlants.mxd NAS-06 08/29/2016 - RK.EV

HELIX Environmental Planning

N 0 200 Feet

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 4b

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Southern Riparian Forest
- Ornamental
- Disturbed
- Developed

Rare Plants

- Ih San Diego Marsh-elder (*Iva hayesiana*)
- Ap San Diego Sagewort (*Artemisia palmeri*)
- Ja Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)

Ja
Ja
Ja
Ja (2)
Ih (4)
Ih (3)
Ih (3)
Ap
Ih (2)
Ih (2)
Ih (3)
Ap (2)
San Diego River
Forester Creek
Mission Gorge Road
52
52
125
a
b
c
d
e

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 200 Feet

Figure 4c

I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaksMap\RPR\Fig4_VegRarePlants.mxd NAS-06 08/29/2016 - RK EV

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Disturbed Wetland
- Southern Riparian Forest
- Southern Willow Scrub
- Burned Southern Riparian Forest
- Open Water
- Ornamental
- Disturbed
- Developed

Rare Plants

- Ja — Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)

Pebble Beach Drive

Carlton Oaks Drive

Inverness Road

Sycamore Creek

Ja

I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Maps\RPR\Fig4_VegRarePlants.mxd NAS-06 08/29/2016 - RK EV

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 200 Feet

Figure 4d

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Southern Riparian Forest
- Southern Riparian Forest - Disturbed
- Southern Willow Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Mule Fat Scrub
- Non-native Grassland
- Open Water
- Ornamental
- Disturbed
- Developed
- Vegetation is below bridge

Rare Plants

- Ja Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)

I:\PROJECTS\SWAS\NAS-06_SDRT_CarltonOaks\Map\RPR\Fig4_VegRarePlants.mxd NAS-06 08/29/2016 - RK.EV

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 200 Feet

Figure 4e

Attachment A
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species		
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	blue elderberry
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus integrifolia	lemonadeberry
Asteraceae	*Ambrosia psilostachya*	western ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Artemisia palmeri†	San Diego sagewort†
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	Baccharis sarothroides	broom baccharis
	Encelia californica	California encelia
	Erigeron canadensis	horseweed
	Helianthus annuus	western sunflower
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	goldenbush
	Iva hayesiana†	San Diego marsh-elder†
	Pseudognaphalium sp.	everlasting
	Xanthium strumarium	cocklebur
Boraginaceae	*Heliotropium curassavicum* var. *occulatum*	salt heliotrope
Cactaceae	*Opuntia littoralis*	coastal prickly pear
Cucurbitaceae	*Cucurbita foetidissima*	calabazilla
	Marah macrocarpa	wild cucumber
Cyperaceae	*Scirpus* sp.	bulrush
Euphorbiaceae	*Croton californicus*	California croton
Fabaceae	*Acmispon americanus*	Spanish-clover
	Amorpha fruticosa	false indigo
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak
Juglandaceae	*Juglans californica* var. *californica*†	Southern California black walnut†
Juncaceae	*Juncus acutus* ssp. *leopoldii*†	southwestern spiny rush†
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow
Onagraceae	*Camissoniopsis* sp.	sun cup
	Epilobium ciliatum ssp. *ciliatum*	willow herb
	Oenothera elata ssp. *hookeri*	great marsh evening-primrose

Attachment A (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species (cont.)		
Papaveraceae	*Eschscholzia californica*	California poppy
Platanaceae	*Platanus racemose*	western sycamore
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Rosaceae	*Heteromeles arbutifolia*	toyon
	Rosa californica	California rose
Salicaceae	*Populus fremontii*	western cottonwood
	Salix exigua	narrow-leaved willow
	Salix lasiolepis	arroyo willow
Sapindaceae	*Acer negundo*	box-elder
Saururacaea	*Anemopsis californica*	yerba mansa
Solanaceae	*Datura wrightii*	jimson weed
Typhaceae	*Typha* sp.	cattail
Vitaceae	*Vitis girdiana*	desert wild grape
Non-native Species		
Aizoaceae	*Carpobrotus edulis*	hottentot-fig
Anacardiaceae	*Schinus terebinthifolius*	Brazilian pepper tree
Apiaceae	*Apium graveolens*	celery
	Foeniculum vulgare	fennel
Arecaceae	*Washingtonia robusta*	Mexican fan palm
Asparagaceae	*Asparagus asparagoides*	bridal creeper
Asteraceae	*Erigeron bonariensis*	flax-leaf fleabane
	Helminthotheca echioides	bristly ox-tongue
	Lactuca serriola	wild lettuce
	Sonchus oleraceus	common sow thistle
Brassicaceae	*Hirschfeldia incana*	short-pod mustard
	Raphanus sativus	wild radish
	Sisymbrium irio	London rocket
Chenopodiaceae	*Chenopodium album*	pigweed
	Salsola tragus	Russian thistle
Euphorbiaceae	*Euphorbia peplus*	petty spurge
	Ricinus communis	castor bean
Fabaceae	*Melilotus albus*	white sweet clover
Moraceae	*Ficus carica*	edible fig

Attachment A (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Non-native Species (cont.)		
Oleaceae	*Fraxinus uhdei*	shamel ash
Onagraceae	*Ludwigia grandiflora*	large-flowered water primrose
Plantaginaceae	*Plantago major*	common plantain
Poaceae	*Avena* sp.	wild oat
	Bromus diandrus	common ripgut grass
	Bromus madritensis ssp. *rubens*	red brome
	Cortaderia jubata	pink pampasgrass
	Cynodon dactylon	Bermuda grass
	Paspalum dilatatum	dallis grass
	Pennisetum setaceum	purple fountain grass
	Stipa miliacea	smilo grass
Polygonaceae	*Rumex crispus*	curly dock
Solanaceae	*Nicotiana glauca*	tree tobacco
Tamaricaceae	*Tamarix* sp.	tamarisk
Tropaeolaceae	*Tropaeolum majus*	garden nasturtium

†Sensitive species

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix H

2016 Coastal California Gnatcatcher Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

August 1, 2016 NAS-06

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

Subject: 2016 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey of the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) conducted by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE778195-13.

PROJECT LOCATION

The project is located within the Cities of Santee and San Diego, California (Figure 1). The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 2). The project's study area is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues through the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park West. The southern boundary is bordered by State Routes 52 and 125 and Mission Trails Regional Park to the west (Figure 3). The project consists of approximately 2 miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in the City of Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway.

METHODS

The survey consisted of six visits that were performed by HELIX biologists Jason Kurnow and Erica Harris (TE778195-13) in accordance with the current (1997) USFWS protocol. The project does not have an approved subarea plan under the Natural Communities Conservation Plan Act, therefore, the USFWS requires six protocol-level surveys be completed between March 15 and June 30 at least seven days apart. The surveys were conducted on foot with the aid of binoculars, and the route was arranged to ensure complete survey coverage of all potential CAGN habitat. Potential CAGN habitat consisted of 0.13 acre of disturbed Diegan coastal sage scrub and 0.16 acre of flat-topped buckwheat scrub. Taped CAGN vocalizations were played periodically in an attempt to elicit a response from CAGNs. Weather conditions, time of day, and season were appropriate for the detection of CAGNs (Table 1).

The surveys were conducted by walking along the edges of, as well as within, suitable CAGN habitat. The survey covered all habitat with potential for occupancy by CAGN. All surveys were conducted with binoculars to aid in bird detection. Recorded CAGN vocalizations were played sparingly and only if other means of detection had failed. The approximate survey route followed is depicted on Figure 4.

Table 1
COASTAL CALIFORNIA GNATCATCHER SURVEY INFORMATION

SITE VISIT	SURVEY DATE	BIOLOGIST	START/ STOP TIMES	APPROX. ACRES SURVEYED/ ACRES PER HOUR	START/STOP WEATHER CONDITIONS	SURVEY RESULTS
1	5/20/16	Erica Harris *Summer Schlageter	1030/ 1200	0.29 ac/ 0.19 ac/hr	68°F, wind, 2-5 mph, 15% cloud cover 73°F, wind, 2-4 mph, 5% cloud cover	No gnatcatchers detected
2	5/27/16	Erica Harris	0700/ 0715	0.29 ac/ 1.16 ac/hr	64°F, wind, 0-1 mph, 100% cloud cover 64°F, wind, 0-1 mph, 100% cloud cover	No gnatcatchers detected
3	6/3/16	Erica Harris	0615/ 0630	0.29 ac/ 1.16 ac/hr	62°F, wind, 0-1 mph, 100% cloud cover 62°F, wind, 0-1 mph, 100% cloud cover	No gnatcatchers detected
4	6/10/16	Jason Kurnow	0615/ 0630	0.29 ac/ 1.16 ac/hr	64°F, wind, 0-1 mph, 100% cloud cover 64°F, wind, 0-1 mph, 100% cloud cover	No gnatcatchers detected
5	6/17/16	Jason Kurnow	0630/ 0645	0.29 ac/ 1.16 ac/hr	63°F, wind, 2-4 mph, 0% cloud cover 63°F, wind, 2-4 mph, 0% cloud cover	No gnatcatchers detected
6	6/24/16	Erica Harris	0805/ 0820	0.29 ac/ 1.16 ac/hr	68°F, wind, 0-1 mph, 0% cloud cover 68°F, wind, 0-1 mph, 0% cloud cover	No gnatcatchers detected

*Supervised individual

VEGETATION COMMUNITIES/LAND USE TYPES

A total of thirteen vegetation communities or land use types were mapped within the study area: freshwater marsh, disturbed wetland, southern riparian forest (including disturbed and burned), southern willow scrub, disturbed Diegan coastal sage scrub, broom baccharis dominated, flat-topped buckwheat scrub, mule fat scrub, non-native grassland, open water, ornamental, disturbed habitat, and developed lands. Vegetation communities were mapped according to Holland (1986), as modified by Oberbauer (2008). Descriptions of vegetation communities and land uses found on site are provided below beginning with communities considered suitable CAGN habitat (disturbed Diegan coastal sage scrub and flat-topped buckwheat scrub).

Diegan Coastal Sage Scrub – Disturbed

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Dominant species found in the project site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Bacchris pilularis*), and broom baccharis (*Baccharis sarothroides*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native annual species.

Flat-Topped Buckwheat Scrub

Flat-topped buckwheat scrub is a community of coastal sage scrub dominated by California buckwheat. This vegetation community is often found in disturbed areas in the coastal and foothill areas of San Diego County. This species occurs at the western portion of the site along West Hills Parkway.

Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species within the project site include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.).

Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora. Within the project site this community is dominated by water primrose (*Ludwigia hexapetala*).

Southern Riparian Forest (including disturbed and burned)

Southern riparian woodlands and forests are composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species do overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species in the project site include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), Fremont's cottonwood (*Populus fremontii*), box-elder (*Acer negundo*), and wild grape (*Vitis girdiana*). Disturbed southern riparian forest is composed of a higher percentage of non-native species while burned southern riparian forest was previously burned in past.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Southern willow scrub occurs in the central-eastern portion of the site and this habitat is dominated by arroyo willow, black willow, and sandbar willow (*Salix exigua*).

Broom Baccharis Dominated

Broom baccharis dominated scrub is an upland community recognized by resource agencies as a subtype of coastal sage scrub that develops under a variety of circumstances following Diegan coastal sage scrub disturbance. Baccharis scrub occurs in the northwestern portion of the site and is dominated by broom baccharis.

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. In the project site, this vegetation community is dominated by mule fat.

Non-Native Grassland

Non-native grassland typically supports a sparse to dense cover of annual grasses often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual,

introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These grasslands are common throughout San Diego County. In the project site, dominant species include wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and western ragweed (*Ambrosia psilostachya*).

Open Water

Open water in the project area consists of man-made ponds located within the Carlton Oaks golf course and along the San Diego River.

Ornamental

Ornamental plantings in the project site consist of maintained portions of the golf course, including irrigated turf areas, sand traps, etc., and associated landscaping and scattered native and non-native trees within the maintained golf course areas. Also includes similar areas in Mast Park.

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, particularly where the soil has been heavily compacted by prior development or where agricultural lands have been abandoned. Disturbed habitat is generally dominated by non-native weedy species that adapt to frequent disturbance, and may also consist of dirt trails and roads.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. In the project site this consists of paved golf cart paths, buildings, and roads.

RESULTS

No California gnatcatchers were detected during the survey.

CERTIFICATION

I certify that the information in this survey report and enclosed exhibit fully and accurately represent our work.

Sincerely,

Erica Harris
Biologist

Jason Kurnow
Senior Scientist

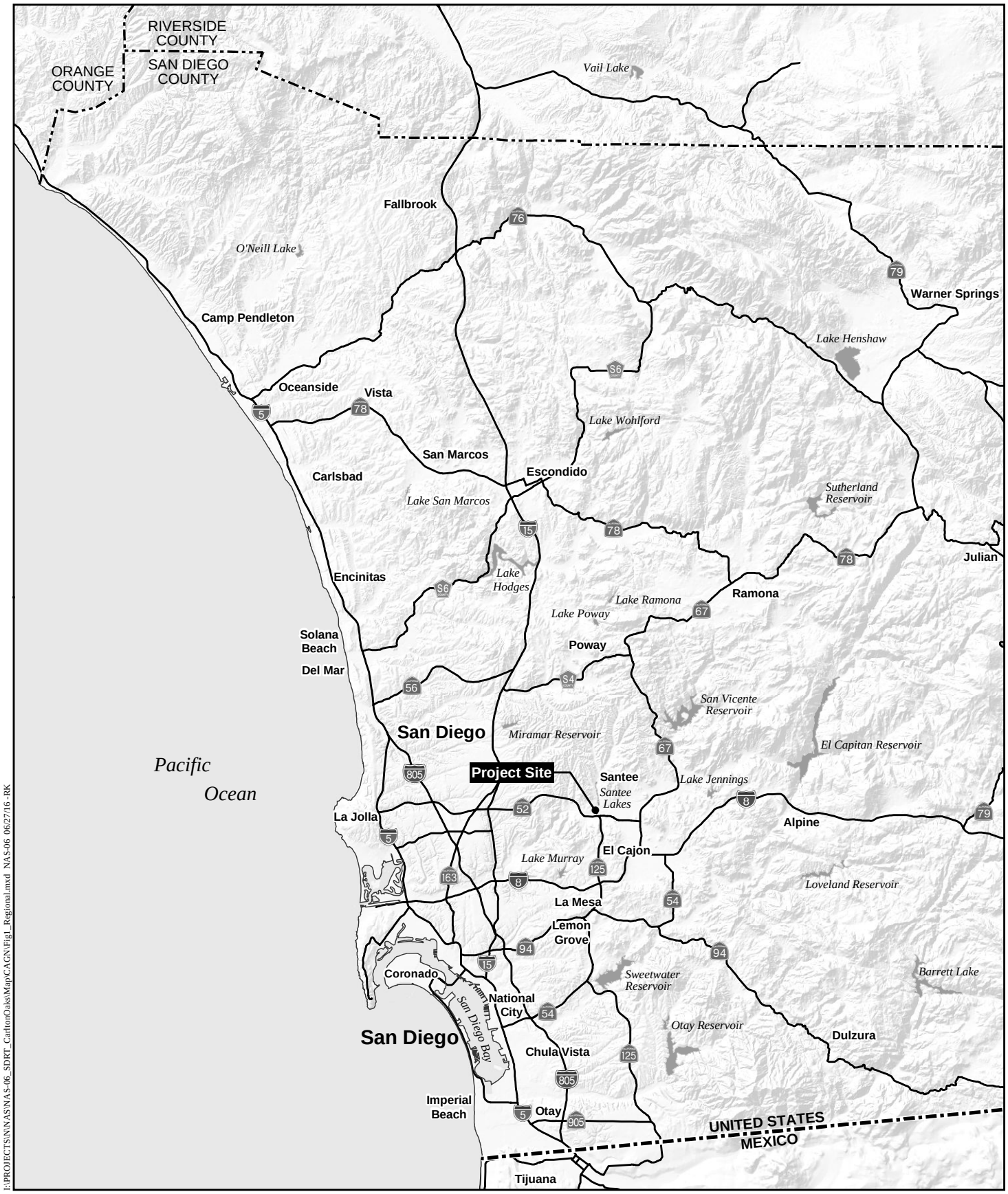
Enclosures:
Figure 1 Regional Location Map
Figure 2 Project Vicinity (USGS Topography)
Figure 3 Project Vicinity Map (Aerial Photograph)
Figure 4 Vegetation/Coastal California Gnatcatcher Survey Route

REFERENCES

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, 156 pp.

Oberbauer, Thomas. 2008. Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. Revised from 1996 and 2005. July.

U.S. Fish and Wildlife Service. 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5pp.



I:\PROJECTS\NNAS\NAS-06_SDRT_CartonOaksMap\CAGN\Fig1_RegionalLmxd NAS-06 06/27/16 -RK

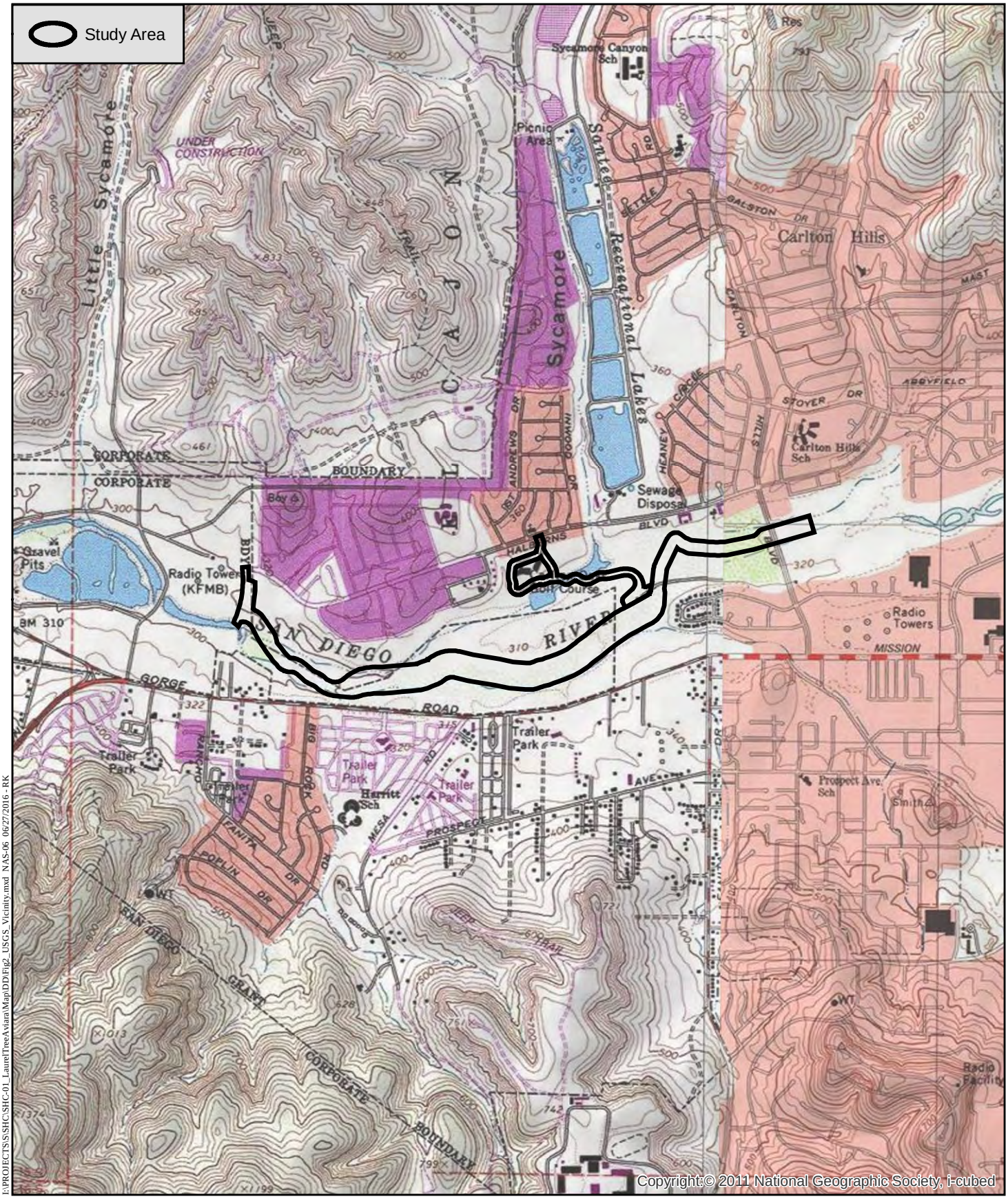
Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 8 Miles

Figure 1



I:\PROJECTS\SHC\SHC-01_LaurelTreeAviara\Map\DD\Fig2_USGS_Vicinity.mxd NAS-06 06/27/2016 - RK

Project Vicinity (USGS Topography)

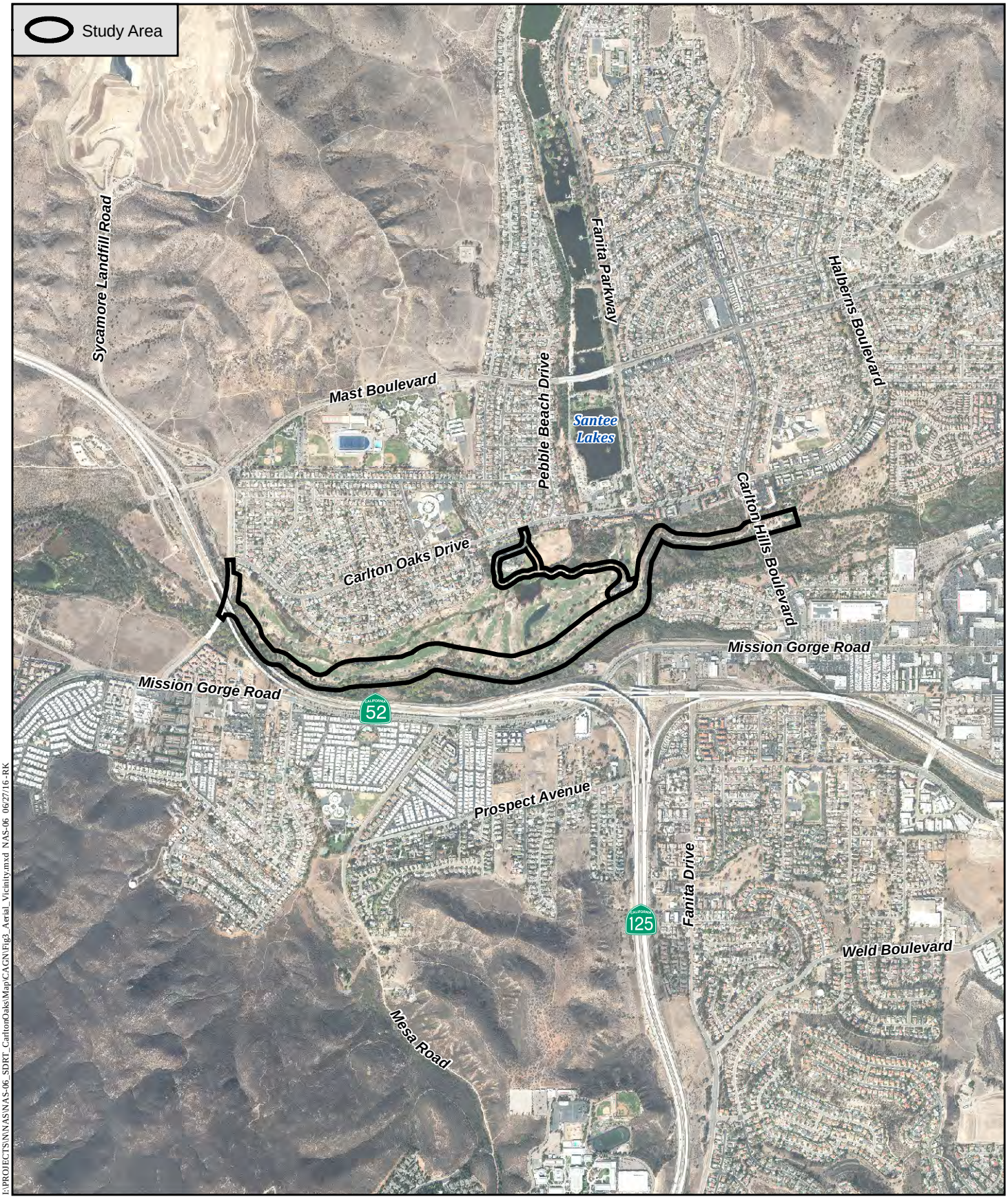
SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N

0 2,000 Feet

Figure 2



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaksMap\CAGN\Fig3_Aerial_Vicinity.mxd NAS-06 06/27/16 RK

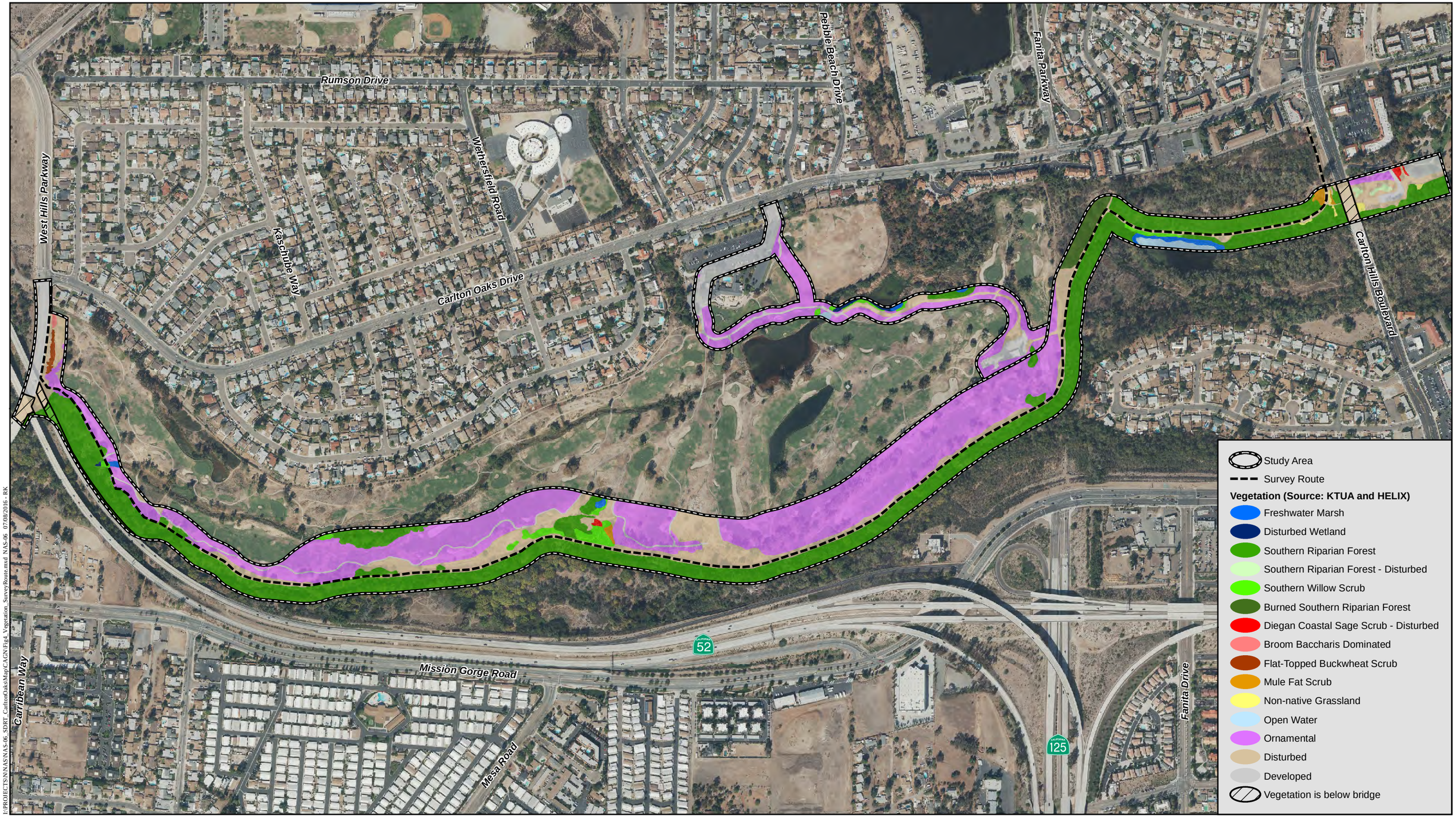
Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 3



I:\PROJECTS\N\NAS\NAS-06_SDRT_CarltonOaks\Map\CAGN\Fig4_Vegetation_SurveyRoute.mxd NAS-06 07/08/2016 - RK

Vegetation/Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Route

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 550 Feet

Figure 4

Appendix I

2016 Least Bell's Vireo Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

August 8, 2016 NAS-06

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

Subject: Year 2016 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Report for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the least Bell's vireo (*Vireo bellii pusillus*; LBVI) conducted by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit (TE778195-13).

PROJECT LOCATION

The approximately 30.47-acre survey area is located partially in the City of Santee on the eastern half of the project site and within the City of San Diego on the western half of the project site (Figures 1 and 2). The LBVI survey area encompasses riparian and wetland habitat along the San Diego River that occurs within 100 feet of the project impact limits (Figure 3). The proposed project impact area extends along the San Diego River from approximately 600 feet east of Carlton Hills Boulevard to where West Hills Parkway meets State Route (SR-) 52. Elevation on site ranges from approximately 90 to 110 meters (300 to 360 feet) above mean sea level (amsl). The San Diego River flows from east to west through the survey area. The western two-thirds of the survey area is bordered by the Carlton Oak Country Club golf course to the north, and SR-52 to the south, which ranges from approximately 370 feet away to directly adjacent to the survey area. East of Carlton Hills Boulevard the survey area is surrounded by Mast Park. Between

Carlton Hills Boulevard and the golf course, the San Diego River is bordered by approximately 1,000 feet of riparian scrub, some of which burned in 2014.

METHODS

Eight surveys were conducted by HELIX biologists Laura Moreton, Katie Bellon, Talaya Rachels, Benjamin Rosenbaum, and Summer Schlageter, according to the schedule in Table 1. The survey was conducted by walking along the edges of, as well as within, suitable LBVI habitat in the survey area while listening for LBVI and observing birds with the aid of binoculars. Suitable habitat for LBVI within the survey area comprises mule fat scrub, southern riparian forest, and southern willow scrub. Habitat within the project site not suitable for LBVI was not surveyed.

Table 1
LEAST BELL'S VIREO SURVEY INFORMATION

Site Visit	Date	Biologist	Time (start/stop)	Approximate Acres (ac) Covered*/ Survey Rate	Weather Conditions (start/stop)
1	5/4/16	Laura Moreton, Lara Barrett	0800/1100	30.47/ 10.16 ac/hr	61ºF, wind 0-1 mph, 100% clouds 66ºF, wind 1-2 mph, 20% clouds
2	5/16/16	Katie Bellon, Talaya Rachels	0830/1120	30.47/ 10.75 ac/hr	58ºF, wind 3-4 mph, 100% clouds 63ºF, wind 6-7 mph, 100% clouds
3	5/26/16	Laura Moreton	0630/1100	30.47/ 6.77 ac/hr	54ºF, wind 0 mph, 100% clouds 66ºF, wind 0 mph, 95% clouds
4	6/6/16	Laura Moreton	0630/1100	30.47/ 6.77 ac/hr	64ºF, wind 2-4 mph, 100% clouds 74ºF, wind 1-2 mph, 15% clouds
5	6/16/16	Laura Moreton	0630/1100	30.47/ 6.77 ac/hr	52ºF, wind 0 mph, 0% clouds 75ºF, wind 0-1 mph, 0% clouds
6	6/27/16	Benjamin Rosenbaum	0515/0925	30.47/ 7.31 ac/hr	66ºF, wind 0-2 mph, 50% clouds 75ºF, wind 0-2 mph, 5% clouds
7	7/7/16	Summer Schlageter	0510/0918	30.47/ 7.37 ac/hr	64ºF, wind 0-1 mph, 100% clouds 73ºF, wind 0 mph, 5% clouds
8	7/18/16	Laura Moreton	0805/1100	30.47/ 10.45 ac/hr	66ºF, wind 1-2 mph, 10% clouds 81ºF, wind 1-2 mph, 0% clouds

*Includes time for travel between habitat patches

RESULTS

There were 10 LBVI detections at 5 discreet locations during the survey effort (Figure 3). No LBVI were detected during the first or second surveys. During the third survey on May 26, 2016, two males were heard singing at the western end of the project site near the SR-52 overpass.

During the fourth survey on June 6, 2016, two males were heard singing in the same area. During the fifth survey on June 16, 2016, the two males were heard singing, in the same location, at the west end of the project area. One of the males was observed and noted to be unbanded. During the fifth survey, an additional male was heard singing approximately 50 feet south of the survey area, north of the intersection of Mission Gorge Road and SR-52. During the sixth survey on June 27, 2016, only one male at the western end of the project site was heard singing. Another LBVI was detected during this survey approximately 100 feet to the west of the survey area and 300 feet south of the intersection of Fanita Parkway and Carlton Oaks Drive. During the seventh survey on July 7, 2016, no LBVI were observed or otherwise detected. During the eighth survey on July 18, 2016, a male LBVI was heard singing in the eastern portion of the survey area, approximately 450 feet east of the golf course.

Special status species were detected during the surveys and included Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*). Brown-headed cowbird (*Molothrus ater*) was detected during all surveys except for the initial survey. A list of animal species observed or detected is included in Attachment A.

CERTIFICATION

I certify that the information in this survey report and enclosed exhibit fully and accurately represents our work.

Please contact Laura Moreton at (619) 462-1515 if you have any questions concerning the survey effort or this report.

Sincerely,

Laura Moreton
Biologist

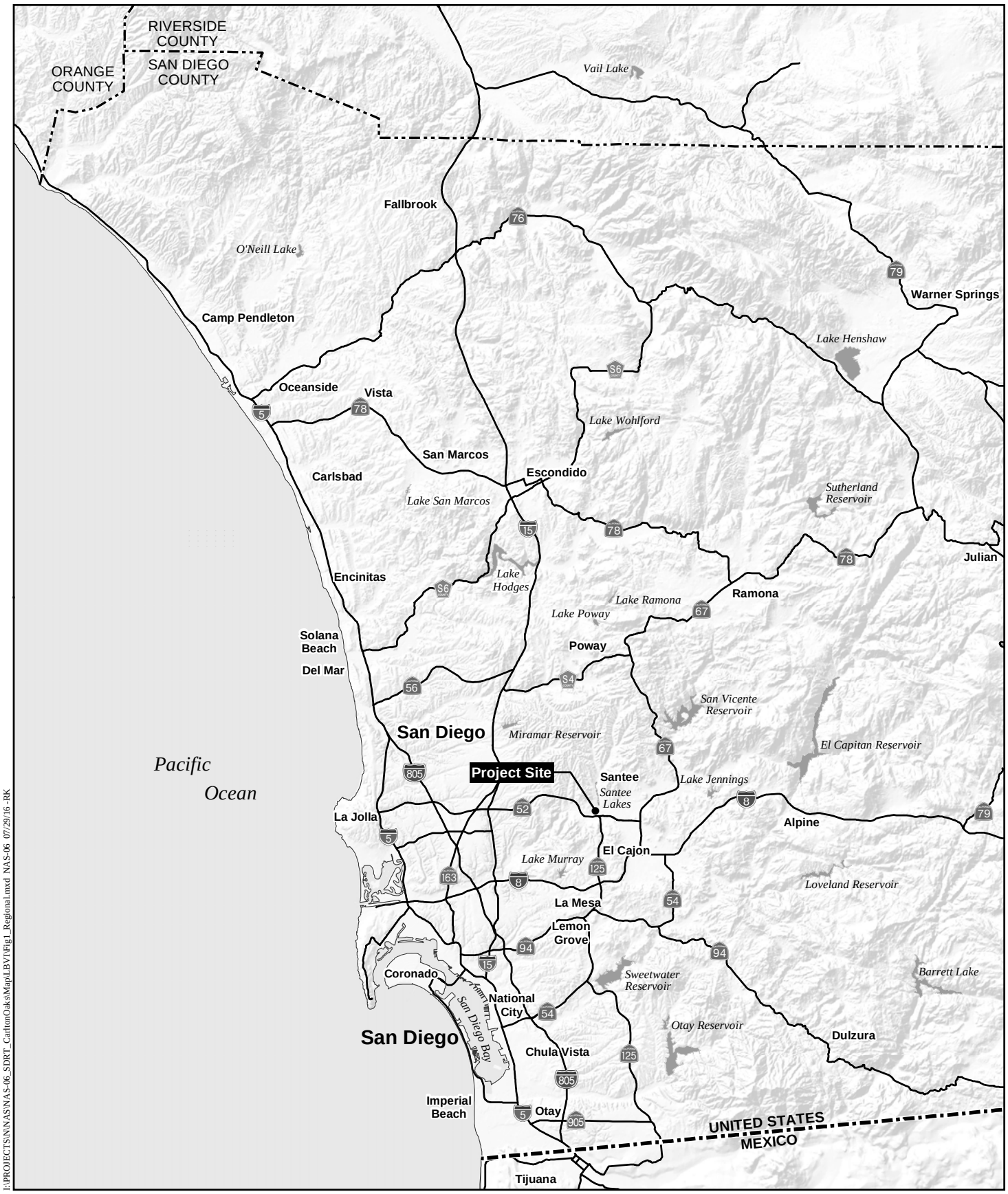
Ben Rosenbaum
Biologist

Summer Schlageter
Biologist

Talaya Rachels
Biologist

Katie Bellon
Biologist

Enclosures:
Figure 1 Regional Location Map
Figure 2 Project Vicinity Map (Aerial Photograph)
Figure 3 Vegetation/Least Bell's Vireo Survey Results
Attachment A Animal Species Observed or Detected



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\LBV1\Fig1_Regional.mxd NAS-06 07/29/16 RK

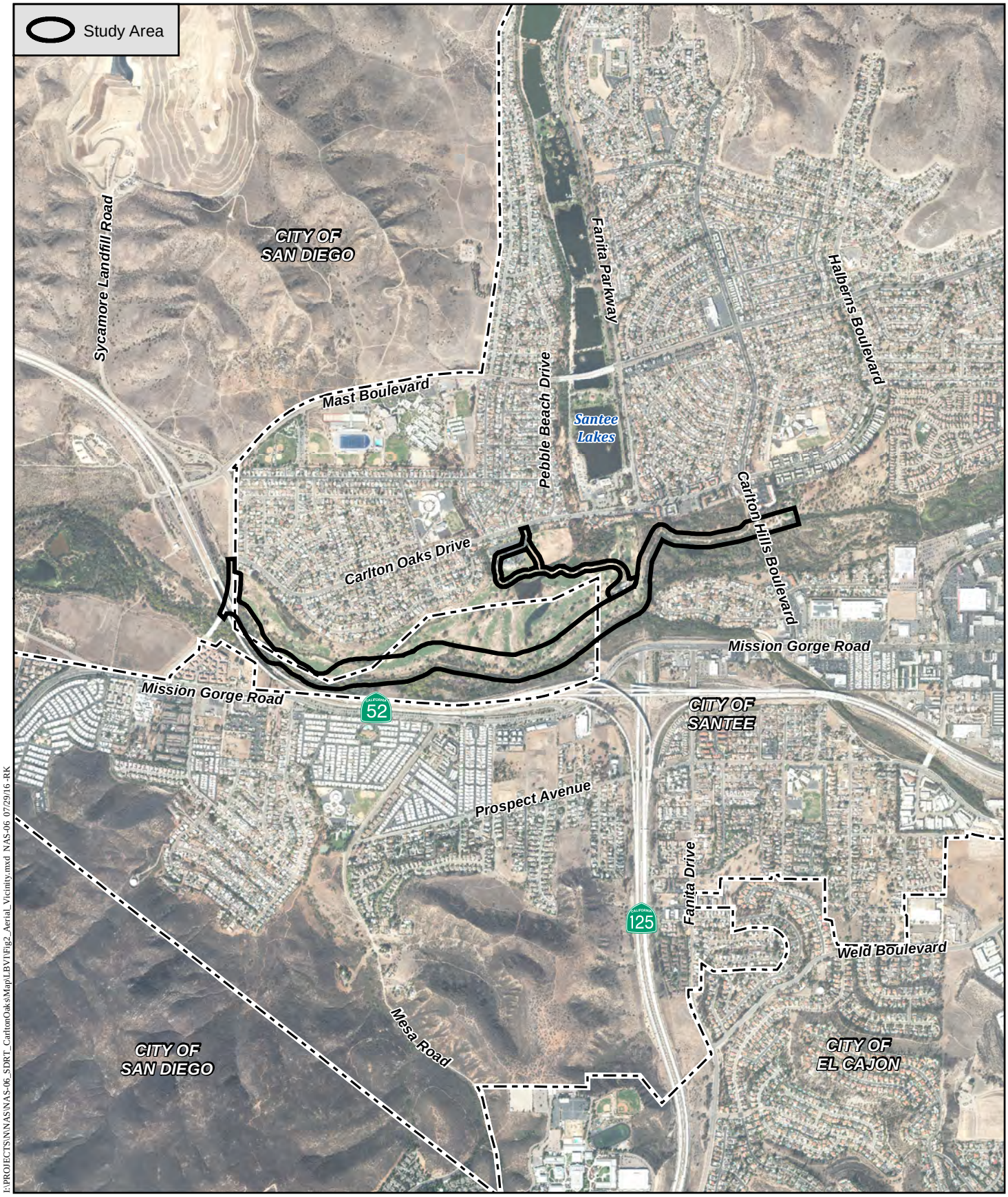
Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 8 Miles

Figure 1



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\LBV1\Fig2_Aerial_Vicinity.mxd NAS-06 07/29/16 -RK

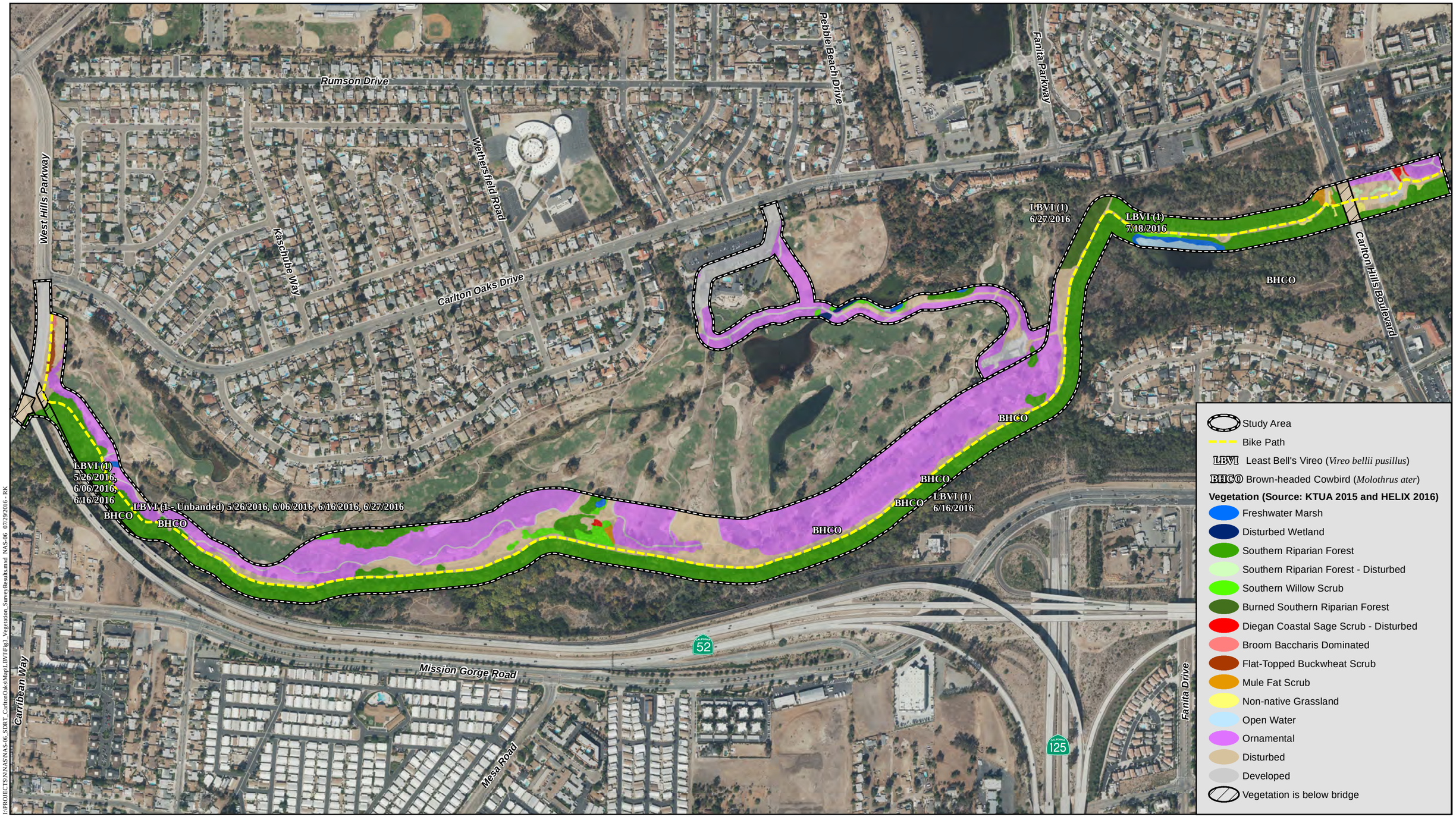
Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2



I:\PROJECTS\N\NAS\NAS-06_SDRT_CarltonOaks\sMap\LBVIFig3_VegetationSurveyResults.mxd NAS-06 07/29/2016 - RK

Vegetation/Least Bell's Vireo (*Vireo bellii pusillus*) Survey Results

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 550 Feet

Figure 3

Attachment A
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES			
Order	Family		
Lepidoptera	Lycaenidae	*Icaricia acmon acmon*	acmon blue
	Nymphalidae	*Nymphalis antiopa*	mourning cloak
	Pieridae	*Pontia sisymbrii*	spring white
		Papilio eurymedon	pale tiger swallowtail
VERTEBRATES			
Reptiles			
Order	Family		
Anura	Ranidae	*Lithobates catesbeianus*	American bullfrog
Birds			
Order	Family		
Accipitriformes	Accipitridae	*Accipiter cooperii†*	Cooper's hawk
		Buteo jamaicensis	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
		Elanus leucurus†	white-tailed kite
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Aix sponsa	wood duck
Apodiformes	Apodidae	*Aeronautes saxatalis*	white-throated swift
	Trochilidae	*Calypte anna*	Anna’s hummingbird
Charadriiformes	Laridae	*Larus* sp.	gull
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Zenaida macroura	mourning dove
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Bombycillidae	*Bombycilla cedrorum*	cedar waxwing
	Cardinalidae	*Pheucticus melanocephalus*	black-headed grosbeak
		Piranga ludoviciana	western tanager

Attachment A (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		**SCIENTIFIC NAME**	**COMMON NAME**
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Passeriformes	Corvidae	*Aphelocoma californica*	western scrub jay
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Emberizidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
		Pipilo maculatus	spotted towhee
	Estrildidae	*Lonchura punctulata*	scaly-breasted munia
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Hirundinidae	*Petrochelidon pyrrhonota*	cliff swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
		Tachycineta bicolor	tree swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Icterus cucullatus	hooded oriole
		Molothrus ater	brown-headed cowbird
	Parulidae	*Geothlypis trichas*	common yellowthroat
		Icteria virens†	yellow-breasted chat
		Setophaga petechia†	yellow warbler
	Sittidae	*Sitta carolinensis*	white-breasted nuthatch
	Sturnidae	*Sturnus vulgaris*	European starling
	Sylviidae	*Chamaea fasciata*	wrentit
	Troglodytidae	*Thryomanes bewickii*	Bewick’s wren
		Troglodytes aedon	house wren
	Turdidae	*Sialia mexicana*	western bluebird
		Turdus migratorius	American robin
	Tyrannidae	*Empidonax difficilis*	pacific-slope flycatcher
		Myiarchus cinerascens	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Tyrannus vociferans	Cassin’s kingbird
	Vireonidae	*Vireo bellii pusillus†*	least Bell's vireo
Pelecaniformes	Ardeidae	*Ardea alba*	great egret
		Butorides virescens	green heron

Attachment A (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Mammals			
Order	Family		
Artiodactyla	Cervidae	*Odocoileus hemionus*	mule deer
Carnivora	Procyonidae	*Procyon lotor*	raccoon
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Sciuridae	*Spermophilus beecheyi*	California ground squirrel

†Special Status Species

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix J

2016 Southwestern Willow Flycatcher Survey Report

Bonnie Peterson, Biologist
11910 Walnut Road, Lakeside, CA 92040
Tel: 619-316-2394
e-mail: bonniepeterson@cox.net

August 1, 2016

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

Re: 45-day Letter Report for Southwestern Willow Flycatcher Protocol Surveys for the San Diego River Trail – Carlton Oaks Golf Course Segment Project, Located in the Cities of Santee and San Diego, San Diego County, California.

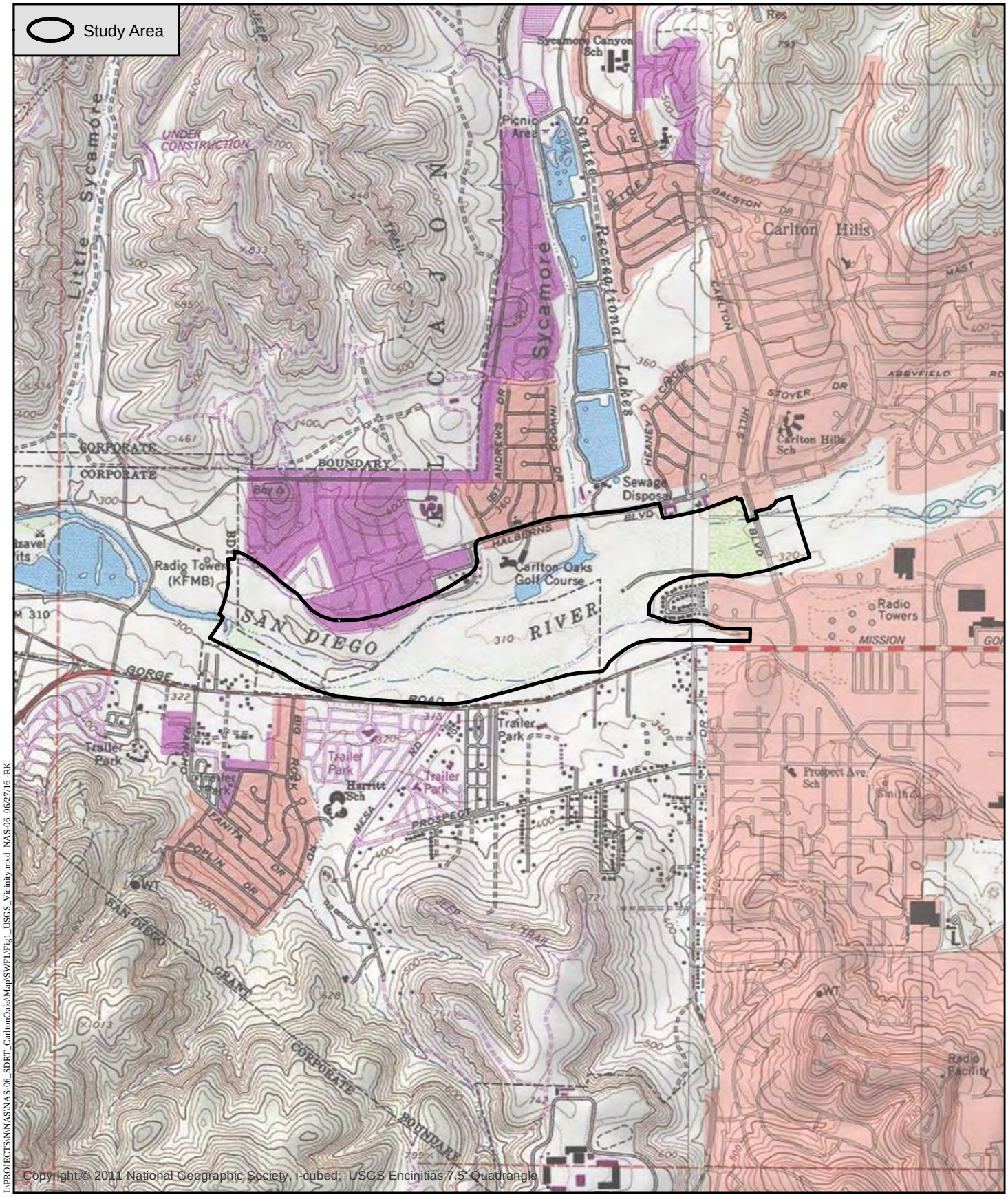
Ms. Love;

Bonnie Peterson conducted protocol surveys for the federally- and state-listed, endangered southwestern willow flycatcher (*Empidonax traillii extimus*) on the San Diego River Trail – Carlton Oaks Golf Course Segment, as authorized under Ms. Peterson's United States Fish and Wildlife Service (USFWS) Endangered Species Act, Section 10(a)(1)(A) permit #TE038701-2 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). These surveys were conducted in accordance with the current U.S. Fish and Wildlife Service's *Southwestern Willow Flycatcher Survey Protocol* (USGS 2010). The project site contains 3.3 linear kilometers of potential flycatcher habitat. No southwestern willow flycatchers were detected on the project site during the surveys. This letter report has been prepared and submitted to Helix Environmental Planning Inc., USFWS, and CDFW in accordance with the requirements of my 10(a) permit and MOU.

INTRODUCTION

Bonnie Peterson conducted protocol surveys for the federally- and state-listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*) for the purpose of determining the presence or absence of this species along the San Diego River Trail – Carlton Oaks Golf Course Segment project site.

The project study area extends from the intersection of West Hills Parkway and Carlton Oaks Drive on the west through the Carlton Oaks Golf Course to just east of Carleton Hills Boulevard (Figure 1). The project lies within the Cities of Santee and San Diego. The southern boundary is bordered by State Route 52 and urban development. Mission Trails Regional Park is located to the west. Urban development occurs on the north and east. The project consists of approximately 2 miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway.



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaksMap\SWFL\Fig1_USGS_Vicinity.mxd NAS-06 06/27/16 RK

Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 1

METHODS

Ms. Peterson conducted protocol surveys for the southwestern willow flycatcher in accordance with the current U.S. Fish and Wildlife Service's (USFWS) *Southwestern Willow Flycatcher Protocol Revision* (USGS 2010), as authorized under federal Endangered Species Act (ESA), Section 10(a)(1)(A) permit #TE038701-2 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). All surveys and conditions are recorded in Table 1. The survey area included approximately 3.3 linear kilometers/115 acres of potentially suitable habitat.

Table 1. Survey Dates, Times, Conditions

Survey #	Date	Time	Conditions[1] (start-end)	Biologist	Survey Acres per Hour/Day
1	2016 May 26	0520-1050	Weather: 100%-95% cc Wind: 0-1 BS Temperature: 52°-66°F	Bonnie Peterson	21 per hour/ 115 per day
2	2016 Jun 6	0520-1100	Weather: 100%-20% cc Wind: 1 BS Temperature: 61°-72°F	Bonnie Peterson	21 per hour/ 115 per day
3	2016 Jun 16	0520-1000	Weather: 10%-0% cc Wind: 1-0 BS Temperature: 59°-70°F	Bonnie Peterson	24 per hour/ 115 per day
4	2016 Jun 27	0515-0935	Weather: 50%-10% cc Wind: 0 BS Temperature: 68°-85°F	Bonnie Peterson	27 per hour/ 115 per day
5	2016 Jul 7	0505-0920	Weather: 100%-5% cc Wind: 0-1 BS Temperature: 64°-73°F	Bonnie Peterson	27 per hour/ 115 per day

[1] cc=cloud cover; BS=Beaufort Scale; F = Fahrenheit

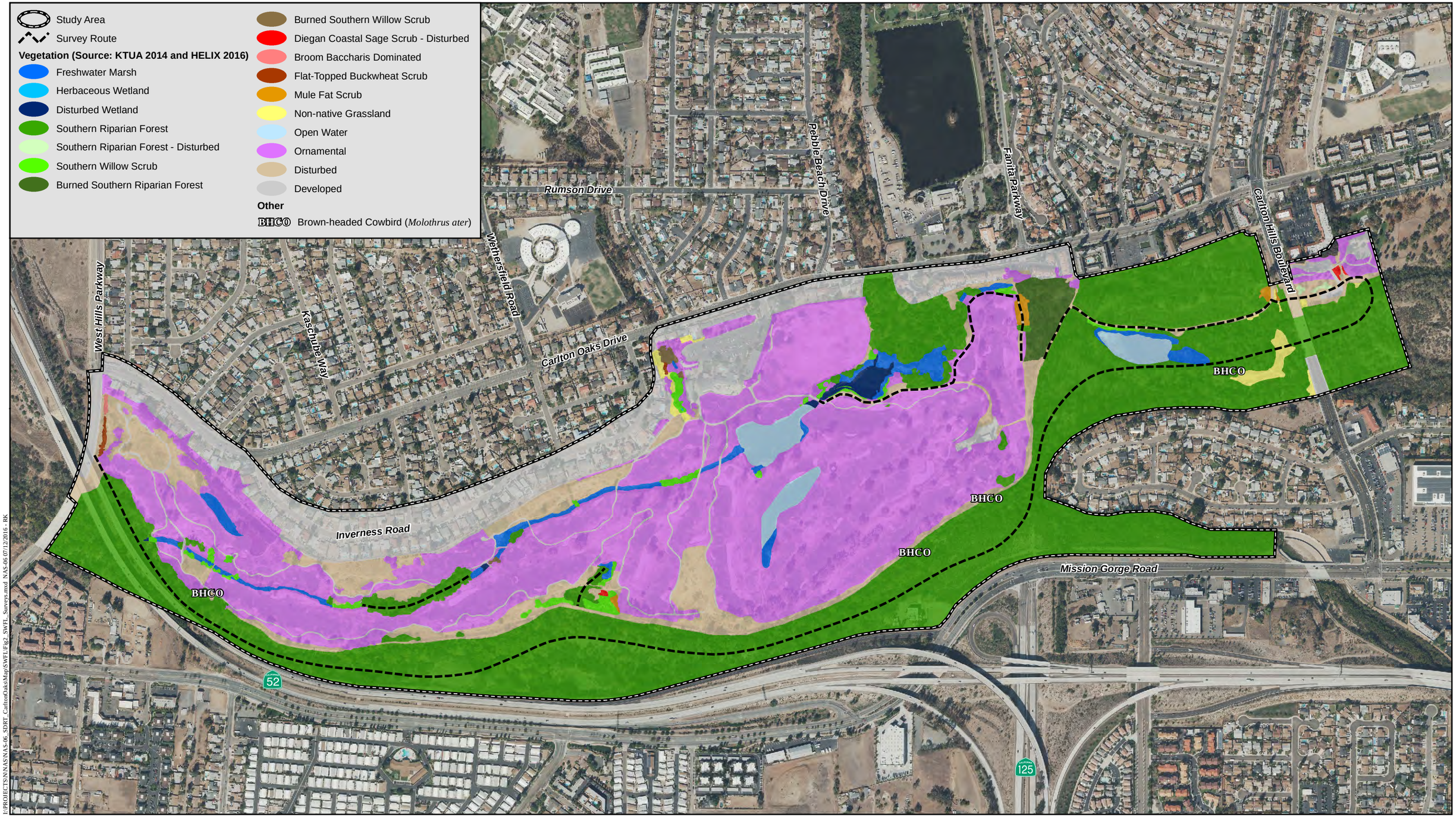
RESULTS

The habitat surveyed was primarily native riparian habitat with some non-native species interspersed. The dominant plant species included black willow (*Salix goodingii*), cottonwood (*Populus fremontii*), (*Acer nugundo*), and wild grape (*Vitis girdiana*). Water was present in the river throughout the entire series of surveys and is potentially present year round. The riparian habitat ranged in width from 50 meters to 300 meters. The overall habitat quality was good but varied from low to high quality along the entire survey area. The riparian habitat was home to many riparian avian species including yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), and least Bell's vireo (*Vireo bellii pusillus*). The brood parasite, brown-headed cowbird (*Molothrus ater*), was also present on site. The surrounding habitat was a golf course to the north and urban development including a freeway to the south.

No southwestern willow flycatcher were detected on the project site.

The survey area and survey routes for the southwestern willow flycatcher are shown in Figure 2.

The Willow Flycatcher Survey and Detection Form (Appendix 1) is also attached.



I:\PROJECTS\NN\NAS\NAS-06_SDRT_CarltonOaks\Maps\SWFLF\fig2_SWFL_Surveys.mxd NAS-06 07/12/2016 - RK

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) Protocol Surveys

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 600 Feet

Figure 2

CONCLUSIONS

No other pertinent observations pertaining to the southwestern willow flycatcher were noted during the survey efforts. Due to the limited nature of the work on this project (i.e., protocol presence/absence surveys, not long-term research), no additional recommendations for species recovery can be made at this time.

If you have any questions concerning this project, please do not hesitate to contact me at (619) 316-2394 or bonniepeterson@cox.net.

Sincerely,

Bonnie Peterson
Permitted Biologist

cc: Ms. Esther Burkett, Senior Environmental Scientist (Specialist), California Department of Fish and Wildlife esther.burkett@wildlife.ca.gov

Ms. Nancy Frost, California Department of Fish and Wildlife, South Coast Region, nancy.frost@wildlife.ca.gov

Shana Rodriguez, Operations Manager, Helix Environmental Planning, Inc.,7578 El Cajon Blvd., La Mesa, CA 91942 ShanaR@helixepi.com

REFERENCES

U.S. Geological Survey (USGS) et al. 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher. 36 pp.

I hereby certify that the statements furnished herein and in the attached exhibits present the data and information as required pursuant to Recovery Permit TE038701-2, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

1) Fieldwork Performed By:

Bonnie Peterson, Permitted Biologist
10(a) Permit Number TE038701-2

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/southwest/es/arizona/) for the most up-to-date version.

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

Site Name SAN DIEGO RIVER TRAIL - CARLTON OAKS GOLF COURSE State CA County SAN DIEGO
USGS Quad Name LA MESA + EL CAJON Elevation 91.4 (meters)
Creek, River, Wetland, or Lake Name SAN DIEGO RIVER
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* ✓ *No* ___

Survey Coordinates: Start: E 497808.50m N 3633600.22m UTM Datum UTM (See instructions)
Stop: E 500408.38m N 3633959.80m UTM Zone 11S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
*** Fill in additional site information on back of this page ****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) BONNIE PETERSON	Date 5/26/2016 Start 0520 Stop 1050 Total hrs 5.5	0	0	0	N	COWBIRDS PRESENT ALONG SURVEY AREA				
Survey # 2 Observer(s) BONNIE PETERSON	Date 6/6/16 Start 0520 Stop 1100 Total hrs 5.6	0	0	0	N	"				
Survey # 3 Observer(s) BONNIE PETERSON	Date 6/16/16 Start 0520 Stop 1000 Total hrs 4.8	0	0	0	N	"				
Survey # 4 Observer(s) BONNIE PETERSON	Date 6/27/16 Start 0515 Stop 0935 Total hrs 4.3	0	0	0	N	"				
Survey # 5 Observer(s) BONNIE PETERSON	Date 7/07/16 Start 0505 Stop 0920 Total hrs 4.3	0	0	0	N	"				

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs	Total Adult Residents	Total Pairs	Total Territories	Total Nests	
	0	0	0	0	Were any Willow Flycatchers color-banded? ~~Yes~~ ~~No~~ If yes, report color combination(s) in the comments section on back of form and report to USFWS.

Reporting Individual BONNIE PETERSON Date Report Completed 7/11/16
US Fish and Wildlife Service Permit # TE 038701-2 State Wildlife Agency Permit # MOU
***Submit** form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.*

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

Reporting Individual BONNIE PETERSON Phone # 619-316-2394
Affiliation HELIX ENVIRONMENTAL E-mail bonniepeterson@cox.net
Site Name SAN DIEGO RIVER TRAIL - CARLETON OAKS GOLF COURSE Date Report Completed _____

Did you verify that this site name is consistent with that used in previous years? Yes ____ No ✓ Not Applicable ___
If site name is different, what name(s) was used in the past? ~
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ✓ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes ✓ No ____ If no, summarize below.

Management Authority for Survey Area : Federal____ Municipal/County ✓ State____ Tribal____ Private____
Name of Management Entity or Owner (e.g., Tonto National Forest) _____

Length of area surveyed: 3300 (meters)

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

____ Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)

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

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

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

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.
SALIX goodingii, Acer negundo, Populus fremontii

Average height of canopy (Do not include a range): 60' (meters)

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

Comments (attach additional sheets if necessary)

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

Territory Number	All Dates Detected	UTM N	UTM E	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary