

3.2 Biological Resources

This section describes the effects to biological resources that may result from the implementation of the proposed Project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid impacts anticipated from Project construction and O&M. In addition, existing laws and regulations relevant to biological resources are described in Section 3.2.2. Section 3.2.1 (Environmental Setting) includes a detailed description of the sources of information used to develop the baseline conditions for the Project area. Section 3.2.3 presents the impact analysis for biological resources.

Additional detail and background on biological resources are included in the following appendices to this EIR:

- Appendix B-1: Applicable Biological Studies
- Appendix B-2: Summary of Surveys Conducted in the Study Area
- Appendix B-3: Wildlife Observed in the Study Area
- Appendix B-4: Plant Species Observed in the Study Area
- Appendix B-5: Sensitive Plant Species Unlikely to Occur in the Study Area
- Appendix B-6: Special Status Plant and Wildlife Descriptions
- Appendix B-7: Preliminary Jurisdictional Delineation Report
- Appendix G: Ventura County Watershed Protection District Routine Operations & Maintenance Program – Environmental Best Management Practices and Permit Conditions Summary

Scoping Issues Addressed

During the scoping period for the EIR (February 26 through March 27, 2015), written comments were received from agencies, organizations, and the public. These comments identified various substantive issues and concerns relevant to the EIR analysis. The following issues related to biological resources were raised during scoping and are addressed in this section.

- The proposed Project should identify impacts and preserve riparian habitat within and adjacent to the Project.
- Proposed Project design should prevent rodent burrows instead of other rodent control methods.
- The proposed Project should consider alternatives to traditional anticoagulant poisons in regards to rodent control.
- The proposed Project should consider sensitive wildlife habitat and wildlife movement.
- The proposed Project should assess flora and fauna within the Project area.
- The proposed Project should assess impacts related to the use of herbicide for levee maintenance.
- Analysis should consider indirect impacts from proposed Project activities.

3.2.1 Environmental Setting

This section presents information on biological resources in the proposed Project region and describes baseline conditions within the Project area. In addition, this section includes vegetation types within the Project area to characterize the botanical resources and potential for wildlife to occur on the proposed Project site. Biotic habitats suitable for the occurrence of plant and wildlife species of special-

status (State and Federally listed threatened and endangered species, Federal candidate species, California Native Plant Society List species, Ventura Locally Important Species, California Fully Protected species, and California Species of Special Concern) are also described.

3.2.1.1 Baseline Data Collection Methodology

Information used in preparing this section was derived from a number of sources including biological resources reports provided by the VCWPD, review of existing literature, consultation with technical experts, and reconnaissance surveys of the Project site. Biological resource data included, but were not limited to, the following:

Literature Search and Review of Existing Data

Aspen has peer reviewed and where appropriate, field verified, all information and data presented in materials provided by the VCWPD. This peer review included but was not limited to technical reports and data, including special-status species locations and survey data presented in Appendix B-1 of this EIR. Aspen conducted data collection through review of the following resources:

- Draft Environmental Impact Report for the Olivas Park Drive Extension Project (City of Ventura, 2013);
- Santa Clara River Levee Certification; Freeman Diversion to Bailard Landfill; Vegetation Management Area and Levee Gap Area Biological Survey Report (Padre, 2009);
- Least Bell's Vireo Protocol Survey and Territory Mapping on the Santa Clara River (VCWPD, 2013a);
- Southwestern Willow Flycatcher Protocol Survey on the Santa Clara River (VCWPD, 2013b);
- Initial Study/Mitigated Negative Declaration for the Santa Clara River Trail Master Plan (City of Oxnard, 2011);
- Natural Diversity Database (CDFW, 2015a);
- State and federally listed endangered and threatened animals of California (CDFW, 2015b);
- Special Animals List (CDFW, 2015c);
- California Wildlife Habitat Relationships (CDFW, 2008);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2010);
- Consortium of California Herbaria;
- County of Ventura General Plan (County, 2015);
- Aerial photographs of the Project site and surrounding areas (January 2014, December 2013, August 2012, April 2011, June 2009, October 2007, September 2007, August 2006, July 2006, December 2005, June 2005, October 2004, December 2003, July 2003, and September 1994).
- List of Ventura County Locally Important Animals (County of Ventura, 2014a); and,
- List of Ventura County Locally Important Plants (County of Ventura, 2014b).

Consultation with Agencies and Local Experts

VCWPD staff and the Aspen have maintained an active dialogue with the US Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (USACE), and California Department of Fish and Wildlife (CDFW).

Collection of Field Data

Aspen conducted multiple reconnaissance level visits of the proposed Project site in order to document the site conditions and to collect new biological resources related field data where applicable. A summary of the surveys conducted in support of the proposed Project are presented in Appendix B-2.

3.2.1.2 Regional Setting

The Santa Clara River system originates in the San Gabriel Mountains and flows westward for approximately 84 miles to the Pacific Ocean where the river forms a coastal lagoon and estuary near McGrath State Beach (VCWPD and LADPW, 2005). The river supports some of the last large-scale cottonwood galleries in the region and is one of the last natural river systems in Southern California. The Santa Clara River is considered a regionally important habitat linkage for many species and provides connectivity from coastal regions to inland valleys and important tributary drainages. Principal tributaries of the Santa Clara River are Castaic Creek in Los Angeles County, and Piru, Sespe and Santa Paula Creeks in Ventura County, with drainage areas of 197, 441, 269, and 42 square miles, respectively (VCWPD and LADPW, 2005).

Faber et al. (1989) estimated that as much as 95 to 97 percent of riparian habitats have been lost in southwestern California. In addition, most of the natural riparian vegetation in California has been lost or degraded from land use conversions to agricultural, urban, and recreational developments; channelization for flood control; sand and gravel mining; ground water pumping; water impoundments; and various other alterations. The Santa Clara River has been subject to numerous anthropogenic disturbances, yet still supports a complex association of river channel, sandy terraces, riparian forest, and upland stream terraces. Portions of the Santa Clara River are considered critical habitat for steelhead trout (southern California distinct population segment, or DPS). A variety of State and federally listed species are known to occur in and near the river corridor and adjacent uplands.

3.2.1.3 Project Overview

The proposed Project consists of implementing improvements to the SCR-3 levee between the northeast end of the Bailard Landfill and the northeast boundary of the UPRR property, generally following the southern bank of the Santa Clara River near the City of Oxnard, California. Proposed Project improvements would occur along an approximately 2.0-mile (10,775-foot) stretch of the SCR-3 levee (includes the extreme southern portion of the “gap” between the east end of the SCR-3 levee and the SCR-1 levee). For purposes of analysis, the VCWPD divided the SCR-3 levee into four reaches:

- Reach 1 – Extends approximately 2,125 feet from the northeast corner of the Bailard Landfill upstream to the Coastal Landfill (just east of Victoria Avenue) (Station 128+75 to 150+00).
- Reach 2 - Extends approximately 5,200 feet along the Coastal Landfill to a point just west of N. Ventura Road (Station 150+00 to 202+00).
- Reach 3 – Extends approximately 1,550 feet from Reach 2 to the point where N. Ventura Road turns easterly and is parallel to the Santa Clara River, approximately 2,600 feet west of Highway 101 (Station 202+00 to 217+50).
- Reach 4 - Extends approximately 1,936 feet from Reach 3 (Station 217+50) upstream to the northeast side of the UPRR crossing (Station 217+50 to Station 236+86). The gap between the UPRR and the Highway 101 Bridge will be addressed by The Village development.

Although impacts from the proposed Project would largely occur within the general area of the existing levee, in order to better characterize the biological resources that may occur in the general vicinity of

3.2

Biological Resources

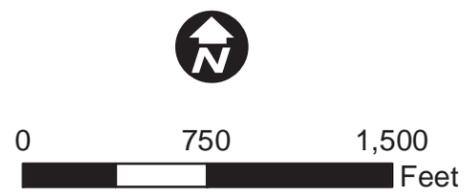
the proposed Project, surveys were conducted within a much larger footprint than the Project impact areas. The surveyed area extends approximately 500 feet north and 200 feet south of the existing levee structure from Highway 101 to approximately 2.2 miles downstream near Victoria Avenue (Study Area) (Figure 3.2-1). The portion of the Santa Clara River within the Study Area is bordered to the north by agriculture lands, light industrial facilities, and a golf course. Land uses to the south include residential communities, commercial properties, a golf course, and three landfills. Highway 101 and upstream portions of the Santa Clara River are located to the east. The western border consists of downstream portions of the Santa Clara River channel and adjacent agricultural areas.

3.2.1.4 Project Setting

The proposed Project is located along an approximately 2.0-mile reach of the Lower Santa Clara River. Habitat in the Study Area includes dense riparian vegetation, broad unvegetated sand/gravel bars, and upland terraces. Riparian plant communities are dominated by stands of native willows (*Salix* spp.), cottonwood (*Populus* spp.), and occasional sycamore (*Platanus racemosa* var. *racemosa*). In some locations, thickets of invasive giant reed (*Arundo donax*) comprise the dominant vegetation. Early seral stands of willow and mulefat (*Baccharis salicifolia*) are common along the margins of the low-flow channels. In many areas, dense stands of white sweetclover (*Melilotus albus*) with pockets of western ragweed (*Ambrosia psilostachya* var. *californica*) occur. Other native plant species observed within or near the low-flow channels included California croton (*Croton californicus*), telegraph weed (*Heterotheca grandiflora*), and southern California locoweed (*Astragalus trichopodus*).

The stream terrace located immediately downstream and southwest of the U.S. Highway 101 Bridge supports a mosaic of upland and riparian woodland communities. Mature cottonwood willow riparian forest with an understory of poison oak (*Toxicodendron diversilobum*), mulefat, California sagebrush (*Artemisia californica*) and black sage (*Salvia mellifera*) transitions to open grasslands and riparian scrub communities. Non-native grasslands in this area are dominated by brome grasses (*Bromus* spp.), with scattered aggregations of summer mustard (*Hirshfeldia incana*), tocalote (*Centaurea melitensis*), horehound (*Marrubium vulgare*), and Russian thistle (*Salsola tragus*). In a few locations, isolated California sagebrush, black sage, and quail bush (*Atriplex lentiformis*) are present. An area subject to previous restoration activities occurs near the Highway 101 Bridge and is dominated by thick stands of coyote brush (*Baccharis pilularis*), with scattered mulefat and quail bush. Fennel (*Foeniculum vulgare*), tocalote, and emerging sages are present along the edge of the dirt road that spans this area. Honey bees (*Apis* spp.), an introduced species to the new world, were commonly observed in irrigation boxes used to support the restoration area. A large windrow of gum trees (*Eucalyptus* spp.) borders N. Ventura Road. Scattered non-native tree tobacco (*Nicotiana glauca*), giant reed, and castor bean (*Ricinus* spp.) are also present in this area to a limited degree.

Adjacent land uses in the Project area are varied. Agricultural lands are present to some degree along both sides of the river. Buenaventura Golf course and River Ridge Golf Course are located north and south of the Project area, respectively, and abut the upper banks of the Santa Clara River. Commercial buildings and a residential community are located south of the Project area. Bailard Landfill is located within and south of the western extent of the Study Area. An active rail line supporting Amtrak, Metrolink, and commercial rail uses runs parallel to Highway 101 near the upstream end of the Study Area. In addition, a large number of homeless encampments are present within the upland terraces of the river channel.



 Study Area

Figure 3.2-1

Study Area
Santa Clara River Levee

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Vegetation

Field surveys were conducted by VCWPD and Aspen in 2013 and 2014; the Study Area was found to support a variety of natural and disturbed vegetation communities and land forms. In addition, large tracts of invasive non-native species, dominated by giant reed, have colonized portions of the Study Area. Thirteen plant communities defined by Sawyer et al. (2009) were mapped within the Study Area. An additional six land cover types were mapped. Table 3.2-1 lists these habitat and cover types including the total acreage within the Study Area. Full descriptions of each of these vegetation communities, as described by Sawyer et al. (2009), are provided in detail below (refer to Figure 3.2-2).

Riparian Vegetation Types

Much of the natural riparian vegetation in California has been lost or degraded due to a variety of factors, including land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; ground water pumping; water impoundments; and various other alterations. Riparian habitats are biologically productive and diverse, and are the exclusive habitat for several special-status wildlife species. Many of these species are wholly dependent on riparian habitats throughout the entirety of their life cycles, while others may utilize these habitats during certain seasons or life history phases. For example, numerous amphibian species breed in aquatic habitats but spend most of their lives in upland areas.

In an otherwise arid landscape, primary productivity in riparian habitats is high due to year-round soil moisture. High plant productivity leads to increased habitat structural diversity and increased food availability for herbivorous animals, and in turn, predatory animals (reviewed by Faber et al., 1989). Insect productivity is also exhibited at relatively higher levels in riparian systems. During warmer months, large numbers of insects provide a prey base for a diverse breeding bird fauna. Structural diversity is also much more evident in riparian systems than those of most regional uplands. Riparian woodlands tend to have multiple-layered herb, shrub, and tree canopies, whereas most upland communities are relatively simple-structured.

Table 3.2-1. Vegetation Community and Land Cover Acreages in the Study Area

Vegetation Communities	Approximate Acres in the Study Area
Arroyo willow thickets [†]	25.43
Black cottonwood forest [*]	2.12
California sagebrush scrub	1.51
Cattail marshes ^{**}	0.09
Coyote brush scrub	3.42
Eucalyptus groves	4.14
Fremont cottonwood forest [*]	2.24
Giant reed breaks	18.42
Mulefat Thicket [†]	23.88
Myoporum stands	2.56
Quailbush scrub	0.50
Shining willow groves [†]	21.78
Upland mustards	0.24
Land Cover Types	
Agriculture	0.50
Developed	34.97
Maintained landscape	19.21
Ruderal	12.84
Sparsely vegetated sandy wash	23.67
Vegetation management zone	1.12
Total	198.62

* Generally meets the habitat requirements of southern cottonwood willow riparian forest, a community considered sensitive by the CDFW.

** Generally meets the habitat requirements of coastal and valley freshwater marsh, a community considered sensitive by the CDFW.

† Generally meets the requirements of southern riparian scrub, a community considered sensitive by the CDFW.

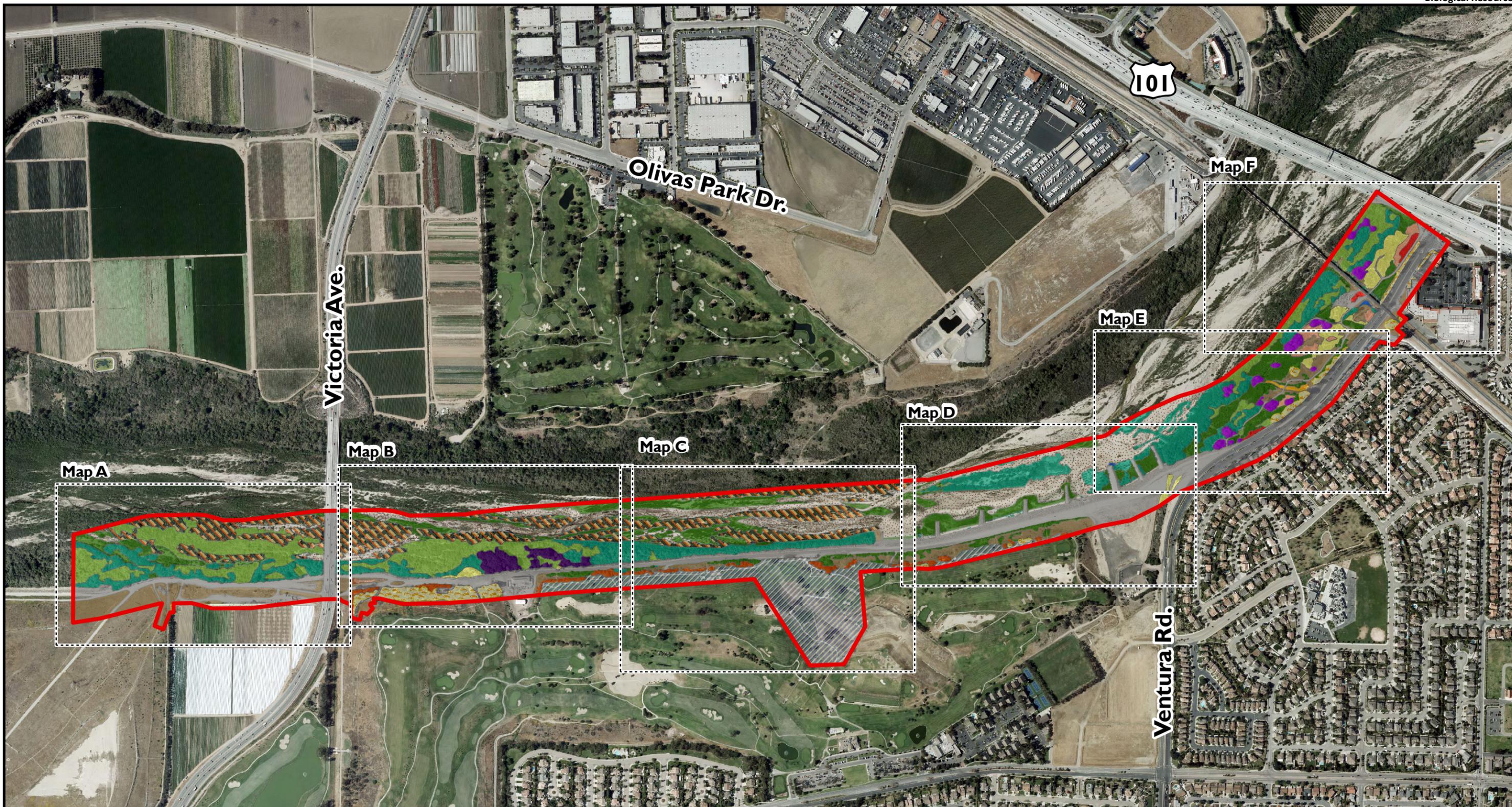
This diverse vertical habitat structure supports a greater diversity of nesting and foraging sites for birds. Similarly, riparian communities support a broader diversity of mammals due to higher biological productivity, denning site availability, thermal cover, and greater access to water.

Riparian woodlands and shrublands in the region are typically dominated by shrubby or tree willow species, cottonwoods, and mulefat, and sometimes have an overstory canopy of taller trees including mature cottonwoods and sycamores. Woody riparian vegetation exists in mosaics of shrublands, developing into woodlands, and finally into a mature forest. These communities may be dominated by similar species, but their structures change over time, mainly as a function of destructive flooding (Holland and Keil, 1995). For example, in the Study Area, several flood prone areas have been recently subjected to scour and existing vegetation is dominated by small early successional species such as sandbar willow (*Salix exigua*) and emerging mulefat. Conversely, large stands of mature willows and scattered cottonwoods dominate areas cut off from scouring flows.

In total, seven riparian vegetation types were documented within the Study Area including arroyo willow thickets, shining willow groves, Fremont cottonwood forest, black cottonwood forest, mulefat thickets, cattail marshes, and giant reed breaks (Sawyer et al., 2009). The portions of the Study Area that appear to have been recently scoured by flows from the Santa Clara River are discussed below under upland habitats because they are not technically a riparian vegetation type, even though they occur in similar areas. Some of the riparian vegetation types are similar to one another in general form and function and tend to intergrade, making it difficult to define the exact limits of each vegetation type. However, for the purposes of this document these communities were mapped and are discussed in detail below.

Mulefat thickets (Baccharis salicifolia Shrubland Alliance). Mulefat thickets were highly variable in composition and occurred throughout Study Area. In the more mesic habitats, this community was found to integrate with arroyo willow thickets and giant reed breaks such that species like sandbar willow, arroyo willow (*Salix lasiolepis*), and giant reed occurred in limited numbers. In the drier habitats, this community integrated with upland vegetation types that included species such as California sagebrush or coyote brush; other shrubs such as quailbush and black sage were also observed. Within the Study Area this community was generally observed on sandy soils in areas of river wash and onto the upland terraces on heavier loam soils. Mulefat thickets were most often found to occur in areas that have not been scoured by flood waters in at least five years; these types of areas are present throughout the Study Area. This vegetation is most similar to the “valley foothill riparian” described by Grenfell (1988) and “mulefat scrub” as described by Holland (1986).

Fremont cottonwood forest (Populus fremontii Forest Alliance). Described as a dense broadleaved, winter deciduous woodland, Fremont cottonwood forests were most often observed on the upland terraces, near mesic swales, or in small secondary channels, within the eastern portions of the Study Area (Reach 4). With Fremont cottonwood (*Populus fremontii*) as the single dominant species in the tree canopy, the understory consisted of a variety of species including various willows, coyote brush, and mulefat. This community likely occurs in close proximity to ground water but at such an elevation that it is protected from scouring floods. This vegetation is most similar to the “valley foothill riparian” described by Grenfell (1988) and “southern cottonwood-willow riparian forest” as described by Holland (1986).





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Feet

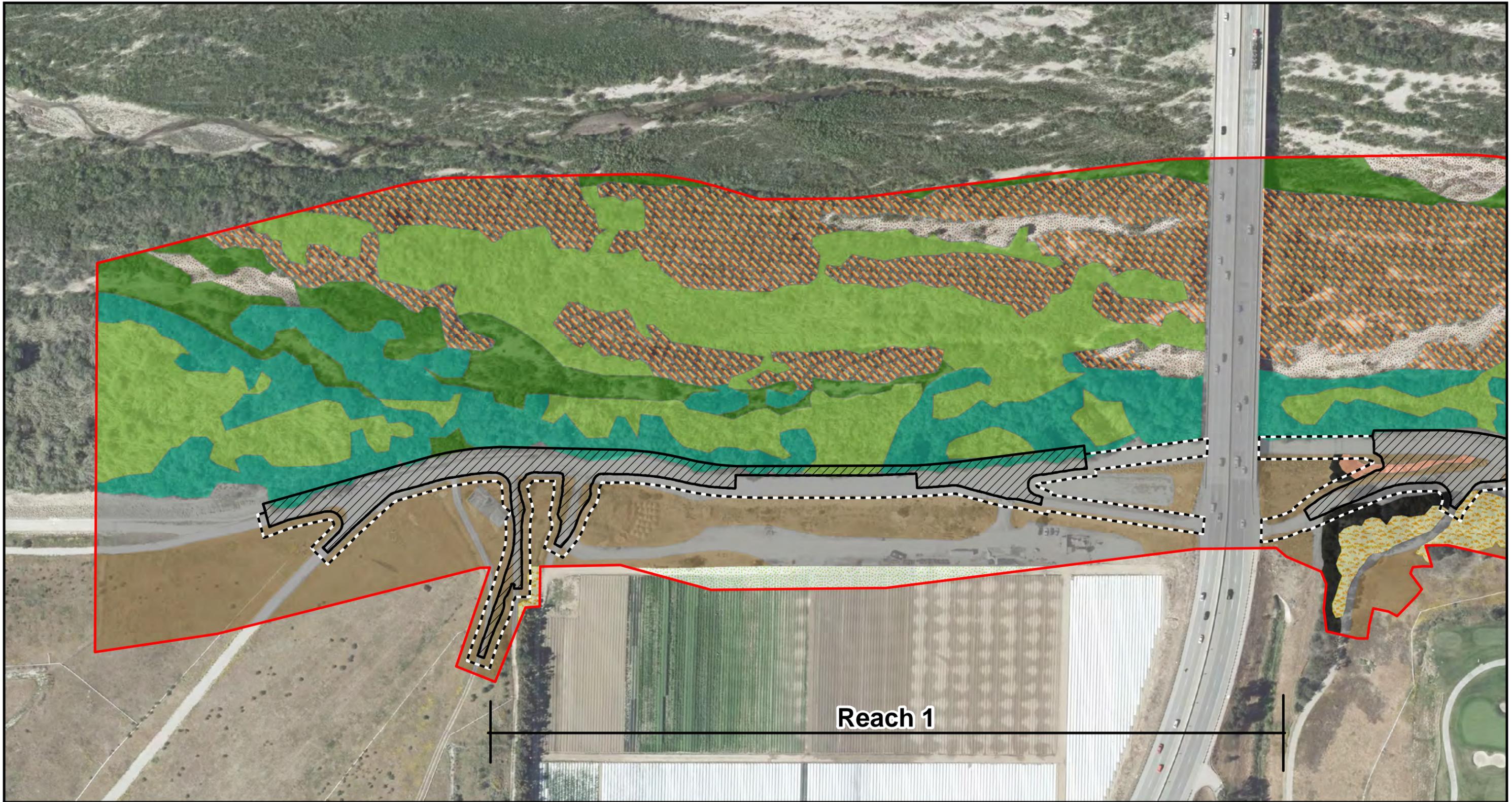
Study Area

Vegetation/Cover Type

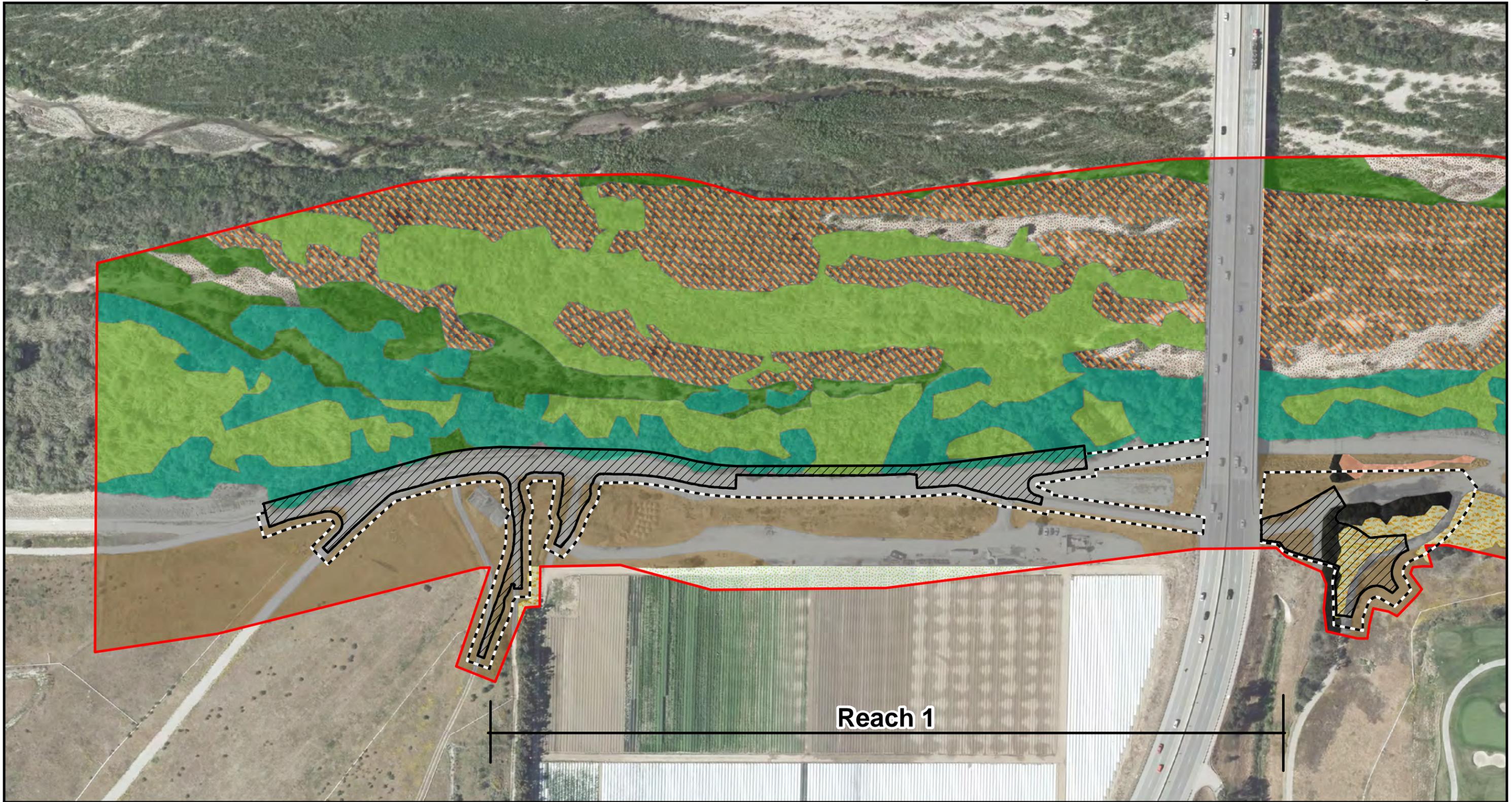
 Agriculture	 Coyotebush scrub	 Developed	 Cattail marsh	 Giant reed breaks	 Ruderal
 Arroyo Willow Thickets	 Black cottonwood forest	 Eucalyptus grove	 Maintained Landscape	 Mulefat thickets	 Shining willow thicket
 California sagebrush scrub	 Fremont cottonwood forest	 Quailbush scrub	 Myoporium stands	 Upland mustards	 Sparsely vegetated sandy wash
				 Vegetation management zone	

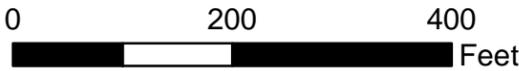
**Figure 3.2-2
Vegetation and
Cover Types**

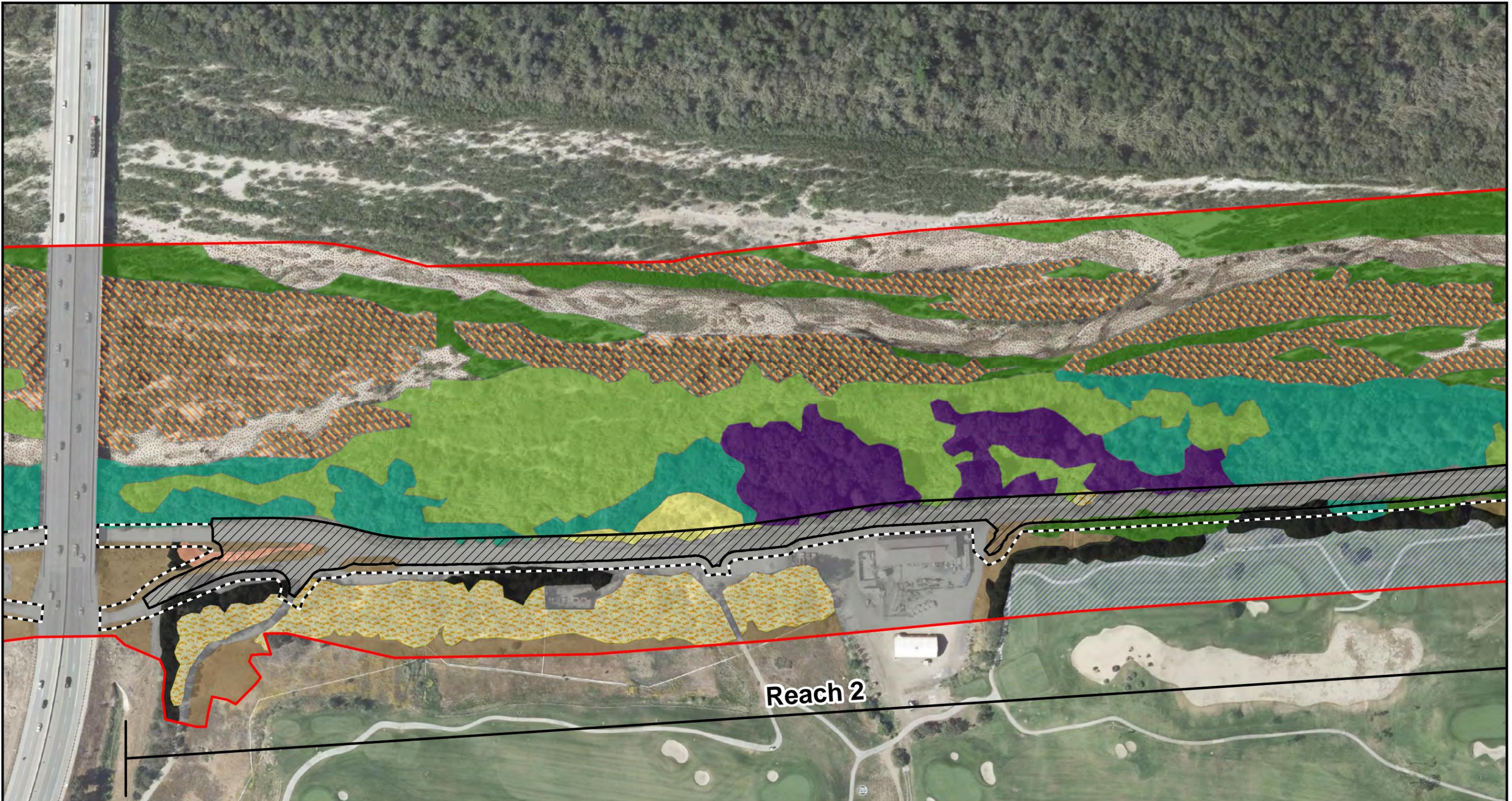
**Santa Clara River Levee
Overview Map**



 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Agriculture  Arroyo Willow Thickets	 California sagebrush scrub  Developed  Eucalyptus grove	 Giant reed breaks  Mulefat thickets  Myoporium stands  Ruderal	 Shining willow thicket  Sparsely vegetated sandy wash
	Figure 3.2-2 Vegetation and Cover Types Option A Santa Clara River Levee Map A-1				



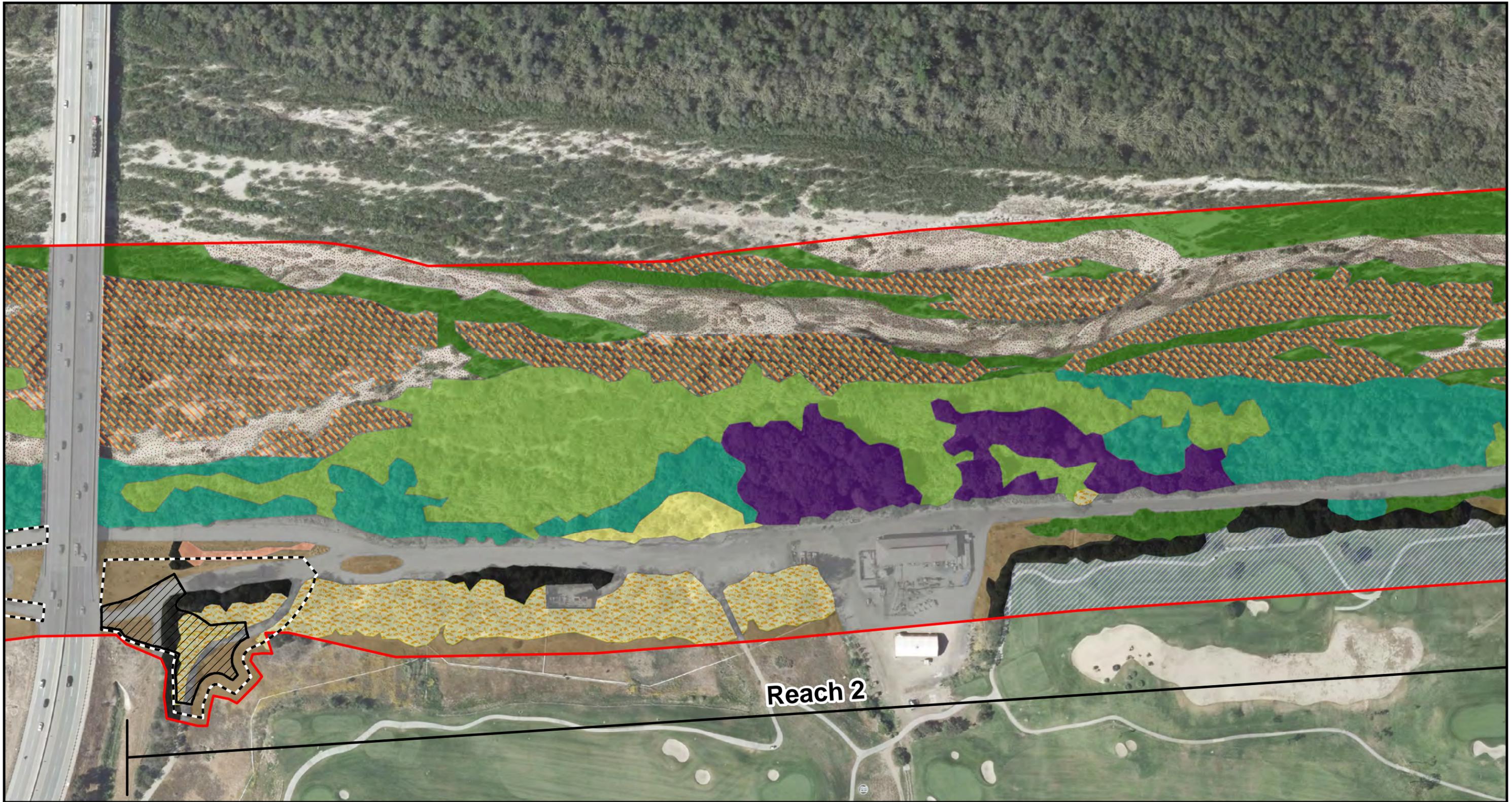
 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Agriculture  Arroyo Willow Thickets	 California sagebrush scrub  Developed  Eucalyptus grove	 Giant reed breaks  Mulefat thickets  Myoporum stands  Ruderal	 Shining willow thicket  Sparsely vegetated sandy wash
	Figure 3.2-2 Vegetation and Cover Types Option B Santa Clara River Levee Map A-2				

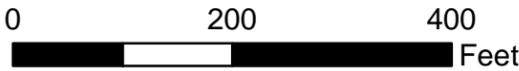


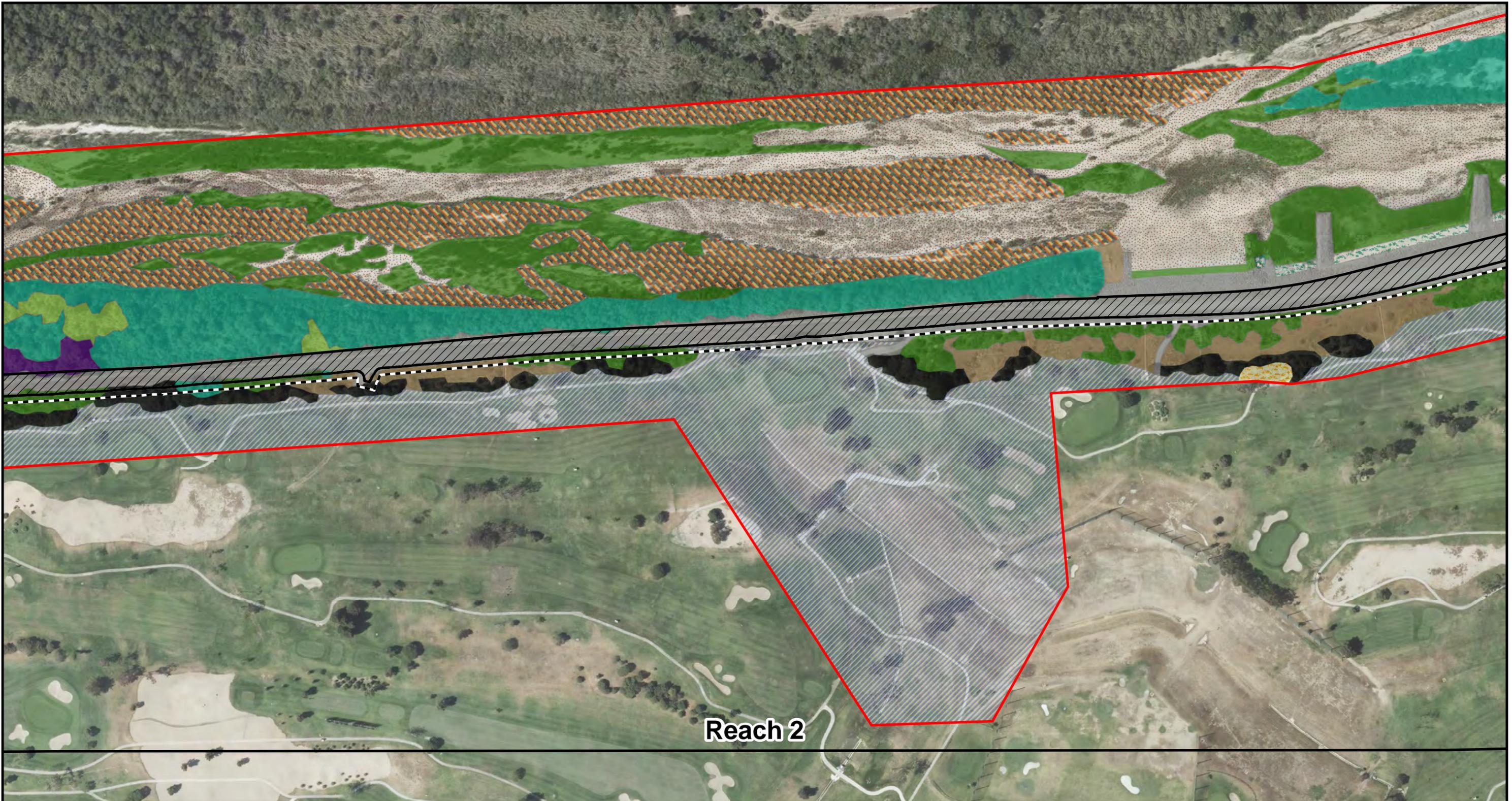
	Study Area	Vegetation/Cover Type		California sagebrush scrub	Giant reed breaks	Ruderal
	Permanent Impact Areas	Arroyo Willow Thickets	Coyote brush scrub	Maintained Landscape	Mulefat thickets	Shining willow thicket
Temporary Impact Areas	Black cottonwood forest	Developed	Eucalyptus grove	Myoporum stands	Sparsely vegetated sandy wash	

**Figure 3.2-2
Vegetation and Cover Types
Option A**

**Santa Clara River Levee
Map B-1**



 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Arroyo Willow Thickets  Black cottonwood forest	 California sagebrush scrub  Coyote brush scrub  Developed  Eucalyptus grove	 Giant reed breaks  Maintained Landscape  Mulefat thickets  Myoporum stands	 Ruderal  Shining willow thicket  Sparsely vegetated sandy wash
	Figure 3.2-2 Vegetation and Cover Types Option B Santa Clara River Levee Map B-2				



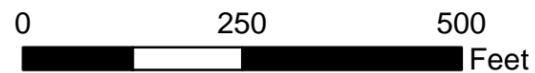
Reach 2



- Study Area
- Permanent Impact Areas
- Temporary Impact Areas

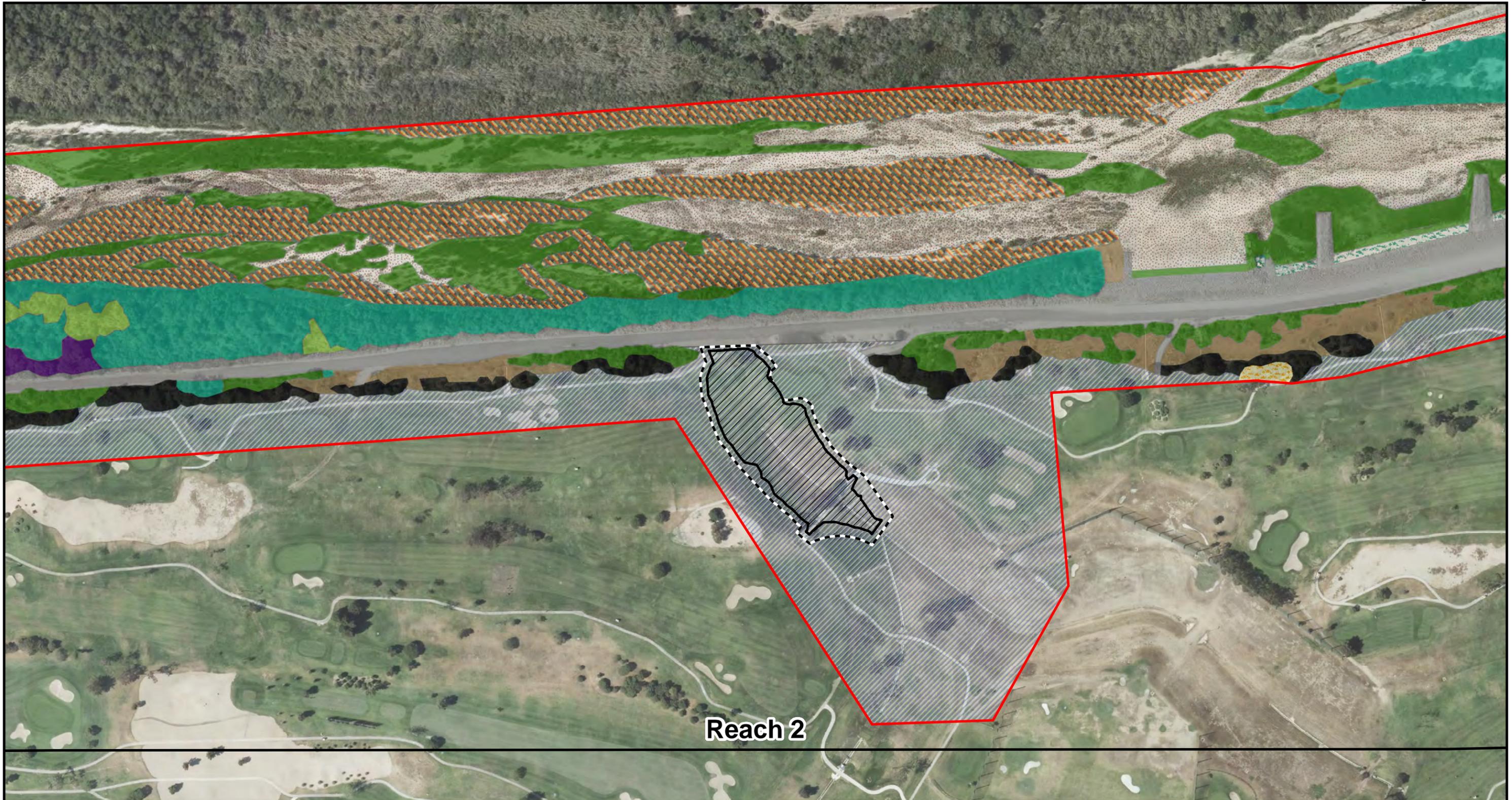
Vegetation/Cover Type

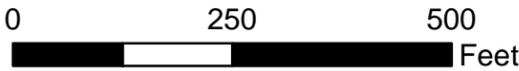
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| Arroyo Willow Thickets | Developed | Mulefat thickets | Sparsely vegetated sandy wash |
| Black cottonwood forest | Eucalyptus grove | Myoporium stands | Vegetation management zone |
| Giant reed breaks | Ruderal | Shining willow thicket | |
| Maintained Landscape | | | |

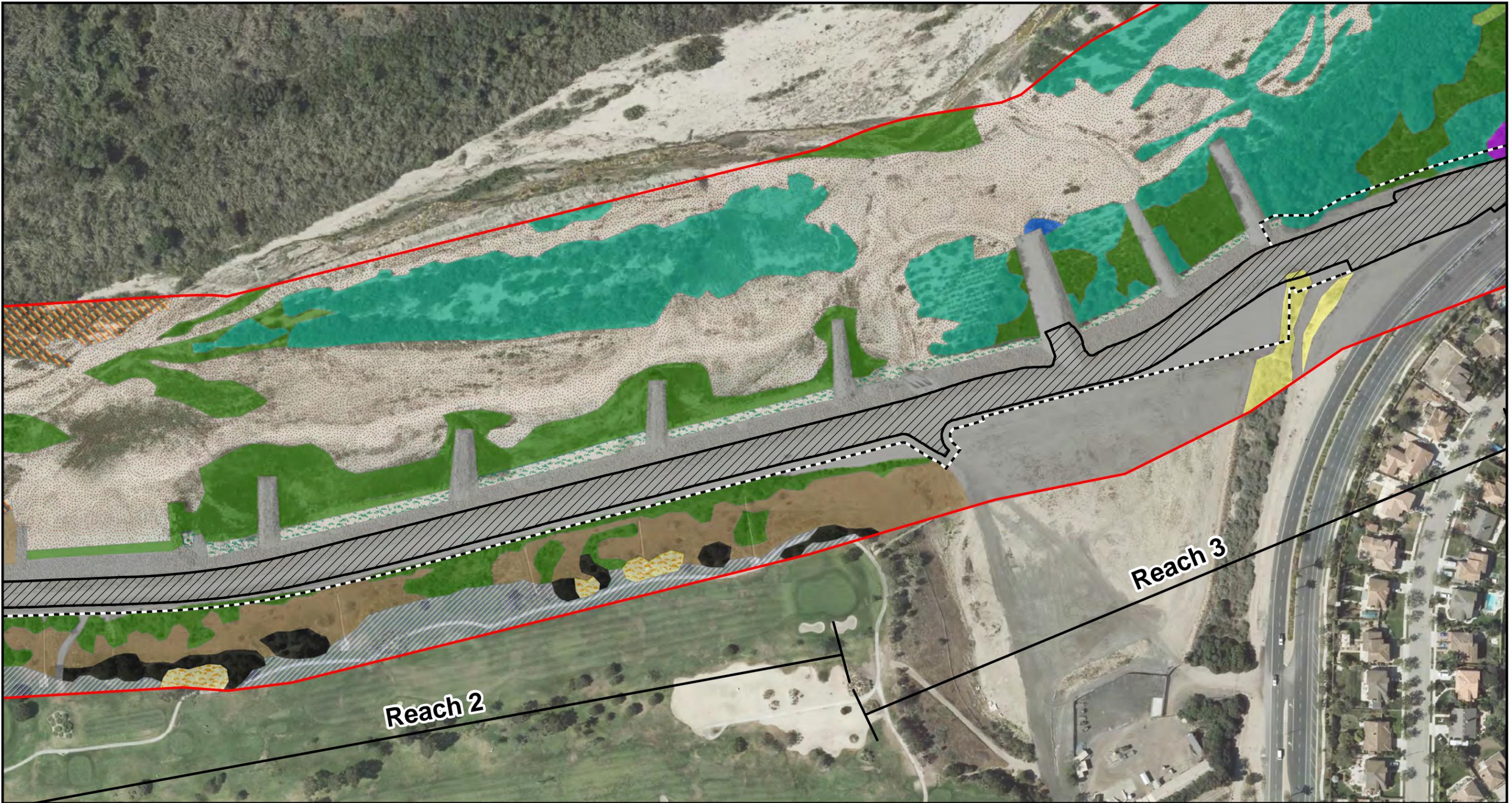


**Figure 3.2-2
Vegetation and Cover Types
Option A**

**Santa Clara River Levee
Map C-1**

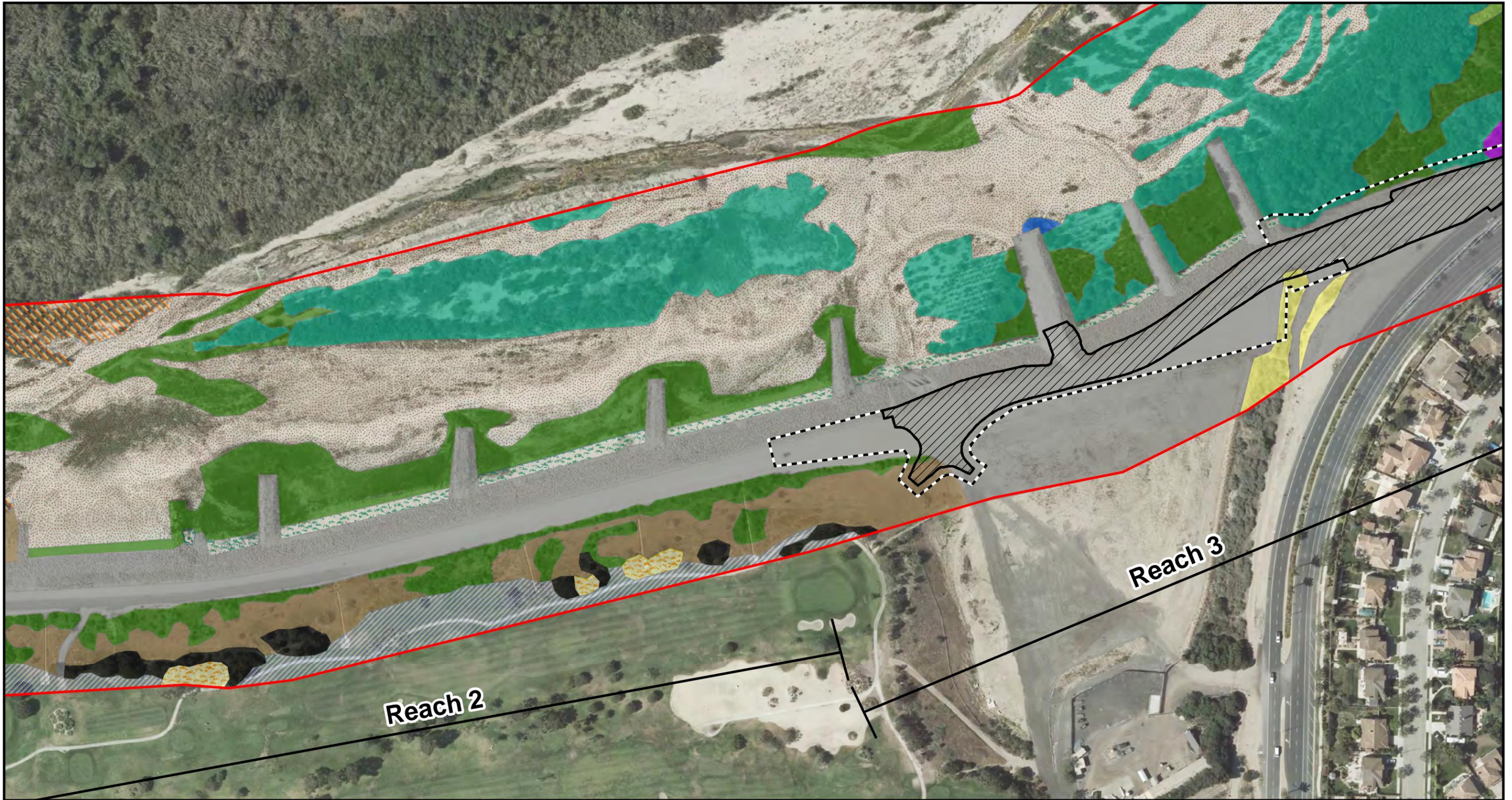


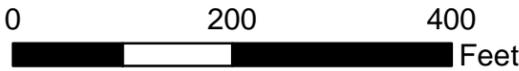
 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Arroyo Willow Thickets  Black cottonwood forest	 Developed  Eucalyptus grove  Giant reed breaks  Maintained Landscape	 Mulefat thickets  Myoporium stands  Ruderal  Shining willow thicket	 Sparsely vegetated sandy wash  Vegetation management zone
	Figure 3.2-2 Vegetation and Cover Types Option B Santa Clara River Levee Map C-2				

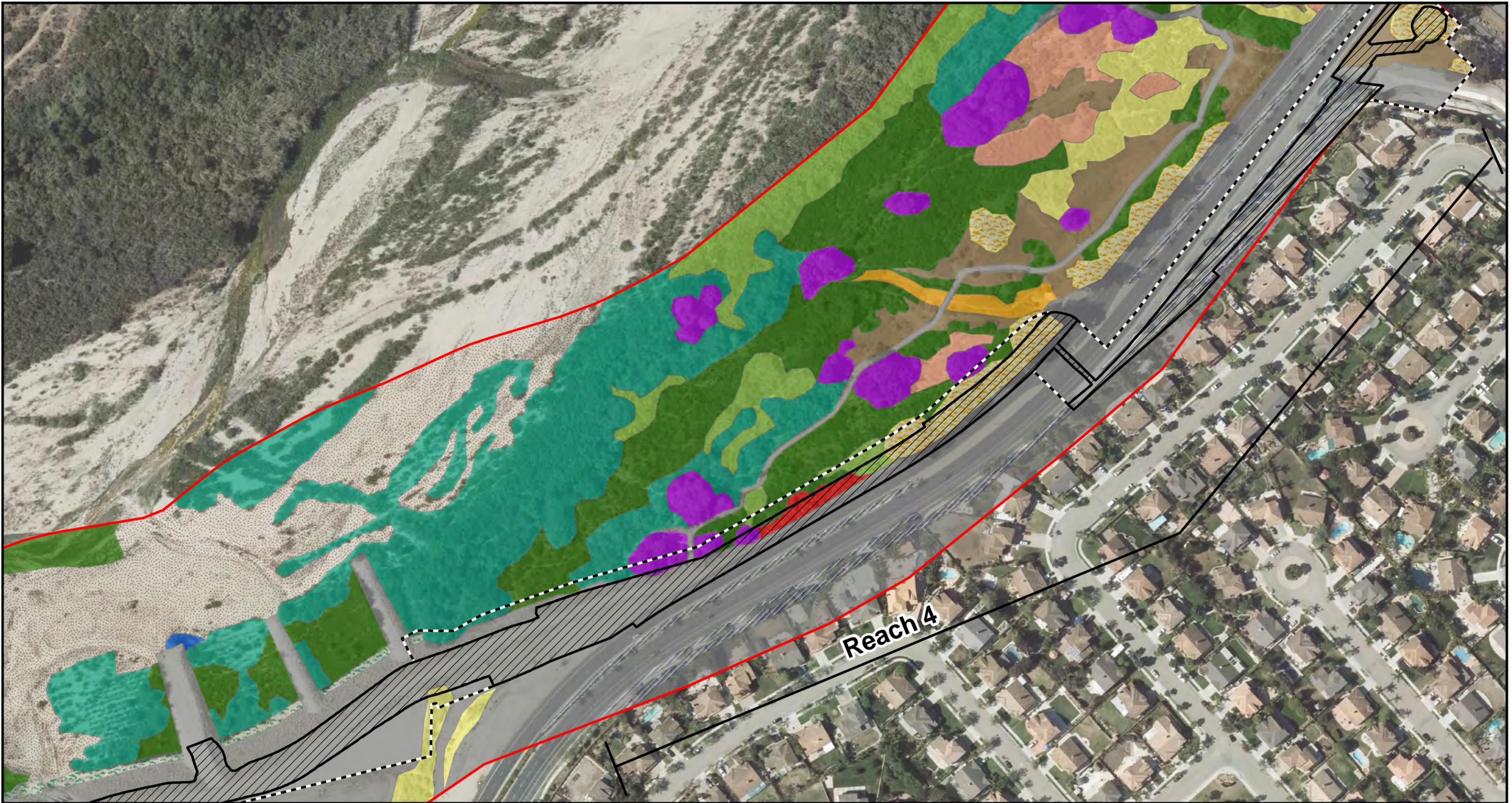


	Study Area	Vegetation/Cover Type	Developed	Maintained Landscape	Shining willow thicket
	Permanent Impact Areas	Arroyo Willow Thickets	Eucalyptus grove	Mulefat thickets	Sparsely vegetated sandy wash
Temporary Impact Areas	Cattail marsh	Fremont cottonwood forest	Myoporum stands	Myoporum stands	Vegetation management zone
	Coyotebush scrub	Giant reed breaks	Ruderal		

Figure 3.2-2
Vegetation and Cover Types
Option A
Santa Clara River Levee
Map D-1



 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Arroyo Willow Thickets  Cattail marsh  Coyotebush scrub	 Developed  Eucalyptus grove  Fremont cottonwood forest  Giant reed breaks	 Maintained Landscape  Mulefat thickets  Myoporum stands  Ruderal	 Shining willow thicket  Sparsely vegetated sandy wash  Vegetation management zone
	Figure 3.2-2 Vegetation and Cover Types Option B Santa Clara River Levee Map D-2				



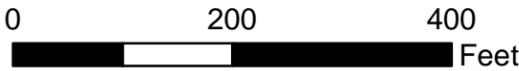
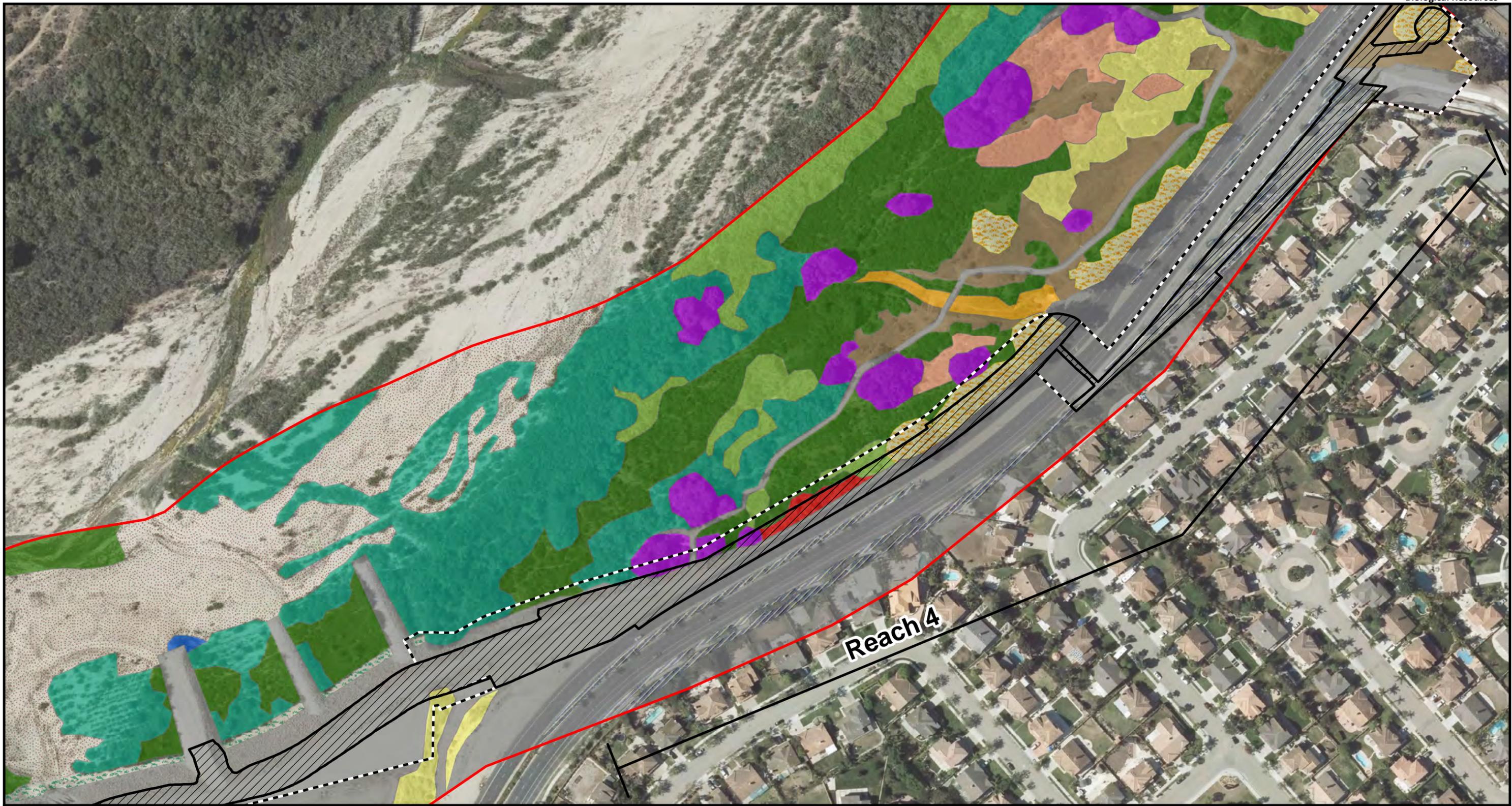
 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Arroyo Willow Thickets  California sagebrush scrub  Cattail marsh	 Coyote brush scrub  Developed  Eucalyptus grove  Fremont cottonwood forest	 Giant reed breaks  Maintained Landscape  Mulefat thickets  Quailbush scrub	 Ruderal  Sparsely vegetated sandy wash  Upland mustards  Vegetation management zone
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Figure 3.2-2
Vegetation and Cover Types
Option A
Santa Clara River Levee
Map E-1





0 200 400 Feet

Study Area

Permanent Impact Areas

Temporary Impact Areas

Vegetation/Cover Type

- Arroyo Willow Thickets
- California sagebrush scrub
- Cattail marsh
- Coyote brush scrub
- Developed
- Eucalyptus grove
- Fremont cottonwood forest
- Giant reed breaks
- Maintained Landscape
- Mulefat thickets
- Quailbush scrub
- Ruderal
- Sparsely vegetated sandy wash
- Upland mustards
- Vegetation management zone

Figure 3.2-2
Vegetation and Cover Types
Option B

Santa Clara River Levee
Map E-2

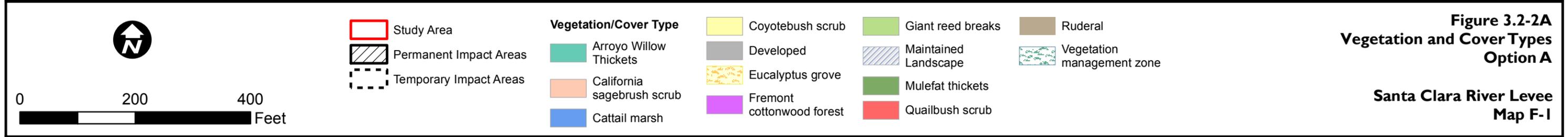


Figure 3.2-2A
Vegetation and Cover Types
Option A

Santa Clara River Levee
Map F-1



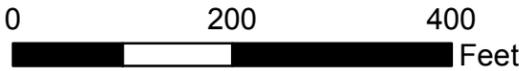
 	 Study Area  Permanent Impact Areas  Temporary Impact Areas	Vegetation/Cover Type  Arroyo Willow Thickets  California sagebrush scrub  Cattail marsh	 Coyotebush scrub  Developed  Eucalyptus grove  Fremont cottonwood forest	 Giant reed breaks  Maintained Landscape  Mulefat thickets  Quailbush scrub	 Ruderal  Vegetation management zone
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Figure 3.2-2B
Vegetation and Cover Types
Option B
Santa Clara River Levee
Map F-2

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Black cottonwood forest (*Populus trichocarpa* Forest Alliance). Black cottonwood forests are broadleaved, winter deciduous riparian woodlands that are very similar to Fremont cottonwood forest discussed above. This community is found only in the western half of the Study Area, just upstream from the Victoria Avenue Bridge where black cottonwood (*Populus trichocarpa*) replaces Fremont cottonwood as the dominant species in the tree canopy. The understory was generally observed to have scattered willows and a dense lower layer of Pacific poison oak and California blackberry (*Rubus ursinus*). This vegetation community is most similar to the “valley foothill riparian” described by Grenfell (1988) and “southern cottonwood-willow riparian forest” as described by Holland (1986).

Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance). Arroyo willow thickets are dense, broadleaved, winter deciduous woodlands. This community was generally found within the sandy soils of the lower and upper terraces of the Santa Clara River floodplain throughout the Study Area. Where this community occurs in the upper terraces, it was observed to integrate with both types of the cottonwood forests identified in the Study Area. Understory species on the lower terraces included an extensive cover of giant reed and patchy areas of Pacific poison oak and California blackberry. This is an intermediate seral community that can tolerate periodic flooding (Holland, 1986). This vegetation is most similar to the “valley foothill riparian” described by Grenfell (1988) and “southern willow scrub” as described by Holland (1986).

Shining willow groves (*Salix lucida* Woodland Alliance). Described as dense broadleaved, winter deciduous woodlands, shining willow groves were observed within the sandy soils of the Santa Clara River floodplain west of the constructed rock groins in the Study Area. This community tends to integrate with the arroyo willow thickets on the lower terraces and forms monotypic stands in the more active areas of the floodplain. Periodic scouring events that typically remove many of the annual/perennial herbaceous and shrubby species, but that do not uproot the shining willow (*Salix lucida* ssp. *lasiandra*), have resulted in the lack of developed understories in this community. This is an intermediate seral community that can tolerate periodic flooding (Holland 1986). This vegetation is most similar to the “valley foothill riparian” described by Grenfell (1988) and “southern willow scrub” as described by Holland (1986).

Giant reed breaks (*Arundo donax* Semi-Natural Herbaceous Stands). Giant reed is an extremely invasive species non-native to southern California that forms dense monotypic stands and outcompetes most of the native species for resources. This vegetation community occurs throughout the Study Area, primarily in and adjacent to the riparian vegetation along the floodplain of the Santa Clara River; this community also occurred on the lower river terraces. In wetter areas it was over ten feet in height and in such dense stands that it likely acts as a barrier to movement for larger wildlife. In the drier portions of the Study Area the giant reed ranged from six to eight feet in height and occurred in less dense stands (as compared to those occurring in wetter areas). This vegetation community does not match any of the vegetation types described by Holland (1986).

Cattail marshes [*Typha (angustifolia, domingensis, latifolia)* Herbaceous Alliance]. Cattail marshes were uncommon in the Study Area and were mapped at only two locations; at the north end of a constructed rock groin in Reach 3 and within a potentially jurisdictional drainage adjacent to the railroad bridge in Reach 4. In good rainfall years, when water in the Santa Clara River is more plentiful, this vegetation community would likely be more commonly observed in the Study Area. In the Study Area, these isolated cattail marshes are dominated by broad-leaved cattails (*Typha latifolia*). Other species observed included bulrush (*Scirpus* spp.), sedges (*Cyperus* spp.), water parsnip (*Berula erecta*), yellow waterweed (*Ludwegia peploides* ssp. *peploides*), and dock (*Rumex* spp.). This vegetation

community best matches the description of “fresh emergent wetland” described by Kramer (1988) and “freshwater marsh” by Holland (1986).

Upland Vegetation Types

Upland plant communities include vegetation dominated by plant species that do not require a permanent source of water, as opposed to plant species that are adapted to areas that are either seasonally flooded or have saturated soils for at least a portion of the growing season. Generally, upland plant communities consist of plant species that are adapted to dryer conditions and typically require only seasonal precipitation to obtain adequate water resources for growth and reproduction. Although most of the proposed Project area is occupied by riparian habitats, several upland plant communities do occur on the elevated terraces, primarily in the eastern portion of the Study Area.

In the Study Area six upland vegetation types including coyote brush scrub, California sagebrush scrub, quailbush scrub, upland mustards, eucalyptus groves, and myoporum stands were observed (Sawyer et al., 2009). Each of these vegetation types is described below in detail.

Coyote brush scrub (Baccharis pilularis Shrubland Alliance). Except for small stands in Reaches 2 and 3, this shrubland vegetation community was only found along the upland terrace within Reach 4 (refer to Figure 3.2-2); the community was generally observed to form thick monotypic stands of vegetation up to six feet tall. Besides the dominant coyote brush, species including mulefat, quailbush, California sagebrush, and black sage were commonly observed within the shrub layer. Understory vegetation was composed of a suite of native annual and perennial herbs as well as non-native species including brome grasses and tocalote. This community does not tolerate flooding events and is therefore not found within the more active areas of the floodplain. This vegetation community best matches descriptions of “coastal scrub” by de Becker (1988) and “Venturan coastal sage scrub” by Holland (1986).

California sagebrush scrub (Artemisia californica Shrubland Alliance). With the exception of a small patch immediately east of the Victoria Avenue Bridge, this shrubland vegetation community was only observed on the upland terrace within Reach 4. As the community name suggests it is dominated by California sagebrush and was generally found to occur in dense stands up to four feet high. Coyote brush and black sage were occasionally observed within openings in the dense stands of California sagebrush. Within the Study Area this community was observed to integrate with coyote brush scrub and quailbush scrub. This vegetation best matches descriptions of “coastal scrub” by de Becker (1988) and “Venturan coastal sage scrub” by Holland (1986).

Quailbush scrub (Atriplex lentiformis Shrubland Alliance). Occurring at only two distinct locations on the upland terrace in Reach 4, this shrubland vegetation community, while dominated by quailbush, included other species such as California sagebrush and coyote brush. This community was observed to integrate with other shrubland vegetation types mapped in the Study Area. This vegetation best matches descriptions of “coastal scrub” by de Becker (1988) and “Venturan coastal sage scrub” by Holland (1986).

Eucalyptus groves [Eucalyptus (globulus, camaldulensis) Semi-Natural Woodland Stands]. Present throughout the Study Area, primarily along roads, on the River Ridge Golf Course, and in disturbed areas, eucalyptus groves are characterized by the presence of gum trees (*Eucalyptus* spp.); gum trees are a non-native species that have become naturalized in southern California. This vegetation community best matches the description of “Eucalyptus” in Pearson (1988).

Upland mustards [*Brassica (nigra)* and Other Mustards Semi-Natural Herbaceous Stands]. The Upland mustards community was mapped at only a single location within the Study Area; a dense stand of mustard (*Brassica* spp.) is growing in an unnamed drainage ditch on the upland terrace in Reach 4. Other non-native species observed within this community includes Italian thistle (*Carduus pycnocephalus*), Australian brass buttons (*Cotula australis*), hairy bittercress (*Cardamine hirsuta*), and speedwell (*Veronica arvensis*). This vegetation community does not match any of the vegetation types described by Holland (1986).

Myoporum stands (*Myoporum laetum* Semi-Natural Woodland Stands). Myoporum stands are non-native shrublands characterized by the presence of lollypop tree (*Myoporum laetum*). Lollypop tree is an invasive shrub tree that was introduced from Australia for landscape purposes and in some areas has become naturalized and spread into natural communities. It tends to either form dense monotypic stands or grows in the understory of the eucalyptus groves. Within the Study Area, it is found primarily between the existing levee access road and the River Ridge Golf Course. Several individuals were also observed in the lower terraces of the Santa Clara River, which indicates that it is beginning to naturalize in the area. This vegetation community does not match any of the vegetation types described by Holland (1986).

Other Cover Types

Other cover types present within the Study Area that do not fit into the descriptions of vegetation communities are discussed below.

Sparsely vegetated sandy wash. This cover type is used to classify frequently scoured portions of the Santa Clara River and occurs in the northern half of the Study Area within Reaches 1-3. Depending on the time of year, these areas may have dense, short-lived, patches of the non-native white sweet-clover or occasional stands of natives such as young mulefat and willows. Over time, if there are multiple years with no scouring flows in the Santa Clara River, these areas may revert to mulefat thickets or arroyo willow thickets as those species grow to a larger size and increase in density.

Disturbed/Developed. There are numerous disturbed and developed areas in the Study Area including flood control facilities, established roads/bridges, and residential buildings. This cover type also includes areas that are devoid of vegetation or support scattered ornamental species or low densities of weeds due to continual disturbance by vehicles, pedestrians, or other anthropogenic means. These areas generally match the description of “urban” by McBride and Reid (1988).

Ruderal. Ruderal vegetation communities are composed of herbaceous pioneering plant species that readily colonize open disturbed soil and thrive as a result of anthropogenic impacts. Ruderal communities are present throughout the Study Area and were dominated by tocalote, Italian thistle, red stem filaree (*Erodium cicutarium*), fennel, prickly lettuce (*Lactuca serriola*), and bur-clover (*Medicago polymorpha*). Some native species were observed in the ruderal areas but in very low densities and included species such as chaparral aster (*Corethrogyne filaginifolia*), sawtooth goldenbush (*Hazardia squarrosa*), and deerweed (*Acmispon glaber*).

Vegetation Management Zone. Adjacent to and on the upstream side of the railroad bridge in Reach 4 is a long strip of vegetation that appears to be regularly mowed. These areas were dominated by ruderal species and occasional emerging riparian shrubs during surveys in 2013/1014. Additionally, an area starting just east of the upstream most groin in Reach 3 and extending west just downstream of the western most weir in Reach 2 is maintained vegetation free. This area includes a 15-foot wide strip extending towards the Santa Clara River from the toe of the existing levee.

Agriculture. Near the western extent of the Study Area, south of the levee and west of Victoria Avenue, is a small area mapped as agriculture. This area was planted with an unknown row crop during surveys conducted in 2013/1014.

Maintained Landscape. Portions of the Study Area occurring within the River Ridge Golf Course (Reaches 2 and 3, south of the existing levee structure) and south of Ventura Road along the residential development (Reach 4) are covered in ornamental vegetation and turf grass that are regularly maintained. Dominant trees within the cover type include various non-native species such as gum trees, pines (*Pinus* spp.), and lollypop tree. Turf grasses at the golf course dominate this cover type and are composed of non-natives including Bermuda grass (*Cynodon dactylon*), tall fescue (*Festuca arundinacea*), and various other species. Areas mapped as this cover type are associated with human development and may also contain paved footpaths and small water conveyance structures.

Jurisdictional and Other Waters

An assessment of jurisdictional wetlands, other “waters of the U.S.,” waters of the State, and riparian habitat was conducted by the Aspen in February and March 2014. This assessment was conducted to determine the extent of resources under the jurisdiction of the USACE, the LARWQCB, and the CDFW that occur within the Study Area (see Table 3.2-2).

Portions of the Study Area that support hydrophytic vegetation, show evidence of wetland hydrology, and contain hydric soils were identified as USACE/RWQCB jurisdictional wetlands (66.4 acres). Areas not meeting the hydrophytic vegetation and/or hydric soils criteria for wetlands but where evidence of hydrology and/or a

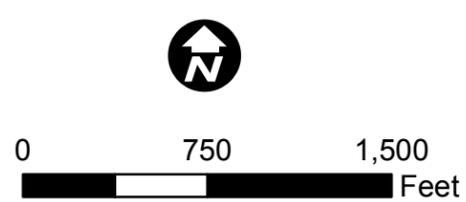
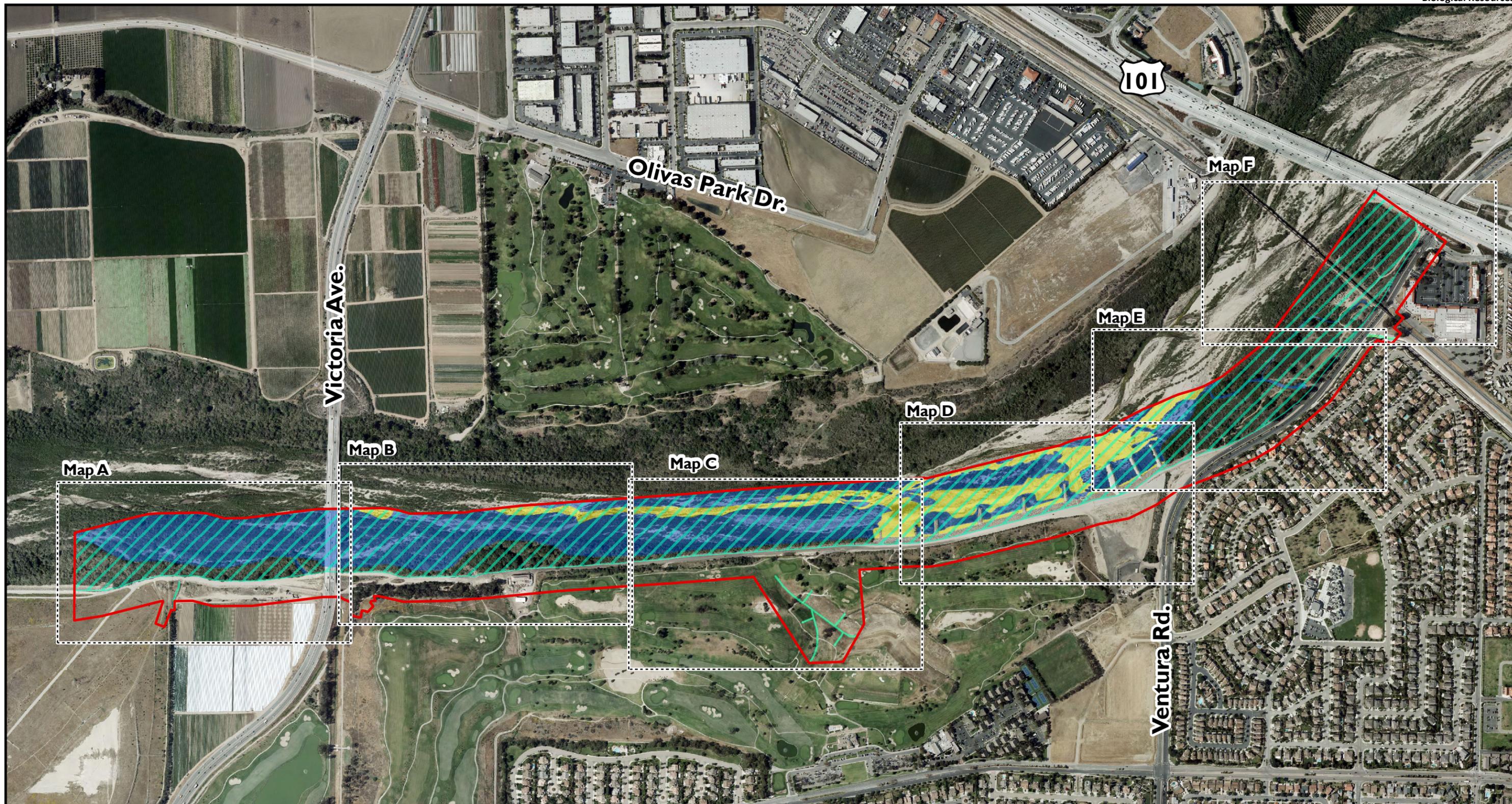
Table 3.2-2. Acreage of USACE/RWQCB Jurisdictional Waters, Wetlands, and CDFW Jurisdictional Habitat in the Study Area		
Jurisdictional Feature Type		Approximate Acres
USACE/LARWQCB Waters and Wetlands (acres)	Non-wetland Waters of the U.S.	18.8
	Wetlands	66.4
CDFW Jurisdictional Waters (Acres)		134.2

discernible OHWM was visible were mapped as USACE/RWQCB jurisdictional non-wetland “waters of the United States” (18.8 acres). Using a combination of vegetation mapping and bed/bank delineation and field observations, 134.2 acres of CDFW jurisdictional waters were identified within the Study Area. Refer to Figure 3.2-3 and the Preliminary Jurisdictional Delineation Report for the Project (Appendix B-7) for additional information on the jurisdictional assessment.

Common Wildlife

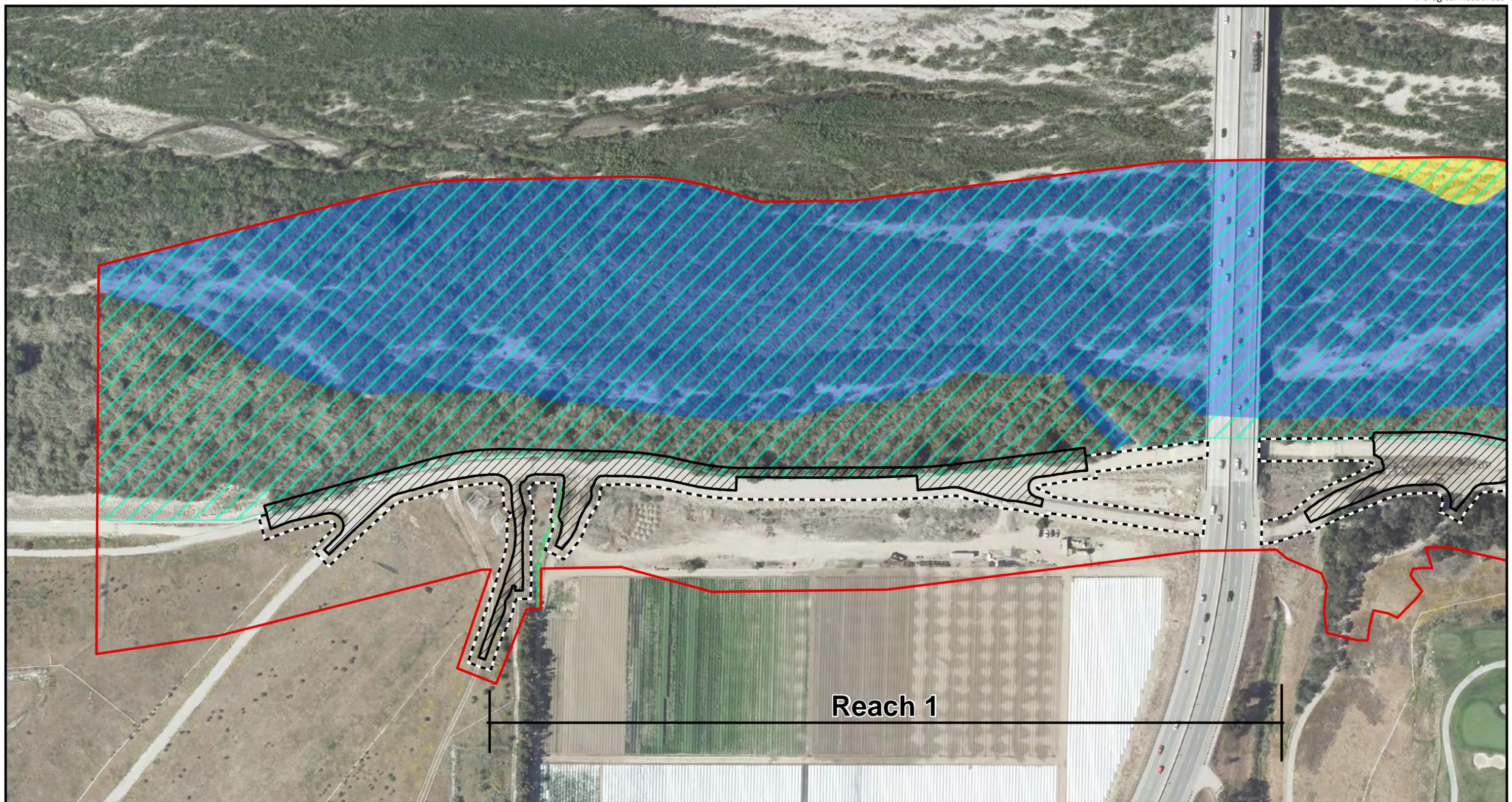
Invertebrates

Focused insect surveys within the boundaries of the Study Area have not been completed to date; however, a suite of common insects are known to occur in the area. Habitat conditions in the Study Area provide a suite of microhabitat conditions for a wide variety of terrestrial and aquatic insects, crustaceans, and other invertebrates. This includes swift running portions of the Santa Clara River (when flowing) with cobble and rocks, thick leaf litter, and pools of slow-moving or still water. Like in all ecological systems, invertebrates in the Study Area play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of fish, bird, reptile, and mammal predators and provide important pollination vectors for numerous plant species.



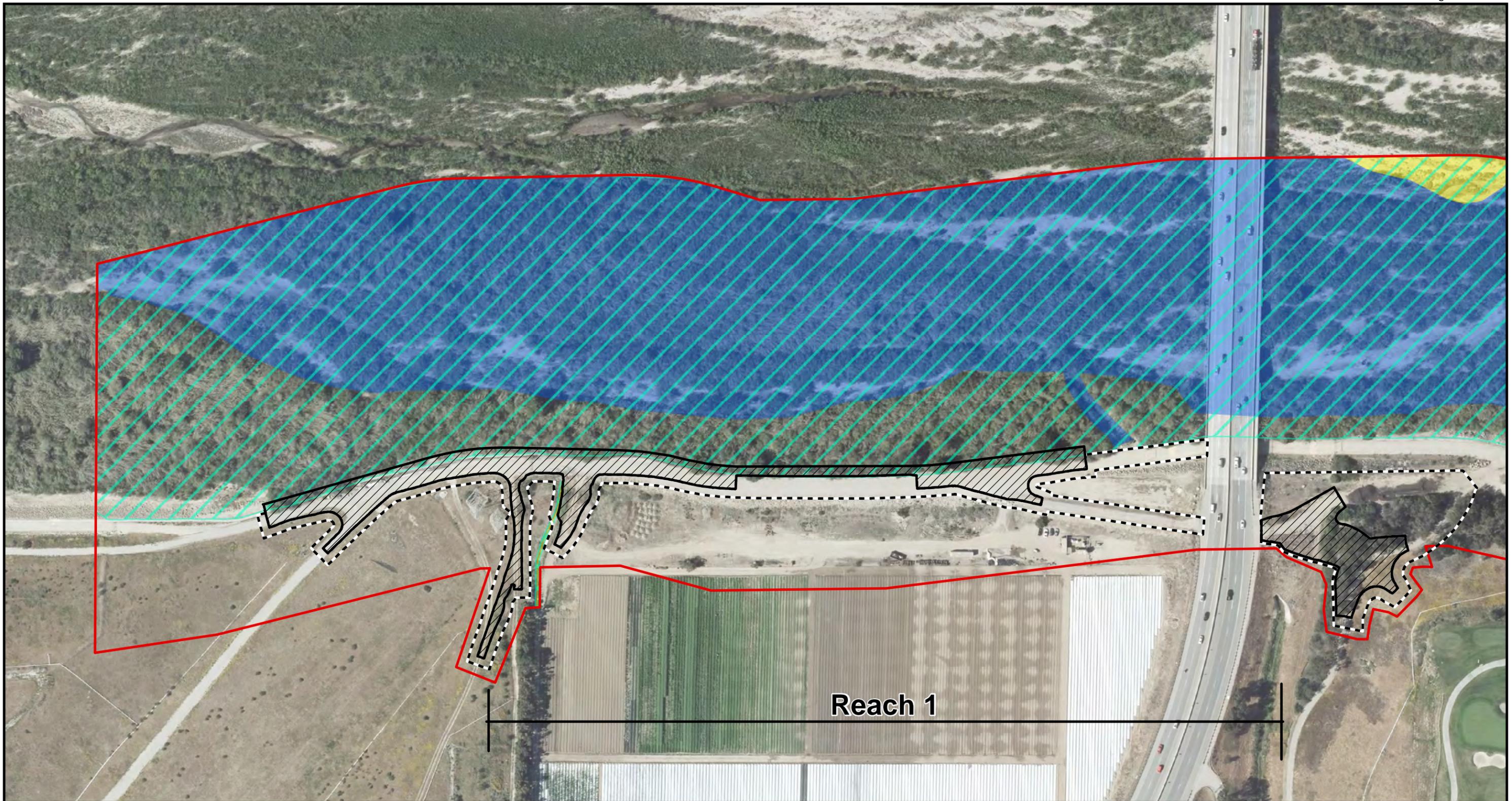
-  Study Area
-  CDFW Waters (134.2 acres)
-  Federal Wetlands (66.4 acres)
-  Federal Non-Wetland Waters (18.8 acres)

Figure 3.2-3
Jurisdictional Features
Santa Clara River Levee
Overview Map



- Study Area
- Impact Areas
- Permanent
- Temporary
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3A
Jurisdictional Features
Option A
Santa Clara River Levee
Map A-1



Reach 1



0 200 400 Feet

- Study Area
- Impact Areas
- Permanent
- Temporary
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3B
Jurisdictional Features
Option B
Santa Clara River Levee
Map A-2



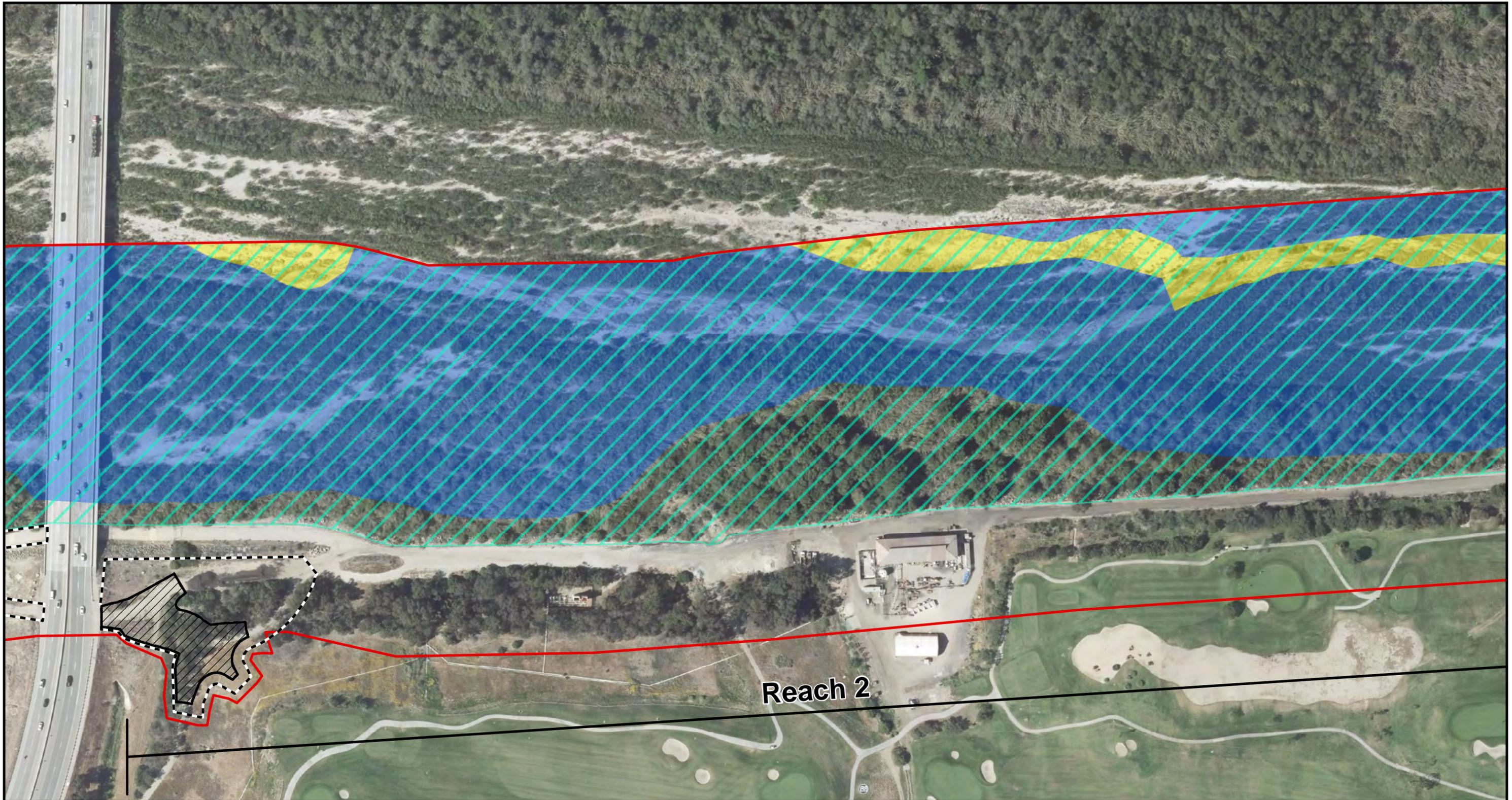
Figure 3.2-3A
Jurisdictional Features
Option A

Santa Clara River Levee
Map B-1

0 200 400 Feet

Study Area
Impact Areas
Permanent
Temporary

CDFW Waters
Federal Non-Wetland Waters
Federal Wetlands



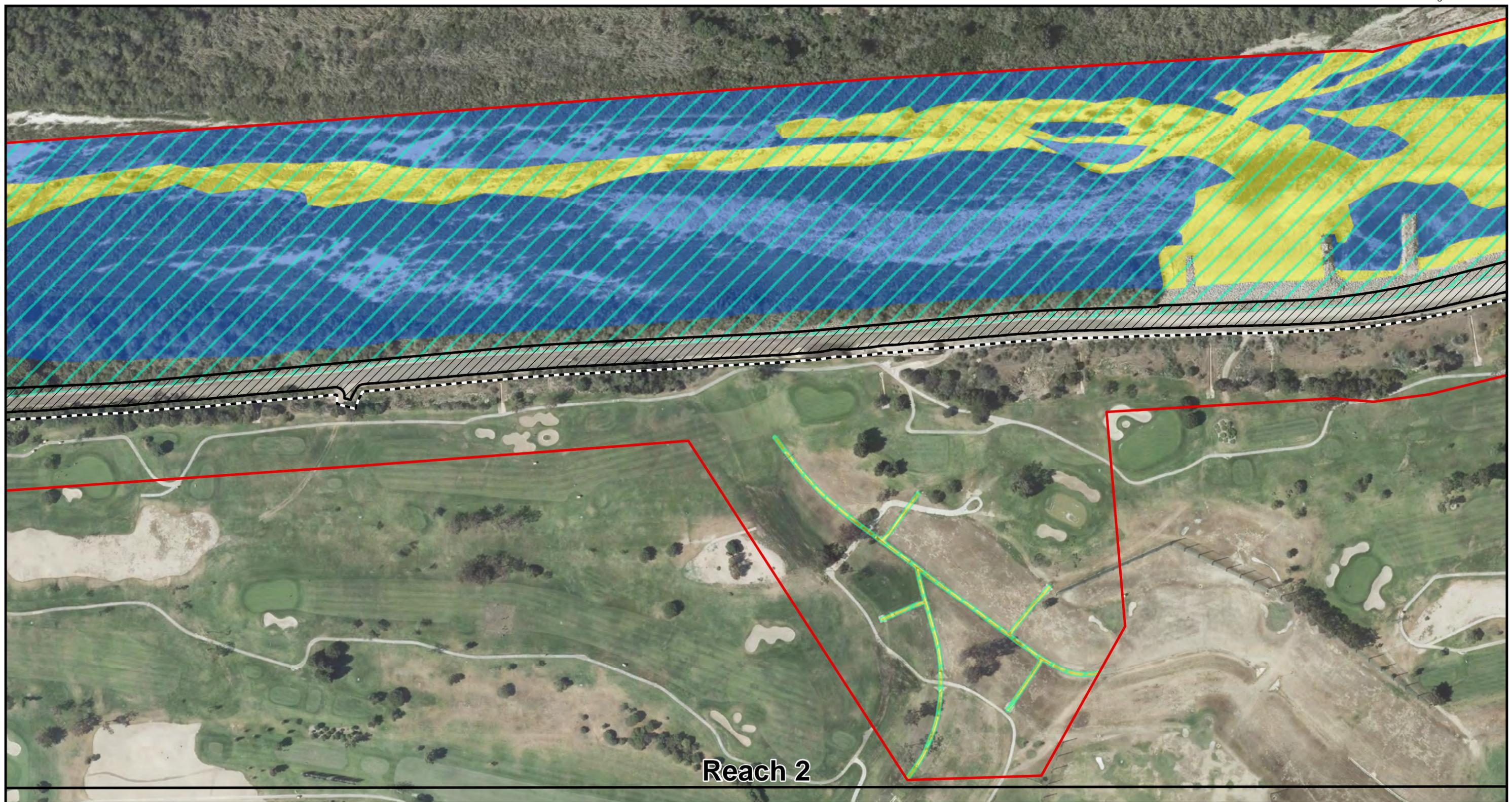
0 200 400
Feet

- Study Area
- Impact Areas
- Permanent
- Temporary

- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3B
Jurisdictional Features
Option B

Santa Clara River Levee
Map B-2



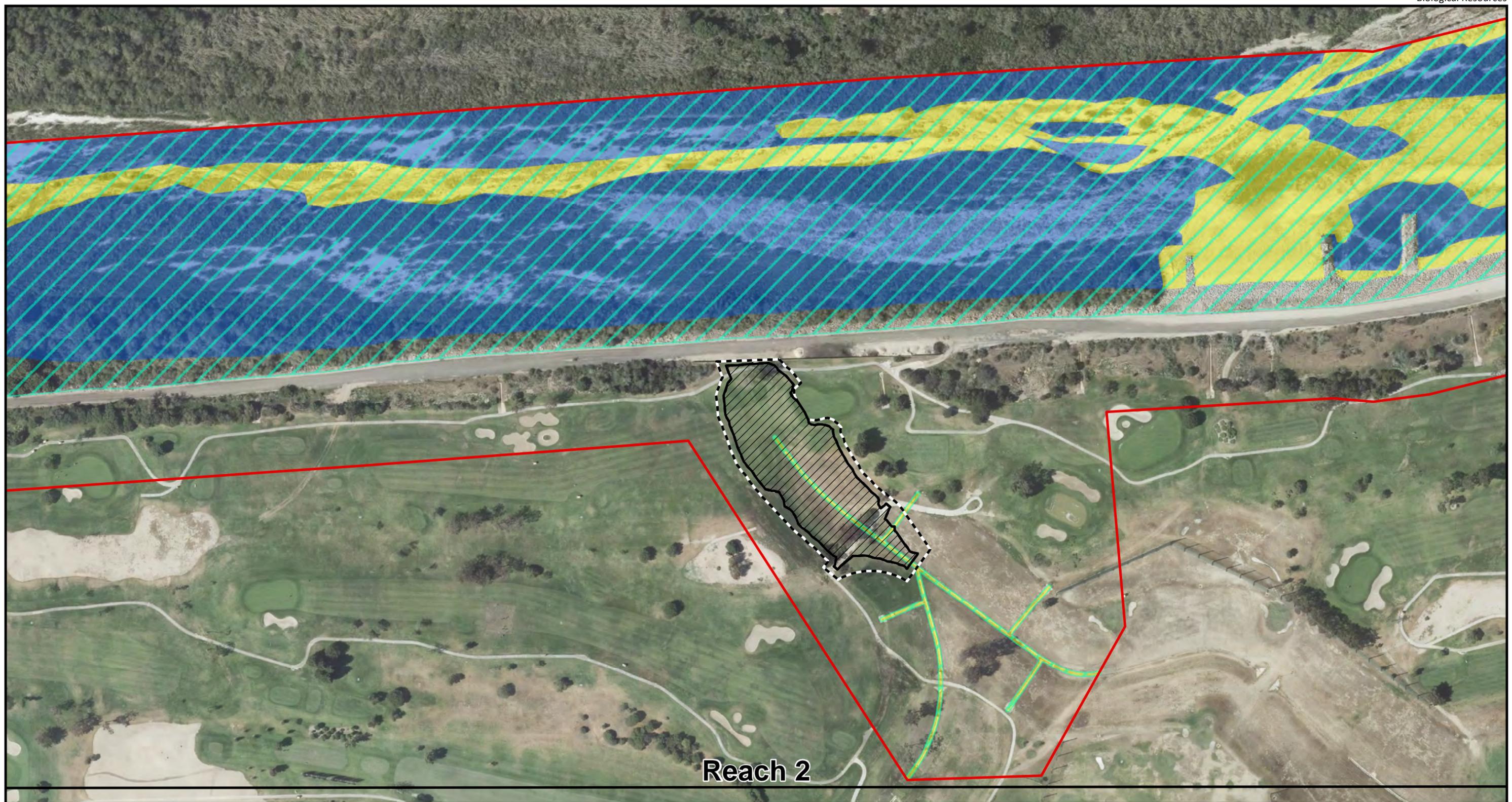
Reach 2



- Study Area
- Impact Areas
- Permanent
- Temporary
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3A
Jurisdictional Features
Option A

Santa Clara River Levee
Map C-1



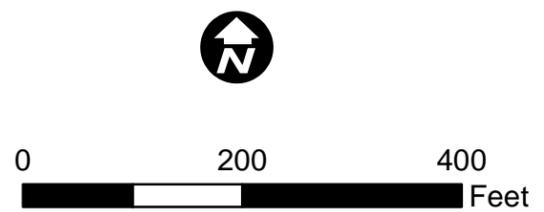
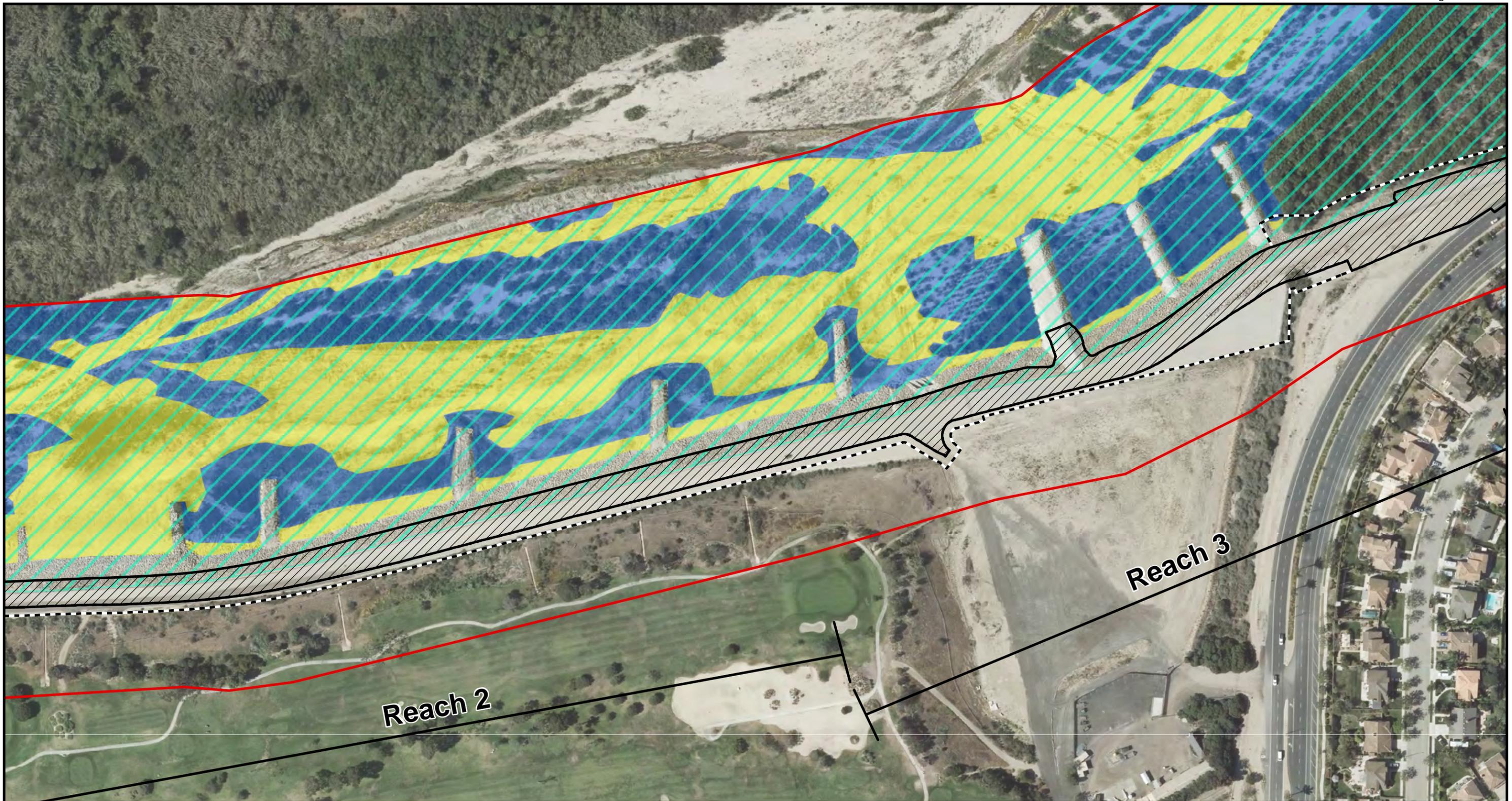
Reach 2



0 200 400
Feet

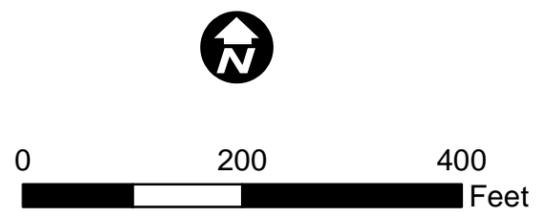
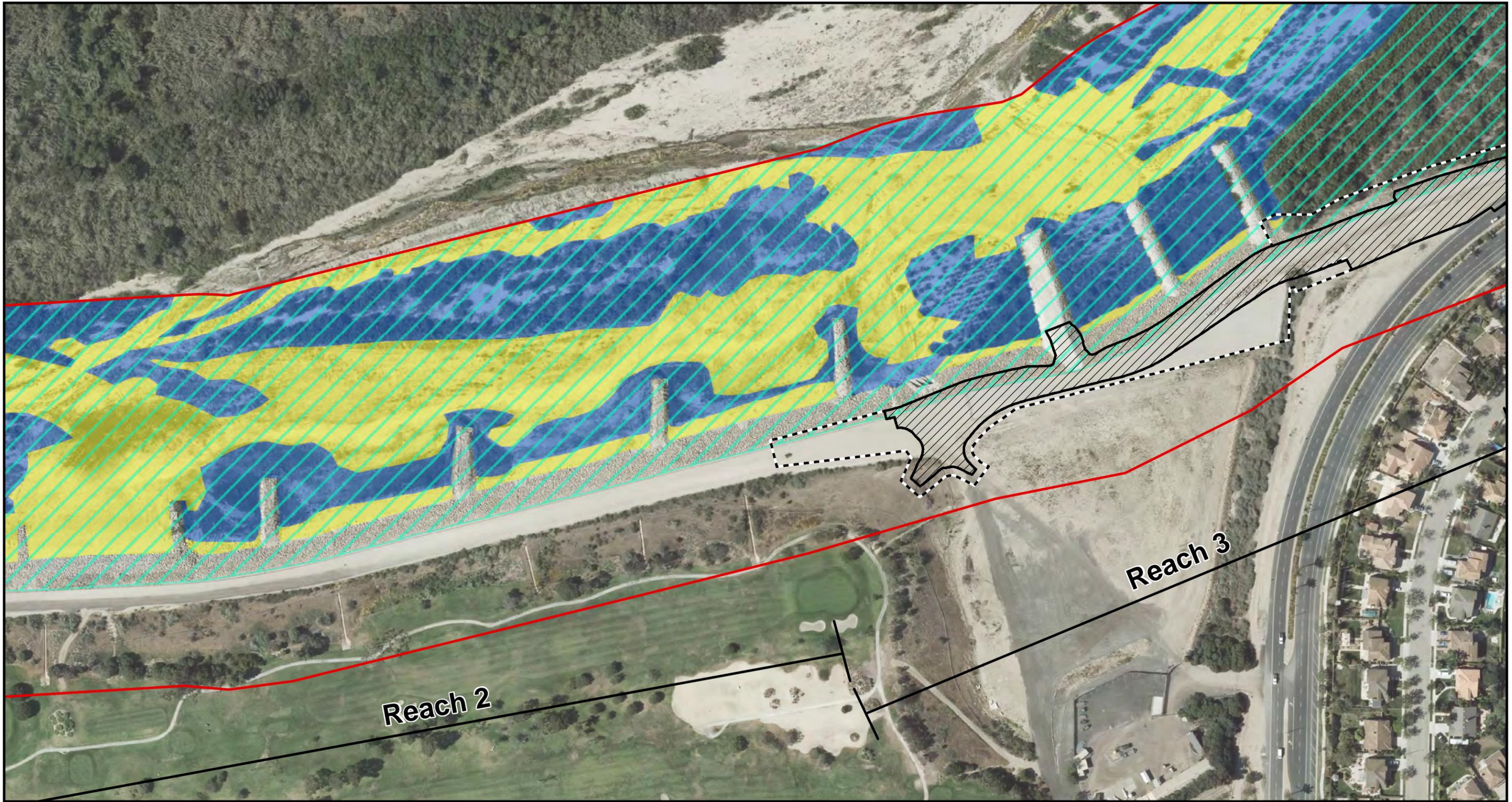
-  Study Area
-  Impact Areas
-  Permanent
-  Temporary
-  CDFW Waters
-  Federal Non-Wetland Waters
-  Federal Wetlands

Figure 3.2-3B
Jurisdictional Features
Option B
Santa Clara River Levee
Map C-2



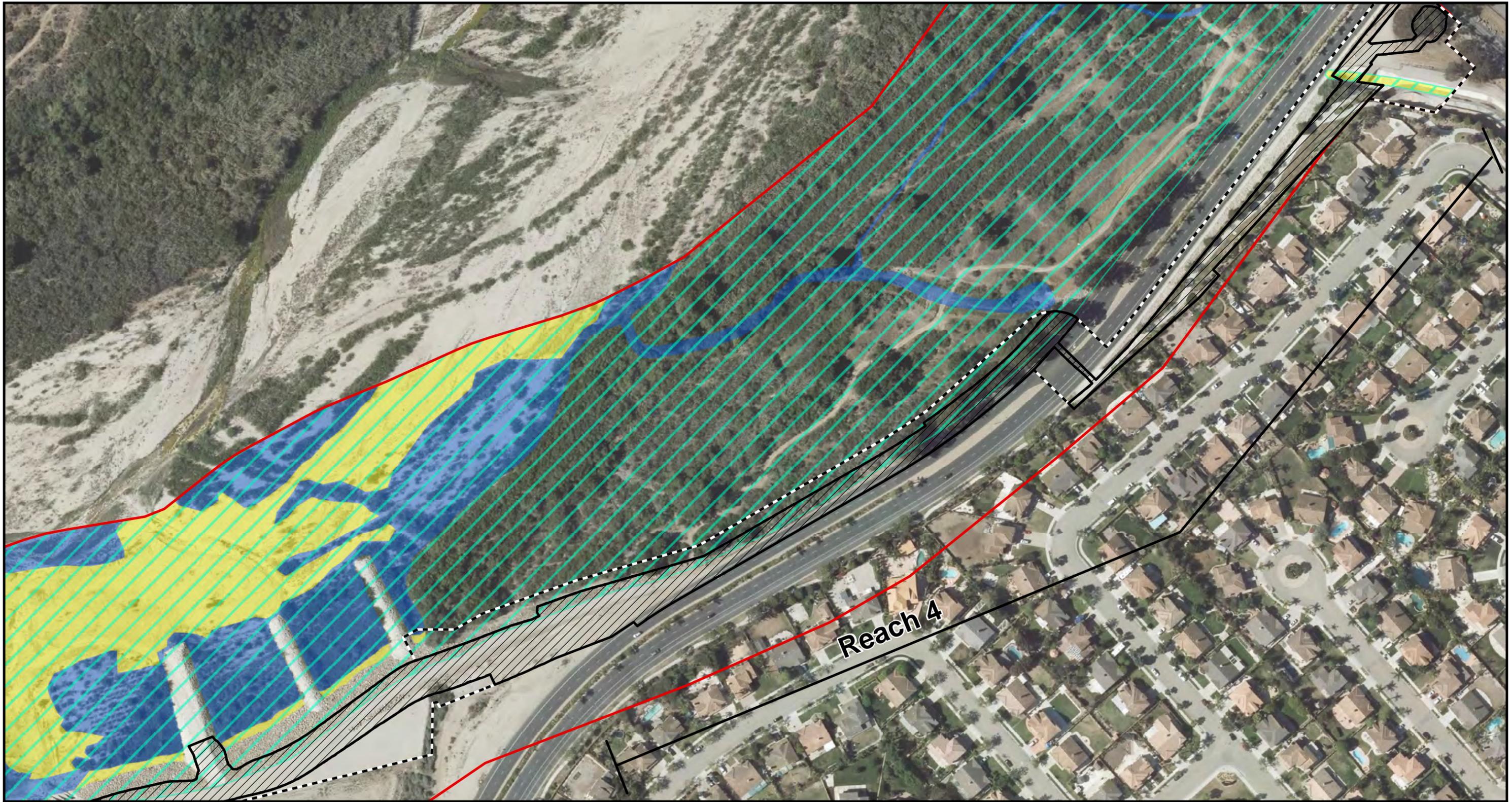
- Study Area
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands
- Permanent
- Temporary

Figure 3.2-3A
Jurisdictional Features
Option A
Santa Clara River Levee
Map D-1



- Study Area
- Impact Areas
- Permanent
- Temporary
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3B
Jurisdictional Features
Option B
Santa Clara River Levee
Map D-2

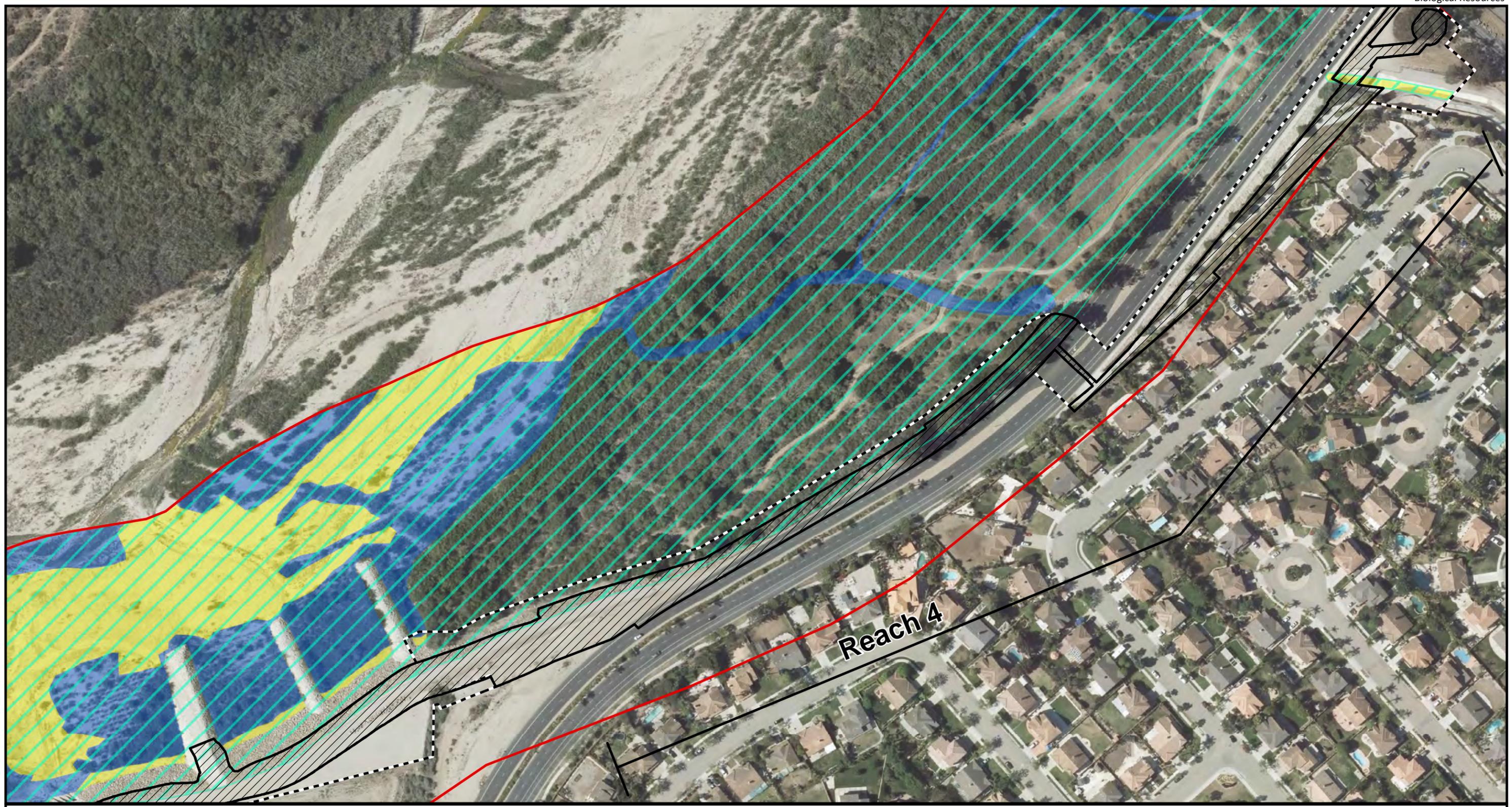


0 200 400
Feet

- Study Area
- Impact Areas
- Permanent
- Temporary

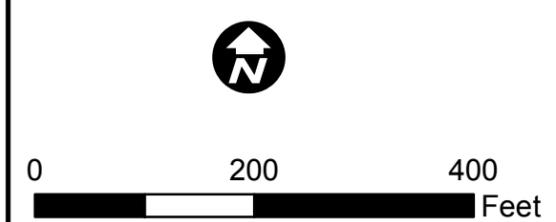
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3A
Jurisdictional Features
Option A
Santa Clara River Levee
Map E-1



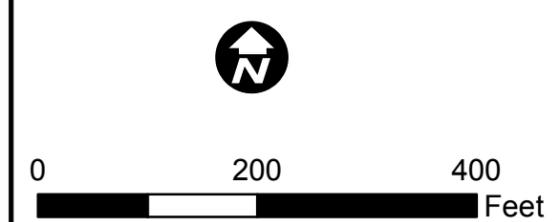
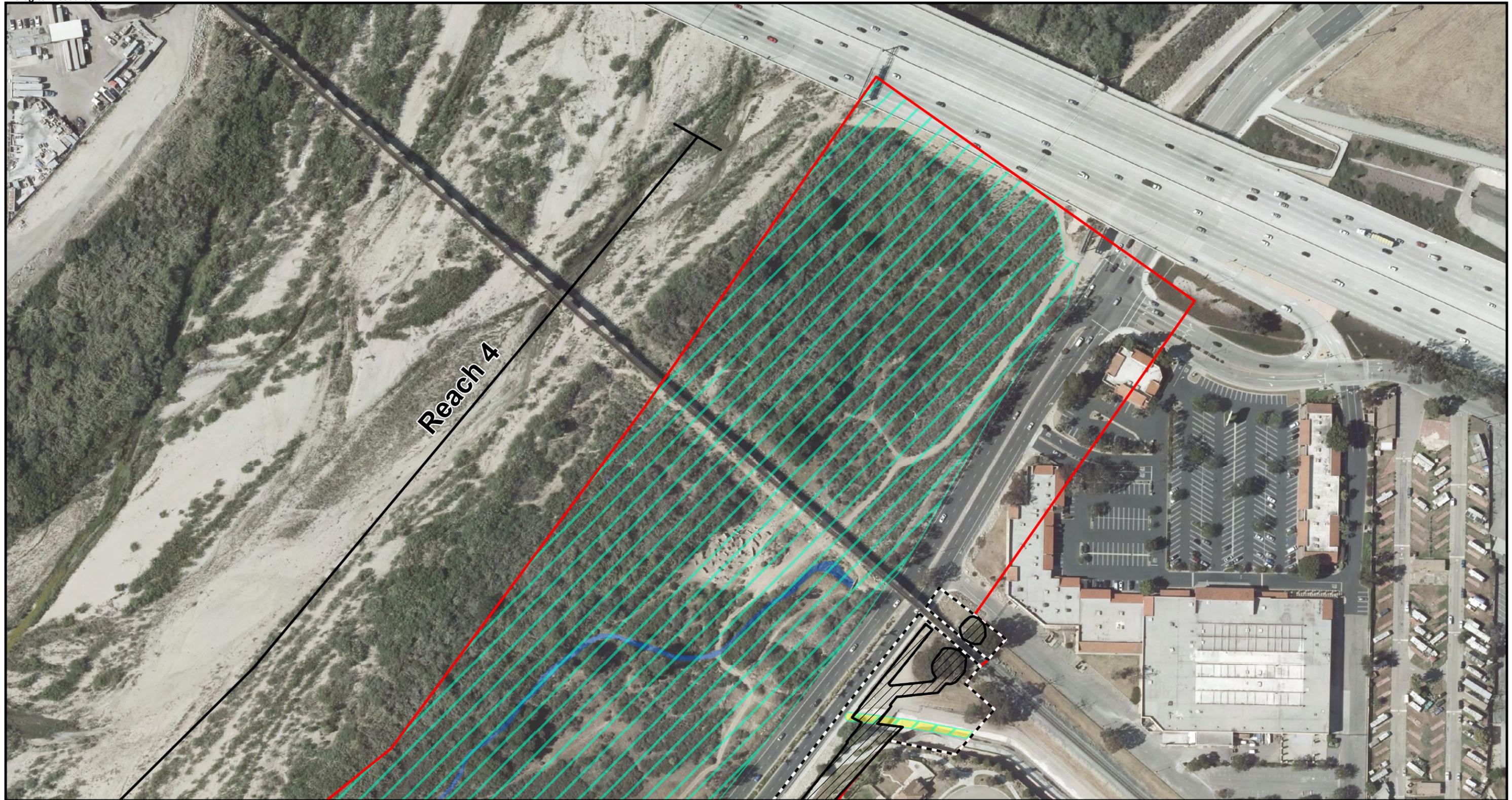
- Study Area
- Impact Areas
- Permanent
- Temporary
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3B
Jurisdictional Features
Option B
Santa Clara River Levee
Map E-2



- Study Area
- Permanent Impact Areas
- Temporary Impact Areas
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3A
Jurisdictional Features
Option A
Santa Clara River Levee
Map F-1



- Study Area
- Permanent Impact Areas
- Temporary Impact Areas
- CDFW Waters
- Federal Non-Wetland Waters
- Federal Wetlands

Figure 3.2-3B
Jurisdictional Features
Option B
Santa Clara River Levee
Map F-2

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Invertebrates also act as efficient components in controlling pest populations and support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. General surveys of the Study Area detected a wide variety of common and nonnative invertebrates. Some of the orders identified in the Study Area included Odonata (dragonflies, damselflies), Hemiptera (true bugs), Coleoptera (beetles), Diptera (flies), Plecoptera (stone flies), Lepidoptera (moths and butterflies), Hymenoptera (wasps, bees and ants), and Trichoptera (caddis flies).

Both non-native Argentine ants (*Linepithema humile*, formerly *Iridomyrmex humile*) and native harvester ants (*Pogonomyrmex californicus*) were detected in the Study Area. Harvester ants were commonly observed in upland habitats on the terraces above the Santa Clara River.

Several species of gastropod were also observed during focused surveys in the Study Area. These included native and non-native snails, such as the introduced garden snail (*Helix aspersa*). In addition, three shoulderband snails (*Helminthoglypta* spp.) were detected during focused surveys for gastropods. Several locally important shoulderband snails are known to occur in the region; these species are discussed further below under threatened, endangered, or special-status invertebrates.

Fish

The Santa Clara River within the Study Area is an ephemeral stream. Due to instances of shallow groundwater and drainage from the adjacent golf course and surrounding community, portions of the Study Area provide potential year-round pool habitat for several species of fish. Habitat conditions in the Santa Clara River within the Study Area include overhanging vegetation, scour pools, and when water is present sections with short runs and riffles. Substrate conditions vary by location but the stream contains areas supporting silty sands, gravel, and cobble dominated zones. Macroalgae communities are present within localized areas and include duck and pond weed and mat-forming algae (*Charra* spp.). When the Santa Clara River is actively flowing, water temperatures vary by season and are a function of depth, location, and snow pack in the upper watershed. The majority of near perennial pool habitats within the Study Area tend to exhibit warmer water temperatures due to the lack of vegetative cover and shallow depths.

Seining and dip netting were conducted as part of the surveys within the aquatic habitats of the Study Area; no species of native fish were detected during these surveys. As with many streams in California, non-native invasive fish were routinely detected during the surveys. Mosquito fish (*Gambusia affinis*) and common carp (*Cyprinus carpio*) were the most common non-native species detected and occurred throughout the pool habitats in the Study Area. Although not detected during the surveys, the watershed is known to support other exotic species including green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), and large-mouth bass (*Micropterus salmoides*).

Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris.

Reptiles were commonly observed during surveys of the Study Area, in both disturbed and natural areas. Western fence lizard (*Sceloporus occidentalis*) and sideblotch lizard (*Uta stansburiana*) were observed whenever weather conditions were favorable and were broadly distributed across the Study Area. A common kingsnake (*Lampropeltis getula*) was observed along the top of the levee near the existing weir field in Reach 2. A coachwhip (*Masticophis flagellum*) and gopher snake (*Pituophis melanoleucus*) were also observed in the Study Area.

Most reptile species, even if present in an area, are difficult to detect because they are cryptic and their life history characteristics (i.e., foraging and thermoregulatory behavior) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases they are only observed when flushed from their refugia. Although not detected in the Study Area, habitat conditions are suitable for a number of common reptiles, including western skink (*Plestiodon skiltonianus*), California whipsnake (*Masticophis lateralis*), western rattlesnake (*Crotalus viridis*), California black-headed snake (*Tantilla planiceps*), and California western blindsnake (*Leptotyphlops humilis*).

Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. While perennial flows do not exist in the portion of the Santa Clara River within the Study Area, shallow groundwater and drainage from the adjacent golf course and surrounding community have created small pool habitats that can persist year-round. These small pools were found to support both native and non-native species. After periods of substantial rainfall within the upper watershed shallow rills and runs, and deep wide slow-moving water may be present within the Study Area and provide additional habitat for amphibious species.

Adjacent upland habitat and riparian vegetation provide ample foraging opportunities. Amphibians that were observed during surveys include the Pacific treefrog [chorus frog] (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), slender salamander (*Batrachoseps* spp.), and the nonnative bullfrog (*Lithobates catesbeiana*). An African clawed frog (*Xenopus laevis*), a highly invasive species known from the watershed, was observed in a small pool located adjacent to one of the existing rock groins in Reach 3. Many amphibians are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris) provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988). Many amphibians are often excluded by exotic fish and amphibian species, which are common the Santa Clara River watershed.

Birds

Ninety-six species of common and sensitive birds were identified in the Study Area during surveys completed in 2013 and 2014 (refer to Appendix B-3 for a complete list of detected birds). It is possible that many other birds use the site either as wintering habitat, seasonal breeding, or as occasional migrants. Special-status species are further discussed below under special-status wildlife.

Birds were identified by sight and sound and were observed throughout the Study Area. The diversity of birds at this location is a function of the large size of the site and the wide variation in plant communities that provide habitat for a number of different groups of birds. For example, a large number of birds are closely associated or dependent on the riparian vegetation within and that borders portions of the Santa Clara River. Riparian systems are frequently considered one of the most productive forms of wildlife habitat in North America. Many bird species are wholly, or at least partially, dependent on riparian plant communities for breeding and foraging (Warner et.al., 1984).

Shore birds and other more aquatic species were commonly detected in the Study Area. In a few locations the presence of rock weirs have resulted in the formation of large pools where shore birds and ducks prey on the many small fish that occur in these areas. Mallard duck (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), green heron (*Butoroides virescens*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*) were commonly observed feeding in the pools within the Study Area when water was present.

Various common song birds were detected in the Study Area and were closely associated or dependent on the riparian vegetation that occurs within and adjacent to the Santa Clara River. Riparian systems are frequently considered one of the most productive forms of wildlife habitat in North America. Some of the detected species included common yellow throat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), and lesser goldfinch (*Carduelis psaltria*). House sparrow (*Passer domesticus*), spotted towhee (*Pipilo maculatus*), and great-tailed grackle (*Quiscalus mexicanus*) were also commonly observed.

Several exotic species including the brown-headed cow bird (*Molothrus ater*) and feral pigeon or rock dove (*Columba livia*) were also observed.

Bird use of the upland terraces was moderate and included a variety of song birds, raptors, vultures, and game birds. Western king bird (*Tyrannus verticalis*), spotted towhee, bushtit (*Psaltriparus minimus*), mourning dove (*Zenaida macroura*), western meadowlark (*Sternella neglecta*), northern mockingbird (*Mimus polyglottos*) and California quail (*Callipepla californica*), were fairly common. Common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), and greater roadrunner (*Geococcyx californianus*) were also observed.

Red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*) were observed either soaring over the site (red-tailed hawks) or foraging for small birds in the Study Area (kestrel). An old raptor nest was observed within an arroyo willow adjacent to the western-most rock groin in the eastern portion of Reach 2. A red-tailed hawk was documented in the general vicinity of this nest during several surveys; the nest was not used in 2013/1014.

Although not detected during surveys within the Study Area, available online eBird (eBird, 2015) data report observations of European starling (*Sturnus vulgaris*), black-chinned hummingbird (*Archilochus alexandri*), gadwall (*Anas strepera*), chipping sparrow (*Spizella passerina*), hairy woodpecker (*Picoides villosus*), hermit warbler (*Setophaga occidentalis*), cinnamon teal (*Anas cyanoptera*), American avocet (*Recurvirostra americana*), belted kingfisher (*Megaceryle alcyon*), and Lincoln's Sparrow (*Melospiza lincolni*) along the Santa Clara River up and downstream of the Study Area and within the Study Area itself.

Mammals

The Study Area is approximately 198 acres in size and is largely confined between developed and residential areas. However, the large width of the flood plain does allow for connectivity to natural lands in areas up and downstream from the Study Area. Generally the distribution of mammals in the Study Area is associated with the presence of such factors as access to perennial water, topographical and structural components (i.e., rock piles, vegetation, and stream terraces) that provide for cover and support prey base, and the presence of suitable soils for fossorial mammals (i.e., sandy areas on the large stream terrace).

The detection of mammals in the Study Area during surveys included direct observation and evidence of use, including tracks, scat, burrows, or other signs. Small mammals or their sign were commonly observed during most of the surveys primarily in the margins of the riparian vegetation, the various rock flood control structures, and in some of the upper stream terraces. Species detected or observed

included desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Otospermophilus beecheyi*), big-eared woodrat (*Neotoma macrotis*), long-tailed weasel (*Mustela frenata*), and Botta's pocket gopher (*Thomomys bottae*).

Mid-size mammals including common muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and coyote (*Canis latrans*) were detected or observed within the Study Area. Most of these species were detected on the margins of the low flow channels of the Santa Clara River, near the permanent pool habitats, or near the existing levee structure that abuts the developed areas on the south side of the Study Area.

Bats were routinely detected in the Study Area and forage over most of the Study Area where prey species such as small insects, moths, and other invertebrates occur. However, many bats tend to concentrate foraging activities in riparian and wetland habitats where insect abundance is high (CDFW, 2000). Common bats known to occur in the Study Area included canyon bat (*Parastrellus hesperus*), greater bonneted bat (*Eumops perotis*), Mexican free-tailed bat (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), and big brown bat (*Eptesicus fuscus*). Bats of an unknown species were observed roosting in the Victoria Avenue Bridge that occurs in the western portion of the Study Area.

Because of the close proximity to urban development and the homeless presence, the Study Area is also frequented by domestic animals including house cat (*Felis catus*) and domestic dog (*Canis familiaris*). It is also likely that invasive or urban associated mammals such as house rats (*Rattus* spp.), Virginia opossum (*Didelphis virginiana*), and common house mice (*Mus musculus*) occur in the urban wilderness interface to some degree.

Sensitive Vegetation Communities

Sensitive vegetation communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." The literature review and vegetation mapping determined that six sensitive vegetation communities including arroyo willow thickets, mulefat thickets, shining willow groves, black cottonwood forest, Fremont cottonwood forest, and cattail marsh occur within or in the vicinity of the Study Area.

Arroyo willow thickets, mulefat thickets, and shining willow groves all generally meet the classification requirements of southern riparian scrub, a community considered sensitive by the CDFW. Portions of the Study Area mapped as black cottonwood forest and Fremont cottonwood forest generally meet the requirements of southern cottonwood-willow riparian forest which is considered a CDFW sensitive community. The one location of cattail marsh in the Study Area meets the classification requirements of coastal and valley freshwater marsh, a community considered sensitive by the CDFW.

Designated Critical Habitat

Literature review conducted prior to initiating field surveys determined that designated and/or mapped critical habitat for steelhead trout (*Oncorhynchus mykiss*), southern California DPS, occurs within the Santa Clara River in the Study Area (Calfish, 2015). The most recent critical habitat was designated on September 2, 2005, and is part of the Santa Clara-Calleguas Hydrologic Unit 4403 (50 CFR Part 226). Mapped critical habitat for tidewater goby (*Eucyclogobius newberryi*) occurs approximately 1.25 miles downstream of the Study Area within the brackish water areas of the Santa Clara River (CDFW, 2015d). All portions of the Study Area within the bed and banks of the Santa Clara River are mapped as critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*) (CDFW, 2015d). Critical

habitat for western snowy plover (*Charadrius alexandrinus nivosus*) is mapped within four locations along the coastal areas from San Buenaventura State Beach to the north and Mugu Lagoon to the south; no critical habitat for this species is located within the Study Area.

Special-Status Species

Special-status taxa include plant and wildlife species listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for listing, Species of Special Concern, plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered in California and beyond, and other taxa which have been identified by the USFWS, CDFW, or local jurisdictions (i.e., Ventura County) as unique or rare and which have the potential to occur within the Study Area. The Ventura County General Plan and Initial Study Assessment Guidelines (County of Ventura, 2015; County of Ventura, 2011) have also identified Significant Biological Resources to include any of the following:

- Habitats of endangered, threatened or rare species
- Wetland habitats
- Coastal habitats
- Migration corridors for fish or wildlife
- Locally important species/communities

Special-Status Plant Species

Record searches and consultation with local experts identified a total of 151 special-status plant taxa that have been documented within the general region of the Study Area. Of this total, 138 taxa were determined to have limited potential to occur due to a variety of factors; these species are listed in Appendix B-5 of this document. Figures 3.2-4 and 3.2-5 illustrate the known locations of special-status plants occurring in or near the Study Area and within the general region (CDFW, 2015a). No state or federally listed plant species were identified in the Study Area. Three Southern California black walnut (*Juglans californica*), a CRPR list 4.2 plant, were detected in the Study Area in 2014 (refer to Figure 3.2-2). Table 3.2-3 lists the special-status plants, including federally and State listed, CRPR 1 – 4, and County of Ventura Locally Important species, that have the potential to occur in or near the Study Area. Species descriptions for taxa having a moderate, or high potential to occur in the Study Area are located in Appendix B-6 of the EIR.

Each of these taxa was assessed for its potential to occur within the Study Area based on the following criteria:

- **Present:** Taxon was observed within the Study Area during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Both a documented recent record (within 10 years) exists of the taxon within the Study Area or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with the taxon are present within the Study Area.
- **Moderate:** Both a documented recent record (within 10 years) exists of the taxon within the Study Area or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxon presence are marginal and/or limited within the Study Area or the Study Area is located within the known current distribution of the taxon and the environmental conditions (including soil type) associated with taxon presence occur within the Study Area.
- **Low:** A historical record (over 10 years) exists of the taxon within the Study Area or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxon presence are marginal and/or limited within the Study Area.

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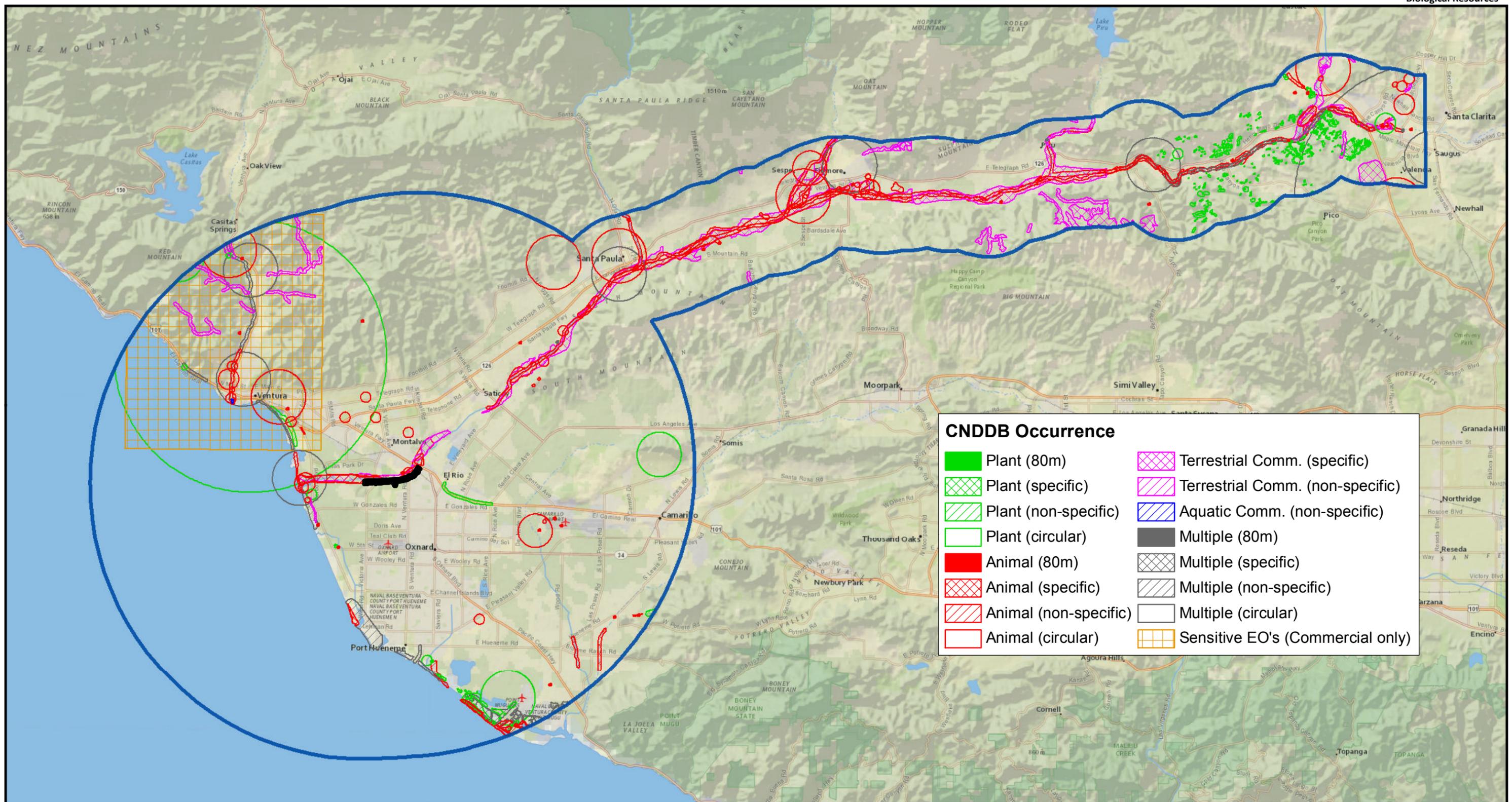
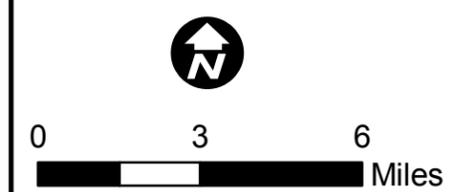
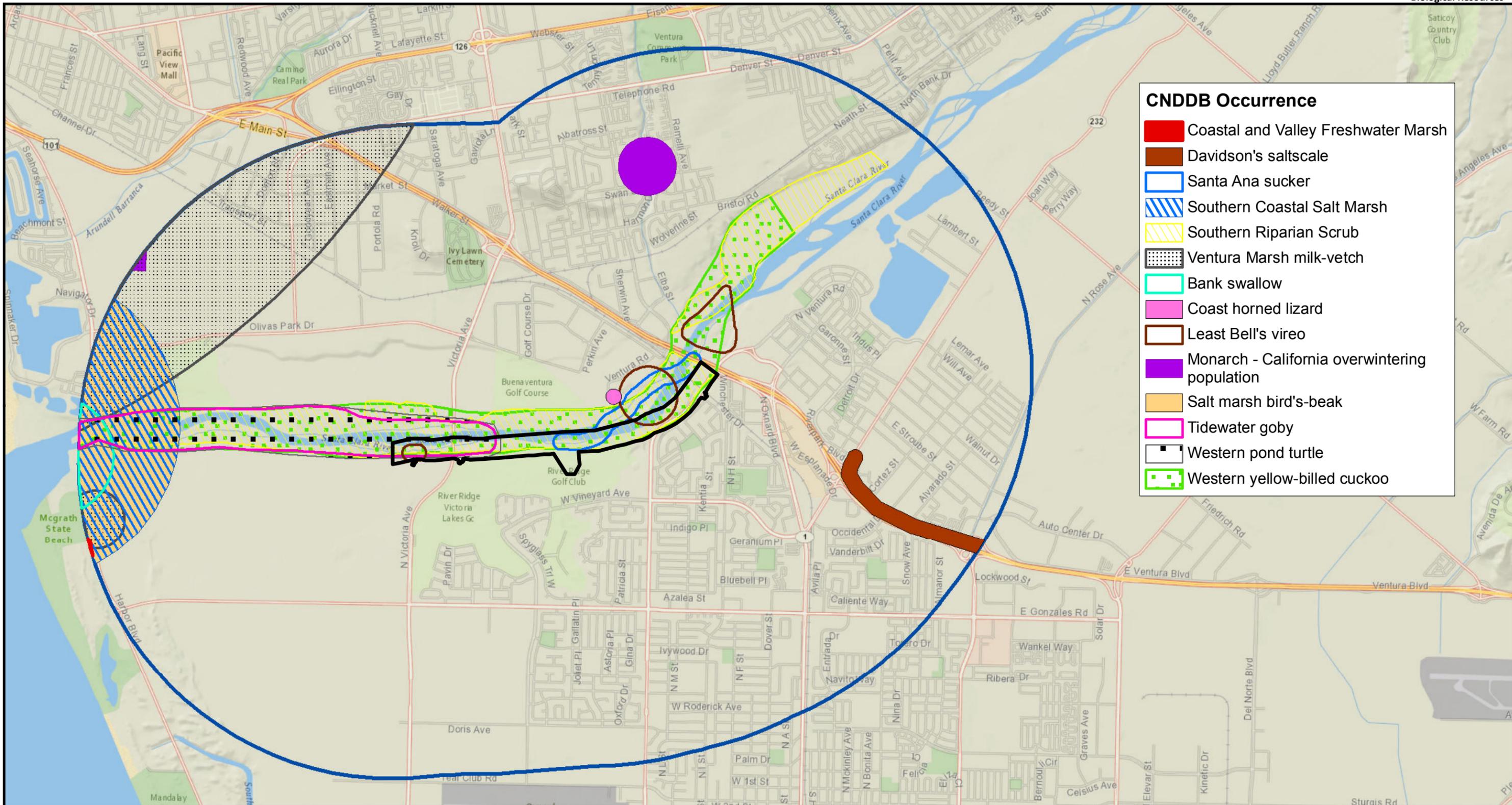


Figure 3.2-4
Sensitive Species
Occurrences - Regional
Santa Clara River Levee



Study Area
Santa Clara River Buffer



- CNDDB Occurrence**
- Coastal and Valley Freshwater Marsh
 - Davidson's saltscale
 - Santa Ana sucker
 - Southern Coastal Salt Marsh
 - Southern Riparian Scrub
 - Ventura Marsh milk-vetch
 - Bank swallow
 - Coast horned lizard
 - Least Bell's vireo
 - Monarch - California overwintering population
 - Salt marsh bird's-beak
 - Tidewater goby
 - Western pond turtle
 - Western yellow-billed cuckoo

- Study Area
- 2 Mile Buffer



0 1,000 2,000
Meters

Figure 3.2-5
Sensitive Species
Occurrences - Study Area
Santa Clara River Levee

Taxa	Status	Blooming Period	Habitat Association and Elevation Limits	Potential to Occur in Survey Area
Amaranthus californicus California amaranth	Fed: none CA: none CRPR: none VC: Yes	Jul-Oct	Spreading annual; mud flats, lake shores; much of Calif. and western N. America; about sea level to 9,200 ft. elev.	Low. Low quality habitat; not detected during surveys.
Ammannia coccinea Purple ammannia	Fed: none CA: none CRPR: none VC: Yes	May-Oct	Annual; margins and shores of ponds, lakes, streams, etc.; much of central and southern Calif.; sea level to about 1,000 ft. elev.	Low. Low quality habitat; not detected during surveys.
Calochortus plummerae Plummer's mariposa-lily	Fed: none CA: S4 CRPR:4.2 VC: Yes	May-Jul	Bulb; shrublands, woodlands, lower pine forests; mountains, foothills, and valleys; Ventura to Orange Cos., inland to Riverside and San Bernardino Cos.; about 300-5,600 ft. elev.	Low. Suitable habitat present; possibly outside of geographic range; not detected during surveys.
Centromadia parryi ssp. Australis Southern tarplant	Fed: none CA: 2 CRPR: 1B.1 VC: Yes	May-Nov	Annual; seasonal wetlands incl. vernal pools, coastal marsh edges, etc.; clay or saline soil; sea level to about 1,400 ft. elev.; Santa Barbara Co to northern Baja Calif.	Low. Minimal suitable habitat; not detected during surveys.
Horkelia cuneata ssp. puberula Mesa horkelia	Fed: none CA: S2.1 CRPR: 1B.1 VC: Yes	Apr-Sep	Perennial herb; shrublands, woodlands; sandy soils, away from immediate coast; San Luis Obispo to San Diego Co., rarely inland to San Bernardino Co.; about 200-2,700 ft. elev.	Low. Suitable habitat present; not detected during surveys.
Imperata brevifolia Satintail	Fed: none CA: S2 CRPR: 2.1 VC: Yes	Sep-May	Perennial grass; meadows, riparian scrub, or mesic flats; S Calif to Utah and mainland Mexico; sea level to about 1700 ft. elev.	Low. Low quality habitat; not detected during surveys.
Juglans californica var. californica Southern California black walnut	Fed: none CA: S3.2 CRPR: 4.2 VC: No	Mar-Aug	Tree; woodlands, coastal sage scrub, chaparral; Santa Barbara Co. to San Diego Co., inland to western San Bernardino and Riverside Cos.; about 150-3,000 ft. elev.	Present. Detected at three locations near the existing levee; additional trees may be present.
Mentzelia affinis Yellow blazing star	Fed: none CA: none CRPR: none VC: Yes	Mar-May	Annual; grasslands, woodlands, desert shrublands; sandy sites; much of southern and central Calif. to Arizona and Baja Calif.; near sea level to about 4,000 ft. elev.	Low. Low quality habitat present, not detected during surveys.
Mucronea californica var. californica California spineflower	Fed: none CA: S2.2 CRPR: 4.2 VC: Yes	Apr-Jul	Annual; many habitats; sandy soils; San Luis Obispo to San Diego Cos., inland to San Bernardino and Kern Cos.; near sea level to about 4,600 ft. elev.	Low. Low quality habitat present; not detected during surveys.
Pseudognaphalim leucocephalum (Gnaphalium leucocephalum) White rabbit tobacco	Fed: none CA: S2S3.2 CRPR: 2.2 VC: No	Jul-Dec	Perennial herb; shrublands, sea level to about 7000 ft. elev.; open sand, usually on alluvium; San Luis Obispo through San Diego Cos, inland to Riverside and San Bernardino cos.	Moderate. Suitable habitat present; not detected during surveys.
Ribes aureum var. gracillimum Slender golden current	Fed: none CA: none CRPR: none VC: Yes	Dec-Aug	Shrub; foothills, washes and alluvial fans, forest margins; SW Calif through the central and north Coast Ranges; about 350-3,000 ft. elev.	Low. Suitable habitat present; not detected during recent surveys.

Table 3.2-3. Known and Potential Occurrence of Special-Status Plant Taxa in the Study Area*

Taxa	Status	Blooming Period	Habitat Association and Elevation Limits	Potential to Occur in Survey Area
Sagittaria sanfordii Sanford's arrowhead	Fed: none CA: S3.2 CRPR: 1B.2 VC: Yes	May-Aug	Perennial herb; shallow freshwater ponds, marshes, ditches, etc.; northern Calif. coast, Central Valley; historically from Orange and Ventura Cos., but evidently now extirpated; sea level to about 2,100 ft. elev.	Low. Low quality habitat present; not detected during surveys.
Stillingia linearifolia Narrow-leaved stillingia	Fed: none CA: none CRPR: none VC: Yes	Mar-May	Subshrub; open shrublands; arid sites; interior southwestern Calif. through deserts to Ariz. and New Mexico; near sea level to about 5,000 ft. elev.	Low. Low quality habitat present; not detected during surveys.

Federal Rankings:

END – Federally Endangered

THR – Federally Threatened

State Rankings:

END – State Endangered

THR – State Threatened

S1 – Less than 6 existing occurrences OR less than 100 individuals

S2 – Between 6-20 existing occurrences OR between 1000-3000 individuals

S3 – Between 21-100 existing occurrences OR between 3000-10,000 individuals

.1 – Very threatened

.2 – Threatened

.3 – No current threats known

S4 – Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat. NO THREAT RANK.

(Rank may be expressed as a range of values; hence S2S3 means the rank is somewhere between the two; adding ? to the rank, such as in S2?, represents more certainty than S2S3, but less than S2)

Sources: CCH 2015, CDFW 2015a, CNPS 2010, and County of Ventura 2014a and 2014b

CRPR Rankings:

CRPR 1A – Presumed extinct in California

CRPR 1B – Rare or endangered in California and elsewhere

CRPR 2A – Presumed extinct in California, more common elsewhere

CRPR 2B – Rare or endangered in California, more common elsewhere

CRPR 3 – More information needed

CRPR 4 – Limited distribution (Watch List)

0.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2 = Fairly endangered in California (20-80% occurrences threatened)

0.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

County Rankings:

VC – Ventura County Locally Important Species

* Species descriptions for taxa present or that have a moderate or high potential to occur in the Study Area are located in Appendix B-6 of the EIR.

Special-Status Wildlife Species

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for listing, Species of Special Concern, and other taxa which have been identified by the USFWS, CDFW, or local jurisdictions (i.e., Ventura County) as unique or rare and which have the potential to occur within the Study Area. Figures 3.2-4 and 3.2-5 illustrate the known locations of special-status wildlife occurring within the queried area (CDFW, 2015a). The CNDDDB was queried for occurrences of special-status wildlife taxa within a five-mile radius surrounding the Study Area, and a two-mile buffer centered on the Santa Clara River extending approximately 40 miles upstream of the proposed Project, ending just east of the Highway 126 and Interstate 5 junction. The specific habitat requirements and the locations of known occurrences of each special-status wildlife taxon were the principal criteria used for inclusion in the list of taxa potentially occurring within the Study Area. There are currently 92 special-status wildlife taxa that have been documented within the general region of the Study Area. Each of these taxa was assessed for its potential to occur within the Study Area based on the following criteria:

- **Present:** Taxon (or sign) was observed in the Project site or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.

- **High:** Habitat (including soils) for the taxon occurs on site and a known occurrence occurs within the Project site or adjacent areas (within 5 miles of the site) within the past 20 years; however, this taxon was not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxon occurs on site and a known regional record occurs within the database search, but not within 5 miles of the site or within the past 20 years; or, a known occurrence occurs within 5 miles of the site and within the past 20 years and marginal or limited amounts of habitat occurs on site; or, the taxon's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxon occurs on site and no known occurrences were found within the database search and the taxon's range includes the geographic area.

A total of 12 taxa were either observed or assumed to be present within, or immediately adjacent to the Study Area, based on surveys conducted in 2013/2014, and/or consultation with local experts. The remaining 80 taxa were reviewed and 71 taxa were determined to have a low, moderate or high potential to occur in the Study Area based on existing recorded occurrences, known geographic range, and/or the presence of suitable habitat. Table 3.2-4 summarizes the special-status wildlife taxa known to regionally occur and their potential for occurrence in the Study Area. A detailed list of all taxa (common and special-status) present in the Study Area is included in Appendix B-3 of this document.

Threatened, Endangered, or Special-Status Invertebrates

Three shoulderband snails (*Helminthoglypta* spp.) were detected during focused surveys for gastropods; the snails were not identified to species. Five locally important species of shoulderband snail are known from the area: Zaca shoulderband snail (*Helminthoglypta phlyctaena*), sage shoulderband snail (*Helminthoglypta salvia*), Matilija shoulderband snail (*Helminthoglypta willetti*), and Ventura shoulderband snail (*Helminthoglypta venturensis*). One rare species (CDFW Special Animal and Ventura County Locally Important Species), the Trask shoulderband snail (*Helminthoglypta traskii traskii*), has the potential to occur in the Study Area. The slotted lancetooth snail (*Haplotrema caelatum*), a Ventura County Locally Important Species, is also known from the general area and has the potential to occur in the Study Area.

Threatened, Endangered, or Special-Status Fish

No threatened, endangered, or special-status fish species were detected in the Study Area. Although not observed during surveys in the Study Area, steelhead trout (southern California DPS) are known to occur in the Santa Clara River watershed during periods when surface water flow is present; this species is federally endangered and a California Species of Special Concern. Critical habitat for steelhead trout (southern California DPS) occurs within the Study Area. Tidewater goby, federally listed as endangered and a CDFW Species of Special Concern, is known to occur downstream of the Study Area within the Santa Clara River estuary.

The federally and State endangered and state fully protected unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), while not observed in the Study Area, has been recorded in the upper Santa Clara River watershed. The partially armored stickleback (*Gasterosteus aculeatus microcephalus*), a CDFW Special Animal and a Ventura County Locally Important Species, is known from the lower watershed; this species can be found year round, upstream in Santa Paula and Sespe Creeks. Owens sucker (*Catostomus fumeiventris*), arroyo chub (*Gila orcuttii*), and Santa Ana sucker (*Catostomus santaanae*), all California Species of Special Concern, and the prickly sculpin (*Cottus asper*), a Ventura County Locally Important Species, are all known to occur along portions of the Santa Clara River.

Threatened, Endangered, or Special-Status Reptiles

Two special-status reptiles, western pond turtle (*Actinemys pallida*) and coast horned lizard (*Phrynosoma blainvillii*), have been observed in the Study Area; both are California Species of Special Concern. A juvenile coast horned lizard was observed within the dry, sandy areas of the Santa Clara River channel, north of the weir field, in Reach 2. Western pond turtles were observed at pool habitat adjacent to the constructed rock groins in the eastern extent of Reach 2 and within a pool near a footing of the Victoria Avenue Bridge. No state or federally listed reptiles were observed in the Study Area. While not detected in the Study Area, a variety of special-status snakes are known to occur in the vicinity including two-striped garter snake (*Thamnophis hammondi*), south coast garter snake (*Thamnophis sirtalis ssp.*), and coast patched nosed snake (*Salvadora hexalepsis virgulata*); these snakes are all California Species of Special Concern. Both silvery legless lizard (*Anniella pulchra pulchra*), a California Species of Special Concern, and coastal whiptail (*Aspidoscelis tigris stejnegeri*), a California Special Animal, are known to occur in the general vicinity of the Study Area.

Threatened, Endangered, or Special-Status Amphibians

Surveys conducted in the Study Area did not detect any threatened, endangered, or special-status amphibians. Arroyo toad (*Anaxyrus californicus*), federally listed as endangered and a California Species of Special Concern, while not detected is known to occur upstream in the Piru Creek watershed; this species has a very low potential of occurrence in the Study Area. Both California red-legged frog (*Rana draytonii*), federally listed as threatened, and western spadefoot toad (*Spea hammondi*), a California Species of Special Concern, are known to occur in the Santa Clara River watershed, however the red-legged frog has low potential to occur within the proposed Project boundaries.

Threatened, Endangered, or Special-Status Birds

With the exception of protocol least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) surveys, the majority of bird sightings were made while conducting general biological surveys. Least Bell's vireo, federally and state listed as endangered, has been documented nesting in the eastern portions of the Study Area (refer to Figure 3.2-6) during surveys conducted in 2013 and 2014. Early results from surveys started in April 2015 show that least Bell's vireo are nesting within the same general areas as identified in the previous year's surveys. A singing willow flycatcher (*Empidonax traillii*), species undetermined, was detected in the eastern portion of the Study Area in 2013; the southwestern willow flycatcher subspecies, which has not been observed nesting in the Study Area, is federally and state listed as endangered. Two California Fully Protected species, white-tailed kite (*Elanus leucurus*) and peregrine falcon (*Falco peregrinus*), have been observed foraging in the Study Area. Several species listed as species of special concern by the CDFW have been identified in the Study Area, including northern harrier (*Circus cyaneus*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), and yellow warbler (*Setophaga petechial*).

Threatened, Endangered, or Special-Status Mammals

Surveys conducted in the Study Area did not detect any threatened, endangered, or special-status mammals. A suite of special-status mammals, all California Species of Special Concern, having the potential to occur in the Study Area include pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumopos perotis californicus*), San Diego black-tailed jack rabbit (*Lepus californicus bennettii*), San Diego desert woodrat (*Neotoma lepida intermedia*), and American badger (*Taxidea taxus*).



Source: Werner Biological, 2013; 2015.

- Study Area
- ▲ 2013 Least Bell's vireo fledgling
- 2013 Least Bell's vireo observation
- 2013 Least Bell's vireo territory
- ▲ 2015 Least Bell's vireo fledgling
- ◆ 2015 Least Bell's vireo nests
- 2015 Least Bell's vireo observation
- 2015 Least Bell's vireo territory

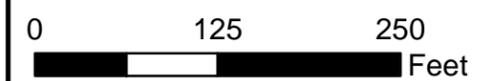


Figure 3.2-6
Mapped locations of
Least Bell's Vireo
Santa Clara River Levee
Map A



Source: Werner Biological, 2013; 2015.

Study Area

▲ 2013 Least Bell's vireo fledgling

▲ 2015 Least Bell's vireo fledgling

● 2013 Least Bell's vireo observation

● 2015 Least Bell's vireo observation

2013 Least Bell's vireo territory

2015 Least Bell's vireo territory

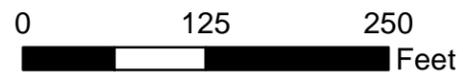
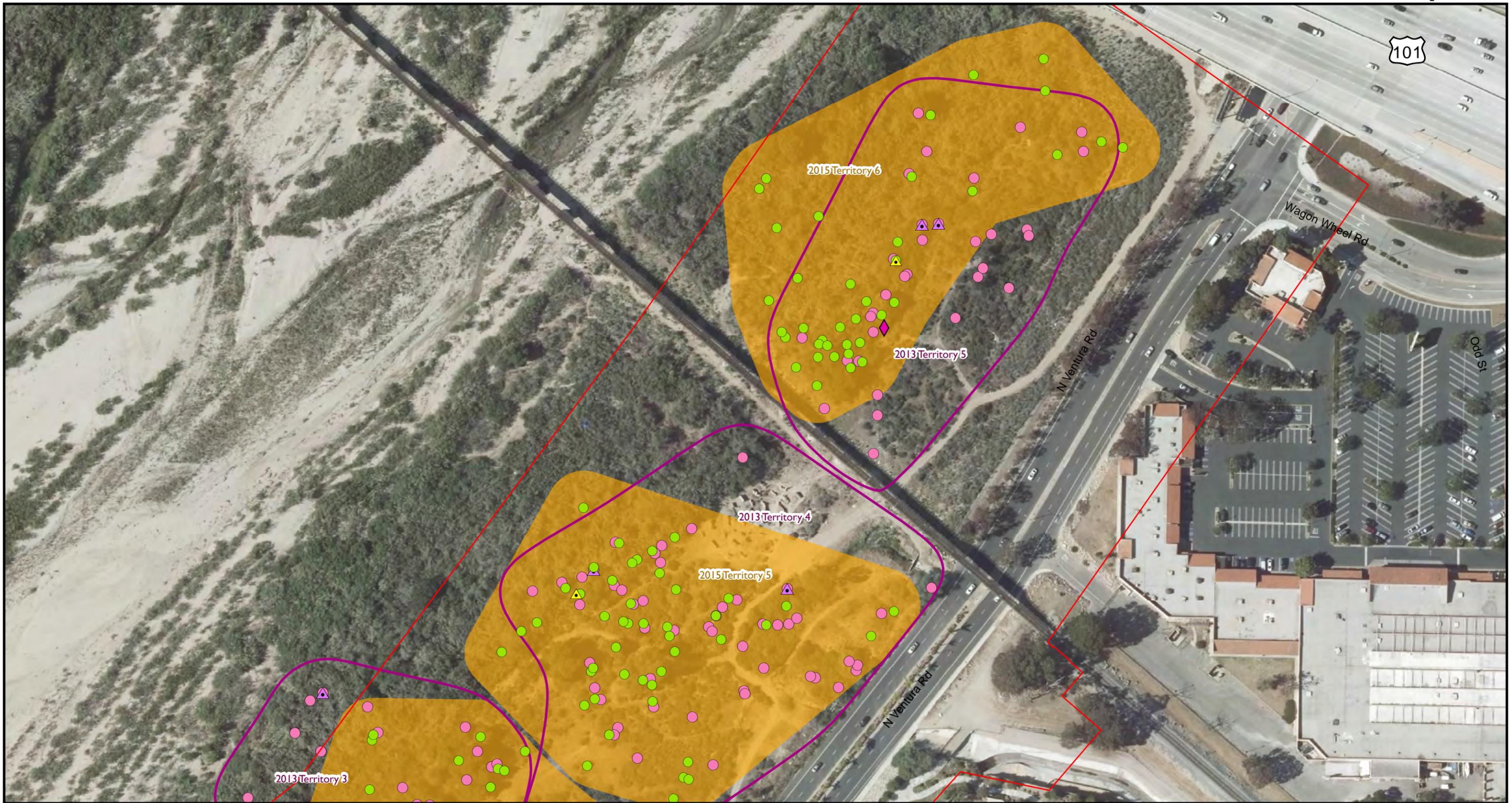


Figure 3.2-6
Mapped locations of
Least Bell's Vireo

Santa Clara River Levee
Map B



Source: Werner Biological, 2013; 2015.

- Study Area
- ▲ 2013 Least Bell's vireo fledgling
- ◆ 2013 Least Bell's vireo nest
- 2013 Least Bell's vireo observation
- 2013 Least Bell's vireo territory
- ▲ 2015 Least Bell's vireo fledgling
- 2015 Least Bell's vireo observation
- 2015 Least Bell's vireo territory

0 125 250
Feet

Figure 3.2-6
Mapped locations of
Least Bell's Vireo

Santa Clara River Levee
Map C

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Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
INVERTEBRATES					
<i>Cicindela hirticollis gravida</i>	Sandy beach tiger beetle	SA	Habitat preference is moist sand near the ocean; often found in depressions behind sand dunes or along the upper portions of sandy beaches beyond the normal high tide mark.	Suitable habitat for this species is not present in the Study Area. The CNDDDB reports occurrences of this species approximately 2 miles downstream just south of the Santa Clara River mouth.	Not Likely To Occur
<i>Cicindela senilis frosti</i>	Senile tiger beetle	SA	Endemic to Calif. and northern Mexico. Historically occurred in coastal salt marshes, tidal mudflats, and interior alkali mudflats from San Diego Co. north to Sonoma Co. and Lake Co.	There are no known recent records for this species in the Study Area. Suitable salt marsh or tidal flats are not present in the Study Area. The closest CNDDDB records for this species occur approximately 10 miles southeast near Point Mugu Naval Base.	Not Likely To Occur
<i>Coelus globosus</i>	Globose dune beetle	SA	Preferred habitat is fore dunes, sand hummocks; larvae spend most of the time in the sand and can occasionally be found under vegetation or debris.	Suitable habitat for this species is not present in the Study Area. The CNDDDB reports a historic occurrence of this species approximately 2.5 miles northwest of the Study Area along Ventura State Beach.	Not Likely To Occur
<i>Danaus plexippus pop. 1</i>	Monarch butterfly (California overwintering population)	SA	Winter roost sites extend along the coast from northern Mendocino to Baja Calif., Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby	Although not detected this species may occur intermittently in the Study Area; suitable winter roosting habitat is available within the eucalyptus stands present in the Study Area. The CNDDDB reports multiple occurrences of this species within 1 – 3 miles north of the Study Area	Moderate
<i>Haplotrema caelatum</i>	Slotted lancetooth snail	VC	Terrestrial; southern Calif. endemic known from Santa Barbara, Ventura, Los Angeles, and San Diego Cos.	There are no known recent records for this species in the Study Area; The Study Area is located within the known geographic distribution for this species (Magney, 2005); suitable habitat is present within the riparian and upland habitats in the Study Area.	Moderate
<i>Helminthoglypta phlyctaena</i>	Zaca shoulderband snail	VC	Terrestrial; endemic known only from Santa Barbara and Ventura Counties.	There are no known recent records for this species in the Study Area; The Study Area is located within the known geographic distribution for this species (Magney, 2005); suitable habitat is present within the riparian and upland habitats in the Study Area.	Moderate
<i>Helminthoglypta salviae</i>	Sage shoulderband snail	VC	Terrestrial; endemic to Ventura Co.	There are no known recent records for this species in the Study Area; The Study Area is located within the known geographic distribution for this species (Magney, 2005); suitable habitat is present within the riparian and upland habitats in the Study Area.	Moderate
<i>Helminthoglypta traskii traskii</i>	Trask shoulderband snail	SA, VC	Terrestrial; southern Calif. endemic known from Ventura, Los Angeles, Orange, and San Diego Counties;	There are no known recent records for this species in the Study Area; the nearest record of this species approximately 13 miles to the southeast in La Jolla Creek in the Santa Monica Mountains; the Study Area is located	Moderate

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Biological Resources

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
			prefers coastal sage scrub and chaparral.	within the known geographic distribution for this species (Magney, 2005); suitable habitat is limited within the Study Area.	
<i>Helminthoglypta venturensis</i>	Ventura shoulderband snail	VC	Terrestrial; endemic to Ventura Co.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographical distribution for this species (Magney, 2005); suitable habitat is present within the riparian and upland habitats in the Study Area.	Moderate
<i>Helminthoglypta willeti</i>	Matilija shoulderband snail	VC	Terrestrial; endemic to Ventura Co.; chaparral, coast live oak woodlands, riparian woodlands; mountainous areas.	There are no known recent records for this species in the Study Area; the nearest record of this species is in Ventura (Lake Canyon), the Ojai area, and Sisar Canyon (Magney 2005 and Hunt et al. 1993); the Study Area is located within the known geographic distribution for this species (Magney, 2005); suitable habitat is present within the riparian and upland habitats in the Study Area.	Moderate
<i>Tryonia imitator</i>	Mimic tryonia (=California brackish water snail)	SA	Habitat preference includes brackish water marshes, coastal lagoons, and estuaries; species can occur in a wide range of salinities.	Suitable habitat is not present within the Study Area but is likely present downstream near the mouth of the Santa Clara River. The CNDDDB reports an occurrence of this species approximately 7 miles south in the Port Hueneme area.	Not Likely to Occur
<i>Panoquina errans</i>	Wandering (=saltmarsh) skipper		Known from coastal saltmarshes in southern Calif.; requires moist salt grass for larval development.	There are no known records for this species in the Study Area. There is no saltmarsh habitat within the Study Area; historic CNDDDB records exist approximately 8 miles southeast in the general area of Point Mugu Naval Base.	Not Likely to Occur
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE	Vernal pools.	There are no known records for this species in the Study Area; nearest CNDDDB record for this species occurs approximately 19 miles to the east in the Tierra Rejada Valley. The Study Area is located within the known geographic distribution for this species however no indication of vernal pools were identified in the Study Area.	Low
<i>Timema monikensis</i>	Santa Monica Mountains timema	VC	Terrestrial; endemic to the Transverse Ranges in scrub habitats.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this widespread species; suitable habitat occurs in limited portions of the Study Area.	Moderate
FISH					
<i>Catostomus santaanae</i>	Santa Ana sucker	FT, CSC	Typically inhabits small, shallow streams and rivers less than 23 feet (7 meters) wide where water temperature is generally below 72 ° F (22 ° C), and where currents range from swift to sluggish (USFWS, 2000).	This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present). This species is known to occur upstream in Santa Paula Creek and Sespe Creek. Currently the USFWS does not	High (when flowing water is present)

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
				include the Santa Clara River Watershed population in the threatened listing.	
<i>Catostomus fumeiventris</i>	Owens sucker	CSC	Generally found in soft-bottomed cool-run streams, lakes or reservoirs.	This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present). This species is known to occur upstream in Santa Paula Creek and Sespe Creek.	High (when flowing water is present)
<i>Cottus asper</i>	Prickly sculpin	VC	Occurs in coastal and inland streams; typically inhabits pools and slowly flowing waters; prefers bottoms of fine materials, sands.	This species is known to occur along portions of the Santa Clara River (United Water, 2007); the Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River channel within the Study area (during periods when flowing water is present).	High (when flowing water is present)
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE, CSC	Occurs in brackish water in shallow lagoons and in lower stream reaches where the water is fairly still but not stagnant.	This species was not documented within the Study Area. Suitable habitat is not present in the Study Area but is located approximately 1.25 miles downstream at the Santa Clara River lagoon.	Low (when flowing water is present)
<i>Gasterosteus aculeatus microcephalus</i>	Partially armored threespine stickleback	SA, VC	Subspecies occurs in freshwater habitats exclusively; prefers relatively shallow inshore waters in lakes and streams.	This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present). This species is known to occur upstream in Santa Paula Creek and Sespe Creek.	High (when flowing water is present)
<i>Gasterosteus aculeatus williamsoni</i>	Unarmored threespine stickleback	FE, SE, CFP	Slow-moving and backwater areas of coastal and inland streams.	This species was not documented within the Study Area. The Study Area is outside the known geographic distribution for this species; This species is known to occur in the upper Santa Clara River watershed.	Low (when flowing water is present)
<i>Gila orcuttii</i>	Arroyo chub	CSC	Los Angeles Basin southern coastal streams; slow water stream sections with mud or sand bottoms; feeds heavily on aquatic vegetation and associated invertebrates.	This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present). This species is known to occur upstream in Santa Paula Creek and Sespe Creek.	High (when flowing water is present)
<i>Oncorhynchus mykiss</i>	Steelhead trout–southern California DPS	FE, CSC	Clear-flowing streams and rivers; typically inhabit deep pools with overhanging banks; anadromous; adults spawn in runs and riffles in gravel and small cobble substrates.	This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present).	High (when flowing water is present)

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Biological Resources

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
AMPHIBIANS					
<i>Aneides lugubris</i>	Arboreal salamander	VC	Coastal live-oak woodlands, yellow pine and black oak forests in foothills; typically found on ground under leaf litter, rocks, logs; also climbs trees; not dependent on water.	This species is known to occur throughout the Coast Ranges from Humboldt Co. to Baja Calif.; there are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species.	Moderate
<i>Anaxyrus californicus</i>	Arroyo toad	FE, CSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash; rivers with sandy banks, willows, cottonwoods, and/or sycamores.	Although not documented from the Santa Clara River, this species has been recorded upstream in the Piru Creek watershed; the Study Area is located outside of the known current geographic distribution for this species; suitable habitat occurs within portions of the Study Area.	Low
<i>Rana boylei</i>	Foothill yellow-legged frog	CSC	Prefers partly shaded, shallow streams with a rocky substrate; requires a minimum of 15 weeks of permanent water for metamorphosis.	Although not documented from the Study Area or surrounding areas, this species has historically been recorded upstream within the upper Sespe Creek Watershed (occurrence was in 1921); the Study Area is located within the historic geographic distribution for this species; suitable habitat occurs within portions of the Study Area when flowing water is present for extended periods of time.	Not Likely to Occur
<i>Rana draytonii</i>	California red-legged frog	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development; must have access to aestivation habitat.	Although not documented from the Study Area, this species has been recorded upstream within the headwaters of Piru Creek and in the upper Santa Clara River watershed. The Study Area is located within of the known geographic distribution for this species; suitable but limited habitat occurs within portions of the Study Area when flowing water is present for extended periods of time.	Low
<i>Spea hammondi</i>	Western spadefoot	CSC	Occurs in numerous habitat types, primarily in grasslands but can be found in valley-foothill hardwood woodlands, sage scrubs, chaparral where pooled/ponded water, supporting typically clay-rich soils, remains through early spring (April/May); in some areas, vernal pools, stock ponds, and road pools are essential for breeding, egg-laying, and larval development.	There are no known records for this species in the Study area or surrounding areas; the Study Area is located within the known geographic distribution for this species; suitable habitat does occur within the Study Area. The closest CNDDDB record for this species is approximately 19 miles northeast near the City of Moorpark.	Moderate
<i>Taricha torosa torosa</i>	Coast Range newt	CSC	Breeds in ponds, reservoirs, streams; terrestrial individuals occupy various adjacent upland habitats, including grasslands, woodlands, and forests.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this widespread species; limited breeding habitat is available (dependent on rainfall) however suitable upland habitat occurs within portions of the	Low

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
				Study Area. The closes known CNDDDB record for this species is approximately 17 miles north.	
REPTILES					
<i>Actinemys pallida</i>	Western pond turtle	CSC	Inhabits permanent or nearly permanent bodies of water in various habitat types; requires basking sites such as partially submerged logs, vegetation mats, or open mud banks.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when ponded/flowing water is present).	Present
<i>Anniella pulchra pulchra</i>	Silvery legless lizard	CSC	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential; prefer soils with high moisture content.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this widespread species; suitable habitat occurs throughout the Study Area. There are multiple CNDDDB records for this species approximately 2.5 miles south.	Moderate
<i>Arizona elegans occidentalis</i>	California glossy snake	VC	Generally found in arid scrub, rocky washes, grasslands, and chaparral.	There are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this secretive species; suitable habitat occurs within the Study Area.	Low
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	SA	Found in deserts and semi-arid areas with sparse vegetation and open areas; also found in woodland and riparian habitats; substrates may be firm soil, sandy, or rocky.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this widespread species. Suitable habitat occurs throughout the Study Area. The CNDDDB reports an occurrence of this species approximately 6 miles north of the Study Area.	Moderate
<i>Lampropeltis zonata pulchra</i>	San Diego mountain kingsnake	CSC, VC	Occurs in a variety of habitats, spends most of its time underground under objects or in crevices. Active during the day when near shaded streams on warm days.	There are no known records for this species in the Study Area; the Study Area is located just outside the known geographic distribution for this secretive species; suitable habitat occurs within the Study Area.	Low
<i>Phrynosoma blainvillii</i>	Coast horned lizard	CSC	Inhabits coastal sage scrub and chaparral in arid and semi-arid climate zones; prefers friable, rocky, or shallow sandy soils; requires native ant food source.	A juvenile coast horned lizard was observed within the dry, sandy areas of the Santa Clara River channel, north of the weir field in Reach 2, during surveys conducted in 2013. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within the Study Area.	Present
<i>Salvadora hexalepsis virgultea</i>	Coast patch-nosed snake	CSC	Occurs in coastal chaparral, desert scrub, washes, sandy flats, rocky areas; broad generalist.	There are no known records for this species within 20 miles of the Study Area; the Study Area is located within the known geographic distribution for this species; suitable habitat occurs within the Study Area.	Low
<i>Thamnophis hammondi</i>	Two-striped garter snake	CSC	Highly aquatic; found in or near permanent fresh water; often along	There are no known records for this species in the Study Area; nearest CNDDDB record for this species occurs approximately 7 miles to the north	Moderate

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Biological Resources

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
			streams with rocky beds and riparian growth.	in the vicinity of the Ventura River. The Study Area is located within the known geographic distribution for this species. Pockets of suitable habitat occur within the limited perennial pool habitats in the Study Area; suitable habitat is present throughout the Santa Clara River in the Study Area when flows are present.	
<i>Thamnophis sirtalis</i> ssp.	South coast garter snake	CSC	Inhabits scrub, chaparral, annual and native grassland, freshwater marsh and agriculture (USACE and CDFG, 2010).	There are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species. Pockets of suitable habitat occur within the limited perennial pool habitats in the Study Area; suitable habitat is present throughout the Santa Clara River in the Study Area when flows are present. The CNDDDB reports an occurrence of this species approximately 7 miles upstream just south of the Santa Paula area.	Moderate
BIRDS					
<i>Accipiter cooperii</i> (nesting)	Cooper's hawk	WL	Woodland, chiefly of open, interrupted, or marginal type; nest sites mainly in riparian growths of deciduous trees.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable nesting and foraging habitat occurs throughout the Study Area. The Study Area is located within the known geographic distribution for this species.	Present
<i>Accipiter striatus</i> (nesting)	Sharp-shinned hawk	WL	Prefers, but not restricted to riparian habitats; breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats; requires north-facing slopes with perches.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic year-round distribution for this species. Suitable breeding habitat does not occur, however, suitable foraging habitat occurs throughout the Study Area. A review of online eBird data shows an occurrence of this species immediately north of the Study Area at the Buenaventura Golf Course.	High
<i>Agelaius tricolor</i> (nesting colony)	Tricolored blackbird	CSC, BCC	Highly colonial species; requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of colony.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Very limited suitable breeding and foraging habitat occurs throughout the Study Area. The closest CNDDDB record for this species is approximately 6 miles north. There are multiple eBird records for this species approximately 2 miles west in the general vicinity of the Santa Clara River mouth.	High
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	WL	Resident in southern Calif. coastal sage scrub and sparse mixed chaparral; frequents relatively steep, often rocky hillsides with grass and forb patches.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding and foraging habitat occurs within the upland terrace in the eastern extent of the Study Area.	Moderate
<i>Aquila chrysaetos</i>	Golden eagle	CFP	Forages in open grasslands, desert scrub and agricultural fields. Nests on	There are no known records for this species in the Study Area. Suitable nesting habitat for this species is not present but may occur in nearby	Not Likely To Occur

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
			ledges on cliff faces, rock outcrops and occasionally in large trees.	areas. Suitable foraging habitat is present within limited portions of the Study Area. The CNDDDB reports historic occurrences of this species from the Santa Monica Mountains approximately 15 miles southeast.	(nesting)/ Moderate (Soaring)
<i>Ardea herodias</i> (rookery sites)	Great blue heron	SA	Rookery sites typically occur in groves of large trees within proximity to aquatic foraging areas of streams, wetlands, and grasslands.	This species was documented in the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable rookery habitat occurs within the western half of the Study Area.	Present (No rookery observed)
<i>Asio flammeus</i> (nesting)	Short-eared owl	CSC	Usually occurs in open areas with few trees, such as grasslands, prairies, dunes, meadows, agricultural fields, emergent wetlands; requires dense vegetation for cover.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic year-round distribution, however, is outside of the known breeding range for this species. Suitable foraging habitat occurs throughout the Study Area. There is a 2008 eBird record for this species approximately 2 miles west, just north of the Santa Clara River mouth.	Low
<i>Athene cunicularia</i> (burrowing sites & some wintering sites)	Burrowing owl	BCC, CSC	Open, dry perennial or annual grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean nester, dependent upon burrowing mammals, particularly Calif. ground squirrels.	The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within limited portions of the Study Area. There is a 2002 eBird record for this species in the Santa Clara River near the Victoria Avenue Bridge in the western extent of the Study Area; nearest CNDDDB record for this species occurs approximately 2 miles to the west near McGrath State Beach.	Moderate
<i>Buteo regalis</i>	Ferruginous hawk	WL	Forages in grasslands and agricultural fields.	There are no known records for this species in the Study Area. The nearest CNDDDB record for this species occurs approximately 9 miles to the southeast near Point Mugu Naval Base. A review of online eBird data shows an occurrence of this species just north of the Study Area near Olivas Park Drive. Suitable nesting habitat is not present in the Study Area although limited foraging habitat is present.	Low
<i>Calypte costae</i>	Costa's hummingbird	SA	Primarily occurs in desert wash, edges of desert riparian and valley-foothill riparian, coastal scrub, desert scrub, low-elevation chaparral.	This species was documented in the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic range for this species; suitable breeding and foraging habitat occurs throughout the Study Area.	Present
<i>Carduelis lawrencei</i> (nesting)	Lawrence's goldfinch	BCC, SA	Nests in open oak or other arid woodland and chaparral near water; nearby herbaceous habitats used for foraging; closely associated with oaks.	There are multiple eBird records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding may occur when flows are present in the Santa Clara River; foraging habitat occurs throughout the Study Area.	High
<i>Chaetura vauxi vauxi</i> (nesting)	Vaux's swift	CSC	Breeds in coniferous and mixed coniferous forests; requires large-diameter, hollow trees for breeding and	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable breeding habitat does not occur in the Study Area; foraging habitat occurs within pool habitats in the Study Area and in the Santa	Low

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Biological Resources

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
			roosting; forages in areas of open water where insect prey congregates.	Clara River when flowing water is present. There are multiple eBird records for this species approximately 2 miles west in the general vicinity of the Santa Clara River mouth.	
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	FE, CSC	Preferred habitat is sandy beaches, pond levees, and shorelines of large alkaline lakes; requires friable soil for nesting.	There are no known records for this species in the Study Area and suitable habitat for this species is not present in the Study Area. The closest CNDDDB record for this species, although not recent, is approximately 2.0 miles to the west along McGrath State Beach. There are multiple eBird records for this species approximately 2 miles west along McGrath State Beach and from beaches immediately to the north.	Not Likely to Occur
<i>Circus cyaneus</i> (nesting)	Northern harrier	CSC	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegetation often at edge of marshes.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; suitable breeding and foraging habitat occurs throughout the Study Area. There are multiple eBird records for this species approximately 2 miles west near the mouth of the Santa Clara River.	Moderate
<i>Coccyzus americanus occidentalis</i> (nesting)	Western yellow-billed cuckoo	FC, SE	Nests along the broad, lower flood-bottoms of larger river systems; also nests in riparian forests and riparian jungles of willow often mixed with cottonwoods, with an understory of blackberry, nettles, or wild grape (USACE and CDFG, 2010).	There is an eBird record for this species, from 2008, within the Study Area. The CNDDDB reports historic records for this species within the Study Area; the Study Area is located within the known geographic distribution for this species. Breeding and foraging habitat is present in the Study Area.	Low
<i>Elanus leucurus</i> (nesting)	White-tailed kite	CFP	Typically nests at lower elevations in riparian trees, including oaks, willows, and cottonwoods; forages over open country.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and limited foraging habitat occurs in the Study Area.	Present
<i>Empidonax traillii extimus</i> (nesting)	Southwestern willow flycatcher	FE, SE	Riparian woodlands in southern Calif.	There are no known records for this species in the Study Area; critical habitat for this species is mapped within the Study Area. The nearest CNDDDB record for this species occurs approximately 8.5 miles upstream in the Santa Clara River near the Santa Paula area. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat occurs throughout the Study Area.	High (Migrants)
<i>Eremophila alpestris</i>	California horned lark	WL	Occurs in open habitats, forages in bare dirt in short and/or sparse grassland and areas of scattered shrubs.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable foraging habitat occurs within the upland terrace in the eastern extent of the Study Area.	Present

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Falco columbarius</i> (non-breeding/ wintering)	Merlin	WL	Wide-variety of habitats including marshes, deserts, seacoasts, open woodlands, fields.	There are no known records for this species in the Study Area or surrounding areas. This species is a winter resident that does not breed in Calif.; the Study Area is located within the known geographic winter distribution for this species. Suitable foraging habitat occurs throughout the Study Area. There is a 2009 eBird record for this species just north of the Study Area at Buenaventura Golf Course.	Moderate
<i>Falco mexicanus</i> (nesting)	Prairie falcon	BCC, WL	Rare in southern Calif.; nests along cliff faces or rocky outcrops; forages over open spaces, agricultural fields.	There are no known records for this species in the Study Area or surrounding areas. This species has been documented north of the Study Area in the Matilija Creek riparian corridor above Matilija Dam (Hunt and Associates, 2009). The Study Area is located within the known geographic year-round distribution for this species; suitable nesting habitat does not occur. Limited suitable foraging habitat occurs within the Study Area. There are eBird records for this species approximately 1.5 miles west and 0.5 miles east.	Low
<i>Falco peregrinus anatum</i>	American peregrine falcon	BCC, CFP	Occurs in various open habitats, especially where suitable nesting cliffs present.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable breeding habitat does not occur within the Study Area but may be present in nearby areas; foraging habitat occurs throughout the Study Area.	Low
<i>Gymnogyps californianus</i>	California condor	FE, SE, CFP	Nests in caves, crevices, behind rock slabs, or on large ledges on high sandstone cliffs; requires vast expanses of open savannah, grasslands, and foothill chaparral with cliffs, large trees and snags for roosting and nesting.	There are no known records for this species in the Study Area. This species is known from the upper Sespe Creek watershed approximately 14.5 miles northeast; suitable nesting habitat does not occur; limited foraging habitat occurs within portions of the Study Area.	Low (soaring)
<i>Icteria virens</i> (nesting)	Yellow-breasted chat	CSC	Inhabits riparian thickets of willow and other brushy tangles near water courses; nests in low, dense riparian vegetation; nests and forages within 10 feet of ground.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat exist throughout the Study Area.	Present
<i>Lanius ludovicianus</i> (nesting)	Loggerhead shrike	BCC, CSC	Broken woodland, savannah, pinyon-juniper woodland, Joshua tree woodland, riparian woodland, desert oases, scrub, and washes; prefers open country for hunting with perches for scanning and fairly dense shrubs and brush for nesting.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat throughout the Study Area.	Present

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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Pandion haliaetus</i>	Osprey	WL	Forages and nests along rivers, lakes, and reservoirs.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable foraging habitat occurs throughout the Study Area. There are multiple eBird records approximately 2 miles west within the general vicinity of the Santa Clara River mouth.	Moderate
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	SE	Breeds on the southern coast from Santa Barbara to San Diego Co. Open fields, meadows, salt marshes, prairies, dunes, shores.	There are no known recent records for this subspecies in the Study Area. Although the Study Area is located outside the recognized geographic range for this species, there are recent eBird records for this species approximately 2 miles west and just north of the Santa Clara River mouth. Very limited suitable habitat may be present in the Study Area. The CNDDDB reports a historic occurrence approximately 2 miles east along McGrath State Beach; recent occurrences are reported approximately 7 miles southeast of the Study Area around Ormond Beach.	Low
<i>Pelecanus occidentalis californicus</i>	California brown pelican	CFP	Brown Pelicans live year-round in estuaries and coastal marine habitats along both the east and west coasts. They breed between Maryland and Venezuela, and between southern Calif. and southern Ecuador—often wandering farther north after breeding as far as British Columbia or New York. On the West Coast they breed on dry, rocky offshore islands. When not feeding or nesting, they rest on sandbars, pilings, jetties, breakwaters, mangrove islets, and offshore rocks. (Cornell, 2012)	There are no known recent records for this species in the Study Area. The closest CNDDDB record for this species is approximately 10 miles southeast near Point Mugu Naval Base. There are eBird records for this species approximately 2 miles west near McGrath State Beach and 2.5 miles northwest at the Ventura Harbor.	Low (soaring)
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	FT, CSC, BCC	Various sage scrub communities, often dominated by Calif. sage and buckwheat; generally avoids nesting in areas with a slope of greater than 40%, and typically less than 820 feet in elevation (USACE and CDFG, 2010).	There are no known records for this species in the Study Area or surrounding areas; nearest CNDDDB record for this species occurs approximately 10 miles to the southeast in the Camarillo area. The Study Area is located within the known geographic distribution for this species. There is a single eBird record for this species at the Ventura Settling Ponds, approximately 2 miles west, just north of the Santa Clara River mouth.	Low (Dispersing)
<i>Rallus longirostris levipes</i>	Light-footed clapper rail	FE, SE, CFP	Generally occur in salt marshes with adjacent tidal sloughs where pickleweed and cord grass are the dominant vegetation.	There are no known records for this species in the Study Area or surrounding areas; nearest CNDDDB record for this species occurs approximately 9.5 miles to the southeast near Point Mugu Naval Base.	Not Likely to Occur

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
				Suitable salt marsh habitat is not present in the Study Area. There is a single eBird record for this species approximately 2 miles west.	
<i>Riparia riparia</i> (nesting)	Bank swallow	ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, or the ocean to dig a nesting hole (USACE and CDFG, 2010).	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding and suitable foraging habitat occurs within portions of the Study Area. The CNDDDB reports a historic occurrence of this species approximately 2 miles downstream at the mouth of the Santa Clara River; there are multiple eBird records in this same general area.	Low
<i>Selasphorus sasin</i>	Allen's hummingbird	SA	Most commonly breeds in coastal scrub, valley-foothill hardwood, and valley-foothill riparian habitats; occurs in a variety of woodland and scrub habitat as a migrant.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat throughout the Study Area.	Present
<i>Setophaga petechial</i> (nesting)	Yellow warbler	CSC	Riparian plant associations; prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat occurs in the Study Area.	Present
<i>Setophaga occidentalis</i>	Hermit warbler	SA	Generally occurs in tall coniferous forests.	This species was documented immediately upstream of the Study Area during surveys conducted in 2013/14 and is assumed to be present in the Study Area as a migrant. The Study Area is outside the known breeding geographic distribution for this species; suitable foraging habitat occurs throughout the Study Area.	Present
<i>Vireo bellii pusillus</i> (nesting)	Least Bell's vireo	FE, SE, BCC	Summer resident of southern Calif. in low riparian habitats in vicinity of water or dry river bottoms; found below 2000 ft.; nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mesquite, <i>Baccharis</i> spp.	This species was detected during recent focused surveys in 2013 and 2015 as well as during general surveys in 2014. The Study Area is located within the known geographic breeding distribution for this subspecies; suitable habitat occurs throughout the Study Area.	Present
MAMMALS					
<i>Antrozous pallidus</i>	Pallid bat	CSC	Desert, grassland, shrubland, woodland, forest; most common in open, dry habitats with rocky areas for roosting; very sensitive to disturbance of roosting sites.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited roosting habitat is present in the Study Area. Suitable foraging habitat occurs throughout the Study Area. There is a historic CNDDDB record approximately 3 miles north.	Moderate

3.2
Biological Resources

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Bassariscus astutus</i>	Ringtail	CFP	Occurs in chaparral, coastal sage scrub, riparian scrub, oak woodlands, and riparian woodlands in proximity to permanent water.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; suitable habitat occurs throughout the Study Area.	Low
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	CSC	Variety of habitats, including coastal scrub, chaparral, and grassland; attracted to grass-chaparral edges.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable habitat occurs in discrete portions of the Study Area. The closest CNDDDB record for this species occurs approximately 8 miles north.	Moderate
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	CSC	Known in Calif. only from San Diego Co. and only as a summer resident. Calif. records largely have been in urban habitat in San Diego.	There are no known records for this species in the Study Area; the Study Area is outside the reported geographical distribution of this species. Suitable roosting habitat is present within many of the trees in the Study Area, should this species occur. The closest CNDDDB record for this species, from 1994, is approximately 4.5 miles north.	Low
<i>Euderma maculatum</i>	Spotted bat	CSC	Occupies a wide variety of habitats from arid deserts and grasslands, to mixed conifer forests; feeds over water and along washes; needs rock crevices in cliffs or caves for roosting (USACE and CDFG, 2010).	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding habitat may occur within the Study Area. Suitable foraging habitat occurs throughout the Study Area.	Moderate
<i>Eumops perotis californicus</i>	Western mastiff bat	CSC	Many open, semi-arid to arid habitats, including coniferous and deciduous woodland, coastal scrub, grassland, chaparral; roosts in crevices in cliff faces, high buildings, trees, tunnels.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species. Suitable roosting habitat is present within the Study Area. Suitable foraging habitat occurs throughout the Study Area. The CNDDDB reports a historic occurrence of this species approximately 7 miles north.	Moderate
<i>Lasiurus cinereus</i>	Hoary bat	SA	Prefers deciduous and coniferous woodlands; primarily roosts in tree foliage.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable roosting habitat is present within the Study Area; suitable foraging habitat occurs throughout the Study Area. The CNDDDB reports historic occurrences of this species approximately 16 miles north and 18 miles east.	Low
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	CSC	Intermediate canopy stages of shrub habitats and shrub, tree, herbaceous edges; primarily coastal sage scrub habitats.	Although not detected in the Study Area, this species is known from the Santa Clara River Valley. The Study Area is located within the known geographic distribution for this subspecies; suitable habitat is present throughout the Study Area.	High
<i>Macrotus californicus</i>	California leaf-nosed bat	CSC	Prefers caves, mines and rock shelters in Sonoran desert scrub.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species.	Low

Table 3.2-4. Known and Potential Occurrence of Special-Status Wildlife within the Study Area*					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
				Very limited suitable habitat may be present in the Study Area; suitable foraging habitat occurs throughout the Study Area.	
<i>Microtus californicus stephensi</i>	South coast marsh vole	CSC	Occurs in a narrow band of wetland communities and associated grasslands in the immediate coastal zone from southern Ventura Co. to northern Orange Co.	There are no known records for this species in the Study Area; the Study Area is just north of the known geographical distribution of this species. The closest CNDDDB record for this species is approximately 10 miles southeast from the Point Mugu Naval Base, the reported northern extent for this species.	Not Likely to Occur
<i>Myotis ciliolabrum</i>	Western small-footed myotis	SA	Occurs in a wide variety of arid upland habitats at elevations ranging from sea level to 2,700 meters (8,860 feet); day roosts include rock crevices, caves, tunnels and mines, and, sometimes, buildings and abandoned swallow nests. (CDFW, 2015e)	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable roosting habitat may be present in the Study; suitable foraging habitat occurs throughout the Study Area.	Low
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CSC	Coastal scrub; prefers moderate to dense canopies; particularly abundant in rock outcrops, rocky cliffs, and slopes.	Although not detected in the Study Area, this species is known from the Santa Clara River Valley. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within portions of the Study Area. The closest CNDDDB records for this species occur approximately 13 and 16 miles northwest.	Moderate
<i>Taxidea taxus</i>	American badger	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils; require sufficient food source, friable soils, and open, uncultivated ground; prey on burrowing rodents.	There are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species. Suitable habitat occurs within portions of the Study Area. The CNDDDB reports multiple occurrences of this species approximately 5 miles upstream in the Santa Paula area.	Moderate

Federal Rankings:

FE = Federally Endangered
 FT = Federally Threatened
 FC = Federal Candidate for Listing
 BCC = USFWS Bird of Conservation Concern

County Rankings:

VC = Ventura County Locally Important Species

Other Rankings:

ABC = American Bird Conservancy: U.S. Watch List of Birds of Conservation Concern (nesting)

State Rankings:

SE= State Endangered

ST = State Threatened

CFP = California Fully Protected

CPF = California Protected Fur-bearer

SA = CDFW Special Animal

WL = CDFW Watch List

CSC = California Species of Special Concern

* Species descriptions for taxa that are present or have a moderate or high potential to occur in the Study Area are located in Appendix B-6 of the EIR.

Wildlife Corridors and Linkages

The ability for wildlife to move freely among populations is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to individual animals' ability to occupy home ranges, if a species range extends across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

The majority of the length of the main stem of the Santa Clara River is connected by a nearly continuous strip of active channel. From east of Piru on downstream, riparian habitat and alluvial scrub habitats are distributed in various-sized patches that are, for the most part, only connected by the active channel. The active channel is a key corridor for aquatic and water-dependent species throughout the length of the river. Maintaining continuity of flows within the river is especially critical for fish species such as the southern steelhead. The river channel is also important in the dispersal of many amphibians and plant species. [VCWPD, 2009]

Although it has been fragmented by both natural and human processes and activities, the riparian vegetation along the river is an important corridor for movement of many species, especially birds. The habitats along the river are used by migratory birds moving up and down the Pacific coast during spring and fall migrations. More importantly, the riparian corridor functions as both habitat and a route for east/west dispersal for riparian breeding species such as the least Bell's vireo and southwester willow flycatcher. Local resident species, including raptors and large mammals, move up and down the river into adjacent uplands habitat along the riparian corridor. [VCWPD, 2009]

Ultimately, linkages and corridors facilitate regional animal movement. Corridors offer wildlife unobstructed terrain for foraging and for dispersal of young individuals. Riparian corridors like the Santa Clara River remain a common pathway utilized by many species because they typically provide cover, foraging opportunities, and water. However, as the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not restrict their movements to some obvious landscape element, such as a riparian corridor. For example, radio-tracking and tagging studies of newts, California red-legged frogs, and western pond turtles found that long-distance dispersal involved radial or perpendicular linear movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor," but towards suitable riparian or upland wintering habitat (Fellers and Kleeman, 2007; Semlitsch, 1998; Reese and Welsh, 1997). In general, the following corridor functions should be considered when evaluating impacts to wildlife movement corridors:

- a. **Movement corridors** are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits, but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- b. **Dispersal corridors** are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of

a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.

- c. **Habitat linkages** are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- d. **Travel routes** are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).
- e. **Wildlife crossings** are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are man-made and include culverts, underpasses, drainage pipes, bridges, and tunnels constructed to provide wildlife access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent “choke points” along a movement corridor because usable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

Considering smaller spatial scales or single habitat types, habitat fragmentation is no less important an issue. At these spatial scales, several studies have documented the negative effects on population structure, home range size, and genetic connectivity resulting from dirt roads, pipeline corridors, transmission line corridors, and other seemingly innocuous features traversing formerly undisturbed habitat (Mader, 1984; Swihart and Slade, 1984; Dunning et al., 1992).

3.2.2 Applicable Regulations, Plans, and Standards

3.2.2.1 Federal

Federal Endangered Species Act

Federal Endangered Species Act provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3).

Critical habitat is defined in Section 3(5)(A) of the ESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery

(i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. USFWS*. Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the Migratory Bird Treaty Act. The Federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for the Project. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protecting unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in the western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

Federally Regulated Habitats

Areas meeting the regulatory definition of “Waters of the U.S.” (Jurisdictional Waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act of 1972 (CWA) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate

waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The Study Area falls within the South Pacific Division of the USACE, and is under the jurisdiction of the Los Angeles District.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the Clean Water Act. As a part of the permit process the USACE works directly with the USFWS to assess potential Project impacts on biological resources.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and utilize public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans/documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 U.S.C. 4321- 4327) (40 CFR 1500-1508).

3.2.2.2 State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

California Endangered Species Act

Provisions of the California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code.

California Fully Protected Species and Species of Special Concern

The California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their

habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Native Plant Protection Act (Fish & Game Code 1900-1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Section 3503 & 3503.5 of the Fish and Game Code

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the Migratory Bird Treaty Act, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the Migratory Bird Treaty Act, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

Porter-Cologne Water Quality Control Act

Regional water quality control boards regulate the "discharge of waste" to "waters of the State." All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both of the terms "discharge of waste" and "waters of the State" are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other "discharge." Isolated wetlands within California, which are no longer considered "waters of the United States" as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

State-Regulated Habitats

The State Water Resources Control Board (SWRCB) is the State agency (together with the Regional Water Quality Control Boards [RWQCB]) charged with implementing water quality certification in California pursuant to Section 401 of the CWA. The Project falls under the jurisdiction of the Los Angeles (Region 4) RWQCB.

The CDFW extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered

streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW.

3.2.2.3 Local

County of Ventura General Plan

This plan sets forth goals and policies directed at recognizing the interdependence of all life forms and the ecological needs for a stable and well-balanced environment so that a healthy coexistence between human and natural biological communities can be assured.

Goal: Preserve and protect significant biological resources in Ventura County from incompatible land uses and development. Significant biological resources include endangered, threatened or rare species and their habitats, wetland habitats, coastal habitats, wildlife migration corridors and locally important species/communities.

1.5.2 Policies:

1. Discretionary development which could potentially impact biological resources shall be evaluated by a qualified biologist to assess impacts and, if necessary, develop mitigation measures.
2. Discretionary development shall be sited and designed to incorporate all feasible measures to mitigate any significant impacts to biological resources. If the impacts cannot be reduced to a less-than-significant level, findings of overriding considerations must be made by the decision-making body.
3. Discretionary development that is proposed to be located within 300 feet of a marsh, small wash, intermittent lake, intermittent stream, spring, or perennial stream (as identified on the latest USGS 7½ minute quad map), shall be evaluated by a County approved biologist for potential impacts on wetland habitats. Discretionary development that would have a significant impact on significant wetland habitats shall be prohibited, unless mitigation measures are adopted that would reduce the impact to a less-than-significant level; or for lands designated “Urban” or “Existing Community”, a statement of overriding considerations is adopted by the decision-making body.
4. Discretionary development shall be sited a minimum of 100 feet from significant wetland habitats to mitigate the potential impacts on said habitats. Buffer areas may be increased or decreased upon evaluation and recommendation by a qualified biologist and approval by the decision-making body. Factors to be used in determining adjustment of the 100 foot buffer include soil type, slope stability, drainage patterns, presence or absence of endangered, threatened or rare plants or animals, and compatibility of the proposed development with the wildlife use of the wetland habitat area. The requirement of a buffer (setback) shall not preclude the use of replacement as mitigation when there is no other feasible alternative to allowing a permitted use, and if the replacement results in no net loss of wetland habitat. Such replacement shall be “in kind” (i.e. same type and acreage), and provide wetland habitat of comparable biological value. On-site replacement shall be preferred wherever possible. The

replacement plan shall be developed in consultation with the California Department of Fish and Wildlife.

5. The California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, National Audubon Society and the California Native Plant Society shall be consulted when discretionary development may affect significant biological resources.
6. Based on the review and recommendation of a qualified biologist, the design of road and floodplain improvements shall incorporate all feasible measures to accommodate wildlife passage.

The Ventura County General Plan also identifies locally important species as significant biological resources to be protected from incompatible land uses and development (Goal 1.5.1). To ensure consistent identification of Locally Important Species, standard criteria for locally important plants and animals were established in the Biological Resources Section of the Initial Study Assessment Guidelines. The Planning Division also maintains a list of plants and animals that meet the criteria for Locally Important Species.

3.2.2.4 Other Applicable Regulations, Plans, and Standards

California Native Plant Society (CNPS) Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known)

3.2.3 Environmental Impacts and Mitigation Measures

Consistent with the requirements of CEQA, the significance of potential impacts is evaluated through the application of the significance criteria described in Section 3.2.3.1. The objective of the biological resources analysis is to identify potential adverse effects and significant impacts on biological resources. While avoidance is the preferred approach for the management of biological resources, it is not always possible to avoid impacts to biological resources. If impacts can be avoided through project design, establishment of exclusion zones, or other means, then specific mitigation measures may be unnecessary. However, appropriate mitigation measures to avoid or minimize impacts are identified including procedures if significant biological resources are discovered during construction or operation.

Construction of the proposed Project includes the raising of the existing levee, filling of the River Ridge Golf Course swale (Reach 2), and the construction of floodwalls (Reaches 3 and 4). The construction and maintenance of these structures include a number of impacts to biological resources. The specific impacts depend on the species, their habitat, hydrology, and other resources present at the Project site. The following discussion provides an overview of the direct, indirect, and operational impacts that are expected to occur with the construction and maintenance of the proposed Project.

The proposed Project includes two different options; both options will be analyzed as part of the EIR. Option 1B, the preferred option, reduces the extent of levee improvements. It includes an earthen raised levee within Reaches 1 and 3, filling of the River Ridge Golf Course Swale in Reach 2 (no levee improvements would occur in Reach 2), and a floodwall along N. Ventura Road within Reach 4. The second option, Option 1A, would include an earthen raised levee within Reach 1 and the majority of Reach 2, a floodwall in front of the River Ridge Golf Course maintenance facilities in Reach 2, an earthen raised levee within the entirety of Reach 3, and the same floodwall, described above under Option 1B, along N. Ventura Road within Reach 4. Option 1A does not include the filling of the River Ridge Golf Course Swale. For additional details on the proposed Project options refer to Sections 2.5.1 and 2.5.2 of the Project Description.

3.2.3.1 Criteria for Determining Impact Significance

Evaluating the significance of potential impacts to biological resources depends on characterizing existing conditions at the Project site and determining the direct and indirect effects to target species and their habitats. An impact that results in the long-term loss or degradation of sensitive habitat, or that adversely affects the population of a special-status species is generally considered significant.

The level of significance of impacts to biological resources is based on Appendix G of the State CEQA Guidelines, which states that a proposed project would have a significant impact on the environment if it exceeds one or more of the following thresholds:

- Conflicts with adopted local, regional, State, or federal environmental plans and goals of the community where it is located;
- Substantially affects a rare or endangered species of animal or plant, or the habitat of such species;
- Interferes substantially with the movement of any native resident or migratory fish or wildlife species; or
- Substantially diminishes habitat for fish, wildlife, or plants.

Impacts are classified as unavoidable and significant, not significant with mitigation incorporated, not significant, or no impact, depending on the size, type, and timing of the impact and the biological resources involved. Disturbance of habitats and/or species is considered significant if it affects biological resources in the following ways:

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- Substantially reduces or eliminates species diversity or abundance;
- Substantially reduces or eliminates quantity or quality of nesting areas;
- Substantially limits reproductive capacity through loss of individuals or habitat;
- Substantially fragments, eliminates, or otherwise disrupts foraging areas and/or access to food sources;
- Substantially limits or fragments the geographic range or dispersal routes of species; or
- Substantially interferes with natural processes, such as fire or flooding, upon which the habitat depends.

The Ventura County impact threshold criteria for species (Ventura County, 2011) further states that a direct or indirect physical impact would occur if a project would directly or indirectly:

- Reduce a species' population,
- Reduce a species' habitat,
- Increase habitat fragmentation, or
- Restrict reproductive capacity.

Additionally, the following types of impacts to plant and animal species or their habitats are considered potentially significant:

- Loss of one or more individuals, occupied habitat or Critical Habitat designated by the U.S. Fish and Wildlife Service of a species officially listed as Endangered, Threatened or Rare under the federal Endangered Species Act (Title 50, Code of Federal Regulations Sections 17.11 or 17.12) or California Endangered Species Act (Sections 670.2 or 670.5, Title 14, California Code of Regulations), a *Candidate Species*, or a *California Fully Protected Species*.
- Impacts that would eliminate or threaten to eliminate one or more *element occurrences* of a special-status species not otherwise listed under the federal Endangered Species Act or California Endangered Species Act, or a *Candidate Species*, or *California Fully Protected Species*.
- Impacts that would threaten the viability of a habitat that sustains a population of a special-status species.
- Impacts that would restrict the reproductive capacity of a special-status species.
- Take of birds protected under the California Fish and Game Code (Sections 3503.5, 3511, and 3513) and the federal Migratory Bird Treaty Act (MBTA), where take is defined in the Fish and Game Code and MBTA.
- Increases in noise and/or nighttime lighting to a level above ambient levels that would adversely affect a special-status species.
- Increases in human access, predation or competition from domestic animals, pests or exotic species, or other indirect impacts, to levels that would adversely affect special-status species.
- Impacts severe enough to substantially reduce the habitat of a wildlife species or cause a wildlife population to decline substantially or drop below self-sustaining levels, pursuant to Section 15065 of the CEQA Guidelines, Mandatory Findings of Significance.

Impacts to biological resources would not be considered significant if there is little or no importance to a given habitat or if disturbance would not create a significant impact to habitats or species.

The following types of impacts to ecological communities are considered potentially significant:

Sensitive Plant Communities

- Construction, grading, clearing, or other activities that would temporarily or permanently remove sensitive plant communities. Temporary impacts to sensitive plant communities would be considered significant unless the sensitive plant community is restored once the temporary impact is complete.
- Indirect impacts resulting from project operation at levels that would degrade the health of a sensitive plant community.

Waters and Wetlands

- Removal of vegetation; grading; obstruction or diversion of water flow; change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; and/or any disturbance of the substratum.
- Disruptions to wetland or riparian plant communities that would isolate or substantially interrupt contiguous habitats, block seed dispersal routes, or increase vulnerability of wetland species to exotic weed invasion or local extirpation. An example would be disruption of adjacent upland vegetation to a level that would adversely affect the ecological function of the wetland, such as where such vegetation play a critical role in supporting riparian-dependent wildlife species (e.g., amphibians), or where such vegetation aids in stabilizing steep slopes adjacent to the riparian habitat, which reduces erosion and sedimentation potential.
- Interference with ongoing maintenance of hydrological conditions in a water or wetland. The hydrology of wetlands systems must be maintained if their functions and values are to be preserved. Adverse hydrological changes might include altered freshwater input; changes in the watershed area or run-off quantity, quality or velocity; drawing down of the groundwater table to the detriment of groundwater-dependent habitat; substantial increases in sedimentation; introduction of toxic elements or alteration of ambient water temperature.
- The project does not provide an adequate buffer for protecting the functions and values of existing waters or wetlands. The buffer is measured from the top-of-bank or edge of wetland or riparian habitat, whichever is greater. Ventura County General Plan Policy 1.5.2-4 requires a minimum buffer of 100 feet from significant wetland habitat. In accordance with this policy, buffer areas may be increased or decreased upon evaluation and recommendation by a qualified biologist and approval by the decision-making body. Factors to be used in determining adjustment of the 100 foot buffer include soil type, slope stability, drainage patterns, presence or absence of endangered, threatened, or rare plants or animals, and compatibility of the proposed development with the wildlife use of the wetland habitat area.

Environmentally Sensitive Habitat Areas (ESHA - Applies to Coastal Zone Only)

- Construction, grading, clearing, or other activities and uses that would temporarily or permanently remove ESHA or disturb ESHA buffers. (ESHA buffers are within 100 feet of the boundary of ESHA as defined in Section 8172-1 of the Coastal Zoning Ordinance).
- Indirect impacts resulting from project operation at levels that would degrade the health of an ESHA.

3.2.3.2 Direct and Potential Indirect Impacts

CEQA defines direct impacts as those impacts that result from a project and occur at the same time and place. These include but are not limited to the removal of vegetation and disturbance to wildlife from construction activities. Indirect impacts are caused by a project, but can occur later in time or are farther removed in distance while still reasonably foreseeable and related to the project. Indirect impacts can include the disruption of the native seed bank, the spread of invasive plant species, the disruption of

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prey base, or increased predation through alterations of the physical landscape from project features (i.e., increased levee tops and floodwalls) that provide perch sites or shelter for predators. Indirect impacts may also include increased traffic and human disturbance related to maintenance of the new structures. General impacts to plants and wildlife are summarized in Table 3.2-5.

Activity	Impacts
Earth moving, grading, habitat/vegetation removal	<ul style="list-style-type: none"> • Direct mortality to plants and small or less mobile species • Crushing of burrows or fossorial animals, disruption of soil surfaces, compaction of soils, and displacement of native species • Reduced use of area as a foraging or movement corridor • Fugitive dust and habitat loss • Creation of barriers disrupting movement • Displacement of breeding birds and the abandonment of active nests (during breeding season) • Loss of eggs and nestlings including ground nesting birds • Loss of foraging habitat • Brush fires • Spread of exotic weeds
Noise and vibration	<ul style="list-style-type: none"> • Interference with breeding or foraging activities and movement patterns • Avoidance of areas during construction • Interference with hearing resulting in increased predation • Abandonment of burrows or habitat
Man-made sources of light	<ul style="list-style-type: none"> • Disturbance or mortality to species that prey on insects attracted to light sources • Collisions with vehicles at night
Access roads	<ul style="list-style-type: none"> • Crushing of burrows, disruption of soil surfaces, compaction of soils, and displacement of native species • Establishment of ruts or depressions that can alter soil conditions and hydrology • Alteration of physical characteristics of soil underneath roads (placement of roads increases compaction up to 200 times relative to undisturbed sites) • Effect on animal behavior by altering home range use, affecting movement patterns, reducing reproductive success, altering escape response, and increasing physiological stress
Traffic	<ul style="list-style-type: none"> • Accidental mortality of small diurnal animals from vehicle collision • Secondary vehicular mortality of opportunistic predators feeding on road kill
Waste	<ul style="list-style-type: none"> • Ingestion of microtrash (i.e., broken glass, paper and plastic waste, and small pieces of metal) or ethylene glycol antifreeze (particularly California condors)

Project impacts are generally considered permanent if they involve the conversion of land to a new use, such as with the construction of new roads, filling of swales, and installation of floodwalls. Temporary impacts are usually considered to be those activities that are of short duration (i.e., six to 12 months) and that do not result in a permanent land use conversion. Temporary project impacts are those effects that include ground disturbance activities restricted solely to the construction phase, such as trimming of vegetation, grading of temporary roads and clearing vegetation within staging areas. These effects would be considered temporary provided the areas are subject to restoration at the conclusion of construction. Noise, human disturbance, vehicle traffic, and construction activities are also considered temporary impacts.

Construction of the proposed Project would occur for a period of approximately 27 months. This time frame exceeds the typical definition of temporary impacts as it relates to certain species of plants or wildlife. For example, construction activity that results in repeated disturbance to an area for a period of over two years could result in permanent effects to plants or wildlife that are fragile, short lived, or have unique dispersal or nesting requirements.

Operational impacts include both direct and potential indirect impacts to biological resources. Ongoing O&M impacts would occur during routine inspection and maintenance of levee and floodwalls and would include such activities as routine inspection of Project-related facilities and emergency repairs. Operational impacts would also include weed abatement and vegetation management activities including but not limited to mechanical removal or mowing, hand removal, or herbicide treatment. These impacts would remain an ongoing source of disturbance for many plants and wildlife species that occur.

Sensitive Vegetation Communities

Impact BIO-1: The Project would result in temporary and permanent losses of native vegetation.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Construction of Option 1B would result in 7.91 acres of permanent and 6.85 acres of temporary disturbance to land cover types and vegetation communities including developed areas, maintained landscape, ruderal areas, eucalyptus groves, arroyo willow thickets, mulefat thickets, giant reed breaks, Fremont cottonwood forest, quailbush scrub, myoporum stands, coyote brush scrub, and vegetation management zone, listed from highest to lowest combined acreage(see Figure 3.2-2 and Table 3.2-6); the majority of Project-related impacts (permanent and temporary) would occur within developed areas on the land side of the levee away from the Santa Clara River. Impacts would include a total of 0.51 acres of permanent and 0.47 acres of temporary impacts to native vegetation. Impacts to native vegetation would largely be related to the construction of the flood wall in Reach 4, and to a lesser extent the levee modifications in Reaches 1 and 3. Listed from highest to lowest acreage, native communities impacted include arroyo willow thickets, mulefat thickets, Fremont cottonwood forest, quailbush scrub, coyote brush scrub, and California sagebrush scrub. Vehicle access and staging for the Project would occur on existing levee roads, developed lands, ruderal habitats, or landscaped areas.

Vegetation Communities	Approximate Acres [∞]	
	Permanent	Temporary
Arroyo willow thickets*	0.33	0.11
California sagebrush scrub	0.00	0.02
Coyote brush scrub	0.01	0.06
Eucalyptus groves	0.54	0.43
Fremont cottonwood forest*	0.04	0.10
Giant reed breaks	0.09	0.06
Mulefat Thicket†	0.03	0.17
Myoporum stands	0.08	0.17
Quailbush scrub	0.11	0.02
Land Cover Types		
Developed	4.21	3.82
Maintained landscape	1.98	0.67
Vegetation Management Zone	0.00	0.01
Ruderal	0.51	1.22
Total	7.91	6.85

* Generally meet the habitat requirements of southern cottonwood willow riparian forest, a community considered sensitive by the CDFW.

† Generally meets the requirements of southern riparian scrub, a community considered sensitive by the CDFW.

∞ Includes acreages for the impacts related to all reaches (Reaches 1- 4)

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The construction of Option 1B would involve the raising of the levee in the western extent of the Project (Reach 1) and within the majority of Reach 3. Within Reaches 1 and 3, to raise the levee, approximately 6,090 CY of the existing levee material would be excavated to prepare the foundation. All excavation and levee raising activities within Reaches 1-3 would occur primarily on the top and the land side of the existing levee away from the Santa Clara River. In Reaches 1-3, rock riprap would be placed on the river face of the new levee top, and vegetation thinning would occur from the new levee top down the river face 20 feet; the remainder of the river face down to the levee toe would be preserved in its current condition. In preparation for the construction of the floodwall in Reach 4, approximately 1,700 CY of exposed and buried riprap would be removed; portions of the buried riprap are vegetated.

Riparian habitats, including ephemeral and perennial streams, are biologically productive and diverse, and are the exclusive habitat of several threatened or endangered wildlife species and many other special-status species. Riparian and wetland habitats are highly productive ecosystems that also provide drinking water sources and foraging, nesting, and cover habitat for a diverse assemblage of wildlife species, both within the riparian habitats and adjacent upland habitats. Many wildlife species are wholly dependent on riparian habitats throughout their life cycles, and many others use riparian habitats only during certain seasons or life history phases. For example, certain mammals require drinking water or cool shaded cover during summer but otherwise may live in upland habitats. Numerous amphibians breed in aquatic habitats but spend most of their lives in uplands.

In an otherwise arid landscape, primary productivity in riparian habitats is high due to year-round soil moisture. High plant productivity leads to increased habitat structural diversity and high food availability for herbivorous and (in turn) predatory animals. Insect productivity is also high, among both aquatic and terrestrial species. Insect numbers are very high during warm months, and serve as a prey base for a diverse breeding bird fauna, including several special-status birds. Habitat structure in riparian vegetation is also more diverse than in most regional uplands. Riparian woodlands tend to have multiple-layered herb, shrub and tree canopies, whereas most upland shrublands are relatively simple in structure. The varied vertical habitat structure provides a greater diversity of nesting and feeding sites for birds compared with non-riparian communities. Similarly, mammal diversity is greater in riparian communities due to high biological productivity, denning site availability, thermal cover, and water availability.

Direct and potential indirect impacts to native vegetation would occur as described above in Table 3.2-5 (Construction and Operational Impacts to Plants and Wildlife). Construction of the proposed Project would remove vegetation, alter soil conditions, and result in the loss of native seed banks within a small portion of the Study Area. Construction activities could also result in the spread of noxious weeds within the proposed Project site and adjacent habitats. Removal of the existing levee materials and associated vehicle travel on the levee roads and other paved streets could result in increased fugitive dust to native vegetation in adjacent areas. Wind-blown dust can degrade soils and vegetation over a wide area (Okin et al., 2001). Dust can have deleterious physiological effects on plants and may affect their productivity and nutritional qualities (Sharifi et al., 1997). Fugitive dust can kill plants by burial and abrasion, interrupt natural processes of nutrient accumulation, and allow the loss of soil resources. The destruction of plants and soil crusts by windblown dust exacerbates the erodibility of soil and accelerates the loss of nutrients (Okin et al., 2001).

Operational impacts would be similar to those currently underway for the existing levee and would occur during routine inspection and maintenance of the levee. These impacts could include trampling or crushing of native vegetation by foot traffic, alterations in topography and hydrology, increased erosion and sedimentation, and the introduction of non-native, invasive plants due to increased human

presence on foot or equipment. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the proposed Project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. These BMPs address stabilizing exposed soil (BMP 26), non-native vegetation removal (BMPs 9 and 23), and preventing dust emissions (BMP 24).

In arid regions such as Southern California, riparian habitats play a particularly crucial role in maintaining biodiversity because up to 80 percent of vertebrate species rely on them for at least part of their lifecycle (Knopf et al., 1988) and because of the central role riparian habitats play in a variety of ecological functions (Rottenborn, 1999; Fischer and Fischenich, 2000). Within the region, large areas of riparian habitat have been lost to development.

Along the 2.0-mile SCR-3 Project length, and within the 198.62-acre Study Area, Option 1B would permanently affect 0.51 acre and temporarily affect 0.48 acre of native habitat. Of these impacts, 0.39 acre and 0.38 acre of permanent and temporary impact, respectively, would occur in riparian habitat. Because of their suitability to support several special-status species, the loss of this habitat associated with Option 1B would be considered a significant adverse impact for which mitigation would be required (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

Construction of Option 1A would result in 12.43 acres of permanent and 7.39 acres of temporary disturbance to vegetation communities and land cover types including arroyo willow thickets, coyote brush scrub, eucalyptus groves, developed areas, and maintained landscape (see Figure 3.2-2 and Table 3.2-7); the majority of Project-related impacts (permanent and temporary) would occur within developed areas on the land side of the existing levee away from the Santa Clara River. Impacts would include a total of 0.91 acres of permanent and 0.95 acres of temporary impacts to native vegetation. Impacts to native vegetation would largely be limited to the construction of the flood wall in Reach 4 and the raising of the levee in Reaches 1-3; listed from highest to lowest acreage, native communities impacted include mulefat thickets, arroyo willow scrub, coyote brush scrub, Fremont cottonwood forest, quailbush scrub, black cottonwood forest, and California sagebrush scrub.

Option 1A proposes to raise the levee within the majority of Reaches 1-3. A floodwall would be

Table 3.2-7. Vegetation Community and Land Cover Acreages within Option 1A

Vegetation Communities	Approximate Acres [∞]	
	Permanent	Temporary
Arroyo willow thickets [†]	0.40	0.17
Black cottonwood forest [*]	0.08	0.00
California sagebrush scrub	0.05	0.02
Coyote brush scrub	0.11	0.06
Eucalyptus groves	0.40	0.28
Fremont cottonwood forest [*]	0.04	0.10
Giant reed breaks	0.11	0.06
Mulefat Thicket [†]	0.13	0.58
Myoporum stands	0.04	0.14
Quailbush scrub	0.11	0.02
Land Cover Types		
Developed	10.08	4.63
Maintained landscape	0.38	0.18
Ruderal	0.52	1.14
Vegetation management zone	0.00	0.01
Total	12.43	7.39

* Generally meet the habitat requirements of southern cottonwood willow riparian forest, a community considered sensitive by the CDFW.

† Generally meets the requirements of southern riparian scrub, a community considered sensitive by the CDFW.

∞ Includes acreages for the impacts related to all reaches (Reaches 1- 4).

installed over approximately 375 feet adjacent to the River Ridge Golf Course maintenance yard and along 400 feet of the eastern extent of Reach 3. To raise the levee, approximately 28,500 cubic yards (CY) of the existing levee material would be excavated to prepare the foundation, along with removal of general debris, vegetation and abandoned facilities. All excavation and levee raising activities within Reaches 1-3 would occur primarily on the top and the land side of the existing levee away from the Santa Clara River. In Reaches 1-3, rock riprap would be placed on the river face of the new levee top, and vegetation thinning would occur from the new levee top down the river face 20 feet; the remainder of the river face down to the levee toe would be preserved in its current condition. Construction of the floodwall in Reach 4 would be the same as described under Option 1B.

Direct, potential indirect, and operational impacts to native vegetation would be the same as described above under Option 1B. Along the 2.0-mile SCR-3 Project length, within the 198.62-acre Study Area, Option 1A would permanently affect 0.91 acre and temporarily affect 0.95 acre of native habitat. Of these impacts, 0.64 acre and 0.85 acre of permanent and temporary impact, respectively, would occur in riparian habitat. The loss of riparian habitat associated with Option 1A would be considered a significant adverse impact for which mitigation would be required (Class II).

Mitigation Measures

Implementation of Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), and BIO-1e (*Implement Biological Construction Monitoring*), presented below, would minimize impacts to sensitive vegetation communities. These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts, development of a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities. As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed below in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to sensitive vegetation communities to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program. Prior to any Project activities on the site (i.e., surveying, mobilization, fencing, grading, or construction), a Worker Environmental Education Program (WEEP) shall be prepared and implemented by a qualified biologist(s). The WEEP shall be finalized and administered prior to construction mobilization, and implemented throughout the duration of the construction activities, such as when new contractor employees or subcontractors begin working on site.

- The WEEP shall include, at a minimum, the following items:
 - Training materials and briefings shall include but not be limited to: a discussion of the Federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event wildlife needs to be relocated or dead or injured wildlife is discovered; and a review of mitigation requirements.

- A discussion of measures to be implemented for avoidance of the sensitive resources discussed above and the identification of an onsite contact in the event of the discovery of sensitive species on the site; this shall include a discussion on microtrash.
 - Protocols to be followed when road kill is encountered in the work area or along access roads and the identification of an onsite representative to whom the road kill will be reported. Road kill shall be reported to the appropriate local animal control agency within 24 hours.
 - Maps showing the known locations of special-status wildlife, populations of rare plants and sensitive vegetation communities, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations (e.g. limited operating periods, etc.). These features shall be included on the Project plans and specifications drawings.
 - Literature and photographs or illustrations of potentially occurring special-status plant and/or wildlife species shall be provided to all Project contractors and heavy equipment operators.
- Evidence that all onsite construction and security personnel have completed the WEEP prior to the start of site mobilization. A special hardhat sticker or wallet size card shall be issued to all personnel completing the training, which shall be carried with the trained personnel at all times while on the Project site. All new personnel shall receive this training and may work in the field for no more than 5 days without participating in the WEEP, accompanied by staff that has undergone the training. A log of all personnel who have completed the WEEP training shall be kept on site.
 - The contract specification books shall include all Project conditions as they relate to biological resources and shall be kept on site at all times (e.g., in the break room, construction foreman's vehicle, construction trailer, etc.) for the duration of the construction. This information shall be easily accessible for personnel in all active work areas.
 - Develop a standalone version of the WEEP, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations.
 - An environmental monitor shall be retained during construction of the proposed Project and shall be directly involved with the implementation and enforcement of the WEEP. A log of all personnel who have completed the WEEP training shall be kept on site.

BIO-1b **Implement Best Management Practices (BMPs).** BMPs shall be implemented as standard operating procedures during all ground disturbance and construction-related activities to avoid or minimize Project impacts on biological resources. These BMPs shall include, but are not limited to, the following:

- Compliance with BMPs shall be documented and provided in a written report upon conclusion of construction activities. The report shall include a summary of the construction activities completed, a review of the sensitive plants and wildlife encountered, a list of compliance actions and any remedial actions taken to correct the actions, and the status of ongoing mitigation efforts.
- Prior to ground disturbance of any kind, the Project work areas shall be clearly delineated by stakes, flags, or other clearly identifiable system.

- Vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- Speed limit signs, imposing a speed limit of 15 miles per hour, shall be installed throughout the Project site prior to initiation of site disturbance and/or construction. To minimize disturbance of areas outside of the construction zone, all Project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas shall be included in pre-construction surveys and to the extent possible, be established in locations disturbed by previous activities or within designated permanent impact areas to prevent further impacts. Off-road traffic outside of designated Project areas shall be prohibited.
- No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Spill kits shall be maintained on site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven and/or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of materials.
- All general trash, food-related trash items (e.g., wrappers, cans, bottles, food scraps, cigarettes, etc.) and other human-generated debris shall be stored in animal proof containers and/or removed from the site each day. No deliberate feeding of wildlife shall be allowed.
- All pipes and culverts removed from the existing levee (that remain on-site after removal) or brought on-site as part of new construction, with a diameter of greater than 4 inches, shall be capped or taped closed. Prior to capping or taping the pipe/culvert shall be inspected for the presence of wildlife by a qualified biologist. If encountered, wildlife shall be allowed to escape unimpeded.
- No firearms shall be allowed on the Project site, unless otherwise approved for security personnel.
- To prevent harassment or mortality of listed, special-status species and common wildlife, or destruction of their habitats, no domesticated animals of any kind shall be permitted in any Project area with the exception of sheep grazing for weed management.
- Use of chemicals, fuels, lubricants, or biocides shall be in compliance with all local, state and federal regulations, and shall include secondary containment. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation, as well as additional Project-related restrictions deemed necessary by the USFWS and CDFW. Use of rodenticides is restricted as described in the existing VCWPD Integrated Pest Management Program.
- Any contractor or employee that inadvertently kills or injures a special-status animal, or finds one either dead, injured, or entrapped, shall immediately report the incident to the onsite representative identified in the WEEP. The representative shall contact the USFWS, CDFW, and VCWPD by telephone by the end of the day, or at the beginning of the next working day if the agency office is closed. In addition, formal notification shall be provided in writing within three working days of the incident or finding. Notification shall include the date, time, location and circumstances of the incident. Any threatened or endangered species found dead or injured shall be turned over immediately to CDFW or USFWS for care, analysis, or disposition.

- Avoidance of vegetation removal or any other construction activities outside of the proposed Project boundaries. All Project impact areas must be clearly flagged prior to initiating work. In areas of temporary impacts, native vegetation shall be cut to ground level and the root system left intact to permit resprouting following work. All non-native vegetation within the temporary impact area shall be removed initially, and any regrowth eliminated throughout construction, the habitat restoration period (see BIO-1c), and during the O&M phase.
- Avoidance and minimization of construction activities resulting in impacts to streambeds and banks of any ephemeral drainage.
- All excavation, steep-walled holes or trenches in excess of 6 inches in depth shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth dirt fill or wooden planks. Trenches shall also be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered shall be allowed to escape before construction activities are allowed to resume, or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).

BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.** To compensate for temporary impacts to sensitive vegetation communities within the proposed Project construction footprint, the VCWPD shall restore all temporary impact areas south of the existing levee in Reaches 1 – 3 and north of the floodwall in Reach 4. The intent of this mitigation measure is for VCWPD to restore temporarily disturbed areas to pre-construction conditions, or better, for arroyo willow and mulefat thickets, Fremont and black cottonwood forest, and coyote brush, sagebrush, and quailbush scrub habitats.

The plans and specifications for the proposed Project shall include, at a minimum, the following items:

- Engineering drawings depicting locations and vegetation types within the temporary disturbance areas immediately prior to Project implementation.
- Description of site preparation work, such as scarification of compacted soils, removal of debris, minor grading for proper drainage, etc.
- The plant species, quantities, and type of stock (e.g. container size, seed) for each of the vegetation communities. Seed and source material will be from genetic stock appropriate to the lower Santa Clara River watershed, if available.
- A description of planting methods for all materials.
- Detailed irrigation system plans and specifications, with criteria for soil moisture conditions to be maintained throughout the plant establishment period.
- Erosion controls and other best management practices for all restoration work.
- Methods for non-native species control and herbivory control.
- Detailed schedule of actions for the 5 year mitigation period.

The temporary impact areas shall be revegetated to 50 percent of their pre-construction cover and diversity values within three (3) years, and 90 percent within 5 years. The VCWPD shall conduct quantitative vegetation community characterization studies prior to construction, to establish the target values for years 3 and 5. These studies shall be

conducted by qualified biologists knowledgeable in the area of habitat restoration specific to the on-site vegetation communities.

Qualified biologist(s) shall conduct monitoring within the on-site vegetation communities during the restoration period. Monitoring shall include, at a minimum:

- **Qualitative Monitoring** – Qualitative monitoring surveys will be performed monthly in all restored/revegetated areas for the first year following planting in any phase of the Project. Qualitative monitoring will be on a quarterly schedule thereafter, until final completion and approval by the appropriate regulatory agencies. Qualitative surveys will assess native plant species performance, including growth and survival, germination success, reproduction, and plant fitness and health as well as pest or invasive plant problems. The monitoring reports will describe site progress toward achieving success criteria, conditions, and all observations pertinent to eventual success, and make recommendations as appropriate regarding remedial work, maintenance, etc. Qualitative monitoring will also include noting wildlife species present (or sign) during each of the monitoring visits.
- **Quantitative Monitoring** – Quantitative monitoring will occur annually for years one to five or until the success criteria are met. The biologist(s) will collect data using standard scientific methods to estimate cover and density of each plant species within the revegetated areas. These data will describe native species growth performance, native and non-native species coverage, seed mix germination, native species recruitment and reproduction, and species diversity. Based on these results, the biologist(s) will make recommendations for maintenance or remedial work on the site.

Reporting – Reporting will comprise annual progress reports prepared by the biologist(s) summarizing the qualitative and quantitative data collected, and recommended or conducted remedial measures to ensure compliance with success criteria. Reports will include aerial photo maps showing restoration areas, transect locations, and photo documentation locations, an explanation of the methods used to perform the work, including the number of acres treated for removal of non-native plants, and any other pertinent information. Reports will be sent to each of the appropriate regulatory agencies (i.e., USACE, CDFW, USFWS) until the established success criteria have been met.

BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. To compensate for permanent impacts to sensitive vegetation communities within the construction footprint of the Project, the VCWPD shall enhance similar habitats in the vicinity of the Project. Enhancement includes removing non-native species and increasing native plant cover. The enhancement mitigation ratios for permanent impacts are 3:1 for arroyo willow and mule fat thickets, as well as Fremont and black cottonwood forest; a ratio of 1:1 shall be applied to coyote brush, California sagebrush, and quailbush scrub habitats.

The VCWPD shall conduct enhancement on lands protected by a conservation easement or other legal instrument ensuring the lands will remain in natural open space in perpetuity. The lands shall also have long-term maintenance and management by a conservation entity. Ideally, the enhanced lands will be near or part of larger blocks of lands also protected in perpetuity, have low level recreational use, be outside of the five-year storm flow limits, and free of hazardous materials and wastes.

Prior to the removal of any vegetation on the Project site, the VCWPD shall develop plans and specifications to enhance the required vegetation communities on lands described above.

Enhancement shall begin within 90 days of the initiation of Project construction, or September 16th following bird nesting season if the 90 day period falls between March 1 and September 15th. The plans and specifications for the proposed Project shall be reviewed by a qualified restoration biologist.

The plans and specifications shall include, at a minimum, the following items:

- Engineering drawings depicting locations and vegetation types targeted for enhancement.
- Description of site access, staging areas, and any preparation work, such as fencing/signage and removal of debris.
- Non-native plant and animal removal methods and materials, and herbivory control.
- The plant species, quantities, and type of stock (e.g. container size, seed) for each of the vegetation communities which may need planting following non-native species removal. Seed and source material will be from genetic stock appropriate to the lower Santa Clara River watershed, if available.
- A description of planting methods for all materials.
- Detailed irrigation system plans and specifications, with criteria for soil moisture conditions to be maintained throughout the plant establishment period.
- Erosion controls and other best management practices for all restoration work.
- Detailed schedule for the 5-year enhancement period.

The enhancement areas shall be revegetated to 50 percent of their target cover and diversity values within three (3) years, and 90 percent within 5 years. The VCWPD shall conduct quantitative vegetation community characterization studies prior to enhancement in nearby reference habitat areas to establish the target values for years 3 and 5. These studies shall be conducted by qualified biologists knowledgeable in the area of habitat restoration specific to the on-site vegetation communities.

Qualified biologist(s) shall conduct monitoring within the enhancement areas during the mitigation period. Monitoring shall include, at a minimum:

- Qualitative Monitoring – Qualitative monitoring surveys will be performed monthly in all enhancement areas for the first year, and on a quarterly schedule thereafter, until final completion and approval by the appropriate regulatory agencies. Qualitative surveys will assess native plant species cover, and plant fitness and health, as well as pest or invasive plant problems. The monitoring reports will describe site progress toward achieving success criteria, vegetation conditions, and all observations pertinent to eventual success, and make recommendations as appropriate regarding remedial work, maintenance, etc. Qualitative monitoring will also include noting wildlife species present (or sign) during each of the monitoring visits.
- Quantitative Monitoring – Quantitative monitoring will occur annually for years one to five or until the success criteria are met. The biologist(s) will collect data using standard scientific methods to estimate cover and density of each plant species within the enhancement areas. These data will describe native species growth performance, native and non-native species cover, native species recruitment and reproduction, and species diversity. Based on these results, the biologist(s) will make recommendations for maintenance or remedial work within the enhancement areas.

- Reporting – Reporting will comprise annual progress reports prepared by the biologist(s) summarizing the qualitative and quantitative data collected, and recommended or conducted remedial measures to ensure compliance with success criteria. Reports will include aerial maps showing restoration areas, transect locations, and photo documentation locations, an explanation of the methods used to perform the work, including the number of acres treated for removal of non-native plants, and any other pertinent information. Reports will be sent to each of the appropriate regulatory agencies (i.e., USACE, CDFW, USFWS) until the established success criteria have been met.

BIO-1e Implement Biological Construction Monitoring. Prior to the commencement of ground disturbance or site mobilization activities, the VCWPD shall retain a qualified biologist(s) to monitor Project construction. The biologist will have demonstrated expertise with special-status plants, terrestrial mammals, reptiles, and birds. Monitoring will occur continuously during initial ground disturbance for each phase of construction. Once initial ground disturbance is complete, monitoring will occur periodically during all construction activities. The qualified biologist(s) shall be present at all times during ground-disturbing activities immediately adjacent to, or within, habitat that supports populations of listed or special-status species. Any special-status plants shall be flagged for avoidance. Any special-status terrestrial species found within a Project impact area shall be relocated by the authorized biologist to suitable habitat outside the impact area. Surveys for special-status species shall be conducted by the authorized biologist prior to the initiation of construction each day during initial ground disturbance, and weekly thereafter. If nesting birds are found during the pre-construction surveys, buffers shall be installed (as prescribed in Mitigation Measure BIO-3 [*Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures*]) discussed below.

If, during construction, the biological monitor observes a dead or injured special-status wildlife species on the construction site, a written report shall be sent to the VCWPD, CDFW, and USFWS (as appropriate) within five calendar days. The report will include the date, time of the finding or incident (if known), and location of the carcass or injured animal and circumstances of its death or injury (if known). Injured animals will be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility. The biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures shall be included with the report. Species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, as appropriate, shall be contacted regarding ultimate disposal of the remains.

Sensitive Wildlife Species

Impact BIO-2: The Project would cause the loss of foraging habitat for wildlife.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

The Santa Clara River supports a broad diversity of both common and sensitive wildlife, many of which use the riparian and upland habitats within and adjacent to Option 1B for foraging and other life history requirements including breeding, movement, and refugia. Existing conditions within the Option 1B footprint provide a relatively low habitat value for the majority of species occurring in the general area. Approximately 86 percent of the habitats mapped within permanent impact areas of the Option 1B

footprint are developed lands, ruderal areas, or maintained landscape. For many common species including rabbits, ground squirrels, and some birds, the Project would not lead to a substantial loss of foraging habitat. The heightened levee and floodwalls may actually provide additional perches, refugia, and increased access to some prey, for species such as Cooper's hawks and kestrels.

Direct impacts from the Project would include permanent and temporary disturbance of vegetation communities and land cover types (i.e., ruderal areas) utilized as foraging habitat for common and sensitive wildlife. Potential indirect impacts could include alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, increased noise levels from construction activities, and the establishment of noxious weeds.

Operational impacts include increased human presence and the spread of noxious weeds due to use of new or improved access roads. O&M activities would include removal of non-native plants from the vegetation thinning area on the upper 20 feet of the river-side levee face, from the land-side levee face to the toe, and from access roads. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed when removing non-native plants (BMPs 9 and 23) and surveys for nesting habitat (BMP 4) prior to routine maintenance work.

Approximately 84 percent of permanent impacts resulting from the construction of Option 1B would occur in habitats mapped as developed lands, ruderal areas, or maintained landscape. The loss of foraging habitat for wildlife resulting from the construction of Option 1B would not be considered significant (Class III).

Option 1A – Full Levee System with Reach 4 Floodwall

Direct, potential indirect, and operational impacts causing the loss of foraging habitat for wildlife resulting from the construction of Option 1A would be similar to those for Option 1B. However, the construction of Option 1A would result in additional permanent (12.43 acres vs 7.91 acres) and similar temporary (7.39 acres vs 6.85 acres) impacts to vegetation communities and land cover types. Approximately 85 percent of permanent impacts resulting from the construction of Option 1A would occur in habitats mapped as developed lands, ruderal areas, or maintained landscape. The loss of foraging habitat for wildlife resulting from the construction of Option 1A would not be a significant impact (Class III).

Impact BIO-3: The Project would result in disturbance to nesting birds or raptors.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Riparian and upland habitats within Option 1B, and adjacent areas of the Santa Clara River, provide foraging, cover, and/or breeding habitat for a variety of resident and migratory birds (e.g., Allen's hummingbird). Birds have been routinely observed nesting in the riparian habitats along the margins of the existing levee, on the upland terrace in Reach 4, and within the adjacent riparian habitats in the Santa Clara River (i.e., Cooper's hawk and yellow breasted chat). Direct impacts to nesting birds include ground-disturbing activities associated with excavation of the existing levee, construction of the new heightened levee, construction and grading of new access roads, and increased human presence.

3.2

Biological Resources

Potential indirect impacts to nesting birds include increased noise levels from heavy equipment and sheet pile installation, human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect nesting.

Construction during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. The increased noise levels resulting from the construction of Option 1B would likely alter and/or preclude the breeding activities for many common and sensitive bird species known to occur along the Santa Clara River. Some species of birds however would likely nest in and adjacent to Option 1B during construction and maintenance of the levees and floodwall. Depending on the species, birds may actively nest on the ground close to equipment or even on idle construction equipment. In other arid ecosystems in southern California, birds have been documented nesting on vehicles, foundations, construction trailers, and other equipment left overnight or during a long weekend. In areas where construction may be phased, birds may quickly utilize these features as nest sites. Many of the birds that would be likely to use these types of nesting substrates are common species such as ravens, house finches, and doves.

Many riparian birds, including least Bell's vireo and other neo-tropical migrants, are adversely affected by noise and human disturbance. Reijnen et al. demonstrated that for two species of European warbler (*Phylloscopus* spp.), sound levels between 26 dB(A) and 40 dB(A) reduced breeding density by up to 60 percent compared to areas without disturbance (1995). In addition, while current sound thresholds for most birds in California are considered to be approximately 60 dB(A), this level may still adversely affect breeding success for least Bell's vireo. W. Haas (personal communication, 2007) reported that in 1999, sound levels were recorded at 87 locations containing similar habitat conditions in the vicinity of the San Luis Rey River, the most robust and stable population of flycatchers in California. Data indicated that noise levels were the most important factor for occupancy. These data suggest disturbance from adjacent road noise and urban development may be a contributing factor in the use of habitat adjacent to developed areas. Conversely Aspen has noted least Bell's vireo successfully fledging chicks in a number of locations with high levels of ambient noise. This includes urban areas of Murrieta Creek and at Prado Dam in Riverside County.

When possible, construction and maintenance activities would occur outside of the recognized breeding season (generally February – September [as early as January for some raptors]). If however construction or maintenance activities are to occur during the breeding season, it is possible that these activities would exclude some species of birds that are less tolerant of anthropogenic disturbance. If birds elect to nest in areas within close proximity to on-going construction or maintenance activities during the breeding season, the qualified avian biologist (refer to Mitigation Measure BIO-3 [*Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures*] below) shall implement a standard avoidance buffer (300 feet [500 feet for raptors]) around the nest and no activities would be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The prescribed buffers may be adjusted by the qualified avian biologist in consultation with CDFW and USFWS based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors.

During O&M of the proposed Project, impacts to nesting birds and raptors would be similar to those underway for the existing levee and would include increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized

tools could also affect nesting. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed when there is potential for disturbing nesting birds or raptors (BMPs 4 and 22).

With the exception of a few non-native birds such as European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*), the loss of active bird nests or young is regulated by the Federal Migratory Bird Treaty Act (MBTA) and Fish and Game Code Section 3503 and would be considered a significant and adverse impact for which mitigation would be necessary (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

Direct, potential indirect, and operational impacts resulting in the disturbance to nesting birds or raptors on the Project site or in adjacent habitats under Option 1A would be similar to those for Option 1B. However, the construction of Option 1A would result in additional permanent (12.43 acres vs 7.91 acres) and temporary (7.39 acres vs 6.85 acres) impacts to vegetation communities and land cover types; as with Option 1B the majority of permanent and temporary impacts are to developed areas. Construction of Option 1A would also include a longer section of raised levee which would increase the duration of construction, increase the length of levee requiring long-term maintenance, and prolong impacts to nesting birds or raptors. The loss of active bird nests or young as a result of the construction of Option 1A would be considered a significant and adverse impact for which mitigation would be required (Class II).

Mitigation Measures

To minimize impacts to nesting birds and raptors, the VCWPD would implement Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), BIO-1e (*Implement Biological Construction Monitoring*), BIO-3 (*Conduct Pre-Construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), conducting pre-construction surveys, developing a Habitat Restoration and Monitoring Plan, conducting surveys for nesting birds and raptors prior to the start of construction activities, monitoring and comparing baseline and construction noise levels and requiring the installation of sound barriers when necessary, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would minimize impacts to nesting birds and raptors to the extent possible and reduce impacts to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program.

BIO-1b Implement Best Management Practices.

BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.**

BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**

BIO-1e **Implement Biological Construction Monitoring.**

BIO-3 **Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures.** Prior to construction activities (i.e., mobilization, staging, grading, or construction) the VCWPD shall retain a qualified avian biologist to conduct pre-construction surveys for nesting birds within the recognized breeding season in all areas within 500 feet of all Project components (i.e., levees, staging areas, floodwalls, and access road locations). Surveys for raptors shall be conducted for all areas from January 1 to August 15. The required survey dates may be modified based on local conditions, as determined by the qualified avian biologist, in coordination with CDFW and USFWS. Measures intended to exclude nesting birds shall not be implemented without prior approval by CDFW and USFWS.

If breeding birds with active nests are found prior to or during construction, the qualified avian biologist shall establish a 300 foot buffer (500 foot for raptors) around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails.

The prescribed buffers may be adjusted by the qualified avian biologist in coordination with the USFWS and/or CDFW based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, nest buffers implemented, and the results of ongoing monitoring and will provide a copy of the monitoring reports for impact areas to the VCWPD.

Surveys shall be conducted to include all impact areas on the Project site as well as all construction equipment. If birds are found to be nesting in facility structures or construction equipment and the nests contain eggs or young, buffers as described above shall be implemented.

If trees with nests are to be removed as part of Project construction activities, this will be done outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided, all trees will be inspected for active nests by the avian biologist. If nests are found within these trees and contain eggs or young, no activities within a 300 foot buffer for nesting birds and/or a 500 foot buffer for nesting raptors shall occur until the young have fledged the nest.

NV-1a **Moveable Construction Noise Barriers.** During construction, install an approximately 10-foot-high moveable barrier along the sidewalk between the construction activity and the residential property wall, extending approximately 30 feet in both directions from the construction activity. If determined to be infeasible due to space constraints, install alternative moveable noise barriers with sound-absorptive surfaces facing the noise source between construction equipment and sensitive receptors (i.e. residences) in Reach 4. As feasible, moveable noise barriers should also be used to shield habitat areas in the Santa Clara River from construction noise.

NV-1b **Monitor Noise Levels.** Periodically monitor noise levels during floodwall construction near noise-sensitive receptors in Reach 4 to determine whether construction noise levels exceed predicted levels. If construction noise is substantially greater than predicted, investigate whether it is feasible to install additional noise barriers or reposition construction equipment to reduce noise levels at sensitive receptors.

Impact BIO-4: The Project would result in disturbance to wildlife in adjacent habitat.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

The riparian and upland habitats adjacent to Option 1B provide refugia and breeding habitat for a variety of common and sensitive reptiles, amphibians, mammals, birds, and invertebrates. For example, the riparian scrub habitats present on the stream terrace within Reach 4 of Option 1B provide suitable nesting and foraging habitat for the listed least Bell's vireo; known territories are present adjacent to Option 1B. Cooper's hawk, a CDFW Watch List species, is known to breed and forage within the riparian habitats in and adjacent to the majority of the Option 1B footprint.

Some of the species known from the area are permanent residents such as the coast horned lizard, coyote, western toad, and western scrub jay. Other species including merlin and osprey are winter residents that forage in and adjacent to the Project area. How the Project would affect individual species depends on many factors, including how a species tolerates disturbance and the ability of a species to adapt to features such as the access roads, new barriers (i.e., floodwall), increased noise levels (i.e., sheet pile installation), and periodic human presence.

While there would be no direct impacts to adjacent habitat, potential indirect impacts from the Project would include fugitive dust, increased noise levels due to heavy equipment and vehicle traffic, light impacts from construction during low-light periods, alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, and the establishment of noxious weeds. Noise from vegetation clearing, excavation/grading, and construction activities (i.e., sheet pile installation) could affect wildlife in adjacent habitats by interfering with breeding or foraging activities and movement patterns, causing animals to temporarily avoid areas adjacent to the construction zone. Construction could also affect nocturnal wildlife that roost within habitat adjacent to Option 1B by displacing these species and increasing their risk of injury or mortality. More mobile species such as birds (during the non-breeding season) and larger mammals adjacent to Option 1B would likely disperse into habitat up or down stream of the Option 1B footprint during construction activities.

O&M of the proposed Project would be similar to that for the existing levee and would include increased noise during maintenance activities, the spread of noxious weeds, and increased fugitive dust from vehicles using levee access roads. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed when there is potential for disturbing nesting birds (BMP 4), sensitive aquatic species (BMP 5/6), and for biological surveys prior to vegetation maintenance (BMP 22).

Construction activities associated with Option 1B, specifically the increased noise levels resulting from construction activities, would result in disturbance to a variety of common and sensitive wildlife within

the adjacent habitats. The increased noise levels would likely alter and/or preclude the breeding activities for many common and sensitive bird species known to occur along the Santa Clara River. Refer to Impact BIO-3 (The Project would result in disturbance to nesting birds or raptors) above for additional information on noise related impacts. The disturbance to wildlife in adjacent habitats resulting from the construction of Option 1B would be considered a significant adverse impact requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

Potential indirect and operational impacts disturbing wildlife adjacent to Option 1A would be similar to those for Option 1B. However, the construction of Option 1A would result in the construction of a longer raised levee than proposed under Option 1B. This additional length would result in an increase in the duration of construction, thus prolonging potential indirect impacts such as noise above ambient levels and fugitive dust. Impacts to wildlife in adjacent habitats resulting from the construction of Option 1A would be a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To reduce impacts to wildlife in adjacent habitats resulting from the construction of the Project, the VCWPD would implement Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), BIO-1e (*Implement Biological Construction Monitoring*), BIO-3 (*Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts, development of a Habitat Restoration and Monitoring Plan, conducting pre-construction surveys, monitoring and comparison of baseline and construction noise levels and the installation of sound barriers when necessary, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would minimize the impacts to wildlife in adjacent areas to the extent possible and reduce them to less-than-significant levels (Class II).

NV-1a **Movable Construction Noise Barriers.**

NV-1b **Monitor Noise Levels.**

BIO-1a **Implement a Worker Environmental Education Program.**

BIO-1b **Implement Best Management Practices.**

BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.**

BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**

BIO-1e **Implement Biological Construction Monitoring.**

BIO-3 **Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures.**

Impact BIO-5: The Project could disturb nesting southwestern willow flycatchers, least Bell's vireos, or their habitat.*Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall*

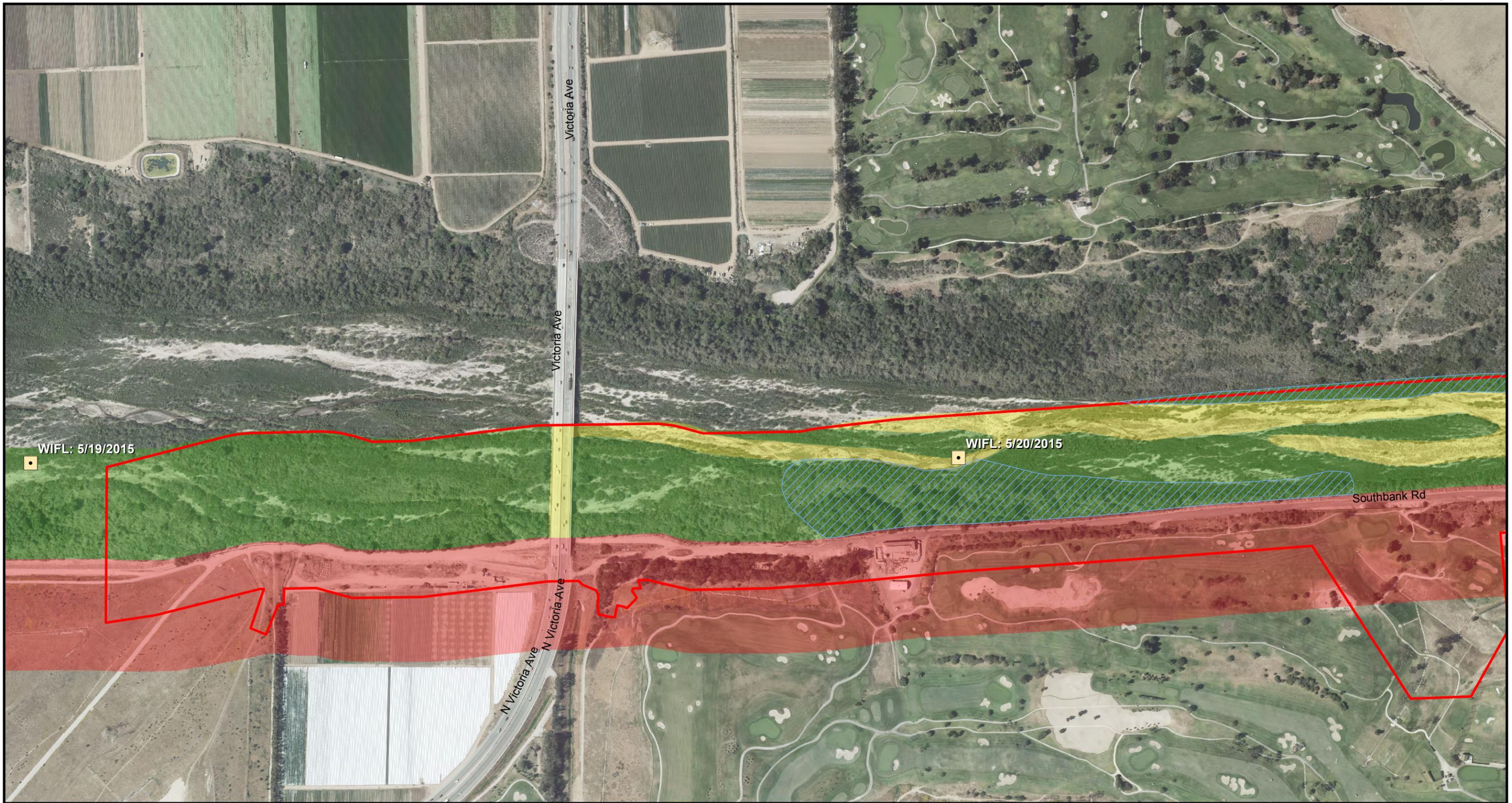
Southwestern willow flycatchers have not been recently documented within Option 1B; this species is known to occur in the region. A single singing willow flycatcher (species undetermined) was observed during surveys conducted in Reach 4 of the Project site in 2013 and six transient willow flycatchers (species undetermined) were observed in Reaches 1 – 3 in 2015. Suitable breeding habitat for southwestern willow flycatchers is present within a very limited portion of the Project site (Reach 2) and in the adjacent riparian woodlands of the Santa Clara River (refer to Figure 3.2-7). Critical habitat for this species is mapped within the bed and banks of the Santa Clara River.

Least Bell's vireo has been documented nesting within the riparian scrub habitats in Reaches 3 and 4 (refer to Figure 3.2-6). Limited suitable habitat for this species occurs within Option 1B. Large amounts of suitable habitat occur adjacent to Option 1B within the majority of the upland terrace in Reach 4 and in the riparian scrub habitats in Reaches 1-3. Critical Habitat for this species is not present in the Project area. Project activities have the potential to impact least Bell's vireos and southwestern willow flycatchers through direct impacts such as ground-disturbing activities associated with excavation of the existing levee, construction of new heightened levee, and increased human presence. During the breeding season, construction activities could result in the displacement of breeding birds and the abandonment of active nests. Potential indirect impacts could include the deterioration of habitat as a result of the spread of noxious weeds, increased noise levels from heavy equipment and sheet pile installation, exposure to fugitive dust, and human presence during repairs to the levees and floodwalls or routine inspection of the facilities. Weed management could also affect nesting.

During O&M of the proposed Project, impacts to southwestern willow flycatchers and least Bell's vireo would be similar to those underway for the existing levee and would include increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect nesting. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed when there is potential for disturbing nesting birds and prior to vegetation maintenance activities (BMPs 4 and 22).

Construction activities would be conducted outside the recognized breeding season to the extent possible. Should construction occur during the breeding season it is possible that the increased noise and disturbance related to Project activities would exclude birds such as least Bell's vireo and southwestern willow flycatcher that are less tolerant of anthropogenic disturbance. Refer to Impact BIO-3 (The Project would result in disturbance to nesting birds or raptors) above for additional information on noise and disturbance related impacts to birds. Project activities that result in the degradation to habitat for or the loss of least Bell's vireo and southwestern willow flycatcher would be considered a significant adverse impact requiring mitigation (Class II).

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Source: Werner Biological, 2013; 2015.

- Study Area
- 2013 willow flycatcher observation (species undetermined)
- 2015 transient willow flycatcher (species undetermined)

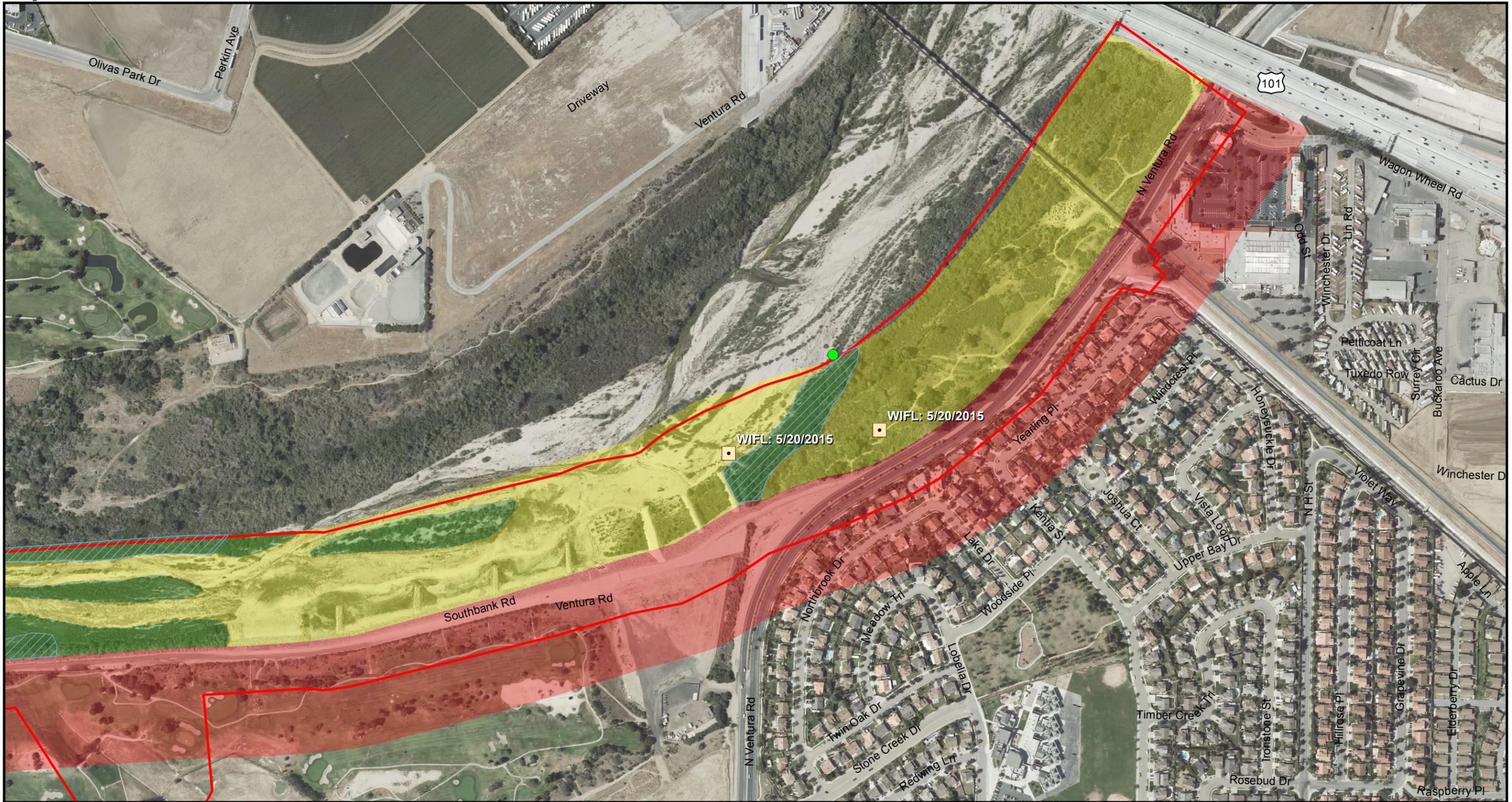
Southwestern Willow Flycatcher Habitat Suitability

- currently suitable near water or saturated soils
- currently suitable
- potentially suitable
- unsuitable



**Figure 3.2-7
Habitat Suitability for
Southwestern Willow Flycatcher**

**Santa Clara River Levee
Map A**



Source: Werner Biological, 2013; 2015.

- Study Area
- 2013 willow flycatcher observation (species undetermined)
- 2015 transient willow flycatcher (species undetermined)

- Southwestern Willow Flycatcher Habitat Suitability**
- currently suitable near water or saturated soils
 - currently suitable
 - potentially suitable
 - unsuitable

Figure 3.2-7
Habitat Suitability for
Southwestern Willow Flycatcher
Santa Clara River Levee
Map B

Option 1A – Full Levee System with Reach 4 Floodwall

Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. The additional sections of levee would result in a longer duration of construction activities and prolong the effects of direct and potential indirect impacts. Project activities proposed under Option 1A that result in the degradation of habitat for or the loss of least Bell's vireo and southwestern willow flycatcher would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To minimize impacts to least Bell's vireo and southwestern willow flycatcher, the VCWPD would implement Mitigation Measure BIO-5 (*Conduct Protocol Surveys for Least Bell's Vireo and Southwestern Willow Flycatcher and Avoid Occupied Habitat*), which requires protocol surveys of suitable habitat, avoidance of any active nests, and monitoring of nest buffers. In addition, implementation of Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), BIO-1e (*Implement Biological Construction Monitoring*), BIO-3 (*Conduct Pre-Construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*) would minimize impacts to least bell's vireo and southwestern willow flycatcher. These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), development of a Habitat Restoration and Monitoring Plan, monitoring and comparing baseline and construction noise levels and requiring the installation of sound barriers when necessary, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to least Bell's vireo and southwestern willow flycatcher to less-than-significant levels (Class II).

NV-1a **Movable Construction Noise Barriers.**

NV-1b **Monitor Noise Levels.**

BIO-1a **Implement a Worker Environmental Education Program.**

BIO-1b **Implement Best Management Practices.**

BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.**

BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**

BIO-1e **Implement Biological Construction Monitoring.**

BIO-3 **Conduct Pre-Construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures.**

BIO-5 **Conduct Protocol Surveys for Least Bell's Vireo and Southwestern Willow Flycatcher and Avoid Occupied Habitat.** If Project-related activities are scheduled to occur during the

breeding season (March through September), the VCWPD shall have a qualified avian biologist conduct focused surveys in suitable habitat within 500 feet of disturbance areas. The surveys shall be of adequate duration to verify potential nest sites if work is scheduled to occur during the breeding season.

If a territory or nest is confirmed in a previously unoccupied area, the CDFW and USFWS shall be notified within 48 hours. In coordination with the CDFW and USFWS, a 300 foot disturbance-free buffer shall be established and demarcated by fencing or flagging. This buffer may be adjusted as determined by a qualified avian biologist in coordination with the CDFW and USFWS. The qualified biologist, in coordination with the VCWPD, shall halt construction if activities outside of but near the 300-foot buffer are determined to be negatively impacting the nesting birds. The qualified biologist shall devise methods to reduce the noise and/or disturbance in the vicinity as needed. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge.

Impact BIO-6: The Project could result in the loss of sensitive Lancetooth, Timema, and Shoulderband Snails or Monarch Butterfly.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Surveys conducted within Option 1B did not detect any sensitive invertebrates. However, sensitive snails have the potential to occur within Option 1B. These species are most often associated with riparian and upland communities that provide suitable microhabitat conditions. Three common shoulderband snails (*Helminthoglypta* spp.) were detected in Reaches 2 and 4 during focused surveys for gastropods in 2014; the snails were not identified to species. Suitable habitat for sensitive snail species is present within the riparian areas of Reaches 1 and 2 and both the riparian and upland habitats in Reach 4. If present, direct impacts would include loss or mortality from levee or floodwall construction, grading of access roads, and increased human presence that crush individuals or alter microhabitat conditions to the degree the species can no longer survive (i.e., removal of leaf litter).

Although not detected within Option 1B, should they occur, direct impacts to monarch butterflies would most likely result from vehicle strikes and removal of roosting habitat. Suitable winter roosting habitat is present within the wind rows of eucalyptus at the western extent of Reach 1 and the eastern extent of Reach 4 (refer to Figure 3.2-2). There are multiple records of winter roost sites for this species within 1-3 miles of Option 1B. Potential indirect and operational impacts could include the spread or colonization of weeds, weed management, fugitive dust, increased noise and vibration levels from construction and sheet pile installation, and the alteration of hydrology.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed during invasive plant removal and prior to vegetation maintenance activities (BMPs 4 and 22) that could disturb sensitive invertebrate species.

Impacts to these species, should they occur, would be considered a significant adverse impact that can be reduced to a less-than-significant level with mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

No sensitive invertebrates were detected within Option 1A. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. Project activities proposed under Option 1A that result in the loss of sensitive invertebrates would be considered a significant adverse impact that can be reduced to a less-than-significant level with mitigation (Class II).

Mitigation Measures

To reduce or avoid impacts to sensitive invertebrate species, the VCWPD would implement Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation For Temporary Impacts To Sensitive Vegetation Communities*), BIO-1d (*Compensation For Permanent Impacts To Sensitive Vegetation Communities*), BIO-1e (*Implement Biological Construction Monitoring*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts, development of a Habitat Restoration and Monitoring Plan, monitoring and comparison of baseline and construction noise levels and the installation of sound barriers when necessary, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to sensitive invertebrates to a less-than-significant level (Class II).

NV-1a **Movable Construction Noise Barriers.**

NV-1b **Monitor Noise Levels.**

BIO-1a **Implement a Worker Environmental Education Program.**

BIO-1b **Implement Best Management Practices.**

BIO-1c **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**

BIO-1d **Develop a Habitat Restoration and Monitoring Plan.**

BIO-1e **Implement Biological Construction Monitoring.**

Impact BIO-7: The Project could result in mortality or injury to southwestern pond turtles or a disruption of nesting habitat.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Although not detected in the Option 1B footprint, southwestern pond turtles have been observed in adjacent habitats within the Santa Clara River. There are numerous pools and/or secondary channels present at or near the toe of the existing levee structure that provide suitable habitat for this species (when water is present). At one location within Reach 2, runoff from the adjacent River Ridge Golf

3.2

Biological Resources

Course is directed through a culvert and discharges into the Santa Clara River at the toe of the existing levee. This runoff has created a near perennial flowing water source that empties into a large pool just beyond the extent of the existing levee structure.

Pond turtles are generally found in and along riparian areas, although gravid females have been reported to nest more than 1,300 feet away from the nearest aquatic habitat (Holland, 1994). Pond turtles may also make overland movements up to one mile between areas of aquatic habitat (Bury, 1972 in Ernst et al., 1994). The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). Juvenile and adult turtles are commonly seen basking in the sun at appropriate sites, although they are extremely wary animals and often dive into the water at any perception of danger.

Direct effects to southwestern pond turtle may occur as a result of mechanical crushing; loss of nesting, breeding or basking sites; and human trampling. Disturbance would be associated with the removal of vegetation, excavation of the existing levee, construction of the new heightened levee, and installation of floodwalls. Disruption of basking activity and potential impacts to southwestern pond turtles may result from construction activities, if pond turtles are present near the construction areas.

Direct impacts to southwestern pond turtles could also result from temporary loss of upland nesting sites and foraging habitat, disruption of breeding activity, or disturbance of basking sites. Juvenile southwestern pond turtles typically move from nesting sites in adjacent upland or riparian areas to the stream in the spring (Buskirk, 1992). Hatchlings are very small, often less than one inch, and may be inadvertently trampled during construction-related activities. In addition, access to zooplankton, an important hatchling food source, may be disrupted if water quality were to be severely degraded by the Project.

Potential indirect impacts to southwestern pond turtle would include alteration of habitat that precludes pond turtle use, degradation of water quality over time due to siltation and sedimentation, fugitive dust, and the spread of noxious weeds. Operational impacts include risk of mortality by vehicles and disturbance during routine maintenance inspections.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed during invasive plant removal and prior to vegetation maintenance activities (BMPs 4 and 22) that could disturb southwestern pond turtles.

The greatest potential for injury or mortality to southwestern pond turtles as a result of construction activities is the damage or destruction of nesting areas. Since southwestern pond turtles often nest communally, damage or destruction of a nesting area could result in injury or mortality to a large number of incubating eggs or hatchling turtles and could disrupt egg-laying activities of adult female turtles. Pond turtles or their eggs may be present in vegetated areas subject to clearing or within open spaces/voids in the existing levee. Impacts to pond turtles would be considered a significant adverse impact requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

Similar to Option 1B, this species has not been observed within the Option 1A footprint but was detected in adjacent habitats. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the raising of a longer section of the existing levee and construction of a retaining wall in Reach 2. Project activities proposed under Option 1A that result in mortality or injury to southwestern pond turtles or a disruption of nesting habitat would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

If present, damage or destruction of southwestern pond turtles or their nesting areas would be considered a significant impact. To reduce impacts to pond turtles, the VCWPD would implement Mitigation Measure BIO-7 (*Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures*). This measure would require focused pre-construction surveys for this species and require monitoring during ground disturbance and vegetation removal activities. In addition, the implementation of Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), and BIO-1e (*Implement Biological Construction Monitoring*) would minimize impacts to sensitive invertebrates. These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), development of a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to southwestern pond turtles to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program.

BIO-1b Implement Best Management Practices.

BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities.

BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities.

BIO-1e Implement Biological Construction Monitoring.

BIO-7 Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures. Prior to ground disturbance or vegetation clearing, the VCWPD shall retain a qualified biologist to conduct focused surveys for southwestern pond turtle within the Project site and adjacent habitats to a distance of 200 feet away. Focused surveys shall occur between 1 April and 1 September, and shall consist of a minimum of four daytime surveys, to be completed prior to ground disturbance or vegetation clearing. The qualified biologist shall conduct focused, systematic surveys for southwestern pond turtle nesting sites. The survey area shall include all suitable nesting habitat located within 200 feet of occupied habitat in which ground disturbance will occur. Surveys will entail searching for

evidence of pond turtle nesting, including remnant eggshell fragments, which may be found on the ground following nest depredation.

If an active southwestern pond turtle nesting area would be adversely impacted by construction activities, the VCWPD contractor shall avoid the nesting area. If avoidance of the nesting area is determined to be infeasible, the authorized biologist shall coordinate with the CDFW to identify if it is possible to relocate the pond turtles. Eggs or hatchlings shall not be moved without written authorization from the CDFW.

A qualified biologist with demonstrated expertise with southwestern pond turtles shall monitor construction activities where pond turtles are present. The authorized biologist will be present full time during all vegetation removal activities immediately adjacent to, or within, habitat that supports populations of southwestern pond turtles, and part time for all remaining activities. If the installation of fencing to prevent turtles from entering the work area is deemed necessary by the qualified biologist, one pre-construction survey for southwestern pond turtles shall be conducted at the time of the fence installation. Pre-construction surveys for southwestern pond turtles shall also be conducted by the qualified biologist prior to vegetation clearing and/or removal of the existing levee structure.

Impact BIO-8: The Project could result in injury or mortality for two-striped garter snakes and south coast garter snake.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Two-striped and south coast garter snakes, although known to occur in the general area, have not been observed within Option 1B. The two-striped garter snake is highly aquatic but may move considerable distances into upland habitats, even where permanent water is lacking. Two-striped garter snakes have been observed in riparian, freshwater marsh, coastal sage scrub, chaparral, oak woodland, and grassland habitats. Rathburn et al. (1993) found that these snakes tend to occupy streamside sites during the summer and switch to nearby upland habitats during the winter. South coast garter snakes are only known from scattered locations in the Santa Clara River Valley; habitat requirements for this species are similar to those discussed above for two-striped garter snake (CaliforniaHerps, 2015).

Direct impacts due to construction activities include mortality or injury of individual snakes as a result of mechanical crushing, loss of nesting, breeding, or basking sites, and human trampling. Other direct effects to these species include degradation of water quality and removal of vegetation. Potential indirect effects include compaction of soils, fugitive dust, and introduction of exotic plant species.

Operational impacts include risk of mortality by vehicles and disturbance on access roads during routine maintenance and inspection activities. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed during invasive plant removal and prior to vegetation maintenance activities (BMPs 4 and 22) that could disturb sensitive garter snakes.

Project effects to this species would be similar to southwestern pond turtle and would be considered a significant adverse impact requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

Two-striped and south coast garter snakes have not been observed within Option 1A. Should they occur, impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to a longer section of the existing levee that would be heightened and construction of an additional section of floodwall in Reach 2. Construction activities proposed under Option 1A that result in injury or mortality of two-striped garter snakes or south coast garter snake would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To reduce effects on two-striped and south coast garter snakes, the VCWPD would implement BIO-8 (*Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures*). This measure would require pre-construction surveys for two-striped and south coast garter snakes prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. In addition, the implementation of Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), and BIO-1e (*Implement Biological Construction Monitoring*) would minimize impacts to sensitive invertebrates. These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), development of a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities. As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to sensitive garter snakes to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program.

BIO-1b Implement Best Management Practices.

BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities.

BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities.

BIO-1e Implement Biological Construction Monitoring.

BIO-8 Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures. Prior to ground disturbance or vegetation clearing in the Project area, the VCWPD shall retain a qualified biologist to conduct focused surveys for two-striped and south coast garter snakes where suitable habitat is present and directly impacted by construction vehicle access, or maintenance. Focused surveys shall consist of a minimum of four daytime surveys within one week of vegetation clearing. The qualified biologist will be present full time during all vegetation removal activities immediately adjacent to or within habitat that supports populations of the two-striped garter snake, and part time for all remaining activities. Surveys for garter snakes shall be conducted by the authorized biologist prior to the initiation of each day of vegetation removal activities. Any snakes found within

the area of disturbance or potentially affected by the Project will be relocated to the nearest suitable habitat that will not be affected by the Project.

Impact BIO-9: The Project could result in injury or mortality of amphibian and reptile species designated as California Species of Special Concern and/or Ventura County Locally Important Species.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Once special-status reptile (other than southwestern pond turtle, as discussed above), the coast horned lizard, was detected near Option 1B within a dry, sandy area of the Santa Clara River during surveys conducted in 2014. Although not detected within Option 1B, several other special-status or Ventura County Locally Important Species of reptiles and amphibians (terrestrial herpetofauna) could be affected by the Project. These include the following terrestrial California Species of Special Concern and Ventura County Locally Important Species:

- Coast horned lizard
- California glossy snake
- San Diego mountain kingsnake
- Arboreal salamander
- Silvery legless lizard
- Coastal whiptail
- Coast patch-nosed snake

Given the ecology of these species and their cryptic nature, it is likely that some or all of the species identified above may occur in or near the Project area. Special-status terrestrial herpetofauna potentially present in the Project area would be subject to similar types of impacts as described above for southwestern pond turtles and garter snakes (Impact BIO-7: The Project could result in mortality or injury to southwestern pond turtles or a disruption of nesting habitat and Impact BIO-8: The Project could result in injury or mortality for two-striped garter snakes and south coast garter snake).

Direct impacts include being hit by vehicles on access roads, mechanical crushing during excavation or raising of the existing levee structure, or the construction of floodwalls. Other impacts include general disturbance due to increased human activity. Special-status terrestrial herpetofauna could be injured or killed during ground-disturbing activities in undeveloped upland habitats and in some developed areas throughout the Project, including staging areas. Potential indirect impacts to these species include compaction of soils, fugitive dust; increased noise levels, and the introduction of exotic plant species.

Operational impacts include risk of mortality by vehicles and disturbance on access roads during routine maintenance and inspection activities. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed during invasive plant removal and prior to vegetation maintenance activities (BMPs 4 and 22) that could disturb terrestrial herpetofauna.

Direct loss of these species would be considered a significant adverse impact requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

No special-status or Ventura County Locally Important Species of terrestrial herpetofauna were detected within Option 1A. Should they occur, impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. Project activities proposed under Option 1A that result in injury or mortality of terrestrial California Species of Special Concern and Ventura County Locally Important amphibian and reptile species would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To reduce effects of the Project, VCWPD would implement Mitigation Measure BIO-9 (*Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures*). This measure would require surveys for terrestrial herpetofauna prior to vegetation removal, relocation of stranded or displaced animals, and construction monitoring. In addition, the implementation of Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), and BIO-1e (*Implement Biological Construction Monitoring*) would minimize impacts to sensitive invertebrates. These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), development of a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to terrestrial herpetofauna to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program.

BIO-1b Implement Best Management Practices.

BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities.

BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities.

BIO-1e Implement Biological Construction Monitoring.

BIO-9 Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures. Prior to ground disturbance or vegetation clearing at all Project locations, the VCWPD shall retain a qualified biologist to conduct surveys for terrestrial herpetofauna where suitable habitat is present and directly impacted by construction vehicle access, or maintenance. Focused surveys shall consist of a minimum of three daytime surveys and one nighttime survey within one week of vegetation clearing. The qualified biologist will be present full time during all vegetation removal activities immediately adjacent to or within habitat that supports terrestrial herpetofauna, and part time for all remaining activities. Surveys for terrestrial herpetofauna shall be conducted by the qualified biologist prior to the

initiation of each day of vegetation removal activities in suitable habitat. Terrestrial herpetofauna found within the area of disturbance or potentially affected by the Project will be relocated to the nearest suitable habitat that will not be affected by the Project.

Impact BIO-10: The Project could disturb nesting or migrant California Species of Special Concern, CDFW Special Animals or California Fully Protected bird species.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

A variety of bird species, listed as California Species of Special Concern or as California Fully Protected species, were documented within the riparian and upland habitats within and adjacent to Option 1B (refer to Appendix B-3 for a complete list of all wildlife observed). These include Cooper's hawk, yellow warbler, white-tailed kite, yellow-breasted chat, loggerhead shrike, Allen's hummingbird, and hermit warbler. Cooper's hawks have been documented nesting within and adjacent to Option 1B in Reaches 1 and 2. Although not confirmed, due to the large number of resident territorial males observed during surveys in 2013, it is suspected that yellow warblers were nesting adjacent to Option 1B. Direct, potential indirect, and operational impacts to nesting birds would be the same as described above for Impact BIO-3 (The Project would result in disturbance to nesting birds or raptors) and Impact BIO-4 (The Project could disturb nesting southwestern willow flycatchers, least Bell's vireos, or their habitat). Direct impacts to nesting birds include ground-disturbing activities associated with excavation of the existing levee, construction of the heightened levee and floodwalls, increased noise levels from heavy equipment and sheet pile installation, and increased human presence.

Potential indirect impacts to nesting birds include human disturbance, increased noise levels from construction activities (i.e., excavation and sheet pile installation), exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance of facilities. Weed management could also affect nesting.

Project activities have potential to affect foraging and nesting birds if present during construction activities. Birds and other wildlife may temporarily or permanently leave their territories to avoid construction activity (i.e., increased noise levels), which could lead to reduced reproductive success and increased mortality. Refer to Impact BIO-3 (The Project would result in disturbance to wildlife in adjacent habitat), Impact BIO-4 (The Project would result in disturbance to nesting birds or raptors), and Impact BIO-5 (The Project could disturb nesting southwestern willow flycatchers, least Bell's vireos, or their habitat) for additional information on impacts related to increased noise and disturbance levels.

During O&M of the proposed Project impacts to bird species, listed as California Species of Special Concern or as California Fully Protected species, would be similar to those underway for the existing levee and would include increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect nesting.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed when there is potential for disturbing nesting birds and prior to vegetation maintenance activities (BMPs 4 and 22).

The loss of California Species of Special Concern, CDFW Special Animals, or California Fully Protected bird species would be considered a significant adverse impact requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

The same species discussed above under Option 1B occur or would be expected to occur within or adjacent to Option 1A. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. The additional work would extend the duration of construction and prolong impacts to nesting or migrant birds. Activities proposed under Option 1A that result in the disturbance of nesting or migrant California Species of Special Concern, CDFW Special Animals, or California Fully Protected bird species would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

Nesting birds are protected under federal and State laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.5. To reduce effects of the Project on nesting birds, VCWPD would implement Mitigation BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), BIO-1e (*Implement Biological Construction Monitoring*), BIO-3 (*Conduct Pre-Construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures*), BIO-5 (*Conduct Protocol Surveys for Least Bell’s Vireo and Southwestern Willow Flycatcher and Avoid Occupied Habitat*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), development of a Habitat Restoration and Monitoring Plan, monitoring and comparison of baseline and construction noise levels and installation of sound barriers when necessary, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would minimize impacts to the extent possible and reduce impacts to less-than-significant levels (Class II).

- NV-1a **Movable Construction Noise Barriers.**
- NV-1b **Monitor Noise Levels.**
- BIO-1a **Implement a Worker Environmental Education Program.**
- BIO-1b **Implement Best Management Practices.**
- BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.**
- BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**
- BIO-1e **Implement Biological Construction Monitoring.**
- BIO-3 **Conduct Pre-Construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures.**

BIO-5 Conduct Protocol Surveys for Least Bell's Vireo and Southwestern Willow Flycatcher and Avoid Occupied Habitat.***Impact BIO-11: The Project could result in mortality of, and loss of habitat for, special-status bat species.******Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall***

Bats were routinely detected in and adjacent to Option 1B and likely forage over most of the adjacent Santa Clara River. Bats were also observed roosting in the Victoria Avenue Bridge just north of Reach 1. The species of bats occurring on or adjacent to Option 1B were not identified. While not specifically detected, several sensitive bat species are known to occur in the general area and likely roost and forage within portions of Option 1B and in adjacent habitats. Western mastiff bat, pallid bat, Mexican long-tongued bat, and spotted bat, all California Species of Special Concern, have the potential to occur within and adjacent to Option 1B. Hoary bat and western small-footed myotis, CDFW Special Animals, may also occur on or near Option 1B. Project areas include numerous locations that constitute suitable bat foraging and roosting habitat including the riparian woodlands at the toe of the existing levee, voids within the existing levee structure, the wind rows of eucalyptus (Reaches 1 and 4), and in adjacent scrub communities.

Bat life histories vary widely. Some species hibernate during winter, or migrate to warmer areas. During the breeding season, bats generally roost during the day, either alone or in communal roost sites, depending on species. Some species feed mainly over open water where insect production is especially high, but others forage over open shrublands. The decline of bat populations is often due to roost site disturbance, loss of foraging habitat, and loss of roost sites. Activities that have been documented to impact bats include livestock grazing, vegetation treatments, and water reclamation that could lead to loss of a water source or riparian habitat. Due to their sensitivity to human disturbance, roost protection is important for bats. Roost protection measures may include seasonal use restrictions or physical closures as necessary.

Direct impacts to bats include mortality or displacement of bats during ground-disturbing activities associated with construction of the levee and floodwalls, and increased human presence. Noise, vibration, and human activity could disrupt maternity roosts during the breeding season. Potential indirect effects could include increased traffic, increased noise levels from heavy equipment and sheet pile installation, exposure to fugitive dust, and human presence in the Project area that could result in bats abandoning their roosts or maternal colonies. Refer to Impact BIO-3 (The Project would result in disturbance to wildlife in adjacent habitat), Impact BIO-4 (The Project would result in disturbance to nesting birds or raptors), and Impact BIO-5 (The Project could disturb nesting southwestern willow flycatchers, least Bell's vireos, or their habitat) for additional information on impacts related to increased noise and disturbance levels; impacts from increased noise levels on bat species would be similar to those discussed for birds. Bats that forage near the ground, such as the pallid bat, would also be subject to crushing or disturbance by vehicles driving at dusk, dawn, or during the night. The use of access roads during dusk and dawn could also disturb bats or result in vehicle strikes.

During O&M of the proposed Project, impacts to sensitive bat species would be similar to those underway for the existing levee and would include increased human disturbance, exposure to fugitive dust, the potential spread of noxious weeds, and disruption of foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect bat species.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed prior to vegetation maintenance and when removing native trees (BMPs 22 and 27).

Implementation of the Project would not prevent bats from foraging in the adjacent Santa Clara River. The Project however may result in the loss of known maternity sites or roosting trees should they occur; there are no currently identified maternity sites within Option 1B. Special-status bats are known from the general area and could be disturbed from Project activities. The loss of habitat for or disturbance to special-status bats would be considered a significant adverse impact that can be reduced to a less-than-significant level with mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

As with Option 1B, bats were routinely detected in Option 1A, although the individual species were not identified. The same species discussed above would have the potential to occur in or adjacent to Option 1A. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. Project activities proposed under Option 1A that result in mortality of, and loss of habitat for special-status bat species would be considered a significant adverse impact that can be reduced to a less-than-significant level with mitigation (Class II).

Mitigation Measures

To reduce impacts to bats, VCWPD would implement Mitigation Measure BIO-11 (*Survey for Maternity Colonies or Hibernaculum for Roosting Bats*). This measure requires pre-construction surveys for roosting bats and the avoidance of maternity colonies or hibernaculum. If maternity colonies are found, a construction buffer would be established and work diverted to another area. The loss of foraging habitat would be offset through Mitigation Measure BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*) and BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*). In addition, Mitigation Measures BIO-1a (*Worker Environmental Awareness Program*), BIO-1b (*Best Management Practices*), BIO-1e (*Implement Biological Construction Monitoring*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*) would protect bats by educating workers, restoring temporarily disturbed areas after construction-related activities, and acquiring off-site habitat. As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to special-status bats to a less-than-significant level (Class II).

NV-1a **Movable Construction Noise Barriers.**

NV-1b **Monitor Noise Levels.**

BIO-1a **Implement a Worker Environmental Education Program.**

BIO-1b **Implement Best Management Practices.**

BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.**

BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**

BIO-1e **Implement Biological Construction Monitoring.**

BIO-11 **Survey for Maternity Colonies or Hibernaculum for Roosting Bats.** Prior to ground disturbance or vegetation clearing at all Project locations, the VCWPD shall retain a qualified biologist to conduct surveys for sensitive bats. Surveys shall be conducted no more than 15 days prior to grading near or the removal of trees or other structures. Surveys shall also be conducted during the maternity season (1 March to 31 July) within 300 feet of Project activities. If active maternity roosts or hibernacula are found, the structure, tree or tower occupied by the roost shall be avoided (i.e., not removed), if feasible. If avoidance of the maternity roost is not feasible, the qualified biologist will implement the following actions.

- **Maternity roosts.** If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat's requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall be notified of any hibernacula or active nurseries within the construction zone.
- **Exclusion of bats prior to eviction from roosts.** If non-breeding bat hibernacula are found in trees scheduled to be removed, the individuals shall be safely evicted, under the direction of a qualified biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified biologist shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

Impact BIO-12: The Project could result in mortality of, and loss of habitat for, special-status mammals.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

No special-status mammal species were detected within Option 1B. However, the Option 1B footprint, and adjacent areas within the Santa Clara River, have the potential to support a variety of special-status mammals including the American badger, San Diego desert woodrat, and San Diego black-tailed jackrabbit, all CDFW Species of Special Concern. Direct impacts to these species would include mechanical crushing by vehicles and construction equipment, trampling, and loss of habitat. Construction disturbance can also result in the flushing of small animals from refugia which increases

the predation risk for small rodents. Potential indirect impacts include exposure to fugitive dust, alteration of soils, such as compaction, that could preclude burrowing, the spread of exotic weeds, and increased noise levels.

During O&M of the proposed Project, impacts to sensitive mammals would be similar to those underway for the existing levee and would include increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect mammal species.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed prior to vegetation maintenance (BMPs 4, 22, and 27).

Because the Project would remove or disturb vegetation and these animals would be subject to mortality from the construction of the levees and floodwalls, impacts to these species would be considered significant adverse effects requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

No special-status mammal species were detected within Option 1A. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. Project activities proposed under Option 1A that result in mortality of, or loss of habitat for, special-status mammals would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To reduce impacts to special-status mammals, VCWPD would implement Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), BIO-1e (*Implement Biological Construction Monitoring*), NV-1a (*Moveable Construction Noise Barriers*), and NV-1b (*Monitor Noise Levels*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including speed limits to control fugitive dust), development of a Habitat Restoration and Monitoring Plan, monitoring and comparison of baseline and construction noise levels and installation of sound barriers when necessary, and conducting biological monitoring during ground-disturbing and other construction-related activities.

As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures and adherence with the O&M programmatic BMPs would reduce impacts to special-status mammals to a less-than-significant level (Class II).

NV-1a **Movable Construction Noise Barriers.**

NV-1b **Monitor Noise Levels.**

- BIO-1a **Implement a Worker Environmental Education Program.**
- BIO-1b **Implement Best Management Practices.**
- BIO-1c **Compensation for Temporary Impacts to Sensitive Vegetation Communities.**
- BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**
- BIO-1e **Implement Biological Construction Monitoring.**

Impact BIO-13: The Project could result in mortality of listed or special-status fish.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

No State or federally listed or special-status fish species were detected in Option 1B during surveys conducted in 2014. The Santa Clara River and several of its tributaries (i.e., Santa Paula Creek and Sespe Creek) support the federally listed endangered steelhead trout (southern California DPS) and are designated as Critical Habitat for this species. The federally endangered tidewater goby occurs downstream of the Project site within the brackish water areas of the lagoon at the mouth of the Santa Clara River. The federally and state endangered and state fully protected unarmored threespine stickleback, while not observed during surveys conducted in 2014, has been recorded in the upper Santa Clara River watershed. Special-status species including the partially armored stickleback, Owen's sucker, arroyo chub, Santa Ana sucker, and the prickly sculpin are all known to occur along portions of the Santa Clara River when flow is present.

All construction activities proposed under Option 1B would occur from the top of and to the land side of the existing levee; no work would occur within the Santa Clara River. Runoff from the River Ridge Golf Course adjacent to Reach 2 discharges into the Santa Clara River and forms a small, near perennial flowing water source near the toe of the existing levee. Depending on the time of year and amount of runoff, flows in this small channel may connect with one of the low-flow braids of the Santa Clara River. This runoff also supports multiple perennial pool habitats located adjacent to the existing levee in Reach 2. While direct impacts to the Santa Clara River channel would not occur, potential indirect effects could include erosion, sedimentation, and degradation of water quality from the excavation of the existing levee, heightening of the new levee structure, and filling of the golf course swale.

During O&M of the proposed Project, impacts to special-status fish would be similar to those underway for the existing levee and would include increased human disturbance, herbicide application for weed abatement, and leaks/spills of contaminants. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed prior to work in aquatic habitats (BMP 5/6) and to avoid spills and leaks (BMP 21).

These potential impacts, although indirect, would be considered significant and adverse and require mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

No listed or special-status fish have been detected within Option 1A. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. However, Option 1A would

not include filling the swale at the River Ridge Golf Course and would instead rely on the heightening of a longer section of levee and installing an additional section of floodwall in Reach 2. Construction activities proposed under Option 1A that result in the mortality of listed or special-status fish species would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To minimize impacts to listed or special-status fish species, VCWPD would implement Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), and BIO-1e (*Implement Biological Construction Monitoring*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts (including water quality protection measures), and biological monitoring during ground disturbing and other Project-related activities. As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). Implementation of these mitigation measures would reduce impacts to listed or special-status fish to a less-than-significant level (Class II).

BIO-1a **Implement a Worker Environmental Education Program.**

BIO-1b **Implement Best Management Practices.**

BIO-1e **Implement Biological Construction Monitoring.**

Sensitive Plant Species

Impact BIO-14: The Project could disturb endangered, threatened, proposed, or other special-status plant species or their habitat.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

State or federally listed and special-status plant species were not detected within Option 1B. Three California black walnuts (CRPR 4.2) were identified adjacent to the toe of the existing levee structure within Reach 2 but are located outside the Option 1B footprint.

Focused botanical surveys of the Project were conducted in the spring and summer of 2014. Seasonal rainfall across Southern California has been extremely limited, which may have reduced the potential to detect sensitive plants within the proposed Project areas. Although the recent drought has limited the detectability of some annual plants, plant expression was considered good to excellent in the majority of the Project area. Surveys conducted in 2014 resulted in good plant detection including ephemeral annuals that cannot be detected in some years.

If present, direct impacts to listed or special-status plants include trampling or crushing from heavy equipment, vehicles, or foot traffic, alterations to the native seed bank due to soil compaction, and modifications to existing hydrological conditions. Potential indirect impacts could include the disruption of native seed banks through soil alterations, the accumulation of fugitive dust, increased erosion and sediment transport, and the colonization of non-native, invasive plant species. Excessive dust can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Ground-disturbing activities that would occur during the Project can result in the proliferation and spread of non-native invasive plants to new areas. Because noxious weeds can permanently degrade rare plant and animal habitats, their proliferation could adversely affect listed plant species if they are present.

3.2

Biological Resources

Operational impacts from routine maintenance and inspection would include trampling or crushing, increased erosion, exposure to fugitive dust, mortality due to herbicide application, and the spread and colonization of noxious weeds. Listed or special-status plant species were not identified during focused surveys of the Project area. In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed for invasive plant removal (BMP 23), for dust control (BMP 24), and for the stabilization of exposed soil (BMP 26)

If present during construction, impacts to listed plant species would be considered significant and adverse and would require mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

No listed or special status plant species were detected within Option 1A. Three California black walnuts (CRPR 4.2) were identified adjacent to the toe of the existing levee structure within Reach 2 but are located outside the Option 1A footprint. Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however result in additional habitat impacts due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. Should they occur, Project activities proposed under Option 1A that disturb endangered, threatened, proposed, or other special-status plant species or their habitat would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

Implementation of Mitigation Measure BIO-14 (*Conduct Pre-construction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Special-status Plants and Avoid Any Located Occurrences of Listed Plants*) would protect occurrences of listed plant species and require compensation for impacts to special-status plant species. In addition, implementation of Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), and BIO-1e (*Implement Biological Construction Monitoring*) would minimize impacts to special-status plant species. These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts, development of a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities.

To control the spread of weeds in Project areas, the VCWPD would conduct vegetation maintenance (i.e., routine herbicide application) according to the VCWPD's Routine Maintenance and Operations Program (VCWPD, 2013). Implementation of these mitigation measures and vegetation maintenance would reduce impacts to listed or special-status plants to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program.

BIO-1b Implement Best Management Practices.

BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities.

- BIO-1d **Compensation for Permanent Impacts to Sensitive Vegetation Communities.**
- BIO-1e **Implement Biological Construction Monitoring.**
- BIO-14 **Conduct Pre-construction Surveys for State and federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Special-status Plants and Avoid Any Located Occurrences of Listed Plants or Perform other Conservation Strategy.** The VCWPD shall conduct focused surveys for federal- and state-listed and other special-status plants. All special-status plant species (including listed threatened or endangered species, Ventura County Locally Important species, and all CRPR 1A, 1B, 2, 3, and 4 species) subject to disturbance shall be documented in a pre-construction survey report. Surveys shall be conducted during the appropriate season in all suitable habitat located within the Project disturbance areas and within 100 feet of disturbance areas and access roads and be conducted by a qualified botanist. The field surveys and reporting must conform to current CDFW botanical field survey protocols (CDFW, 2009) or more recent updates, if available. The report will describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seed or below-ground rootstock (e.g., poor rainfall, recent grazing, or wildfire).

If federally or State-listed plants are detected in disturbance areas or within 100-feet of the disturbance areas, the VCWPD would avoid these populations and notify the USFWS and CDFW as appropriate.

The VCWPD shall avoid impacts to any State or federally listed plants to the extent feasible. If Project activities result in the loss of more than 10 percent of the known individuals within a special-status plant species (List 1.B and List 2 only) occurrence/population to be impacted, the VCWPD shall consult with USFWS and CDFW regarding the most appropriate conservation strategy for the particular species being impacted.

Habitat Fragmentation and Wildlife Movement

Impact BIO-15: The Project would interfere with established wildlife migratory corridors.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

Studies suggest that habitat fragmentation and isolation of natural areas ultimately results in the loss of native species within those communities (Soulé et al., 1988). The ability for wildlife to move freely among populations is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to an animal's ability to occupy home ranges, if a species range extends across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

The South Coast Missing Linkages Project identified the Santa Clara River as an important component of the Santa Monica-Sierra Madre Connection, particularly because it offers one of the few connections between the Pacific Ocean and inland natural areas (Penrod et al., 2006, as cited in City of Ventura, 2013). The Santa Clara River acts as a vital pathway for a variety of wildlife, including large mammals such as bobcats, mountain lions, and mule deer, while also acting as a migratory corridor for avian species such as least Bell's vireo. Migratory fish such as steelhead trout (southern California DPS)

3.2

Biological Resources

navigate the Santa Clara River, searching for spawning grounds located in the Sespe and Santa Paula Creek watersheds. Construction activities proposed as part of Option 1B would take place from the top of and towards the land side of the existing levee and would not occur within the Santa Clara River. Therefore the Project would not interfere with the migration of southern steelhead trout.

Direct impacts resulting from the construction of Option 1B include the placement of physical structures such as heightened levees in Reaches 1 and 3 and the construction of a floodwall in Reach 4. Ground-disturbing activity including excavation of the existing levee structure, construction of the new heightened levee, and the installation of a floodwall would be expected to interfere with terrestrial wildlife movement during construction of the Project. The Project could also affect wildlife in adjacent habitats by interfering with movement patterns or causing animals to temporarily avoid areas adjacent to the construction zone. More mobile species such as birds and larger mammals would likely disperse into adjacent habitat areas during ground disturbing activities.

Potential indirect impacts include human disturbance, colonization or expansion of invasive weeds, and vehicle traffic. Operational impacts would be the same as described for direct and potential indirect impacts.

Construction activities may temporarily limit terrestrial wildlife movement within the Project area; however, the broad geographic range and habitat that occurs in the region would remain available to wildlife. Wildlife would maintain access to the Santa Clara River channel during all construction activities. The Project would not substantially interfere with the movement of any native resident or migratory fish, reptile, or amphibian species. Existing barriers to movement (i.e., existing levee structures) and surrounding land uses (i.e., residential and recreational) currently constrain or limit movement in the Project area. Construction of the Project would not directly impact the main channel or any secondary channels of the Santa Clara River. Impacts related to the O&M of the proposed Project would be similar to those for the existing levee and would include increased human disturbance and vehicle traffic as well as the colonization or expansion of invasive weeds.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed for leaving herbaceous wetland vegetation in channel bottoms and during invasive plant removal (BMPs 12 and 23).

There are no known bird or bat migratory corridors that would be directly impeded by the Project. Large concentrations of migrants are not known to utilize any specific portion of the Project site and Project activities are not expected to preclude use of the area. Migrating birds would have access to riparian communities within the adjacent Santa Clara River channel. Although species would be disrupted during certain activities, impacts to migratory corridors from the Project would not be significant (Class III).

Option 1A – Full Levee System with Reach 4 Floodwall

Impacts from the construction and O&M of Option 1A would be similar to those described above for Option 1B. Option 1A would however create additional potential barriers due to the heightening of a longer section of the existing levee and construction of an additional section of floodwall in Reach 2. Although species would be disrupted during certain construction activities, impacts to migratory corridors from construction and O&M of Option 1A would not be significant (Class III).

Jurisdictional Waters

Impact BIO-16: The Project would result in the loss of jurisdictional waters and/or wetland habitats.

Option 1B – Minimum Levee System (Preferred) with Reach 4 Floodwall

An assessment of jurisdictional wetlands, other “waters of the U.S.,” waters of the State, and riparian habitat was conducted in February and March 2014. The assessment identified approximately 0.004 acres of federally jurisdictional wetlands, 0.18 acres of federal non-wetland waters, and 2.56 acres of CDFW jurisdictional waters within Option 1B (see Figure 3.2-3 and Table 3.2-8). Permanent and temporary impacts related to the construction of Option 1B would be limited to the heightening of the levee in Reaches 1 and 3, and filling of the River Ridge Golf Course swale in Reach 2. The open concrete drainage channels currently present within the swale collect on-site runoff at the River Ridge Golf Course and are directed into a single culvert that discharges into the Santa Clara River. These concrete channels would be replaced with culverts prior to filling the existing swale. All existing drainage from this portion of the golf course would remain directed to the existing outlet in the Santa Clara River. Impacts to CDFW jurisdictional waters related to the heightening of the levee in Reaches 1 and 3 would result from the thinning of vegetation along the upper 20 feet of the river-facing bank of the existing levee structure. All excavation and construction-related activities within Reaches 1-3 would occur from the top of and to the land side of the existing levee away from the Santa Clara River. Filling of the golf course swale along Reach 2 would impact this non-wetland Water of the U.S. In addition, construction of the floodwall in Reach 4 would impact El Rio Drain, a non-wetland Water of the U.S. The small acreage of temporary impacts to federally jurisdictional wetlands would occur just north of the upstream most groin in Reach 3. This area would be restored to pre-project conditions as described in Mitigation Measure BIO-1c.

Table 3.2-8. Acreage of Jurisdictional Waters, Wetlands, and CDFW Jurisdictional Habitat Within Option 1B

Jurisdictional Feature Type		Approximate Acres*	
		Permanent	Temporary
Corps/LARWQCB Waters and Wetlands	Non-wetland Waters of the U.S.	0.09	0.09
	Wetlands	0.00	0.004
CDFW Jurisdictional Waters		1.60	0.96

* Acreages for the impacts related to the Reach 4 Floodwall are included in the acreages reported above. Of the impact to non-wetland waters of the U.S. and CDFW Jurisdictional Waters, 0.076 acres and 0.0095 acres are due to permanent and temporary impacts, respectively, to the non-natural River Ridge Golf Course swale atop the Santa Clara Landfill.

The importance of intermittent and ephemeral streams to wildlife in arid environments is well known (Levick et al., 2008). Ephemeral drainages such as the Santa Clara River provide unique habitat that is distinct from the surrounding uplands, providing more continuous vegetation cover and micro-topographic diversity than the surrounding uplands. Ephemeral and intermittent streams in the arid west provide important habitat for wildlife and are responsible for much of the biotic diversity (Levick et al., 2008). They have higher moisture content and provide shade and cooler temperatures within the channel. In cases where the habitat is distinct in species composition, structure, or density, wash communities provide habitat values not available in the adjacent uplands.

3.2
Biological Resources

Direct impacts to State and federal waters would include the removal of native riparian vegetation, the discharge of fill, degradation of water quality, and increased erosion and sediment transport. Potential indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. Operational impacts to wetland habitats would be similar to direct and potential indirect impacts.

In 2008, the VCWPD adopted a set of programmatic BMPs that are rigorously implemented during all routine O&M activities; these would apply during the O&M phase of the SCR-3 project as well. Since 2008, these BMPs have been further refined during negotiations with the CDFW, USACE, USFWS, NMFS, and LARWQCB. A copy of the most current *Routine Operations and Maintenance Program Environmental Best Management Practices and Permit Conditions Summary* is provided in Appendix G. The BMPs include protocol to be followed to avoid channel earthwork during the rainy season (BMP 1) and for the stabilization of exposed soil (BMP 26).

As required by law, VCWPD would comply with the regulations regarding conducting Project activities in water courses and habitats under the jurisdiction of the State and federal government. Therefore, VCWPD would obtain required permits pursuant to Section 401 and 404 of the CWA, the State Porter-Cologne Act, and Fish and Game Code Section 1605. There would be no net loss of wetlands from the implementation of Option 1B. The concrete lined swale located at the River Ridge Golf Course, just south of the existing levee, while meeting the jurisdictional criteria as federal non-wetland waters (due to connectivity to the Santa Clara River) and CDFW jurisdictional waters, provides little in terms of habitat that would support special-status species; impacts to this swale would not be considered significant. However, due to the importance of riparian habitats and natural ephemeral/perennial drainages and their suitability to support special-status species, the loss of these habitats associated with all other remaining portions of the proposed Project would be considered a significant adverse impact requiring mitigation (Class II).

Option 1A – Full Levee System with Reach 4 Floodwall

The assessment of jurisdictional wetlands, other “waters of the U.S.,” waters of the State, and riparian habitat conducted in February and March 2014 identified approximately 0.004 acres of federally jurisdictional wetlands, 0.10 acres of federal non-wetland waters and 4.57 acres of State waters in Option 1A (see Figure 3.2-3 and Table 3.2-9). Option 1A would not include filling the swale at the River Ridge Golf Course and would instead rely on the heightening of a longer section of levee and constructing an additional section of floodwall in Reach 2; this change reduces the impacts to federal non-wetland waters associated with Option 1B to 0.02 acres (permanent) and 0.08 acres (temporary)

Table 3.2-9. Acreage of Jurisdictional Waters, Wetlands, and CDFW Jurisdictional Habitat Within Option 1A

Jurisdictional Feature Type		Approximate Acres*	
		Permanent	Temporary
Corps/LARW QCB Waters and Wetlands	Non-wetland Waters of the U.S.	0.02	0.08
	Wetlands	0.00	0.004
CDFW Jurisdictional Waters		3.66	0.91

* Acreages for the impacts related to the Reach 4 Floodwall are included in the acreages reported above.

because it eliminates filling of the non-natural golf course swale atop the Santa Clara Landfill. Impacts to CDFW jurisdictional waters from the construction of Option 1A would be 2.01 acres greater than those described above for Option 1B. The VCWPD would be required to obtain the same regulatory approvals as outlined above under Option 1B. The small acreage of temporary impacts to federally jurisdictional wetlands would occur just north of the upstream most groin in Reach 3. This area would be restored to pre-project conditions as

described in Mitigation Measure BIO-1c. Due to the importance of riparian habitats and ephemeral/perennial drainages and their suitability to support special-status species, any loss of these habitats associated with the Project would be considered a significant adverse impact requiring mitigation (Class II).

Mitigation Measures

To minimize impacts to jurisdictional habitats, VCWPD would implement Mitigation Measures BIO-1a (*Implement a Worker Environmental Education Program*), BIO-1b (*Implement Best Management Practices*), BIO-1c (*Compensation for Temporary Impacts to Sensitive Vegetation Communities*), BIO-1d (*Compensation for Permanent Impacts to Sensitive Vegetation Communities*), and BIO-1e (*Implement Biological Construction Monitoring*). These measures include worker education describing the sensitive biological resources that occur on the Project site, implementation of BMPs to minimize and avoid impacts, developing a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities. As discussed above, the VCWPD would also implement existing O&M programmatic BMPs as well as those listed in Mitigation Measure BIO-1b (VCWPD, 2013). These measures and adherence with the O&M programmatic BMPs would reduce impacts to jurisdictional features to a less-than-significant level (Class II).

BIO-1a Implement a Worker Environmental Education Program.

BIO-1b Implement Best Management Practices.

BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities.

BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities.

BIO-1e Implement Biological Construction Monitoring.

3.2.3.3 Cumulative Impacts

Introduction

The area of cumulative effect for biological resources varies by a species' life history, mobility, distribution, and specific range in the proposed Project area. The "geographic scope" of the analysis of cumulative impacts to biological resources refers to the area within which cumulative impacts are likely to occur. For the proposed Project, the majority of the cumulative effects analysis makes a broad, regional evaluation of the impacts of existing and reasonably foreseeable future projects that threaten plant communities and wildlife within 20 miles of the Project area. For steelhead trout the Project considers the range of the species within the lower Santa Clara River Watershed.

The proposed Project predominately supports developed lands including the existing levee structure and River Ridge Golf Course. Patches of native riparian vegetation (i.e., arroyo willow thickets, black cottonwood forest, Fremont cottonwood forest) are present along portions of the existing levee face while riparian scrub and upland habitats (i.e., mulefat thickets, eucalyptus groves, and quailbush scrub) are present within the upland terrace in the eastern or upstream extent of the proposed Project.

Historically, the lower Santa Clara River Watershed has been subject to disturbance from farming, water diversions, and development; the loss of natural communities within the lower Santa Clara River Watershed has been exacerbated through these activities. In many instances, the conversion of natural lands through human disturbance has resulted in the displacement of native species, the restriction of regional movement corridors, and the loss of genetic diversity. The construction of the Vern Freeman Diversion in 1991, upstream of the proposed Project, has permanently altered the hydric regime within the Santa Clara River. This facility captures all low flows within the Santa Clara River originating upstream.

During most of the year, the portion of the Santa Clara River from the diversion to the mouth of the river does not contain flowing water. The facility must adhere to strict discharge requirements during the winter and spring, dependent on rainfall and resulting flows, to allow for migration of steelhead trout.

Both large and small scale land conversion within the lower Santa Clara River Watershed, coupled with the cumulative project list (refer to Section 3.0, Table 3-1 and Figure 3.2-1), was considered in the evaluation of cumulative impacts for the proposed Project. Because the proposed Project would result in the permanent loss of natural lands (including sensitive riparian communities), albeit a relatively small amount (Option 1B: 0.51 acres permanent and 0.47 acres temporary impacts, Option 1A: 0.91 acres permanent and 0.95 acres temporary impacts, to native vegetation), the analysis would consider whether the proposed Project, after the application of mitigation measures, would contribute to the cumulative significant loss and degradation of habitat for plants and wildlife, including least Bell's vireo, southwestern pond turtle, Cooper's hawk, and other special-status species.

Project Contribution to Cumulative Impacts

The majority of construction related impacts to sensitive wildlife, sensitive plants, and jurisdictional waters would be temporary and indirect. Operational impacts would be similar to those underway for the existing levee, and would not result in additional impacts. There are no known bird or bat migratory corridors that would be directly impeded by the proposed Project. Large concentrations of migrants are not known to utilize any specific portion of the proposed Project site and construction and O&M activities are not expected to preclude use of the area. Migrating birds would have access to riparian communities within the adjacent Santa Clara River channel. Although species would be disrupted during certain activities, impacts to migratory corridors from the proposed Project would not be significant. Impacts to sensitive wildlife, sensitive plants, jurisdictional waters and wildlife corridors, when combined with past, present, and probable future projects, would not be cumulatively considerable.

However, the proposed Project would result in minimal direct impacts to native vegetation known to support special status plants and wildlife including least Bell's vireo, yellow warbler, and southwestern pond turtle. The majority of potential impacts would be temporary and indirect in nature. Construction activities would only occur from the top of the existing levee and landward away from the Santa Clara River. Although impacts to riparian habitat as part of the proposed Project would be minimal, because of the overall loss of these communities within California, and their suitability to support several special-status species, the loss of this habitat when combined with past, present, and probable future projects would be a cumulatively significant impact.

Implementation of Mitigation Measures BIO-1a through BIO-14 would minimize the proposed Project's contribution of cumulative impacts. These measures include worker education describing the sensitive biological resources that occur on the Project site, protocol surveys for sensitive species, implementation of BMPs to minimize and avoid impacts, developing a Habitat Restoration and Monitoring Plan, and conducting biological monitoring during ground-disturbing and other construction-related activities. Implementation of these mitigation measures would reduce the proposed Project's contribution to cumulative impacts such that they would not be cumulatively considerable.

3.2.3.4 Impact Significance Summary

Table 3.2-10, below, provides a summary of each identified direct and indirect impact and associated mitigation measures to reduce or avoid the impact, if warranted. Mitigation measures are required for each significant impact, but are not required for impacts that are not significant. Table 3.2-10 also indicates the significance conclusion for each identified impact. For cumulative impacts, the proposed Project's contribution to biological resources impacts during construction and O&M were determined not to be cumulatively considerable after implementation of the mitigation measures.

Table 3.2-10. Summary of Biological Resources Impacts and Mitigation Measures		
Impacts	Mitigation Measures	Significance Conclusion
BIO-1: The Project would result in temporary and permanent losses of native vegetation	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring.	Class II
BIO-2: The Project would cause the loss of foraging habitat for wildlife	No mitigation measures are required.	Class III
BIO-3: The Project would result in disturbance to nesting birds or raptors	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-3 Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II
BIO-4: The Project would result in disturbance to wildlife in adjacent habitat	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-3 Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II
BIO-5: The Project could disturb nesting southwestern willow flycatchers, least Bell's vireos, or their habitat	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-3 Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures. BIO-5 Conduct Protocol Surveys for Least Bell's Vireo and Southwestern Willow Flycatcher and Avoid Occupied Habitat. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II
BIO-6: The Project could result in the loss of sensitive Lancetooth, Timema, and Shoulderband Snails or Monarch Butterfly	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II

3.2
Biological Resources

Table 3.2-10. Summary of Biological Resources Impacts and Mitigation Measures

Impacts	Mitigation Measures	Significance Conclusion
Impact BIO-7: The Project could result in mortality or injury to southwestern pond turtles or a disruption of nesting habitat.	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-7 Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures.	Class II
BIO-8: The Project could result in injury or mortality for two-striped garter snakes and south coast garter snake	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices (BMPs). BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-8 Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures.	Class II
BIO-9: The Project could result in injury or mortality of amphibian and reptile species designated as California Species of Special Concern and/or Ventura County Locally Important Species	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring BIO-9 Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures.	Class II
BIO-10: The Project could disturb nesting or migrant California Species of Special Concern, CDFW Special Animals or California Fully Protected bird species	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-3 Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures. BIO-5 Conduct Protocol Surveys for Least Bell's Vireo and Southwestern Willow Flycatcher and Avoid Occupied Habitat. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II
BIO-11: The Project could result in mortality of, and loss of habitat for, special-status bat species	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-11 Survey for Maternity Colonies or Hibernaculum for Roosting Bats. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II

Table 3.2-10. Summary of Biological Resources Impacts and Mitigation Measures		
Impacts	Mitigation Measures	Significance Conclusion
BIO-12: The Project could result in mortality of, and loss of habitat for, special-status mammals	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. NV-1a Movable Construction Noise Barriers. NV-1b Monitor Noise Levels.	Class II
BIO-13: The Project could result in mortality of listed or special-status fish	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1e Implement Biological Construction Monitoring.	Class II
BIO-14: The Project could disturb endangered, threatened, proposed, or other special-status plant species or their habitat	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring. BIO-14 Conduct Pre-construction Surveys for State and federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Special-status plants and Avoid Any Located Occurrences of Listed Plants or Perform Other Conservation Strategy.	Class II
BIO-15: The Project would interfere with established wildlife migratory corridors	No mitigation measures are required.	Class III
BIO-16: The Project result in the loss of jurisdictional waters and/or wetland habitats	BIO-1a Implement a Worker Environmental Education Program. BIO-1b Implement Best Management Practices. BIO-1c Compensation for Temporary Impacts to Sensitive Vegetation Communities. BIO-1d Compensation for Permanent Impacts to Sensitive Vegetation Communities. BIO-1e Implement Biological Construction Monitoring.	Class II

Class I: Significant impact; cannot be mitigated to a level that is not significant. A Class I impact is a significant adverse effect that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.

Class II: Significant impact; can be mitigated to a level that is not significant. A Class II impact is a significant adverse effect that can be reduced to a less than significant level through the application of feasible mitigation measures presented in this EIR/EIS.

Class III: Adverse; less than significant. A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.

Class IV: Beneficial impact. A Class IV impact represents a beneficial effect that would result from project implementation.