5.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources (including jurisdictional waters) in the project area, potential environmental impacts, recommended mitigation measures to help reduce or avoid impacts to biological resources, and determine the level of significance of those impacts after mitigation. The information presented in this section is partly based on the Biological Technical Report (Appendix E of this Draft EIR), which includes a Jurisdictional Delineation.

5.3.1 EXISTING CONDITIONS

5.3.1.1 Regulatory Setting

The following section discusses the federal and state laws and regulations, and other regulatory ordinances, laws, and regulations that may be applicable to biological resources that occur within the project area.

Federal Regulations and Standards

Federal Endangered Species Act (ESA)[1]

Enacted in 1973, the federal Endangered Species Act (ESA) provides for the conservation of threatened and endangered species and their ecosystems. The ESA prohibits the "take" of threatened and endangered species except under certain circumstances and only with authorization from United States Fish and Wildlife Services (USFWS) through a permit under Section 4(d), 7 or 10(a) of the ESA. "Take" under the ESA is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Migratory Bird Treaty Act[2] *(MBTA)*

Congress passed the Migratory Bird Treaty Act (MBTA) in 1918 to prohibit the killing or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The prohibition applies to birds included in the respective international conventions between the United States and Great Britain, the United States and Mexico, the United States and Japan, and the United States and Russia.

Clean Water Act[3] *(CWA)*

Under Section 404 of the Clean Water Act (CWA), the United States Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into jurisdictional waters of the United States (U.S.), which include those waters listed in 33 Code of Federal Regulations (CFR) 328.3 (Definitions).

Section 401 of the CWA requires a water quality certification from the state for all permits issued by ACOE under Section 404 of the CWA. The Regional Water Quality Control Board (RWQCB) is the state agency in charge of issuing a CWA Section 401 water quality certification or waiver.

[1] United States Code [U.S.C.] Title 16, Chapter 35, Sections 1531–1544.
[2] U.S.C. Title 16, Chapter 7, Subchapter II, Sections 703–712.
[3] U.S.C. Title 33, Chapter 26, Sections 101–607.

State Regulations and Standards

California Fish and Game Code (CFGC)

The California Fish and Game Code (CFGC) regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as impacts to natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA) (Sections 2050–2115) and Streambed Alteration Agreement regulations (Section 1600 et seq.). Wildlife "take" is defined by the California Department of Fish and Wildlife (CDFW) as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Protection extends to the animals, dead or alive, and all their body parts. Section 2081 of CESA allows CDFW to issue an incidental take permit for state-listed threatened or endangered species, should a project have the potential to "take" a state-listed species that has been detected within or adjacent to the project. Certain criteria are required under CESA prior to the issuance of such a permit, including the requirement that impacts of the take are minimized and fully mitigated.

Porter-Cologne Water Quality Control Act

Under Section 13000 et seq., of the Porter-Cologne Act, the RWQCB is the agency that regulates discharges of waste and fill material within any region that could affect a water of the state (California Water Code [CWC] 13260[a]), (including wetlands and isolated waters) as defined by CWC Section 13050(e).

5.3.1.2 Plants and Vegetation Communities

The Santa Ana River Parkway Extension Project (proposed project) study area (project area) is in an area known as the "Santa Ana River Narrows." The project area traverses a 2-mile length of the Santa Ana River (SAR), from Gypsum Canyon Road on the west, upstream to the junction of the Orange, Riverside and San Bernardino county lines on the east. The project area is additionally defined by SR-91 (Riverside Freeway) on the south, and La Palma Avenue, the Villa Del Rio community and Riverbend Apartments, and the Burlington Northern Santa Fe (BNSF) railroad right-of-way on the north. Despite the overall riverine system that dominates the project area, there is a fairly broad variety of plant communities present. The project area has undergone several events in recent years that have had significant effects on vegetative communities and land cover types currently present. These include floods events during the winter of 2004/2005 and 2011, the 2008 Freeway Complex Fire, and bank stabilization projects along the active channel of the SAR, in the vicinity of the Green River Golf Club. Riparian plant communities are adapted to periodic disturbances (especially flooding), and are typically capable of recovering relatively rapidly. Some of the more upland portions of the SAR floodplain in the project area contain a significant percentage of non-native vegetation, much of which poses an increase fire hazard.

As shown in Table 5.3-1, Vegetation Community Mapping, there are nine major classifications of plant communities within the project area (refer also to Figure 5.3-1, Vegetation Communities [Existing Conditions]). These major classifications include: scrub; grassland; marsh; riparian; woodland; watercourses; agriculture; developed; and disturbed. Within the major vegetation classifications are 27 subtypes.

TABLE 5.3-1
VEGETATION COMMUNITY MAPPING
WITHIN PROJECT AREA - EXISTING CONDITIONS

VEGETATION COMMUNITY TYPES	TOTAL (ACRES)
(2.3.10) Mixed Scrub	10.77
(2.3.6) Sagebrush Scrub	0.33
(2.3.7) Buckwheat Scrub	0.53
(2.6) Scale-Broom Scrub	6.11
(2.9) Scrub-Eucalyptus Planting	0.91
(2.10) Yerba Santa Scrub	2.22
Subtotal (Scrub)	**20.86**
(4.1) Annual Grassland	0.61
(4.6) Ruderal Grassland	38.29
(4.10) Salt Grass Grassland	0.22
(4.11) Giant Reed Grassland	12.00
Subtotal (Grassland)	**51.12**
(6.4) Freshwater Marsh	0.39
(7.1) Herbaceous Riparian	12.49
(7.2) Willow Riparian Scrub	11.40
(7.3) Mulefat Scrub	15.89
(7.4) Sycamore Riparian Woodland	5.98
(7.6) Arroyo Willow Riparian Forest	1.00
(7.7) Black Willow Riparian Forest	2.28
(7.8) Cottonwood-Willow Riparian Forest	51.28
(7.12) Barren Riparian	3.46
Subtotal (Riparian)	**103.78**
(8.1) Coast Live Oak Woodland	3.86
(8.2) California Walnut Woodland	0.42
(8.4) Mexican Elderberry Woodland	17.08
(8.5) Nonnative Woodland	1.48
Subtotal (Woodland)	**22.84**
(12.1) Open Water	0.26
(13.1) Perennial Rivers and Streams	17.85

TABLE 5.3-1
VEGETATION COMMUNITY MAPPING
WITHIN PROJECT AREA - EXISTING CONDITIONS

VEGETATION COMMUNITY TYPES	TOTAL (ACRES)
(14.3) Orchard and Vineyard	21.63
(15.1) Urban and Commercial	16.69
(15.5) Ornamental Landscaping	67.86
Subtotal (Urban and Commercial, Ornamental)	**84.55**
(16.1) Disturbed or Barren	39.92
(16.2.1) Disturbed Scrub	0.70
(16.2.2) Disturbed Riparian	4.94
(16.2.3) Disturbed Woodland	0.06
Subtotal	**45.62**
TOTAL	**368.91**

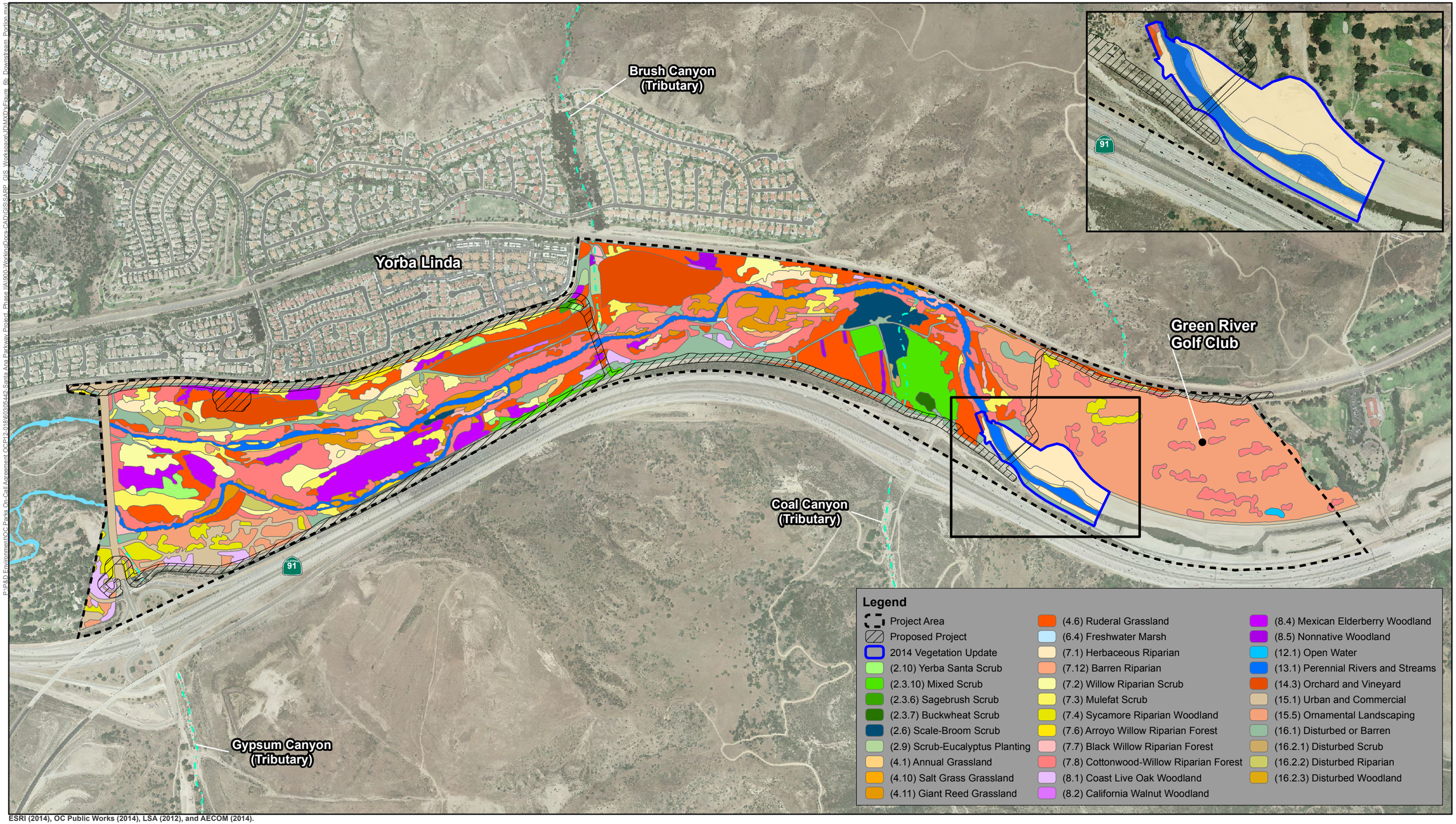
Source: AECOM (2014a).

Scrub

Vegetation in this classification typically consists of drought deciduous, relatively low-growing, soft-leaved shrubs. It generally is found in the foothills, below 3,000 feet elevation, growing on gentle to steep slopes, where shallow soils are present. In the more coastal areas of southern California, scrub habitats are often recognized as Coastal Sage Scrub (CSS). Scrub habitats are considered fire-adapted, and being relatively short-lived. Occurrences of fires in scrub habitats are fairly frequent in comparison to other native plant communities. CSS is known for its association with several threatened and endangered plant and animal species, and therefore it is recognized as a special-status vegetation type. There are many subtypes of scrub vegetation, which are categorized by their species composition, and especially by the dominant or co-dominant plant species. The five subtypes of native scrub vegetation found in the project area include sagebrush scrub, buckwheat scrub, mixed sage scrub, scale-broom scrub and yerba santa scrub.

Grassland

Native grasslands in California, especially southern California, have largely been replaced by the invasion of nonnative annual grasses and forbs (of mostly Mediterranean origin). These nonnative plants, generally regarded as weeds, include grasses such as bromes, wild oats, barley and herb species such as mustards and thistles. The subtypes of grasslands within the project area include annual grassland, ruderal grassland, salt grass grassland, and giant reed grassland.



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ESRI (2014), OC Public Works (2014), LSA (2012), and AECOM (2014).

Scale 1 : 10,500

0 250 500 1,000 1,500 Feet

Figure 5.3-1
Vegetation Communities-Existing Conditions

Santa Ana River Parkway Extension Project

Marsh

Marsh habitats consist of permanently or seasonally flooded or saturated areas dominated by persistent herbaceous plants that are obligate hydrophytes. Only one type of marsh habitat, Freshwater Marsh¸ is found in the project area. Freshwater marsh is dominated by cattail or bulrush species with other perennial or annual obligate hydrophyte species present as subdominants.

Riparian

Riparian habitats consist of trees, shrubs or herbs that occur along watercourses and bodies of water. The vegetation is adapted to flooding and soil saturation during at least a portion of its growing season. Riparian communities are recognized as special-status habitats by CDFW (Holland 1986). In the project area, there are up to eight subtypes present. These include herbaceous riparian, willow riparian scrub, mulefat scrub, sycamore riparian woodland, arroyo willow riparian forest, black willow riparian forest, cottonwood-willow riparian forest, and barren riparian.

Woodland

Woodland communities consist of multilayered vegetation with a canopy that is 20 to 80 percent tree cover. In the project area there are four subtypes of woodland communities, including, coast live oak woodland, California walnut woodland, Mexican elderberry woodland and nonnative woodland.

Watercourses

Watercourses include flood control channels, streams, and rivers. The Perennial Rivers and Streams subtype is the only type of watercourse present within the project area. This habitat type specifically pertains to the unvegetated, open-water portion of the SAR.

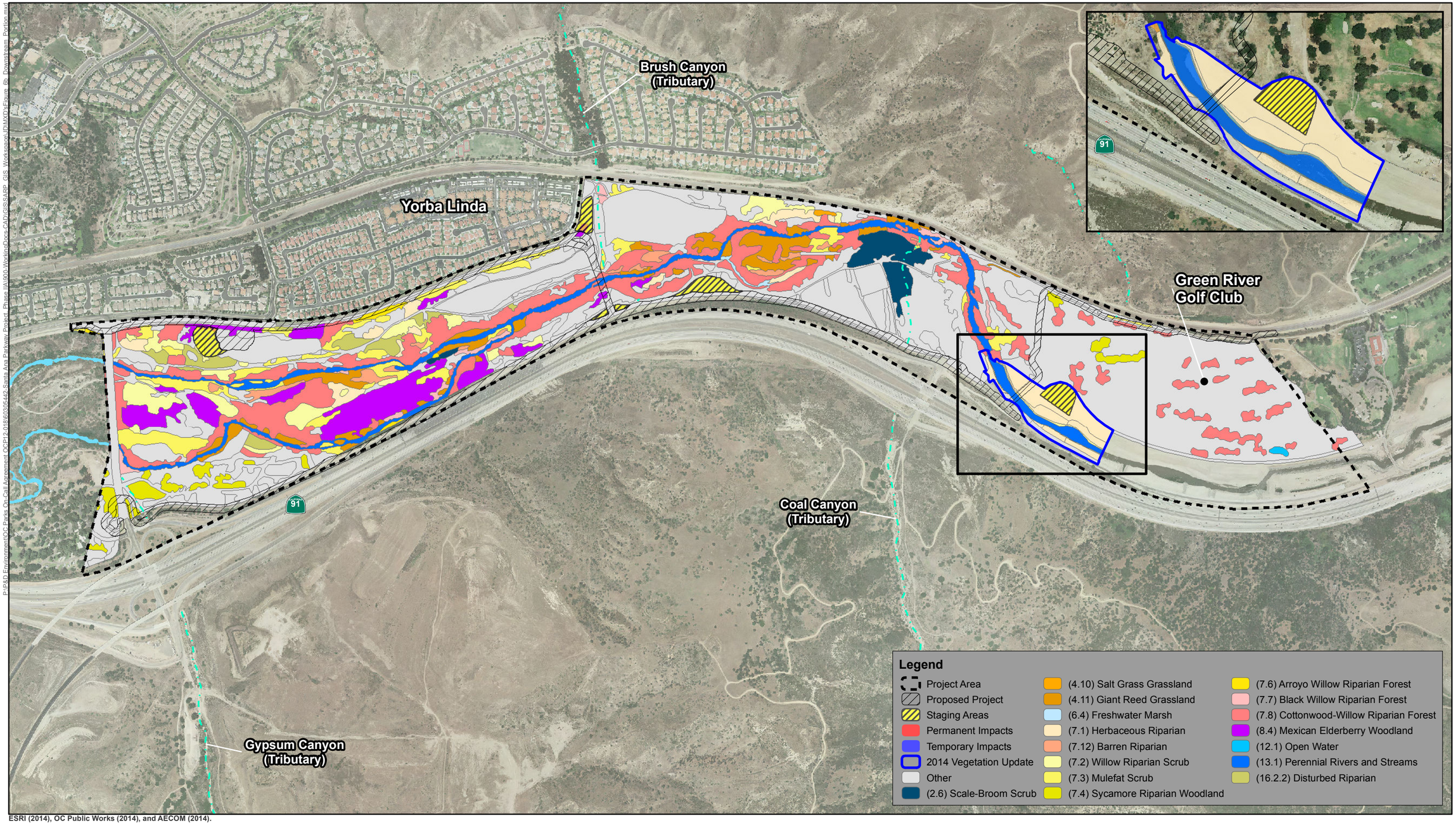
Agriculture, Developed, and Disturbed

Approximately one-third of the project area contains land classified as Agriculture, Developed, or Disturbed. These classifications include land used for orchards, roads, parks, ornamental landscaping, buildings/pavement, flood protection features, and disturbed or barren areas (e.g., areas that have been cleared or graded, areas lacking vegetation or that are sparsely covered).

5.3.1.3 Special-Status Natural Communities

The resource agencies consider vegetation types or communities that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife, to be special-status.

Of the 27 plant community subtypes, the following 13 are considered species-status communities: sagebrush scrub, buckwheat scrub, mixed sage scrub, scale-broom scrub, coast live oak woodland, California walnut woodland, willow riparian scrub, mulefat scrub, sycamore riparian woodland, arroyo willow riparian forest, black willow riparian forest, cottonwood-willow riparian forest, and freshwater marsh. As shown in Figure 5.3-2, Riparian Vegetation Communities - Existing Conditions, a large portion of the project area is composed of riparian habitat.



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ESRI (2014), OC Public Works (2014), and AECOM (2014).

Scale 1 : 10,500

0 250 500 1,000 1,500 Feet

Figure 5.3-2
Riparian Vegetation Communities-Existing Conditions

5.3.1.4 Special-Status Plants

Table B-1 of the Biological Technical Report (Appendix E of this Draft EIR) provides information regarding special-status plants that may have potential to occur in the project area. These include chaparral sand-verbena (*Abronia villosa* var. *aurita*), Braunton's milk-vetch (*Astragalus brauntonii*), southern tarplant (*Centromadia parryi* ssp. *australis*), intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), Payson's jewel-flower (*Caulanthus simulans*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), chaparral nolina (or beargrass)(*Nolina cismontana*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*), Coulter's matilija poppy (*Romneya coulteri* var. *coulteri*) and salt Spring checkerbloom (*Sidalcea neomexicana*). Of these, only one plant has been recorded in the project area (Coulter's matilija poppy), while the remaining species are considered to have low potential of occurring.

Two of the plant species are listed as federally endangered: Braunton's milk-vetch and Santa Ana River woollystar. The woollystar is also state-listed as endangered. The milk-vetch is considered to have low potential to occur in the project area due to a lack of suitable habitat. Although there may be patches of potential habitat for the woollystar in the project area, there is only one old (1927) record, which is believed to be approximately where Weir Canyon Road crosses the SAR. This location is roughly 2.5 miles downstream of the western terminus of the project area. There have been no subsequent observations of this relatively distinct, and easy to detect species. Nevertheless, the project area does contain areas of potential habitat for the federally- and state-listed Santa Ana River woolly star.

5.3.1.5 Special-Status Wildlife

Table B-2 of the Biological Technical Report (Appendix E of this Draft EIR) provides information regarding special-status wildlife that may have potential to occur in the project area (one fish, one amphibian, two reptiles, and 13 birds). These include Santa Ana sucker (*Catostomus santaanae*), arroyo toad (*Anaxyrus (=Bufo) californicus*), western pond turtle (*Actinemys (=Emys) marmorata*), two-striped garter snake (*Thamnophis hammondi*), Cooper's hawk (*Accipiter cooperii*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), long-eared owl (*Asio otus*), northern harrier (*Circus cyaneus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), Clarke's marsh wren (*Cistothorus palustris clarkae*), coastal California gnatcatcher (*Poliptila californica californica*), yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*) and tricolored blackbird (*Agelaius tricolor*).

Of the special-status wildlife species, six are listed as threatened or endangered (by either USFWS or CDFW). These include the Santa Ana sucker, arroyo toad, western yellow-billed cuckoo, southwestern willow flycatcher, least Bell's vireo and coastal California gnatcatcher. Two of these species are not expected to be present, due to unsuitable habitat and lack of any recent records in the area (arroyo toad, western yellow-billed cuckoo). There is considered to be a low potential for southwestern willow flycatcher due to very marginally suitable habitat in the project area. Although there appears to be no established population of Santa Ana sucker downstream of Prado Dam, suitable habitat may exist in the project area and the potential for the presence of Santa Ana sucker is considered low to moderate.

Although there are known occurrences of California gnatcatchers in multiple locations in the vicinity of the project area (e.g., Appendix E – Biological Technical Report, AECOM 2014a; Appendix B – Regional Special-Status Wildlife Species [B-2] of AECOM 2014a; LSA 2013) there is very limited suitable breeding habitat for this species within the project area. Therefore, although there may be moderate potential for a juvenile gnatcatcher to occasionally occur in the project area during post-

breeding dispersal of young birds from breeding territories in the vicinity, the potential for a breeding pair of California gnatcatchers to occur is considered low. Yet, because the gnatcatcher is a year-round resident of coastal sage habitats located adjacent to (or regionally close to) the project area, there is the potential for it to occur within the project area (AECOM 2014a).

Over the last two decades the least Bell's vireo in southern California has been responding favorably to conservation efforts for this species, and the numbers of vireo territories throughout Orange County have risen substantially. Riparian habitat along the SAR is one of the areas being actively colonized by this species in the county. A significant portion of the project area is known to have supported breeding territories of least Bell's vireo in recent years.

The remaining non-listed special-status wildlife species have either a low to moderate potential to occur within the project area (western pond turtle, two-striped garter snake, golden eagle, bald eagle, long-eared owl, northern harrier, Clarke's marsh wren, yellow warbler and yellow-breasted chat), or are not expected to occur (tricolored blackbird), due to lack of suitable habitat. Cooper's hawk has been observed in the project area, including during the breeding season, and is likely an uncommon resident there. Although there are records for bald eagle, golden eagle and northern harrier in the project area, all have been occurrences outside the breeding season. No breeding habitat for any of these species is considered present in the project area.

5.3.1.6 Critical Habitat

There are no areas of designated critical habitat within the project area.

5.3.1.7 Wildlife Movement

"Wildlife movement corridors" are connections between habitat patches and resource areas that allow for physical and genetic exchange between animal populations. These connections may be local, such as between foraging, nesting or denning areas, or of regional importance. As undisturbed habitats become surrounded by urban development, they become isolated from neighboring areas. Movement corridors provide critical linkages between islands of open space, isolated foraging and breeding habitats and other important wildlife use areas. Drainage courses and adjacent upland habitats, including ridgelines (for greater ease of movement for larger mammals), typically function as movement corridors. These corridors can also provide water and significant cover for many animals.

The project area includes a regionally significant north-south wildlife movement corridor where the Coal Canyon drainage joins with the SAR. This corridor links the Cleveland National Forest and the Santa Ana Mountains that are south of the SR-91 Freeway, by way of Coal Canyon, with Chino Hills State Park, which is north of the SAR. The main wildlife movement is through the Coal Canyon underpass of the SR-91 Freeway, across the relatively small Chino Hills State Park parcel within the project area, and across the SAR to the north (including Brush Canyon). This is an important wildlife movement corridor for numerous species, especially mountain lion and mule deer. Other, more secondary, movement corridors include Gypsum Canyon, where it connects with the SAR at the far western limits of the project area, facilitating movement between the Santa Ana Mountains and the river. There are also several small culverts under SR-91 that allow small mammals to travel between the Santa Ana Mountains/Cleveland National Forest and Chino Hills State Park. Brush Canyon provides access from the SAR to the more westerly portions of Chino Hills State Park. The SAR itself provides considerable freedom of movement for wildlife moving east to west, allowing connection between both Chino Hills State Park and the Santa Ana Mountains with the somewhat limited resources downstream along the river (e.g, Featherly Regional Park and the Horseshoe Bend area of the river).

5.3.1.8 Habitat Conservation Plans

The project area is not currently within any Habitat Conservation Plan (HCP) or Natural Communities Conservation Plan (NCCP). Two HCP/NCCP plans were developed for other areas in Orange County – the Central Coastal HCP/NCCP and the Southern Subregion NCCP/Master Streambed Alteration Agreement (MSAA)/HCP (County of Orange 1996, 2006) – both of which occur to the southwest, south, and southeast of the proposed project.

Santa Ana River Canyon Habitat Management Plan (SARCHMP) (SARCHMP; OCFCD 1997; LSA 2013) is a regional conservation plan developed for both the SAR (from Prado Dam downstream to the Weir Canyon overpass) and Brush Canyon. The primary goal is to maintain the baseline amount of native riparian habitat, which is to be mapped in ten-year intervals. Projects implemented by the County of Orange within the SARCHMP area are to maintain the habitat, or provide mitigation such that the riparian habitat is maintained and can support sensitive species over the long term.

5.3.1.9 Jurisdictional Waters, Wetlands, and Riparian Habitats

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources that can fall under the jurisdiction of several regulatory agencies (i.e., ACOE, CDFW, and RWQCB). Potential waters of the U.S. and State are present in the project area (Table 5.3-2; see also Appendix E; AECOM 2014a). Table 5.3-2, below, shows the potentially jurisdictional wetlands and other waters of the U.S. within a delineated buffer area around project features. Permits from ACOE, CDFW, and RWQCB authorizing installation of the proposed project at river crossings would be required for work within and adjacent to jurisdictional resources.

TABLE 5.3-2
JURISDICTIONAL RESOURCES - EXISTING CONDITIONS

FEATURE	NON-WETLAND WoUS	WETLAND WoUS	TOTAL WoUS	CDFW-ONLY	TOTAL CDFW
SAR-Bridge 1	0.72	0.16	0.88	0.02	0.90
SAR-Bridge 2	0.14	0.01	0.15	0.35	0.50
SAR-Bridge 3	0.10	0.00	0.10	0.05	0.15
SAR-North Bank Depressional Wetlands (Sites 1 - 8 at Culverts 74 - 81)	0	0.53	0.53	0	0.53
SAR-North Bank-Ephemeral Drainage (Tributary at North side of Golf Course)	0.01	0	0.01	0	0.01
SAR-South Bank-CDFW Riparian	0	0	0	0.23	0.23
TOTAL	**0.97**	**0.70**	**1.67**	**0.65**	**2.32**

Acronyms: WoUS = Waters of the U.S.
Note: Jurisdictional Delineation was conducted for applicable project areas around the trails and bridges. See Appendix E of this Draft EIR.
Source: AECOM (2014a).

5.3.2 THRESHOLDS OF SIGNIFICANCE

Based upon the thresholds contained in Appendix G of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would result in a significant adverse impact related to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or USFWS.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

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

For the first-bulleted CEQA threshold above, a significant short-term effect may be determined if there is a high potential for loss of individuals of a sensitive species. A significant long-term effect may be determined if there is a substantial decrease in the long-term viability of an existing population of sensitive species on the site. For the second-bulleted CEQA threshold above, significant effect may include any short- or long-term reduction in the quantity and quality of vegetation.

5.3.3 METHODOLOGY RELATED TO BIOLOGICAL RESOURCES

5.3.3.1 Literature Review

This assessment of biological resources associated with the proposed project is based largely on information that was obtained from a variety of sources. These sources provided data related to the existing (and historic) conditions of the project site and surrounding areas, including the vegetation communities, the characteristic plant and wildlife composition, the location of special status plants and wildlife or potential habitat for special status species, and the presence of wetlands, waterways and other jurisdictional features.

Sources that were particularly useful in the compiling of biological resource data include the following:

- Santa Ana River Canyon Habitat Management Plan Maintenance and Monitoring Reports (LSA 2013);

- Santa Ana River Parkway Engineer's Report and Alignment Study (RBF Consulting 2010);

- Santa Ana River Mitigation Sites, 2010 Annual Report (AECOM 2010); and

- Santa Ana River Interceptor Line (SARI) Protection/Relocation Supplemental Environmental Impact Statement (EIS)/EIR (ACOE 2009).

In addition, the California Natural Diversity Database (CNDDB), administered by the California Department of Fish and Wildlife's Biogeographic Data Branch (CDFW 2014a,b,c,d) was used to identify special status species and vegetation communities that were potentially present in, and adjacent to, the project area.

5.3.3.2 Vegetation Mapping

The vegetation and land cover types in the project area have been mapped for several different projects over the last five years, with the most recent mapping effort conducted in 2012 for the Santa Ana River Canyon Habitat Management Plan (LSA 2013). Vegetation and land cover mapping for this document (see Table 5.3-1) was largely based on results of the 2012 mapping effort. The vegetation classification designations follow those used by LSA (2013), which is based on the Orange County Habitat Classification System. Site visits, however, were conducted in 2014 by AECOM's Dr. Erik Larsen, to confirm the current status of the vegetation and land cover types, and refine or update the mapping as needed. These site visits were conducted on the dates of January 13 and 14, and February 4 and 5, 2014. In particular, vegetation mapping was updated at the location of Bridge 2 (Figures 5.3-1 and 5.3-2). Thus, the vegetation spatial data includes the past LSA (2013) data as well as AECOM (2014a) updated data.

During the preparation of this biological resources analysis, including fieldwork throughout the project area, it was evident that portions of the project area were being directly impacted by the ongoing SARI project and the SAR Reach 9 Phase 3 project. The impact areas were located along the entire southern bank of the SAR (from Gypsum Canyon Bridge upstream to the Bridge 2 location). Thus, the actual existing condition for the SAR Parkway project area involved a disturbed setting along the southern bank. In this case, the SARI contractor may restore impacted areas per applicable regulatory permits, which then could be impacted by the proposed project. Coordination with County staff (OCPW 2014c), provided assistance with understanding the hydroseed mixes used in riparian and upland areas along the project area. Where previous mapping (e.g., before 2013) showed disturbed areas around the location of Bridge 2, the areas have now been hydroseeded with a basic native mix for the purpose of erosion control. These updates have been captured in the mapping that was completed for this biological resources analysis.

5.3.3.3 Field Surveys

<u>Biological Resources</u>

The account describing the characteristic plants and wildlife of the project area was based on data obtained from the literature review, as well as that derived from a number of site visits conducted at different times of the year by AECOM biologists in recent years, for unrelated projects (AECOM 2010, AECOM 2014a).

Regarding potential impacts to riparian habitat in particular, hydraulic modeling was performed using the geo-referenced WEST HEC-RAS model, which had been modified by AECOM (2014c). The hydraulic model was used to determine if the bridge supports and pilings result in any changes to flow, sediment transport, or water depth (i.e., hydraulic impact) around the proposed bridges. The model shows results for existing and proposed conditions (without bridges, with bridges; AECOM 2014c). After model runs were completed, a HEC-GeoRAS GIS plug-in was used to overlay flow and depth data upon habitat

mapping provided by LSA (2013) and AECOM (2010, 2014a). Thus, it was possible to determine not only that there were hydraulic impacts, but the acreage of particular habitat types that would be impacted by the altered hydraulics around the proposed bridges (AECOM 2014c).

Jurisdictional Delineation

Standard methods were used for the delineation of jurisdictional waters, wetlands, and riparian habitat within the project area (Appendix E of this Draft EIR; CDFG-ESD 1994; EL 1987; ACOE 2008; Lichvar and McColley 2008; Curtis and Lichvar 2010; USDA-NRCS 2010; ACOE 2014a,b; and USDA-NRCS 2014a,b).

Special-Status Plant and Wildlife Potential for Occurrence

After conducting the CNDDB (CDFG 2013) and the California Native Plant Society (CNPS) (2014) database searches, a list of applicable plant and wildlife species were organized into tables for plants and wildlife, respectively. No focused surveys for special status plant or wildlife species were conducted specifically for the Biological Technical Report. Refer to the Biological Technical Report (Appendix E of this Draft EIR) for how the potential for occurrence ranking criteria was utilized.

5.3.4 POTENTIAL IMPACTS

This section discusses potential impacts to sensitive plant communities, plants, and wildlife species that have either been observed or have the potential to occur in the project area. Impacts to non-sensitive species or plant communities are not discussed.

Biological resources may be either directly or indirectly impacted by a project. Direct and indirect impacts may furthermore be either permanent or temporary in nature. These impacts are defined below.

- Direct Impacts: Any alteration, disturbance, or destruction of biological resources that would result from project related activities is considered a direct impact. Examples include clearing vegetation, encroaching into wetlands, diverting surface water flows, and the loss of individual species and/or their associated plant communities.

- Indirect Impacts: As a result of project related activities, biological resources may also be affected in an indirect manner. Examples include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and the introduction of invasive wildlife (i.e., domestic cats and dogs) and plants.

- Permanent Impacts: All impacts that result in the irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.

- Temporary Impacts: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction or the removal of vegetation for construction activities and subsequently allowing the natural vegetation to recolonize the impact area.

5.3.4.1 Impacts to Special-Status Species and Sensitive Natural Communities and Riparian Habitat

Special-Status Plants

As discussed previously, eleven of the twelve special-status plants identified in the record search were determined to have a low potential for occurring in the project area. Coulter's matilija poppy was the only plant that had been recorded in the project area; however, the disturbance limits of the proposed project are not expected to overlap where this species would occur.

It should be noted that two of the twelve plant species are listed as federally endangered: Braunton's milk-vetch and Santa Ana River woollystar. The Santa Ana River woollystar is also state-listed as endangered. Braunton's milk-vetch is considered to have low potential to occur in the project area due to a lack of suitable habitat. Although the potential for Santa Ana River woollystar occurrence is considered to be low, there are some limited areas of potential habitat. Due to the federal and state status of this plant species, any impacts (direct and indirect) to Santa Ana River woollystar would be considered significant. Therefore, construction of the proposed project could result in a potentially significant impact to the Santa Ana River woollystar. Impacts to other sensitive plant species are not expected to occur, and would be less than significant.

Operation of the proposed project is not anticipated to result in any significant impacts to special-status plants, as trail users would be confined via fencing and signage to the designated pathways, bridges, staging area, turnouts, vista points, etc., associated with the proposed project. Impacts during operation of the proposed project would therefore be considered less than significant.

Special-Status Wildlife and Nesting Birds

As discussed previously, of the seventeen special-status wildlife species, six are listed as threatened or endangered. These include the Santa Ana sucker, arroyo toad, western yellow-billed cuckoo, southwestern willow flycatcher, least Bell's vireo and coastal California gnatcatcher.

Arroyo toad and western yellow-billed cuckoo are not expected to be present within the project area due to unsuitable habitat and lack of any recent records in the area. Additionally, there is considered to be a low potential for southwestern willow flycatcher due to very marginally suitable habitat in the project area. The potential for the presence of Santa Ana sucker is considered low to moderate. Although there appears to be no established population downstream of Prado Dam, suitable habitat may potentially exist in the project area. Although there are known occurrences of California gnatcatchers in multiple locations in the vicinity of the project area, there is very limited suitable breeding habitat for this species within the project area. As such, the potential for a breeding pair of California gnatcatchers to occur is considered low. However, there may be moderate potential for a juvenile gnatcatcher to occasionally occur in the project area during post-breeding dispersal of young birds from breeding territories in the vicinity. Over the last two decades the least Bell's vireo in southern California has been responding favorably to conservation efforts for this species, and the numbers of vireo territories throughout Orange County have risen substantially. Riparian habitat along the SAR is one of the areas being actively colonized by this species in the county. Furthermore, a substantial portion of the project area is known to have supported breeding territories of least Bell's vireo in recent years. Therefore, construction of the proposed project could result in potentially significant impacts to the Santa Ana sucker, California gnatcatcher, and least Bell's vireo.

The remaining non-listed special-status wildlife species have either a low to moderate potential to occur within the project area (i.e., western pond turtle [moderate], two-striped garter snake [low], golden eagle, bald eagle, long-eared owl, northern harrier, Clarke's marsh wren, yellow warbler and yellow-breasted chat), or are not expected to occur (tricolored blackbird), due to lack of suitable habitat.

Two-striped garter snake has a low potential to occur within the project area and, as such, impacts are not expected to occur to this species. Potentially suitable perennial freshwater habitat for western pond turtle is present at proposed bridge crossings of the SAR (especially Bridge 1). However, because of the extensive perennial freshwater habitat in the vicinity of the proposed bridges, and because most of the project elements will not cross or be located immediately adjacent to the SAR, impacts to the western pond turtle would be considered less than significant.

Although there are records for bald eagle, golden eagle and northern harrier in the project area, all have been occurrences outside the breeding season, no suitable breeding habitat occurs within the study area, and substantial foraging habitat for these raptors will remain in the study area. As there is moderate potential for breeding individuals of Clarke's marsh wren, yellow warbler and yellow-breasted chat to occur in the study area, the project may have potential adverse impacts on these bird species. Although these species would not be expected to have substantial populations in the area, impacts to active nests would be considered significant, and are further protected by the MBTA.

Cooper's hawk has been observed in the project area, including during the breeding season, and is likely an uncommon resident there. Although Cooper's hawk would not be adversely impacted by the proposed project during the non-breeding season, project impacts during the breeding season would be potentially significant. Cooper's hawk, and other birds protected by the MBTA and CFGC, have the potential to nest within or near the disturbance limits of the proposed project. A variety of habitats suitable for nesting birds, including both native and non-native plant communities, are present throughout the project area. Clearing of vegetation during the nesting season could cause the direct loss of active nests, and would be considered a significant impact. Indirect impacts to nesting birds within the vicinity of the disturbance limits could occur as a result of noise and vibration and other startle effects resulting from construction activities. Disturbances related to construction could result in increased nestling mortality due to nest abandonment or decreased incubation or feeding frequency. Additionally, wherever the proposed project comes in contact with riparian habitat dominated by willows, including riparian woodland or scrub type vegetation, there is the chance of direct or indirect impacts to least Bell's vireo. Because sensitive riparian habitat, most of which is occupied by least Bell's vireo, is prevalent through the project area, direct impacts to riparian habitat is a potentially significant impact to this species (during the breeding season). Further, direct impacts and indirect impacts to CSS may result in potentially significant impacts to the California gnatcatcher. Therefore, construction of the proposed project has the potential to result in significant impacts to nesting birds during the bird breeding season.

Operation of the proposed project is not anticipated to result in any significant impacts to special-status wildlife or nesting birds, as trail users would be confined via fencing and signage to the designated pathways, bridges, staging area, turnouts, vista points, etc., associated with the proposed project. Impacts during operation of the proposed project would therefore be considered less than significant.

Sensitive Natural Communities and Riparian Habitat

Table 5.3-3 and Figure 5.3-3 identify the plant communities that are expected to be directly impacted (permanently removed), or indirectly impacted (temporarily affected) from within the construction footprint of the proposed project.

TABLE 5.3-3
VEGETATION COMMUNITY MAPPING - TEMPORARY AND PERMANENT IMPACTS

VEGETATION COMMUNITY TYPE	TOTAL (ACRES)	TEMPORARY IMPACTS (ACRES)	PERMANENT IMPACTS (ACRES)
(2.3.10) Mixed Scrub	10.77	1.06	0.43
(2.3.6) Sagebrush Scrub	0.33	0.14	0.05
(2.3.7) Buckwheat Scrub	0.53	0	0
(2.6) Scale-Broom Scrub	6.11	0	0
(2.9) Scrub-Eucalyptus Planting	0.91	0.28	0.28
(2.10) Yerba Santa Scrub	2.22	0.10	0.04
Subtotal (Scrub)	**20.86**	**1.57**	**0.81**
(4.1) Annual Grassland	0.61	0.01	0.01
(4.6) Ruderal Grassland	38.29	2.26	1.36
(4.10) Salt Grass Grassland	0.22	0	0
(4.11) Giant Reed Grassland	12.00	0	0
Subtotal (Grassland)	**51.12**	**2.27**	**1.37**
(6.4) Freshwater Marsh	0.39	0	0
(7.1) Herbaceous Riparian	12.49	1.69	1.56
(7.2) Willow Riparian Scrub	11.40	0.26	0.25
(7.3) Mulefat Scrub	15.89	1.06	0.17
(7.4) Sycamore Riparian Woodland	5.98	0.40	0.08
(7.6) Arroyo Willow Riparian Forest	1.00	0.34	0.14
(7.7) Black Willow Riparian Forest	2.28	0.00	0.00
(7.8) Cottonwood-Willow Riparian Forest	51.28	0.72	0.20
(7.12) Barren Riparian	3.46	0	0
Subtotal (Riparian)	**103.78**	**4.47**	**2.39**
(8.1) Coast Live Oak Woodland	3.86	0.58	0.15
(8.2) California Walnut Woodland	0.42	0	0
(8.4) Mexican Elderberry Woodland	17.08	0.74	0.73
(8.5) Nonnative Woodland	1.48	0	0
Subtotal (Woodland)	**22.84**	**1.32**	**0.88**
(12.1) Open Water	0.26	0	0
(13.1) Perennial Rivers and Streams	17.85	0.13	0.08
(14.3) Orchard and Vineyard	21.63	1.06	1.32
(15.1) Urban and Commercial	16.69	3.34	1.85
(15.5) Ornamental Landscaping	67.86	2.75	0.97
Subtotal (Urban and Commercial, Ornamental)	**84.55**	**6.09**	**2.81**

TABLE 5.3-3
VEGETATION COMMUNITY MAPPING - TEMPORARY AND PERMANENT IMPACTS

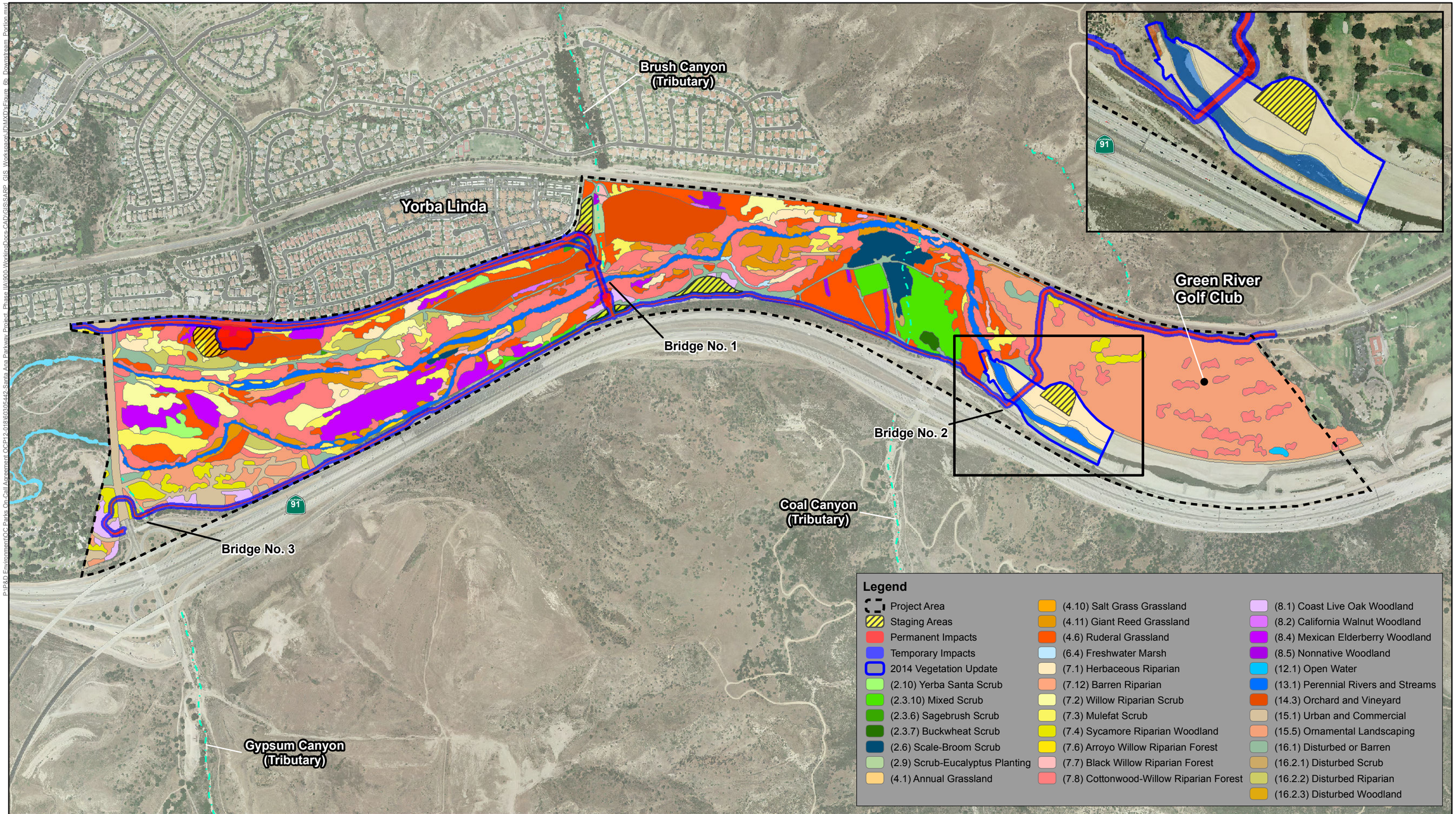
VEGETATION COMMUNITY TYPE	TOTAL (ACRES)	TEMPORARY IMPACTS (ACRES)	PERMANENT IMPACTS (ACRES)
(16.1) Disturbed or Barren	39.92	4.79	4.00
(16.2.1) Disturbed Scrub	0.70	0	0
(16.2.2) Disturbed Riparian	4.94	0.04	0.07
(16.2.3) Disturbed Woodland	0.06	0	0
Subtotal (Disturbed)	**45.62**	**4.83**	**4.07**
TOTAL	**368.91**	**21.75**	**13.73**

Source: AECOM (2014a).

Of the 32 plant community subtypes that were mapped within the study area, the following 14 are considered special-status communities: sagebrush scrub, buckwheat scrub, mixed sage scrub, scale-broom scrub, coast live oak woodland, California walnut woodland, willow riparian scrub, mulefat scrub, sycamore riparian woodland, arroyo willow riparian forest, black willow riparian forest, cottonwood-willow riparian forest, perennial rivers and streams, and freshwater marsh. Of these 14 special-status plant communities in the study area, it is anticipated that the proposed project may impact nine communities (sagebrush scrub, mixed scrub, yerba santa scrub, mulefat scrub, sycamore riparian woodland, arroyo willow riparian forest, cottonwood-willow riparian forest, coast live oak woodland, perennial rivers and streams). Where direct removal of any of these nine special-status natural communities cannot be avoided by the proposed project, these impacts would be considered significant. Therefore, construction of the proposed project could result in a potentially significant impact to sensitive natural communities and riparian habitat.

It should be noted that the proposed project is being planned for an area with several other ongoing projects (e.g., ACOE projects within the SAR below Prado Dam). In order for impacts to remain as expected, and not increase due to potential conflicts with installation of future habitat mitigation (of other parties' projects), the County has agreed to coordinate with other agencies/contractors working within the project area so that complex, high quality riparian or upland mitigation for other projects' impacts will not be constructed within the proposed route for the SAR Parkway trails.

Results of the hydraulic modeling analysis indicate that potential indirect impacts to riparian habitat are primarily limited to cottonwood-willow riparian forest, especially upstream from Bridge No. 1. There are 2.4 acres of discernible impacts to the flood regime that would occur to the cottonwood-willow riparian forest vegetation community from the proposed project during the design storm (i.e., defined as 30,000 cubic feet per second). These impacts are limited to decreases in velocity between -0.25 to -1.0 feet per second (fps). A decrease in flow velocity means that on the upstream side of the bridges, water would have a tendency to slow down, back up (or pool) and spread out laterally over the floodplain. This effect would not be considered an adverse impact, as these riparian communities are adapted to periodic flooding during storms (or releases from Prado Dam). No project-related increase in velocity is expected to impact this habitat type during the design storm. This type of impact is usually associated with hydromodification (i.e., changes to the peak and duration of flood flows due to urbanization). Thus, scour of sediment around the bridges is not expected to occur. The indirect, hydraulic-induced impacts described above are not expected to be adverse, and thus operational impacts would be considered less than significant.



P:\P&D Environment\OC Parks On-Call Agreement OCP12-016\6030\06442-Santa Ana Parkway Project, Phase II\A\900-WorkingDocs-CAD\GIS\SARP_GIS_Workspace_IDMXD's\Figure_6b_Downstream_Portion.mxd

ESRI (2014), OC Public Works (2014), LSA (2012), and AECOM (2014).

Scale 1 : 10,500

0 250 500 1,000 1,500 Feet

Figure 5.3-3
Vegetation Communities-Impacts

5.3.4.2 Impacts to Federally Protected Wetlands

Potentially jurisdictional features are present within the project area, and temporary and permanent impacts to jurisdictional resources are shown in Table 5.3-4, below (see also Appendix E of this Draft EIR). The direct impacts (i.e., removal) to jurisdictional waters, wetlands and riparian areas are considered significant. Direct impacts include construction of the trail, the bridge support structures, and the equestrian staging area. Along the northern bank of the SAR, the proposed project would directly impact several wetlands associated with storm drains where runoff from urban uses and landscaping have produced wetlands. In general, these wetlands are of low quality and generally support native emergent vegetation along with non-native plants. This is in contrast to the adjacent riparian habitat composed of woody native vegetation and more complex riparian habitat. The proposed project will directly intersect these wetlands. It should be noted that for the purpose of providing a conservative analysis, all impacts are considered direct impacts.

TABLE 5.3-4
SUMMARY OF JURISDICTIONAL DELINEATION RESULTS*

FEATURE	NON-WETLAND WOUS	WETLAND WOUS	TOTAL WOUS	CDFW-ONLY	TOTAL CDFW
Project area (Existing Conditions)	0.97	0.70	1.67	0.65	2.32
Proposed Project (Temporary Impacts)	0.33	0.16	0.49	0.47	1.32
Proposed Project (Permanent Impacts)	0.16	0.30	0.46	0.14	0.82
Total Impact Area (Permanent + Temporary Impacts)	0.49	0.46	0.95	0.62	2.14
TEMPORARY IMPACTS					
FEATURE	**NON-WETLAND WOUS**	**WETLAND WOUS**	**TOTAL WOUS**	**CDFW-ONLY**	**TOTAL CDFW**
SAR-Bridge 1	0.14	0.04	0.18	0.02	0.19
SAR-Bridge 2	0.09	0.01	0.10	0.23	0.33
SAR-Bridge 3	0.10	0	0.10	0.03	0.07
SAR-North Bank Depressional Wetlands (Sites 1 - 8 at Culverts 74 - 81)	0	0.12	0.12	0	0.53
SAR-North Bank-Ephemeral Drainage (Tributary at North side of Golf Course)	0	0	0	0	0
SAR-South Bank-CDFW Riparian	0	0	0	0.20	0.20
TOTAL	**0.33**	**0.16**	**0.49 ***	**0.47**	**1.32**
PERMANENT IMPACTS					
FEATURE	**NON-WETLAND WOUS**	**WETLAND WOUS**	**TOTAL WOUS**	**CDFW-ONLY**	**TOTAL CDFW**
SAR-Bridge 1	0.05	0.01	0.06	0.02	0.10
SAR-Bridge 2	0.01	0	0.01	0.11	0.16

TABLE 5.3-4
SUMMARY OF JURISDICTIONAL DELINEATION RESULTS*

FEATURE	NON-WETLAND WOUS	WETLAND WOUS	TOTAL WOUS	CDFW-ONLY	TOTAL CDFW
SAR-Bridge 3	0.10	0	0.10	0.01	0.02
SAR-North Bank Depressional Wetlands (Sites 1 - 8 at Culverts 74 - 81)	0	0.29	0.29	0	0.53
SAR-North Bank-Ephemeral Drainage (Tributary at North side of Golf Course)	0	0	0	0	0
SAR-South Bank-CDFW Riparian	0	0	0	0	0
TOTAL	**0.16**	**0.30**	**0.46 ***	**0.14**	**0.82**

* = Numbers in the Total Waters of the U.S. (WoUS) column may not add up precisely due to rounding.
Note: Jurisdictional Delineation was conducted for applicable project areas around the trails and bridges. See Appendix E of this Draft EIR. Impacts were calculated with GIS as a subset of the delineated area that directly overlaps with the trails and bridge support structures.
Source: AECOM (2014a).

Operational impacts due to the increased frequency of human and equestrian uses, may degrade adjacent wetland and riparian habitat. Thus, operational impacts may be adverse over the long term due to effects associated with equestrian uses and potential increases in nutrient levels (which may in turn support or favor non-native plant species). Habitat fragmentation effects due to an additional recreational trail may decrease the habitat integrity of the wetland/riparian areas along the SAR, potentially decreasing diversity and habitat structure that is important to riparian birds, in particular. The link between equestrian uses and the spread of non-native species, though, has not been supported in the literature (Mazboudi 2004, Gower 2006, Wells and Lauenroth 2007, Quinn 2008, and Cal-IPC 2012). Water quality impacts are beyond the scope of this section, but would not be expected to have an adverse effect on adjacent riparian habitat assuming equestrian uses are managed along the SAR. There is an existing Operation and Maintenance (O & M) Program, but the efficacy of the program is not known at this time. Given all the potential effects of the planned uses, operational impacts would be potentially significant due to the long-term effects of the planned uses.

5.3.4.3 Impacts to Wildlife Movement

The proposed project crosses a regionally important north-south wildlife movement corridor. The main movement corridor is under SR-91, at Coal Canyon underpass, to the small Chino Hills State Park parcel within the project area. From there the corridor would be expected to span across the SAR, and extend north into the expansive Chino Hills State Park. Additional wildlife movement would be expected east and west along the SAR, being especially valuable to species associated with freshwater and riparian habitats. Other wildlife movement is expected at the Gypsum Canyon Road underpass of SR-91, allowing wildlife to access the SAR from the Santa Ana Mountains to the south of the freeway.

Bridge 1, and the adjacent trail system, would be along, and above, wildlife movement following the SAR towards the Brush Canyon. Bridge 2 and the adjacent trail system would be located along, and above, wildlife movement located at the western extent of the Green River Golf Club, which is just east of the primary wildlife movement corridor that follows Coal Canyon Road under SR-91. Bridge 3 and the adjacent trail system would be located along and above wildlife movement that is expected to move north through the Gypsum Canyon underpass of SR-91.

The noise and activity associated with construction of the proposed project is anticipated to temporarily displace wildlife from the immediate construction areas. The construction activities are not expected to directly harm most of the displaced individuals, although this could lead to temporary abandonment of localized food and water resources, nesting and sheltering areas, etc. However, due to the proximity to the railroad, city streets, freeway and urban uses in or near the project site, many species that already use this area are likely adapted to human-related disturbances. Although construction-related noise has the potential to cause temporary disturbance to wildlife, only wildlife within the immediate construction areas would be impacted. Most wildlife would be able to relocate to unaffected areas. Additionally, impacts within a given area would cease as soon as construction was completed and had moved onto another location. Although there may be temporary adverse impacts on wildlife movement due to project construction, the impacts are not expected to interfere substantially with wildlife movement and would be considered less than significant.

5.3.4.4 Impacts Related to Conflicts with Regional Conservation Plans

Construction of the proposed project would not conflict with the provisions of an adopted HCP or NCCP. However, the SARCHMP is a regional conservation plan that is applicable to the proposed project. Because of this, the proposed project has been designed to be in compliance with the SARCHMP, such that any impacts on sensitive vegetation communities and species are to be mitigated in order to ensure the continued conservation of riparian habitat per the intent of the SARCHMP. In addition, before project construction, the County will be required to comply with Section 7 of the ESA (through a consultation between the ACOE and USFWS) and applicable regulatory permits. A consultation would be required because the project may adversely affect endangered species and their habitat. This consultation will ensure that the proposed project will not be in conflict with the SARCHMP. Although direct impacts to riparian habitat from construction of the proposed project would occur, the SARCHMP dictates appropriate mitigation to implement in such cases. Therefore, because the proposed project would be constructed in compliance with the SARCHMP, impacts to this regional conservation plan would be considered less than significant.

5.3.5 MITIGATION MEASURES

5.3.5.1 Mitigation Measures Related to Special-Status Species and Sensitive Natural Communities and Riparian Habitat

The following mitigation measures would reduce potentially significant impacts during construction to Santa Ana River woolly star, California gnatcatcher, Santa Ana sucker, least Bell's vireo, and nesting birds.

BR-1 Prior to the issuance of a grading permit, the County shall conduct biological field surveys of the project area for the following special status plant and wildlife species:

- Santa Ana River Woolly Star (*Eriastrum densifolium sanctorum*);
- Coastal California Gnatcatcher (*Polioptila californica californica*);
- Santa Ana Sucker (*Catostomus santaanae*), and
- Least Bell's vireo (*Vireo bellii pusillus*).

Surveys shall be conducted in accordance with current California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Services (USFWS) survey protocols for the identified species by a qualified biologist/botanist to confirm their presence or absence in the project site.

BR-2 During construction, all equipment maintenance, lighting, and staging shall be located in designated areas, and to the extent possible directed away from ecologically sensitive areas and wildlife corridors.

BR-3 Speed limits of 10 miles per hour (mph) or less shall be required at all times to avoid potential injury to wildlife in the area, and minimize fugitive dust.

BR-4 A litter control program shall be implemented during construction to eliminate the accumulation of trash. Trash will be removed to trash receptacles following the close of each workday, and disposed of in a sanitary landfill at the end of each work week.

BR-5 A qualified biologist will monitor construction during clearing, grubbing, and excavation activities, as needed. At a minimum, construction monitoring should be implemented at bridge construction locations, wherever riparian vegetation provides potentially suitable habitat for any of the special-status wildlife species (e.g., least Bell's vireos) that have potential to occur in the project area. The monitor will ensure that construction workers stay within the designated footprints of the project to avoid trespass on foot or in vehicles into sensitive habitats, and ensure compliance with the conditions of project permits and agreements.

BR-6 During the least Bell's vireo nesting season (March 15 to August 31), wherever breeding territories of vireos may be present in areas adjacent to project construction sites, a qualified vireo biologist will monitor territories to ensure that active vireo nests are not being adversely impacted by construction noise and activities. Nest protection buffer areas for listed birds would typically be at least 300-feet from areas of construction, although the specifics of appropriate buffer distances can be determined during consultation with the resource agencies.

BR-7 The County shall comply with the following measures, in order to mitigate any effects of clearing or construction activities on biological resources and to protect special status resources, including impacts to birds subject to the Migratory Bird Treaty Act (MBTA):

- To the extent feasible, all vegetation removal activities shall be scheduled outside the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds.
- If initial vegetation removal occurs during the nesting season, all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist no more than five-days prior to commencement of clearing. All nests found will be recorded.
- If any active nests are detected, a nest protection buffer of at least 100 feet (300 feet for raptors) shall be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor to minimize impacts.
- If the recommended nest protection zone is not feasible, the qualified biologist will determine whether an exception is possible and obtain concurrence from the appropriate resource agency before construction work can resume within the avoidance buffer zone. All work will cease within the avoidance buffer zone until agency concurrence is obtained or the biologist determines that the adults and young no longer rely on the nest site.
- After vegetation removal for the project has been completed, wherever construction activities are taking place during the breeding season, in areas adjacent to potential

nesting habitat outside the work limits, surveys will continue on a once-a-week basis for nesting birds.

The following mitigation measures are provided to further reduce impacts to sensitive natural communities:

BR-8 Wherever possible, construction personnel shall utilize existing access roads or previously disturbed areas to reach the project area or stage their vehicles and equipment.

BR-9 Prior to removal of vegetation within the bed of the Santa Ana River, the routes in and out of the project area shall be flagged to minimize impacts of crushing or removing native vegetation within the area. The perimeter of the work site shall be adequately flagged and/or fenced to prevent damage to adjacent habitat. All this work shall be supervised by an on-site, qualified biologist. Temporary fencing (with silt barriers) will be installed at the limits of project impacts (including construction staging areas and access routes) to prevent habitat impacts and prevent the spread of silt from the construction zone into adjacent habitats. The fencing will be installed in a manner that does not impact adjacent habitats to be avoided.

BR-10 The contractor will be informed regarding the biological constraints of this project. The project limits will be clearly marked on project maps provided to the contractor and areas outside of the project limits will be designated as "no construction" zones. A construction manager will be present during all construction activities to ensure that work is within designated project limits.

5.3.5.2 Mitigation Measures Related to Federally Protected Wetlands

BR-11 Prior to approval of the project plans and specifications, the County shall confirm that the plans and specifications stipulate that, prior to commencement of construction activities, the County shall coordinate with the U.S. Army Corps of Engineers to obtain authorization pursuant to Section 404 of the Federal Clean Water Act and the Regional Water Quality Control Board to obtain a Water Quality Certification pursuant to Section 401 of the Federal Clean Water Act. Additionally, the County shall obtain a Streambed Alteration Agreement from the California Department of Fish and Game pursuant to Section 1602 of California Fish and Game Code. The County shall implement a project-specific Habitat Mitigation and Monitoring Plan (HMMP) as required by the permit authorizations.

BR-12 The County shall successfully restore riparian vegetation that is temporarily disturbed during construction-related activities and shall keep all temporarily disturbed areas free of exotic plants until riparian vegetation is re-established. Restoration will be completed with at least a 1:1 ratio. If the site has not begun to recover within five (5) years, then the site shall be reseeded or replanted with container plants and/or cuttings from native riparian species. Permanent impacts will be compensated through appropriate on-site or off-site mitigation as dictated by the permit authorizations. Exact compensation/restoration requirements would be negotiated with the regulatory agencies during the project permitting process.

BR-13 Prior to commencement of riding and hiking trail operations, an ongoing O & M Program shall be prepared and approved by the County, in order to mitigate potential long-term impacts to biological resources and water quality from horse manure. Such a plan should contain BMPs specifically developed for equestrian uses (e.g., Mazboudi 2004; Cal-IPC 2012). The O & M Program may be part of an already-established program operated by OC

Parks. The O & M Program shall identify items to be maintained and specify maintenance levels, funding resources, and work responsibility. The O & M Program shall also manage maintenance frequency for specific trail segments or the trail in its entirety, based on the maintenance plan or unique conditions. The County shall be responsible for overseeing or maintaining the trail facilities and establishing a consistent level of maintenance.

5.3.5.3 Minimization Measures Related to Wildlife Movement

Although no significant impacts to wildlife movement would occur, the following minimization measures are included to further reduce impacts to wildlife movement during construction:

BR-14 Construction shall occur only during daylight hours, if possible, to minimize disturbances to wildlife species that move primarily at night. In particular, whenever possible, above-ground operations (including use of access pits, equipment and vehicles) in the vicinity of the Coal Canyon underpass (wildlife corridor) shall not begin until 0700 hours and shall be completed before dusk of each day. The only exception shall be for an activity that must continue non-stop until it is completed for physical or engineering reasons.

BR-15 Excavation and trenching activities in areas of known wildlife movement shall include measures to prevent entrapment and injury to wildlife. For instance, steep-sided trenches may either be backfilled at the end of each work day, fenced, or include "escape ramps" for wildlife.

5.3.5.4 Mitigation Measures Related to Conflicts with Regional Conservation Plans

No mitigation measures required.

5.3.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures BR-1 through BR-13 would reduce potentially significant impacts related to biological resources to below a level of significance. Minimization Measures BR-14 through BR-15 would further reduce impacts through avoidance and minimization of impacts.