RIVERSIDE TRANSMISSION RELIABILITY PROJECT
FOCUSED/PROTOCOL SURVEY REPORT
RIVERSIDE COUNTY, CALIFORNIA

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1.0 INTRODUCTION

Southern California Edison (SCE) contracted AECOM to conduct focused protocol surveys for a number of sensitive species along and adjacent to the Riverside Transmission Reliability Project (RTRP) alignment (Project). These surveys are in response to data requests received from the California Public Utilities Commission (CPUC) during their review of SCE's Application for a Certificate of Public Convenience and Necessity. At the request of SCE, this letter report summarizes the findings of focused surveys, for the following species:

- Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*; DSFLF)
- Least Bell's vireo (*Vireo bellii pusillus;* LBVI)
- Southwestern willow flycatcher (*Empidonax traillii extimus;* SWFL)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis;* YBCU)
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus;* LAPM)
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax;* SDPM)
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*)

1.1 PROJECT DESCRIPTION

The Project is a joint venture with Riverside Public Utilities (RPU) to provide a new 230-kilovolt (kV) transmission line connection to RPU's transmission system and increase the reliability of their grid. SCE's scope of work includes construction of the following:

- Approximately 7.9 miles of new 230kV transmission line (overhead)
- Approximately 2.1 miles of new 230kV transmission line (underground)
- Access roads
- Towers
- Telecom
- Two marshalling yards

The focused/protocol surveys and survey report were completed as requested by CPUC.

1.2 PROJECT LOCATION

The Project is located in the northwest portion of Riverside County, north of Norco and south and east of Mira Loma (Figure 1; all figures are included in Appendix A). The western (north-

south) segment of the Project alignment is located just east of Interstate 15 (Figure 2). The northern terminus occurs just west of the intersection of Cantu Galleano Ranch Road and Wineville Avenue, while the southern terminus occurs northeast of the dead-end at Wilderness Avenue, just south of the Santa Ana River (Figure 2).

Of the approximately 10 miles of proposed transmission line, SCE proposes to reroute and underground approximately 2.1 miles that were originally intended to be overhead. This underground alignment was not included in the focused survey areas discussed in this report. Instead a habitat assessment was conducted along the underground alignment (plus a 500-foot buffer) in October of 2016 for the target species discussed in this report. The results of the habitat assessment are included in the RTRP Underground Alignment Habitat Assessment Report (AECOM 2016a).

The Project can also be described as occurring in Sections 24, 25, 26, 27, 28, 29, 32, 33, and 34 of Township 2 South, Ranges 5 and 6 West of the Riverside West and Corona North, California U.S. Geological Survey (USGS) Topographic Quadrangle. Elevation along the Project averages approximately 695 feet above mean sea level (amsl) with a maximum elevation of approximately 785 feet amsl at the Wilderness Substation.

The Project occurs within Roughstep Unit 1 (northwest corner) of the Western Riverside County Multiple Species Conservation Plan (MSHCP) and crosses three Criteria Cells: 610, 617 and 700 (Figure 3). Proposed conservation areas within these Cells are described in the MSHCP and regulated and monitored by the Western Riverside County Riverside Conservation Authority.

1.3 PURPOSE OF THE REPORT

During their review of SCE's Application for a Certificate of Public Convenience and Necessity, CPUC requested an update to the 2010 *RTRP Biological Resources Technical Report* (BRTR) prepared by Power Engineers, Inc. (Power Engineers, Inc. 2010), which included habitat assessments and focused surveys for the aforementioned regulated species. Because the data presented in the BRTR are more than 6 years old, the update was to ensure that the analysis of impacts to regulated resources described in the Certificate of Public Convenience and Necessity was supported by the most current data. Subsequently, habitat assessments were conducted for each species in the spring and summer of 2016 by respective species specialists and/or permit holders. Suitable habitat for each species was found to occur within or adjacent to several areas along the RTRP, depending on the presence of specific habitat requirements; therefore, subsequent focused surveys for each species was required. Descriptions and specific locations of

suitable habitat are summarized in Section 1.5 of this report. Full descriptions of suitable habitat are included in the 2016 RTRP Habitat Assessment Report (HAR) (AECOM 2016b) and the 2016 RTRP Underground Alignment Habitat Assessment Report (AECOM 2016a).

This report presents the findings of focused surveys for the DSFLF, LBVI, SWFL, YBCU, LAPM, SDPM, and SBKR in suitable habitat along the RTRP in western Riverside County, California.

1.4 SPECIES BACKGROUND

1.4.1 Delhi Sands Flower-loving Fly

The DSFLF belongs to the Dipteran (fly) family Mydidae. These flies are relatively large with size ranging from approximately 1.5 to 4 centimeters (0.6 to 1.6 inches). All species of Rhaphiomidas are associated with arid, sandy habitats, with most species living on dune systems of inland desert valleys, rivers, deltas, and beach strands. The DSFLF is generally found in areas containing Delhi fine sands soil type. The DSFLF is only known from Riverside and San Bernardino Counties, with most occupied DSFLF habitat located within a limited area of southwestern San Bernardino County (USFWS 2008). The unconsolidated sandy Delhi soils in suitable habitat support an open community of native and exotic plant species. Dominant plants are typically California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), telegraph weed (*Heterotheca grandiflora*), and deerweed (*Acmespon glaber*) but many exotic species often dominate within DSFLF habitat as well (Kingsley 1996). DSFLF have been found in habitats that do not support these dominant plant species, and plant species composition may not be directly relevant to larval development (due to likely predatory or parasitic habit of DSFLF larvae). Adult DSFLF are thought rarely to nectar at flowers of California buckwheat and California croton. Many other plant species are common, including Thurber's eriogonum (*Eriogonum thurberi*), Autumn vinegar weed (*Lessingia glandulifera*), and sapphire eriastrum (*Eriastrum sapphirinum*). Non-native plant species also occur in DSFLF habitat (and incidentally, virtually everywhere). DSFLF habitat also supports other associated insects such as flies and wasps considered as indicator species: *Apiocera convergens*, *Apiocera chrysolasia*, *Ligyra gozophylax*, *Campsomeris tolteca*, *Trielis alcione*, and *Nemomydas pantherinus.*

The life history of the DSFLF is largely unknown. Oviposition (egg-laying) occurs within loose, sandy soils in late summer months and may primarily occur near telegraph weed (Rogers and Mattoni 1993; Kingsley 1996). Larval stages develop completely underground and emerge as

adults from July through September. Adults are most active during the warmest, sunniest parts of the day, and both males and females extract nectar from California buckwheat and other plants (Kingsley 1996; USFWS 2008).

1.4.2 Least Bell's Vireo

Historically, this subspecies was a common summer visitor to riparian habitat throughout much of California. Currently, LBVI is found only in riparian woodlands in southern California, with the majority of breeding pairs in San Diego, Santa Barbara, and Riverside Counties.

LBVI is restricted to riparian woodland and is most frequent in areas that combine an understory of dense young willows or mulefat with a canopy of tall willows. Since LBVI build their nests in dense shrubbery 3 to 4 feet above the ground (Salata 1984), they require young successional riparian habitat or older habitat with a dense understory. Therefore, riparian plant succession is an important factor in maintaining LBVI habitat. Nests are also often placed along internal or external edges of riparian thickets (USFWS 1986).

LBVI arrives in Riverside County in late March and early April and leaves for its wintering ground in September.

The LBVI's decline was attributed to loss, degradation, and fragmentation of riparian habitat combined with nest parasitism by the brown-headed cowbird (*Molothrus ater*). Due to concerted programs focused on preserving, enhancing, and creating suitable nesting habitat, the LBVI population has steadily increased in population size along several of its breeding drainages in southern California. Significant increases in breeding populations have occurred along the Santa Ana River at Prado Basin, and on the Santa Margarita River on U.S. Marine Corps Base Camp Pendleton, as well as at several other sites throughout the region.

1.4.3 Southwestern Willow Flycatcher

This subspecies of willow flycatcher is a summer breeding resident in riparian habitats in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and northwestern Mexico (USFWS 1995). It is restricted to dense riparian woodlands of willow, cottonwood, and other deciduous shrubs and trees. In general, the riparian habitat of this species tends to be rare, isolated, small, and/or in linear patches, separated by vast expanses of arid lands.

Spring migration of the endangered subspecies is relatively late, beginning in early May and extending through June (Unitt 2004). Another subspecies that breeds to the north in the northern Sierra Nevada Mountains and the Cascade Range, little willow flycatcher *(E. t. brewsteri),* migrates through southern California between mid-May and mid-June. There is a period of overlapping occurrence in Riverside County riparian habitats for these two very similar looking subspecies during spring and fall migration. Fall migration of both subspecies occurs rather early, from August through mid-October. Egg laying by the endangered southwestern willow flycatcher occurs in Riverside County from the end of May through the end of June. Dense willow thickets are required for nesting, and nests are often near standing water (CDFG 1990). Willow flycatchers hunt for insects from low exposed perches, flying out to catch the insects in mid-air.

The SWFL was listed as endangered by the U.S. Fish and Wildlife Service (USFWS) in February 1995 because of "extensive loss of riparian breeding habitat, brood parasitism by the brown-headed cowbird, and lack of adequate protective regulations" (USFWS 1995). This subspecies was previously listed as endangered by the California Department of Fish and Game (now California Department of Fish and Wildlife [CDFW]) in December 1990. The population of SWFL in southern California was estimated to be less than 80 pairs in the early 1980s (Unitt 2004).

1.4.4 Western Yellow-billed Cuckoo

The YBCU is a slim, long-tailed bird about 30 centimeters (12 inches) in length and weighs about 60 grams (2 ounces). Its broad curved bill is yellow at the base of the lower mandible and black on top. The grayish-brown color of its head and back contrasts with its white underparts. The long tail is grayish brown above and strikingly marked with six white spots against a black background below. They have zygodactyl feet (two toes forward and two toes backward) unlike the three forward and one backward pointing toe arrangement of most songbirds.

The YBCU is a riparian species and breeds in low- to moderate-elevation native forests lining the rivers and streams of the western United States (Daw 2014). Cottonwood-willow forests (*Populus* spp. - *Salix* spp.) are most often used, although other riparian tree species can be important components of breeding habitat as well, such as alder (*Alnus* spp.), box elder (*Acer negundo*), mesquite (*Prosopis* spp.), Arizona walnut (*Juglans major*), Arizona sycamore (*Platanus wrightii*), oak (*Quercus* spp.), netleaf hackberry (*Celtis reticulata*), velvet ash (*Fraxinus velutina*), Mexican elderberry (*Sambucus mexicanus*), seepwillow (*Baccharis glutinosa*), and occasionally tamarisk (*Tamarix* spp.) (Daw 2014). YBCU require relatively large

(>49 acres), contiguous patches of multilayered riparian habitat for nesting. The multilayered canopy provides shade and traps moisture to create the relatively cooler and more humid streamside conditions which are believed to be important for nesting success. They are also known to nest in early to mid-successional native riparian habitat (Daw 2014).

Migration and wintering habitat needs are not well known, although they appear to include a relatively wide variety of conditions. Migrating YBCU have been found in coastal scrub, second-growth forests and woodlands, hedgerows, forest edges, and in smaller riparian patches than those used for breeding. Wintering YBCU generally use woody lowland vegetation near fresh water (Daw 2014).

The YBCU was listed as threatened by USFWS in November 2014 because of loss, degradation, and fragmentation of riparian habitat combined with nest parasitism by the brown-headed cowbird.

1.4.5 Los Angeles Pocket Mouse

The LAPM is a minute heteromyid, the smallest of the three targeted species and averaging between 8 to 12 grams. LAPM is one of eight subspecies of the little pocket mouse (*Perognathus longimembris*) (Brylski et al. 1998). The LAPM is generally rare, its distribution being similar to the historic range of SBKR within San Bernardino and Riverside Counties (Brylski et al. 1998; RCIP 2002). Detection of LAPM can be challenging due to its typical limited presence above ground between late March and early September, and its ability to enter into torpor (a quiescent physiological condition) at times of low temperatures and/or low food supplies (RCIP 2002). As a result, trapping must be conducted during the warmer months of the year to maximize the potential for capture of this species.

LAPM are most likely to inhabit areas containing fine sandy soils, which is an excellent medium for burrow excavation by this diminutive animal. Like many heteromyids, LAPM dig burrow systems along the base of shrubs or amidst other vegetation, and position themselves within the burrow as environmental conditions change (Kenagy 1973; RCIP 2002). Habitat preferences suggest that LAPM forage under the protection of a vegetative canopy and are rarely found in exposed open areas (RCIP 2002). Thus, targeting scrub vegetation communities and the bases of shrubs or other vegetation types in fine sandy soils along the Santa Ana River would be expected to maximize the likelihood of discovering this species during field surveys (Brylski et al. 1993, RCIP 2002).

1.4.6 Northwestern San Diego Pocket Mouse

The SDPM is a medium-sized heteromyid that prefers scrub communities, rock outcroppings, and grasslands adjacent to scrub habitat (RCIP 2002). Of the three target heteromyid target species, the SDPM is considered well distributed in the region. Although relatively common in occupied habitats, SDPM can be negatively affected by habitat fragmentation and disturbance (RCIP 2002). However, when present in a location this species is usually readily trapped. SDPM was considered potentially present in multiple locations along the transmission line where patches of remnant sage scrub vegetation occurred in association with rocky areas and suitable sandy-loam soils. Thus, if present in the Project area, this species would likely be captured during standard trapping surveys at one or more of the proposed trapping locations (RCIP 2002).

1.4.7 San Bernardino Kangaroo Rat

The SBKR, a member of the rodent family Heteromyidae, is endemic to southwestern California. It is one of 19 subspecies of the Merriam's kangaroo rat (*Dipodomys merriami*), which is widely distributed throughout the western United States and northwestern Mexico. Populations of SBKR historically ranged throughout alluvial floodplains and adjacent upland habitats, from the San Bernardino Valley in San Bernardino County to Menifee and San Jacinto Valleys in Riverside County. Twenty-five separate locations were identified by McKernan (1997) in San Bernardino and Riverside Counties, four of which (City Creek, Etiwanda, Reche Canyon, and South Bloomington) supported only small remnant populations. The Santa Ana River, Lytle and Cajon washes, and the San Jacinto River support the largest extant concentrations of SBKR and suitable habitat for this species (approximately 13,697 acres of potentially suitable habitat); however, all but 3,215 occupied acres are currently more mature than the open, early successional habitat type preferred by SBKR (USFWS 1998; USFWS 2009).

SBKR prefer sparse vegetative cover and are primarily associated with Riversidean alluvial fan sage scrub (now termed scalebroom scrub). The species typically occurs in large river-wash systems such as the Santa Ana River, San Jacinto River, Cajon Wash and Lytle Creek (Brylski et al. 1998; RCIP 2002). However, it has been found in stands of chaparral, dense Riversidean and alluvial fan sage scrub, grasslands associated with Riversidean scrub, and even a heavily disturbed former orange grove in Redlands, California (RCIP 2002; Montgomery 2016). Low-elevation sandy terraces (also called benches) at varying elevations adjacent to and outside of the immediate main flood zones are an important aspect of SBKR habitat in natural alluvial systems. Such terraces serve as refuges for SBKR during heavier flood events, and the soft loamy soils allow SBKR to excavate burrows with ease (Brylski et al. 1998).

1.5 DESCRIPTION OF SURVEY AREAS

Habitat assessments were conducted separately for each taxa/species by a respective specialist(s). The habitat assessments generally included areas within 500 feet of each Project component (including two marshalling yards) as well as 100 feet on either side of Project-related access roads identified by SCE. During the habitat assessments, the biologists determined the location and extent of suitable habitat for the target species and delineated the limits of said habitat in the field using orthorectified aerial maps depicting the Project components and survey buffers. All suitable habitat was later digitized and quantified using geographic information system (GIS) software and provided to the biologists conducting the focused/protocol surveys. Detailed methodologies for each habitat assessment survey are included in Sections 2.2.1 through 2.2.7 of the 2016 HAR (AECOM 2016b). The resulting suitable habitat mapping defined the survey areas in which the focused/protocol surveys were carried out. Each survey area is described below with respect to species/taxa.

1.5.1 Delhi Sands Flower-loving Fly

The distribution of Delhi sands soils on undeveloped lands within the Project area (including a buffer area) is restricted to a few discontinuous areas extending from the north side of the Santa Ana River to immediately north of Cantu-Galleano Ranch Road (Figure 4a). Much of the Project passes through extensive areas of undeveloped lands along the Santa Ana River. Though these riverine soils are often sandy, they are alluvial sands, often flooded and with an associated high water table supporting riparian vegetation and representing conditions unsuitable for DSFLF.

Knecht (1971) indicated the suitable habitat areas along the Project consist of Delhi fine sands and were observed to have high silt content. Appendix B provides a list of plant species encountered within the survey areas.

The distribution of Delhi sands soils on undeveloped lands within the Project area (i.e., habitat ratings 2 through 5 described in Section 2.4 of the HAR) are restricted to a few discontinuous areas extending from the north side of Limonite Avenue to immediately north of Cantu-Galleano Ranch Road (Figure 4a). For reference, each of these discontinuous, discrete areas identified as representing suitable habitat for DSFLF is numbered 1 through 4 (with subparts of Area 2) as follows with their approximate acreages: Area 1 of 0.9 acre is located on the north side of Limonite Avenue; Area 2a of 4.63 acres is located on the south side of Landon Drive; Area 2b of 1.5 acres is located at the southwestern intersection of Landon Drive and Wineville Avenue; Area 3 of 35.69 acres is located on the northwestern intersection of Wineville Avenue and

Cantu-Galleano Ranch Road; and Area 4 (the southernmost marshalling yard) of 5.42 acres is located northwest of the intersection of Cantu-Galleano Ranch Road and Etiwanda Avenue. The total combined acreage of these areas is 48.14 acres.

Area 1

Area 1 is located north of and adjacent to Limonite Avenue (just east of Interstate 15). This area has rolling topography with a prominent sandy ridge (overlaying a high-pressure natural gas line) at elevations ranging from 648 to 666 feet amsl. The majority of this undeveloped site (northerly portions) is situated in an active agricultural field, in previous use for decades (at least since 1994, Google Earth). These agricultural portions of the site are unsuitable for DSFLF. A small southern edge of this site exhibits abundant Delhi sands, sand-associated insects (*Bembix* are abundant) and plants (golden crownbeard [*Verbesina encelioides*]) and is sufficiently undisturbed to constitute suitable DSFLF habitat of moderate to low quality. Most western portions of this survey site are mapped with soils other than Delhi sands. However, due to a history of excavations (an underground pipeline) and agricultural tilling, the soils have been mixed with the Delhi sands present on eastern portions of the survey area, and so these western portions of the site are liberally included as potential habitat for DSFLF. Vegetation in Area 1 consists of partially irrigated ruderal vegetation adjacent to an agricultural field. Dominant species include golden crownbeard, common sunflower (*Helianthus annua*), tumbleweed (*Amaranthus albus*), Palmer's amaranth (*Amaranthus palmeri*), Russian thistle (*Salsola tragus*), and London rocket (*Sisymbrium irio*). Lands to the north of Area 1 were found to be highly disturbed, agricultural fields. Other surrounding areas are developed to roads.

Area 2

Area 2 consists of two discontinuous patches of sand deposits, fallow in recent years after a long history in agricultural use, located along the south side of Landon Drive. This area has gently rolling topography with elevations ranging from 703 to 717 feet amsl. Small patches of soils mapped as with Delhi sands (Knecht 1971) constitute the portions representing DSFLF habitat (Areas 2a and 2b) mapped by Knecht. Current conditions through these areas range from low to high quality DSFLF habitat. Area 2 is composed of exotic grassland and forbland dominated with mustard (*Sisymbrium* spp.) and golden crownbeard. Commercial-industrial development occurs to the north (across Landon Drive) while residential development and an operational dairy occur to the northeast. Disturbed agricultural and annual grasslands extend to the south and west from Area 2 on mostly non-Delhi sand soils.

Area 3

Area 3 on the northwest of intersection of Wineville Avenue and Cantu-Galleano Ranch Road also represents a site fallow in recent years after a long history in agricultural use. Area 3 has gently rolling topography with elevations ranging from 738 to 757 amsl.

Though portions appear to be disked on an annual basis, a small fragment of remnant dune along the roadside remains essentially unchanged since the previous DSFLF surveys undertaken in 2010 and 2011 (Osborne 2011). Conditions on the site rate as moderate quality DSFLF habitat. Area 3 contains vegetation dominated by very dense Russian thistle, lamb's quarters (*Chenopodium album*), Kochia (*Kochia scoparia*), and mustard with smaller areas of dense golden crownbeard. Lands to the north and west of Area 3 are similar to the survey area as they also support exotic grasslands and dense stands of Kochia, Russian thistle, and tumbleweed. To the south, across Cantu-Galleano Ranch Road and east across Wineville Avenue, commercial-industrial developments occur. Southeast of Area 3, across the Cantu-Galleano Ranch/Wineville intersection, is an operational dairy with conditions unsuitable for DSFLF.

Area 4

Area 4 on the west side of Etiwanda Avenue is an open field without any recent agricultural use, mapped (Knecht 1971) with Tujunga soils. However, this site is part of a larger field with Delhi sands on its southern portions and, due to a history of disking on the site, soils are mixed. Area 4 is essentially flat with an elevation ranging between 743 and 753 feet amsl. The area is dominated by Russian thistle and lamb's quarters with some sand-associated plant species present. The site is rated as low to moderate quality DSFLF habitat and included for focused survey in spite of its being mapped as alluvial Tujunga soils. Adjacent lands have similar open fields adjacent to surveyed portions of this vacant lot to the south and west. Beyond these, all surrounding lands are developed to roads or commercial buildings.

Table 1 provides the ratings of habitats on-site as they relate to potential to support DSFLF, along with brief explanations of conditions driving the rating.

Table 1
Rating of DSFLF Habitat Quality within Project Area

Survey Area	Habitat for DSF	Explanation
1	Low Quality	A small area with relatively undisturbed Delhi sands with ruderal vegetation dominated by annual grasses, *Verbesina*, *Helianthus*, and *Amaranthus*. Very small area in extent, and long surrounded by unsuitable agricultural conditions, renders the site as low quality habitat. Site includes other soils mixed with Delhi sands.
2a	Low to High Quality	History of disking, vegetation of exotic annual grasslands. Sands appear overly fine and semi-alkaline.
2b	Low to Moderate Quality	History of disking, vegetation of exotic annual grasslands and forblands with *Verbesina* in some areas.
3	Moderate Quality	History of disking, vegetation of exotic annual forbs (*Salsola*, *Kochia*) with *Verbesina* prominent on a limited sandy portion. Portions of relictual dune.
4	Low to Moderate Quality	Large field with extensive sandy soils mapped with Tujunga soils, but disking has mixed soils with Delhi sands. Sand-associated plants.
Dairy	Unsuitable	Heavily disturbed, wet, irrigated pastures, cattle pens, developed, and landscaping.
Corn field	Unsuitable	North of and adjacent to Area 1, in active agriculture (currently corn) commonly sorghum for years.
68th St. lot	Unsuitable	Northwest corner of Lucretia Ave. and 68th St. Northwest half of lot mapped with sands, but contaminated by storage of exotic soils, mulches, gravel.
Santa Ana River	Unsuitable	Alluvial sands supporting riparian woodlands, high water table, often flooded.

1.5.2 Least Bell's Vireo, Southwestern Willow Flycatcher, and Yellow-Billed Cuckoo

The surveys for the LBVI, SWFL, and YBCU were divided into three distinct survey areas (Figure 4b). These are described in more specific detail below.

Area 1 – Golf Course

This survey area is the most artificial of the three segments. The northern half consists of pockets of riparian vegetation in the midst of a golf course (Figure 4b). This riparian vegetation is largely black willow (*Salix goodingii*) and various exotic trees (e.g., ash, mulberry, eucalyptus) with some tangled understory of sandbar willow (*Salix exigua*), mulefat (*Baccharis salicifolia*), and nettles (*Urtica dioica*). South of the golf course on both sides of the Santa Ana River, the vegetation is wild with a canopy of cottonwood (*Populus fremontii*) and black willow with an understory of mulefat, nettles, giant reed (*Arundo donax*), and various annuals (mostly dry

during the survey period). The presence of healthy riparian vegetation and a permanent water supply suggest that this area could be suitable for nesting southwestern willow flycatchers. An active trapping cage for brown-headed cowbirds was present just south of the golf course on all survey visits. This area was surveyed in two parts: the golf course and northern floodplain of the river were covered first. The survey then continued with biologists driving around to the south side through the entrance to Hidden Valley wildlife area and walking from there.

Area 2 – Hidden Valley

This survey segment mostly runs along the south bank of the Santa Ana River roughly from the nature center at Hidden Valley Wildlife Area east to Van Buren Drive (Figure 4b). There are also a few parts of the north shore included in the survey area, as well as a small arroyo and other detached pockets of riparian vegetation to the south. The survey area is well wooded and the canopy throughout consists largely of cottonwood and black willow with an understory of mulefat, nettles, sandbar willow, and blackberry (*Rubus ursinus*). The presence of healthy riparian vegetation and a permanent water supply suggest that this area could be suitable for nesting LBVI, SWFL, and YBCU. Access to the entire survey area is along the bike path and trails that pass through or parallel to the suitable habitat along the river (Figure 4b).

Area 3 – East of Van Buren

This survey segment includes portions of the north and south banks of the Santa Ana River east of Van Buren Drive for approximately 2 kilometers (Figure 4b). The survey area is thickly vegetated and well wooded: the canopy throughout consists largely of cottonwood and black willow with an understory of mulefat, nettles, sandbar willow, and blackberry (*Rubus ursinus*). Cattail (*Typha* sp.) and bulrush (*Scirpus* sp.) reeds are present along the river bank in slower moving shallow areas. There are also various exotic trees (palms, eucalyptus, and tamarisk) scattered throughout. The presence of healthy riparian vegetation and a permanent water supply suggest that this area could be suitable for nesting LBVI, SWFL, and YBCU. This survey area has a high homeless population and footpaths pass through much of the core parts of the survey area. Access is best from the bike path of the south bank, the homeless footpaths, and a dirt road on the north shore (Figure 4b).

1.5.3 Los Angeles Pocket Mouse, Northwestern San Diego Pocket Mouse, and San Bernardino Kangaroo Rat

The overall Project alignment encompasses a complex array of more natural habitats, as well as expansive areas of different types of human disturbances exemplified by cultivated fields, dairies, graded lands, residential housing developments, areas in the process of being developed into residences, a golf course, highways and heavily used local roads, and bridges. Within array of natural habitats, there are pockets of small mammal habitat along the southern (east-west) portion of the alignment (Figure 4c). Numerous homeless encampments also occur in the eastern portion of the Project alignment. Natural habitats remaining in the Project area occur in the southern segment of the Project alignment and primarily include the expansive mature riparian woodland and riparian scrub communities along the Santa Ana River and in small side drainages, the expansive disturbed annual grasslands in the Project area, and small patches of native sage scrub in scattered locations away from the river (Figure 5). The effect of the various land disturbances in the area has been to fragment existing natural scrub and grassland habitat types into patches of varying size and configurations. In contrast, the riparian communities along the Santa Ana River have largely remained intact over time and represent a contiguous block of native habitat that is generally of high value to numerous species of wildlife.

The western (north-south) segment of the Project area (Figure 5) is entirely disturbed by cultivated fields, abandoned (and one active) dairies, and residential and commercial developments. No habitats suitable for the three target species occur in this part of the Project alignment. In contrast, the southern (east-west) segment (Figure 5) exhibits extensive areas of development (residential, golf course) at its western end. Large easterly expanses of undeveloped land encompass the well-developed stands of mature riparian woodland and riparian scrub vegetation along and in small side drainages of the Santa Ana River, and large areas of disturbed annual grassland and scattered typically very small isolated patches of low quality scrub vegetation away from the river. The abundant large homeless camps in the easternmost part of the Project alignment, the corresponding constant presence of human traffic in this area and in some cases, the presence of camper's dogs, function to disturb the extant natural habitats in this part of the alignment. Such disturbances would naturally degrade habitat conditions as well as have a tendency to negatively affect native rodent species that might inhabit (or have inhabited) this area. Depending on their intensity and regularity, such disturbances could result in the extirpation of certain species, or reduce numbers per species in these areas. Soil conditions in the southern segment vary from pure sand in the Santa Ana River floodplain to sandy loams away from the river floodplain.

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2.0 METHODS

2.1 HABITAT ASSESSMENTS

Habitat assessments were conducted separately for each taxa/species by a respective specialist(s). The habitat assessments generally included areas within 500 feet of each Project component (including two marshalling yards) as well as 100 feet on either side of Project-related access roads identified by SCE. The only instance where this standard buffer was not implemented was the focused survey for San Diego ambrosia—surveys were conducted within and adjacent to the proposed impact areas. Detailed methodologies for each habitat assessment survey are included in the 2016 HAR (AECOM 2016b).

The biologists determined the location and extent of suitable habitat for the target species and delineated the limits of said habitat in the field using orthorectified aerial maps depicting the Project components and survey buffers. Suitable habitat was later digitized and quantified using GIS software. To gain knowledge of the existing conditions within the Project area and vicinity, a historical literature and database review were first implemented before going in the field.

The suitable habitat delineated during the habitat assessments is described in Section 1.5 and provided the survey areas for the focused/protocol surveys described below.

2.2 HISTORICAL LITERATURE AND DATABASE REVIEW

To understand the conditions of the Project area and see what sensitive species had been previously observed or detected, the BRTR prepared by Power Engineers, Inc. (Power Engineers, Inc. 2010), and the protocol survey reports included within, were reviewed prior to conducting the fieldwork. Outside of Project-specific literature, select data pertaining to the natural resources of the region were also reviewed prior to conducting the field survey. The following sources were consulted to obtain public information relevant to the gap areas:

- Western Riverside County Multiple Species Habitat Conservation Plan (RCIP 2004);
- Riverside County Integrated Plan Online Conservation Report Generator (RCIP 2016);
- California Natural Diversity Database (CDFW 2016); and
- USFWS Carlsbad Fish and Wildlife Office GIS data (USFWS 2016).

2.3 FOCUSED/PROTOCOL SURVEYS

Focused/Protocol surveys were conducted separately for each taxa/species by a respective specialist(s). The focused surveys included areas within 500 feet of each Project component (including two marshalling yards) that were deemed suitable during the 2016 habitat assessments (AECOM 2016b; see Sections 1.5 and 2.1 of this report). Detailed methodologies for each focused survey are included in Sections 2.3.1 through 2.3.5 below.

2.3.1 Delhi Sands Flower-loving Fly

From July 3 through September 20, 2016, USFWS-permitted biologists Kendall H. Osborne, (TE-837760-10), Jeremiah George (TE-837760-10), Rick Rogers (TE-844465-1), David K. Faulkner (TE-838743-6), and Eric S. Renfro (TE-142436-2) performed DSFLF protocol surveys in areas of suitable habitat along the Project area. Surveys followed the protocol outlined in the *Interim General Survey Guidelines for the DSFLF* (USFWS 1996). The guidelines indicate that focused DSFLF surveys should be conducted wherever Delhi sands are present within the presumed range of DSFLF, twice weekly (2 days per week) during the single annual flight period (usually from July 1 through September 20). Weather conditions must be suitable for DSFLF activity at the times survey work is pursued. The DSFLF is generally active when daytime temperatures exceed 80 degrees Fahrenheit (°F), but may fly with slightly cooler temperatures in bright sunlight.

Table 2 summarizes the dates, times, survey personnel, and weather conditions of all protocol presence/absence surveys for SWFL.

Several survey sites across the Project, comprising a total of 42.7 acres, were identified as having habitat conditions suitable for the DSFLF. In keeping with the recommended USFWS protocol, each site was surveyed at least 22 times. The level of survey effort at each site was determined by acreage (Table 3).

Table 2
DSFLF Survey Conditions and Personnel

Survey Areas	Personnel*	Date	Time	Weather Conditions
1–4	ER	7/3/2016	1000-1356	clear, winds 4-7 mph, 77-87°F.
1–4	RR	7/7/2016	1000-1346	10-0% clouds, patchy/clear, 2-4 mph, 79-98°F.
1–4	DF	7/11/2016	1000-1400	clear, 0-3 mph, 75-91°F.
1–4	JG	7/13/2016	1000-1400	clear to haze, 0-4 mph, 74-88°F.
1–4	RR	7/14/2016	1000-1348	clear, winds 1-7 mph, 83-98°F.
1–4	JG	7/16/2016	1000-1400	clear, 0-4 mph, 74-88°F.
1–4	RR	7/21/2016	1000-1348	clear, winds 0-11 mph, 89-104°F.
1–4	ER	7/23/2016	1000-1344	clear, winds 2-3 mph, 94-109°F.
1–4	DF	7/25/2016	1000-1400	30% clouds/patchy/smoke, 1-3 mph, 89-101°F.
1–4	KO	7/29/2016	1137-1400	clear, winds 0-10 mph, 94-100°F.
2–3	KO	7/30/2016	1000-1112	5-50% clouds, clear/patchy, 0-5 mph, 82-91°F.
1–4	RR	8/4/2016	1000-1348	5-15% clouds, patchy, 3-6 mph, 82-93°F.
2	KO	8/5/2016	1024-1035	clear, 0-2 mph, 83°F.
1–4	RR	8/9/2016	1000-1348	5-15% clouds, patchy, clear, 3-7 mph, 77-90°F.
1–2	KO	8/11/2016	1004-1021	clear, 3-5 mph, 78-79°F.
1–4	RR	8/11/2016	1015-1348	clear, 1-8 mph, 77-89°F.
1–4	RR	8/16/2016	1000-1348	clear, 2-8 mph, 84-93°F.
1–4	RR	8/14/2016	1000-1352	clear, 2-8 mph, 94-108°F.
1–4	RR	8/24/2016	1005-1351	clear, 3-8 mph, 81-94°F.
2–4	RR	8/26/2016	1035-1354	5-85% clouds, patchy, 1-5 mph, 75-80°F.
1–2	KO	8/27/2016	1115-1135	25-75% clouds/patchy/clear, 0-2 mph, 76-78°F.
1–4	RR	8/29/2016	1000-1356	clear, 2-7 mph, 80-103°F.
1–4	DF	9/1/2016	1000-1400	clear, 1-7 mph, 83-98°F.
1–4	RR	9/5/2016	1035-1400	50-90% clouds, patchy, clear, 1-8 mph, 75-83°F.
3	RR	9/7/2016	1225-1400	clear, 7-10 mph, 86-87°F.
1	KO	9/8/2016	1220-1240	clear, 0-5 mph, 83-84°F.
1–4	RR	9/8/2016	1000-1225	clear, 2-6 mph, 75-80°F.
1, 3, 4	KO	9/10/2016	1251-1400	clear, 0-5 mph, 91-95°F.
1–4	JG	9/12/2016	1000-1400	20-60% clouds, clear/overcast, 4-7 mph, 79-97°F. humid
1–4	RR	9/14/2016	1015-1400	5-10% clouds, patchy, clear, 3-8 mph, 82-86°F.
1–4	DF	9/18/2016	1000-1400	clear, 0-2 mph, 85-101°F.
1–4	KO	9/20/2016	1000-1341	75-100% clouds, overcast, 0-6 mph, 81-86°F. Humid

* KH = Kendall H. Osborne; JG = Jeremiah George; RR = Rick Rogers; DF = David K. Faulkner; ER = Eric S. Renfro

Table 3
Survey Areas, Acreages, and Calculated Minimal Survey Time (Effort)*

Survey Area	Acres	Hours / Day	Season Hours
1	0.9	0.07	1.58
2a	9.04	0.72	15.91
2b	1.5	0.12	2.64
3	25.84	2.07	45.48
4	5.42	0.43	9.54
Totals	**42.7**	**3.41**	**75.15**

*Assumes 22 visits total for the season (July 1 to September 20, two visits per week)

Survey efforts were conducted from July 3 through September 20, 2016, with the overall minimal survey effort totaling 75.15 hours (Table 3). Actual times of the surveys were recorded on the field data sheets presented in Appendix C.

Some undeveloped portions of the Project mapped with Delhi sands (Knecht 1971) were deemed unsuitable for DSFLF due to contaminated soils, active agricultural areas, or active dairies.

The study areas were photographed from several perspectives to document existing conditions. Notes were taken on vegetative cover and plant species composition, abundance and diversity and species composition of insects and other animals, soil types, degree and nature of disturbance, surface cover, organic content, compaction, current land management practices, existing development, condition of surrounding vicinity, and proximity of other DSFLF populations.

2.3.2 Least Bell's Vireo

Presence/absence surveys were conducted by Kidd Biological, Inc. according to the January 19, 2001, USFWS *Least Bell's Vireo Survey Guidelines* (USFWS 2001). All potential LBVI habitat and riparian areas within the study sites were surveyed eight times between April 10 and July 31 with at least 10 days between survey visits for each site. The surveys were conducted during the morning hours between 0530 and 1140. To adequately cover the three aforementioned survey sites, the biologists conducted surveys on 24 days between May 8 and July 31, 2016 (Table 4). Based on the level of effort and environmental conditions, all surveys were considered valid as they followed published protocols.

Table 4 summarizes the dates, times, survey personnel, and weather conditions of all protocol presence/absence surveys for LBVI.

Table 4
Least Bell's Vireo Survey Conditions and Personnel

Survey Pass	Personnel *	Survey Date	Start Time	End Time	Start Temp (°F)	End Temp (°F)	Start Weather	End Weather
Survey Area 1 – Golf Course								
1	BK, YL	5/9/2016	545	1215	58	71	100% CC, wind 1-4 mph	90% CC, wind 3-5 mph
2	BK, YL	5/18/2016	540	1240	60	78	Wind 1-4, 100% CC	Wind 3-6, 0% CC
3	BK, YL	5/29/2016	530	1215	60	72	Wind 0-3 mph, 100% CC	Wind 1-4 mph, 30% CC
4	BK, JF	6/8/2016	630	2315	65	80	Wind 1-4 mph, 100% CCC	Wind 3-6 mph, 0% CC
5	BK, KM	6/20/2016	545	1110	65	88	0% CC, wind 0-1 mph	0% CC, wind 3-6 mph
6	BK	6/30/2016	545	1130	56	83	0% CC, wind 0-1 mph	0% CC, wind 0-1 MPH
7	BK, KM	7/16/2016	556	1133	60	85	0% CC, wind 0-1 mph	0% CC, wind 3-6 mph
8	BK, KM	7/30/2016	555	1120	70	88	100% CC, wind 0-1 mph	0% CC, wind 3-6 mph
Survey Area 2 – Hidden Valley								
1	BK, YL	5/8/2016	545	1215	58	71	100% CC, wind 1-4 mph	90% CC, wind 3-5 mph
2	BK, NK	5/19/2016	600	1215	60	75	Wind 1-4 mph, 100% CC	Wind 3-7 mph, 0% CC
3	BK, YL	5/27/2016	515	1200	57	70	Wind 0-3 mph, 100% CC	Wind 0 mph, 0% CC
4	BK, MT	6/7/2016	547	1145	65	78	Wind 1-3 mph, 100% CC	Wind 1-6 mph, 0% CC
5	BK, TS	6/16/2016	545	1130	50	80	0% CC, wind 0-1 mph	0% CC, wind 3-6 mph
6	BK, KM	7/1/2016	551	1144	53	80	0% CC, wind 0-1 mph	0% CC, wind 0-1 mph
7	BK, KM	7/17/2016	550	1131	59	88	100% CC, wind 0-1 mph	0% CC, wind 3-6 mph
8	BK, KM	7/31/2016	600	1123	61	88	40% CC, wind 0-1 mph	0% CC, wind 3-6 mph
Survey Area 3 – East of Van Buren								
1	BK, YL	5/9/2016	545	1231	57	70	100% CC, wind 1-3 mph,	90% CC, wind 2-6 mph,
2	BK, NK	5/17/2016	600	1240	58	75	Wind 1-4, 100% CC	Wind 3-6, 0% CC
3	BK, YL	5/28/2016	530	1218	54	70	Wind 0 mph, 100% CC	Wind 2-4 mph, 0% CC
4	BK, YL	6/6/2016	545	1220	56	70	Wind 1-3 mph, 100% CC	Wind 1-3 mph, 0% CC
5	BK, JF	6/17/2016	530	1145	52	83	0% CC, wind 0-1 mph	0% CC, wind 2-4 mph

Survey Pass	Personnel *	Survey Date	Start Time	End Time	Start Temp (°F)	End Temp (°F)	Start Weather	End Weather
6	BK, KM	7/3/2016	550	1100	58	83	0% CC, wind 0-1 mph	0% CC, wind 0-1 mph
7	BK, TS	7/18/2016	545	1130	60	89	0% CC, wind 0-1 mph	0% CC, wind 3-6 mph
8	BK, AJ	7/29/2016	600	1127	70	88	40% CC, wind 0-1 mph	0% CC, wind 3-6 mph

* BK= Brian Karpman, YL= Yajaira Lechuga, NK= Nina Kidd, JF= Jonathon Feenstra, MT= Michelle Thomas, KM= Karly Moore, TS= Tim Searl, AJ= Angela Johnson

Less than 1.9 miles of habitat were surveyed per day. LBVI surveys were conducted passively, listening for vireo songs, calls, whisper songs, and scolds and visually looking for adults and juveniles. Any nesting behavior was also noted.

LBVI observations were recorded in a field notebook, and global positioning system readings of the locations were taken during the surveys. Numbers and locations of paired or unpaired territorial males, and the ages and sexes of encountered vireos (when discernible) were noted. Individual LBVI were also checked for colored leg bands. Due to the density of LBVI in the area and the extent of habitat, prolonged efforts to determine territories was limited. Estimates of territory numbers were made once all the data were collected and a map was created where the data points could be more easily distinguished as territories.

2.3.3 Southwestern Willow Flycatcher

The surveys for SWFL were conducted by USFWS-permitted biologists Jonathan Feenstra (TE 128462-2) and Angela Johnson (TE 59592B-1) of Kidd Biological, Inc. following *A Southwestern Willow Flycatcher Natural History and Survey Protocol* (Sogge et al. 1997).

Suitable breeding habitat for SWFL was surveyed until 10:30 a.m. Following the USFWS survey guidance of spring 2016, SWFL surveys were conducted on a separate pass from surveys for other species (i.e., LBVI and YBCU). Some additional time after the 10:30 a.m. SWFL protocol cut-off was used to walk out of the survey area, or to revisit areas of the best habitat if climate conditions were satisfactory and there was no discernible reduction in bird activity, implying consistent potential detection of the focus species. Survey areas are shown in Figure 4b.

Five focused survey visits for SWFL were conducted in suitable habitat, one within the first survey period (May 15–31), and two each within the second and third survey periods (June 1–24

and June 25–July 17, respectively). Each survey visit was conducted at least 5 days apart with careful and thorough coverage of all suitable habitats.

All surveys were conducted between 1 hour before sunrise and 10:30 a.m., when willow flycatchers are most active, except as noted above. Playing of recorded vocalizations was performed in suitable habitat and discontinued if the bird showed undue disturbance or potential predators were present.

Table 5 summarizes the dates, times, survey personnel, and weather conditions of all protocol presence/absence surveys for SWFL.

Table 5
Southwestern Willow Flycatcher Survey Conditions and Personnel

Survey Pass	Personnel*	Survey Date	Start Time	End Time	Air Temp. (°F)	Cloud Cover	Wind Speed (mph)
Survey Area 1 – Golf Course							
1	AJ	5/29/2016	0540	0900	60	Cloudy	4-7
2	JF	6/8/2016	0530	1045	63-84	Partly	0-5
3	JF	6/15/2016	0530	1045	65-70	Cloudy	1-2
4	AJ	6/30/2016	0540	1000	66-81	0	2
5	AJ	7/12/2016	0540	1030	64-73	Cloudy-Partly	2-4
Survey Area 2 – Hidden Valley							
1	JF	5/21/2016	0545	1030	58-72	Partly-cloudy	0-6
2	JF	6/9/2016	0535	1045	61-79	Partly	0-3
3	JF	6/16/2016	0535	0950	60-77	Partly-0	1-4
4	JF	7/5/2016	0530	1000	66-78	Cloudy	1-5
5	JF	7/13/2016	0535	1040	64-89	0	0-3
Survey Area 3 – East of Van Buren							
1	AJ	5/28/2016	0540	1040	56-67	Cloudy	1-3
2	JF	6/10/2016	0545	1110	67-80	Cloudy	1-4
3	AJ	6/17/2016	0550	1030	59-81	0	2-4
4	JF	7/6/2016	0525	0940	64-70	Cloudy	0-5
5	JF	7/14/2016	0530	1040	68-89	0	0-3

* AJ = Amanda Johnson; JF = Jonathan Feenstra

2.3.4 Western Yellow-billed Cuckoo

The surveys for YBCU were conducted by USFWS-permitted biologist Angela Johnson (TE 59592B-1) of Kidd Biological, Inc. following *A Natural History Summary and Survey Protocol*

for the Western Distinct Population Segment of the Yellow-billed Cuckoo: U.S. Fish and Wildlife Techniques and Methods(Halterman et al. 2015).

Suitable breeding habitat for YBCU was surveyed until 11:00 a.m. Following the survey protocol, YBCU surveys were conducted on a separate pass from surveys for other species (i.e., LBVI and SWFL). Some additional time after the 11:00 a.m. protocol cut-off was used to walk out of the survey area, or to revisit areas of the best habitat if climate conditions were satisfactory and there was no discernible reduction in bird activity, implying consistent potential detection of the focus species. Survey areas are shown in Figure 4b.

Four focused survey visits for YBCU were conducted in suitable habitat, one within the first survey period (June 15–July 1), two within the second survey period (July 1–31), and one within the third survey period (July 1–August 15). Each survey visit was conducted at least 12 days apart with careful and thorough coverage of all suitable habitats. All surveys were conducted early in the morning just before or at sunrise and ending no later than 11:00 a.m., when YBCU are most active. Playing of recorded vocalizations was performed in suitable habitat.

Table 6 summarizes the dates, times, survey personnel, and weather conditions of all protocol presence/absence surveys for YBCU.

Table 6
Yellow-Billed Cuckoo Survey Conditions and Personnel

Survey Pass	Personnel*	Survey Date	Protocol Survey Times		Atmospheric Conditions		
			Start Survey Times	End Survey Times	Air Temp (°F)	Percent Cloud Cover (%)	Wind Speed (mph)
Survey Area 1 – Golf Course							
1	AJ	6/23/2016	0535	1105	63-80	0	2
2	AJ	7/12/2016	0540	1030	64-73	30-100	2-4
3	AJ	7/27/2016	0550	1020	77-88	0-5	0-3
4	AJ	8/11/2016	0600	1015	61-73	0	0-3
Survey Area 2 – Hidden Valley							
1	AJ	6/24/2016	0535	1100	62-81	0	2-4
2	AJ	7/13/2016	0540	1040	64-89	0	0-3
3	AJ	7/28/2016	0550	1030	66-87	5	1-2
4	AJ	8/9/2016	0600	1100	65-77	0-100	2-3
Survey Area 3 – East of Van Buren							
1	AJ	6/25/2016	0535	1105	60-83	0	1-4
2	AJ	7/14/2016	0535	1050	68-89	0	0-3
3	AJ	7/29/2016	0550	1045	71-91	0	0-4
4	AJ	8/10/2016	0600	1030	62-75	0	0

* AJ = Amanda Johnson

2.3.5 Los Angeles Pocket Mouse, Northwestern San Diego Pocket Mouse, and San Bernardino Kangaroo Rat

Selected areas along the southern segment of the Project alignment were trapped by Dana H. McLaughlin (Sessions 1, 2, and 3) and Dan Grout (Session 4), both of whom are permitted to trap and handle SBKR under authority of USFWS 10(a)(1)(a) endangered species permits, as summarized below. McLaughlin holds a USFWS Permit (TE 43597A-1) and/or CDFW Memorandum of Understanding (MOU) for the three species, while Grout is a sub-permittee to Stephen J. Montgomery (TE 745541-11 for SBKR and holds a CDFW MOU for LAPM and SDPM).

Four trapping sessions in the summer of 2016 targeted the three species within suitable microhabitats along the southernmost leg of the proposed transmission line. Session 1 commenced on July 10, Session 2 commenced on July 25, and Sessions 3 and 4 commenced on August 28. Trapping was completed on September 2.

Most traps were set in transects covering larger habitat patches and spaced at approximately 7-meter intervals. Smaller patches of suitable habitat were set with small groups of traps at 7-meter spacing in sufficient numbers to ensure adequate coverage of these areas. All traps were placed in microhabitats considered to be those most likely to yield the three target species. Since trapping areas were separated by varying distances, and/or required walking to access trap lines, the time required to travel between areas limited the number of traps that could be covered by each biologist each night.

Sessions 1, 2, and 3 were trapped following standard small mammal protocols established for trapping and handling of SBKR and other sensitive species, which included the following general requirements: (a) trap selected areas for a maximum of 5 consecutive nights unless a target species is captured prior to the fifth night; (b) trap when air temperatures are above 50ºF; (c) check traps twice/night, near midnight and each following early morning. Session 4 trapping initially followed the same protocols but was suspended after trap-night 2 for safety reasons (see Section 3.6.1, Special Trapping Conditions). In addition, midnight trap checks were not conducted in the easternmost trapping areas located in proximity to homeless encampments. Additionally, as illustrated in Figure 4c, one area of suitable habitat near the Santa Ana River was not trapped in 2016 due to recent sightings of an active, aggressive mountain lion.

At most locations, trap lines were run for 5 consecutive nights with traps remaining in the same locations all 5 nights. Traps were set at dusk each day and baited with a mixture of bird seed,

then checked near midnight and again the following morning, at which time they were closed for the day. During trap checks, all animals were identified to species and released at the point of capture. Field notes and photographs were taken to document habitat conditions in trapping areas. Representative weather conditions at the time of the trapping study also were noted. As mentioned, midnight trap checks were not part of the trapping protocol during the trapping in the eastern area of the homeless encampments, due to concerns for the safety of the trappers (see Section 3.6.1, Special Trapping Conditions).

Session 4 traps were run, as described above, for only 2 consecutive nights. Traps located in the area east of Van Buren Blvd, where homeless encampments were abundant, were checked and then picked up the morning of day 2, thereby truncating that survey effort. Safety was a serious concern during Session 4 due to the proximity of homeless encampments; the unpredictable behavioral patterns of some camp residents; and, in some cases; the presence of campers' dogs along the trapping transects.

Weather conditions during the trapping survey were generally mild and suitable for small mammal trapping. Data collected included air temperatures (which ranged from 62 to 72º F), cloud cover (between 0 and 100%) and variable wind speeds (Table 7). Nighttime temperatures during the trapping effort were warm and no harm came to trapped animals during the four trapping sessions.

Table 7 summarizes the dates, times, survey personnel, and weather conditions of all protocol presence/absence surveys for YBCU. Table 8 lists the number of traps set per night during each session.

Table 7
Small Mammal Trapping Conditions and Personnel

Date	Trapping Session	Personnel*	Temperature (F)	Cloud Cover %	Wind (mph)
7/10/2016	1	DM	62	0	0-1
7/11/2016			63	0	0-1
7/12/2016			67	100	0-2
7/13/2016			62	0	0-1
7/14/2016			65	0	0-0.5
7/15/2016			64	0	0-0.5
7/26/2016	2	DM	69	0	0-0.5
7/27/2016			71	0	0-0.5
7/28/2016			70	0	0-0.5
7/29/2016			71	0	0
7/30/2016			72	100	0-1
8/29/2016	3, 4	DM, DG	65	0	0-0.5
8/30/2016			66	0	1-2
8/31/2016	3	DM	64	0	0
9/1/2016			66	0	0
9/2/2016			68	100	0-1

* DM = Dana H. McLaughlin; DG = Dan Grout

Table 8
Number of Traps Set During Sessions 1 through 4

Session	Total traps set per night	Total Trap-Nights
1	174 x 5	870
2	190 x 5	950
3	145 x 5	725
4	140 x 2	280
Total trap nights		**2,825**

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3.0 RESULTS

3.1 HISTORICAL LITERATURE AND DATABASE REVIEW

3.1.1 CNDDB and USFWS Database

Appendix D tabulates the results of the CNDDB and USFWS database queries and provides a discussion of each species' habitat requirements, sensitivity status, and potential to occur within the Project alignment. The database query for the CNDDB included the Riverside West and Corona North, California USGS Topographic Quadrangles, plus the Quadrangles immediately adjacent. The USFWS query extended out 5 miles from the Project alignment; however, to avoid a cluttered figure only the data points and polygons in the immediate vicinity of the Project alignment were shown in Figure 6.

3.1.2 Critical Habitat

As illustrated in Figure 7, the only USFWS-designated Critical Habitats that occur within or directly adjacent to the Project alignment are those delineated for LBVI and Santa Ana sucker (*Catostomus santaanae*) (USFWS 2016).

3.2 DELHI SANDS FLOWER-LOVING FLY

DSFLF was not observed during the focused surveys. During surveys, at least 112 insect species (counting only large and conspicuous insects) were observed. A list of insect species observed during the surveys is presented in Appendix E. None of the observed insects commonly occur with DSFLF.

3.3 LEAST BELL'S VIREO

A total of 308 LBVI were detected during the course of the surveys (Figure 8a). These observations culminated in an estimated consolidated total of 62 LBVI territories (Figure 8b). Willow flycatchers (*Empidonax traillii*) were detected during a few of the surveys in 2016; however, these did not appear to breed within the survey area in 2016 (see Section 3.4 for further details). Other sensitive species detected during the LBVI surveys include yellow warbler (*Setophaga petechia*) and yellow-breasted chat (*Icteria virens*) (see Section 3.7).

The results of the LBVI surveys within each survey area are described in detail below.

Area 1 – Golf Course

Although this area is heavily used as a public golf course, there are patches of high quality riparian habitat interspersed throughout. It was found that there were approximately 12 distinct territories within this survey area; however, it is estimated that only 10 of these territories were active through the entire season (Figure 8b). Fledglings were detected within the majority of the territories early in the season.

Area 2 – Hidden Valley

This survey area is part of the Hidden Valley Nature Reserve and a trail runs along the southern edge of the riparian corridor. There are also smaller trails interspersed throughout the habitat. These trails are used by pedestrians, bicyclists, and equestrian riders. Evidence of wild boars was seen in many areas. The habitat is quite dense and the territories of LBVI were also very dense. It was estimated that there were 26 territories within this survey area (Figure 8b). Although fledglings were detected throughout the survey area, it was difficult to determine which pairs were successful due to the proximity of the pairs and the mobility of the fledglings.

Area 3 – East of Van Buren

This survey area provides good foraging and nesting habitat for LBVI; however, there was substantial evidence of homeless activity within the habitat. Trails in this area are regularly used by homeless campers. Several stray dogs were also encountered. In total, it was estimated that there were 24 LBVI territories within survey Area 3 – East of Van Buren (Figure 8b). Fledglings were detected in half of the territories during the last several surveys.

Table 9 includes the total number of individuals detected or observed during each pass through the Project area.

Brown-headed cowbirds were detected only during the fourth survey of Area 3 – East of Van Buren. Cowbird traps were noted within Area 1 – Golf Course.

The only non-native wildlife species detected within the survey areas were rock pigeons (*Columba livia*) and European starlings (*Sternus vulgaris*). Neither of these birds poses a significant threat to the conservation of the LBVI.

Table 9
Number of LBVI Observed During Each Survey Pass

Survey Pass	Number of LBVI Detected
1	38
2	53
3	47
4	39
5	44
6	30
7	27
8	30
Total LBVI Detections	**308**

There were two conspicuous invasive plant species within the survey area: giant reed and salt cedar (*Tamarix* spp.). Large patches of giant reed were noted in all three survey areas, with a very large patch in Area 1 – Golf Course. Although an invasive plant, salt cedar is regularly used by riparian birds for foraging and nesting. Although this species outcompetes native plant species, the small extent of salt cedar in this area does not likely have a significant impact on the population of sensitive birds in the area.

Giant reed was found in great density in all three survey areas, but most notably in Area 1 – Golf Course. The presence of giant reed has a greater effect on ecosystem health as the diversity and abundance of leaf/aerial insects are significantly decreased in areas overrun by giant reed (Dudley and Dudley 2003). For insect-eating birds such as the LBVI, the spread of giant reed could cause a significant decrease in food availability and has already reduced suitable foraging and breeding habitat for the LBVI in large areas of the Santa Ana River.

Castor bean (*Ricinus communis*) was also observed in many areas, but it was most prevalent in survey area 3.

3.4 SOUTHWESTERN WILLOW FLYCATCHER

Willow flycatchers were detected in all three of the contiguous areas surveyed. It's important to note that the willow flycatchers detected during the focused SWFL surveys were not identified to the subspecies that is listed as endangered by USFWS (i.e., *E.t. extimus*); however, the willow flycatcher is listed as endangered by CDFW. The number of individuals observed at each survey area during the presence/absence surveys is summarized below and mapped in Figure 8c. Further details of these sightings are listed in Table 10.

A single willow flycatcher was observed on May 21, 2016, during the first survey pass of Area 2 – Hidden Valley. The bird was outside of the mapped survey area, but was detected from within due to spontaneous singing. It was not detected on subsequent visits to the survey area.

During the second pass, willow flycatchers were detected in all three survey areas. Six were found in or near Area 1 – Golf Course on June 8, 2016. Four of these birds were singing in response to the played vocalizations, and two were silent and unresponsive. One of the six was outside of the survey area but was heard singing from within. All were present within riparian habitat. Single willow flycatchers were found in Area 2 – Hidden Valley (June 9, 2016) and Area 3 – East of Van Buren (June 10, 2016). Both birds were calling from within riparian habitat. The flycatcher found in Area 3 – East of Van Buren was detected as the surveyor was walking out of the survey area; however, the detection came after the 10:30 a.m. protocol cut-off.

No breeding behavior was observed. The flycatcher occurrences coincide with the peak of this species' spring migration through the area. No willow flycatchers were detected or observed during the final two survey passes. Table 10 provides the data for each willow flycatcher detected.

Table 10
Willow Flycatcher Observations

Species	Date	# of Individuals	Latitude	Longitude	Survey Area	Notes
Willow Flycatcher	5/21/2016	1	33.962675	-117.503685	2 – Hidden Valley	Singing. Spontaneous.
Willow Flycatcher	6/8/2016	1	33.960384	-117.529615	1 – Golf Course	Singing and calling in response.
Willow Flycatcher	6/8/2016	1	33.959655	-117.530772	1 – Golf Course	Singing and calling in response.
Willow Flycatcher	6/8/2016	1	33.958782	-117.531549	1 – Golf Course	Silent, unresponsive. Not too far from previous, possibly same bird.
Willow Flycatcher	6/8/2016	1	33.957781	-117.532994	1 – Golf Course	Singing in response.
Willow Flycatcher	6/8/2016	1	33.959449	-117.534422	1 – Golf Course	Silent, unresponsive.
Willow Flycatcher	6/8/2016	1	33.96165	-117.534584	1 – Golf Course	Singing and calling in response.
Willow Flycatcher	6/9/2016	1	33.96256	-117.470518	2 – Hidden Valley	Spontaneously calling.
Willow Flycatcher	6/10/2016	1	33.966345	-117.457138	3 – East of Van Buren	Called in response.

Brown-headed cowbirds, both males and females, were detected during the surveys. Three were heard in Area 2 – Hidden Valley on June 9, 2016, and another three were heard on June 10, 2016 in Area 3 – East of Van Buren. Individuals were detected in Area 3 – East of Van Buren during subsequent surveys on June 25, July 6, and July 14, 2016. No free-flying brown-headed cowbirds were observed in Area 1 – Golf Course, though active cowbird trapping is occurring there. There was no confirmation of local breeding.

3.5 WESTERN YELLOW-BILLED CUCKOO

Although the two survey areas most suitable for occupancy by YBCU (Hidden Valley and East of Van Buren), no YBCU were detected in any of the three contiguous areas surveyed.

Brown-headed cowbirds, both males and females, were detected during the surveys (see Section 3.4 above for details).

3.6 LOS ANGELES POCKET MOUSE, NORTHWESTERN SAN DIEGO POCKET MOUSE, AND SAN BERNARDINO KANGAROO RAT

A total of five rodent species, represented by 459 captures, were recorded during 2,825 trap-night survey (Tables 11 through 14). Although the potential for SBKR and LAPM was high in the sandy Santa Ana River floodplain habitats, and SDPM had a high potential to occur along the edges of the Santa Ana River in adjacent scrub and scrub-grassland habitats, none of the target species were captured during the four trapping sessions.

The ubiquitous deer mouse (*Peromyscus maniculatus*) and western harvest mouse (*Reithrodontomys megalotis*) were by far the most abundant captured species. The common California ground squirrel (*Spermophilus beecheyi*) was captured at three locations and is indicative of disturbed conditions. Two non-native (Old World) species, the house mouse (*Mus musculus*) and black rat (*Rattus rattus*), also were captured during the survey, reflecting the disturbed condition of the trapped habitats and the proximity of the Project alignment to older human developments. None of the species captured during the four sessions are considered sensitive.

Table 11
Summary of Small Mammal Capture Results

Trapping Session 1-4	July 2016 to September 2016	Trapping Locations 1-19	Species Captured							
			SBKR	LAPM	CHFA	PEMA	REME	MUMU	RARA	SPBE
Total captures			**0**	**0**	**0**	**286**	**154**	**10**	**5**	**4**

SBKR = San Bernardino kangaroo rat (*Dipodomys merriami parvus*)
LAPM = Los Angeles pocket mouse *(Perognathus longimembris brevinasus*)
CHFA = San Diego pocket mouse (*Chaetodipus fallax fallax*)
PEMA = Deer mouse (*Peromyscus maniculatus*)
REME = Western harvest mouse (*Reithrodontomys megalotis)*
MUMU = House mouse (*Mus musculus*)
RARA = Black rat (*Rattus rattus*)
SPBE = California ground squirrel (*Spermophilus beecheyi*)

Table 12
Capture Data, Session 1

Trapping Session	Date	Trapping Location	Species Captured							
			SBKR	LAPM	CHFA	PEMA	REME	MUMU	RARA	SPBE
1	7/10/2015*	1A	-	-	-	4	2			
	7/11/2015	1A	-	-	-	6	4			
		1B	-	-	-	5	4			
		2A	-	-	-	2				
		2B	-	-	-	2				
		3	-	-	-	2				
		4	-	-	-	3				
		5	-	-	-	1				
	7/12/2015	1A	-	-	-	7	8	1		
		1B	-	-	-	2	5		1	
		2A	-	-	-	3	1			
		2B	-	-	-	1				
		3	-	-	-	2				
		4	-	-	-	4				
		5	-	-	-	2				
	7/13/2015	1A	-	-	-	14	8	2		
		1B	-	-	-	3	14			
		2A	-	-	-	3				
		2B	-	-	-	2				
		3	-	-	-	3				
		4	-	-	-	4				
		5	-	-	-	1				
	7/14/2015	1A	-	-	-	15	6	3		
		1B	-	-	-	2	7			
		2A	-	-	-	5				
		2B	-	-	-	1				
		3	-	-	-	3				
		4	-	-	-	4				
		5	-	-	-	3				1
	7/15/2015	1B	-	-	-	3	10			
		2A	-	-	-	3				
		2B	-	-	-	1				
		3	-	-	-	4				
		4	-	-	-	3				
		5	-	-	-					1

***Only 1A trapping began on 7/10/2016**

SBKR = San Bernardino kangaroo rat (*Dipodomys merriami parvus*)
LAPM = Los Angeles pocket mouse *(Perognathus longimembris brevinasus*)
CHFA = San Diego pocket mouse (*Chaetodipus fallax fallax*)
PEMA = Deer mouse (*Peromyscus maniculatus*)
REME = Western harvest mouse (*Reithrodontomys megalotis)*
MUMU = House mouse (*Mus musculus*)
RARA = Black rat (*Rattus rattus*)
SPBE = California ground squirrel (*Spermophilus beecheyi*)

Table 13
Capture Data, Session 2

Trapping Session	Date	Trapping Location	Species Captured							
			SBKR	LAPM	CHFA	PEMA	REME	MUMU	RARA	SPBE
2	7/26/2016	6	-	-	-	15	2			
		7	-	-	-	3	1			
		8	-	-	-	1				
		9	-	-	-	2	4			
		10	-	-	-	3	1			
	7/27/2016	6	-	-	-	14	5			
		7	-	-	-	3	2			
		8	-	-	-	1				
		9	-	-	-	2	2			
		10	-	-	-	1				
	7/28/2016	6	-	-	-	18	5			
		7	-	-	-	2	1			1
		8	-	-	-	1	5			
		9	-	-	-	1				
		10	-	-	-	2	6			
	7/29/2016	6	-	-	-	15	4	1		
		7	-	-	-	2				
		8	-	-	-	2	2			
		9	-	-	-	1				
		10	-	-	-	3	2			
	7/30/2016	6	-	-	-	11	2			
		7	-	-	-	2				
		8	-	-	-	1	1			
		9	-	-	-	2				
		10	-	-	-	2	3			

SBKR = San Bernardino kangaroo rat (*Dipodomys merriami parvus*)
LAPM = Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)
CHFA = San Diego pocket mouse (*Chaetodipus fallax fallax*)
PEMA = Deer mouse (*Peromyscus maniculatus*)
REME = Western harvest mouse (*Reithrodontomys megalotis)*
MUMU = House mouse (*Mus musculus*)
RARA = Black rat (*Rattus rattus*)
SPBE = California ground squirrel (*Spermophilus beecheyi*)

Table 14
Capture Data, Sessions 3 and 4

Trapping Session	Date	Trapping Location	Species Captured							
			SBKR	LAPM	CHFA	PEMA	REME	MUMU	RARA	SPBE
3	8/29/2016	11B	-	-	-	5				
		12	-	-	-	-	-	-	-	-
		14**	-	-	-	1	4			
		15B**	-	-	-		1			
		16**	-	-	-	1	1			
		18B**	-	-	-		1		1	
		19B**	-	-	-	-	-	-	-	-
	8/30/2016	11B	-	-	-	5	1			
		12	-	-	-	-	-	-	-	-
		14**	-	-	-	1	6			
		15B**	-	-	-	-	-	-	-	-
		16**	-	-	-	1	1			
		18B**	-	-	-		3	1	3	
		19B**	-	-	-	-	-	-	-	-
	8/31/2016	11A	-	-	-	1	2			
		11 B				4	2			
		12	-	-	-	4				
	9/1/2016	11A	-	-	-	1	2			
		11 B				4	2	1		1
		12	-	-	-	3				
	9/2/2016	11A	-	-	-	2	2	1		
		11 B				6				
		12	-	-	-	3				
4	8/29/2016	11A	-	-	-	2	2			
		12	-	-	-	-	-	-	-	-
		13**	-	-	-	3				
		15A**	-	-	-	-	-	-	-	-
		17**	-	-	-		2			
		18A**	-	-	-		2			
		19A**	-	-	-					
	8/30/2016	11A	-	-	-	1	1			
		12	-	-	-	3				
		13**	-	-	-	2				
		15A**	-	-	-	-	-	-	-	-
		17**	-	-	-					
		18A**	-	-	-		1			
		19A**	-	-	-		1			

****Traps pulled day 2 due to homeless encampment encounters and lack of security**

SBKR = San Bernardino kangaroo rat (*Dipodomys merriami parvus*)

LAPM = Los Angeles pocket mouse *(Perognathus longimembris brevinasus*)

CHFA = San Diego pocket mouse (*Chaetodipus fallax fallax*)

PEMA = Deer mouse (*Peromyscus maniculatus*)

REME = Western harvest mouse (*Reithrodontomys megalotis)*

MUMU = House mouse (*Mus musculus*)

RARA = Black rat (*Rattus rattus*)

SPBE = California ground squirrel (*Spermophilus beecheyi*)

3.6.1 Special Trapping Conditions

A number of large homeless encampments were observed in the well-developed riparian woodland along the Santa Ana River during the initial habitat assessment, primarily in the far eastern part of the Project alignment. At least three areas of interest relative to sensitive small mammals coincided with these homeless camps. These areas exhibited deep pure sandy soils that, at least superficially, appeared suitable for SBKR and/or LAPM. Nonetheless, the Riverside County Sheriff's Department recommended that trap checks not be conducted in this area during the night, especially in the vicinity of homeless encampments, due to the inability of the Sheriff to guarantee the safety of the biologists. It was also recommended that two trappers be in close physical proximity to one another during each baiting, check, and trap closure every day. Due to these general admonitions by the Sheriff's Department, it was determined that nighttime checks would not be conducted during the proposed trapping effort. However, due to the mild environmental conditions prevailing during the trapping survey, no harm came to trapped animals sequestered in traps during the full nighttime period.

3.7 OTHER SENSITIVE SPECIES OBSERVED OR DETECTED

The following section includes a brief summary of the non-targeted sensitive species that were incidentally observed during the aforementioned focused surveys. "Sensitive" includes not only those species listed as threatened or endangered by USFWS and CDFW, but also those species listed as Species of Special Concern by CDFW.

Two sensitive bird species were detected during the focused riparian bird surveys: yellow warbler and yellow-breasted chat. The willow flycatchers detected during the focused SWFL surveys were not identified to the subspecies listed as endangered by USFWS; however, the willow flycatcher is listed as endangered by CDFW.

3.7.1 Yellow Warbler

Yellow warbler, a CDFW Species of Special Concern, was found in all three riparian bird survey areas during every survey. On June 24, 2016, breeding was confirmed for this species as the biologists observed recently fledged young in riparian bird survey Area 2 – Hidden Valley. As many as 26 singing males were detected in this area. Figure 8c illustrates the locations of the detected individuals.

3.7.2 Yellow-breasted Chat

Yellow-breasted chat is a CDFW Species of Special Concern, and was found in all three riparian bird survey areas during every visit. On July 12, 2016, breeding was confirmed for this species as the biologists observed two fledged juveniles in riparian bird survey Area 1 – Golf Course. Breeding was suspected but not confirmed in the other riparian bird survey areas, which are also highly suited for this species. As many as 16 singing males were detected in riparian bird survey Area 2 – Hidden Valley. Figure 8c illustrates the locations of the detected individuals.

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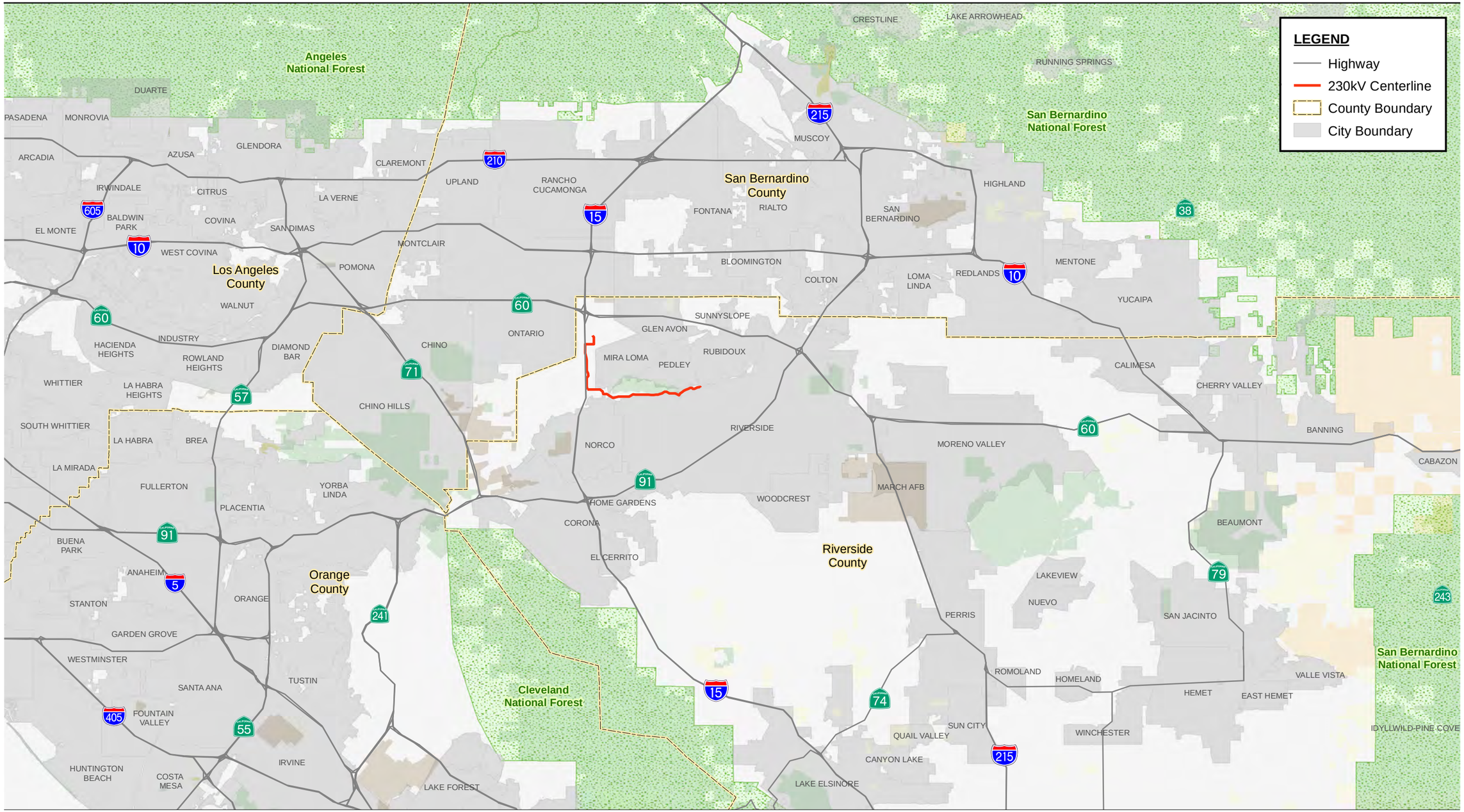
APPENDIX A

FIGURES



Source: SCE; BLM; USFS; Esri.

5 2.5 0 5 Miles

Scale: 1:316,800; 1 inch = 5 miles

Figure 1
Regional Map

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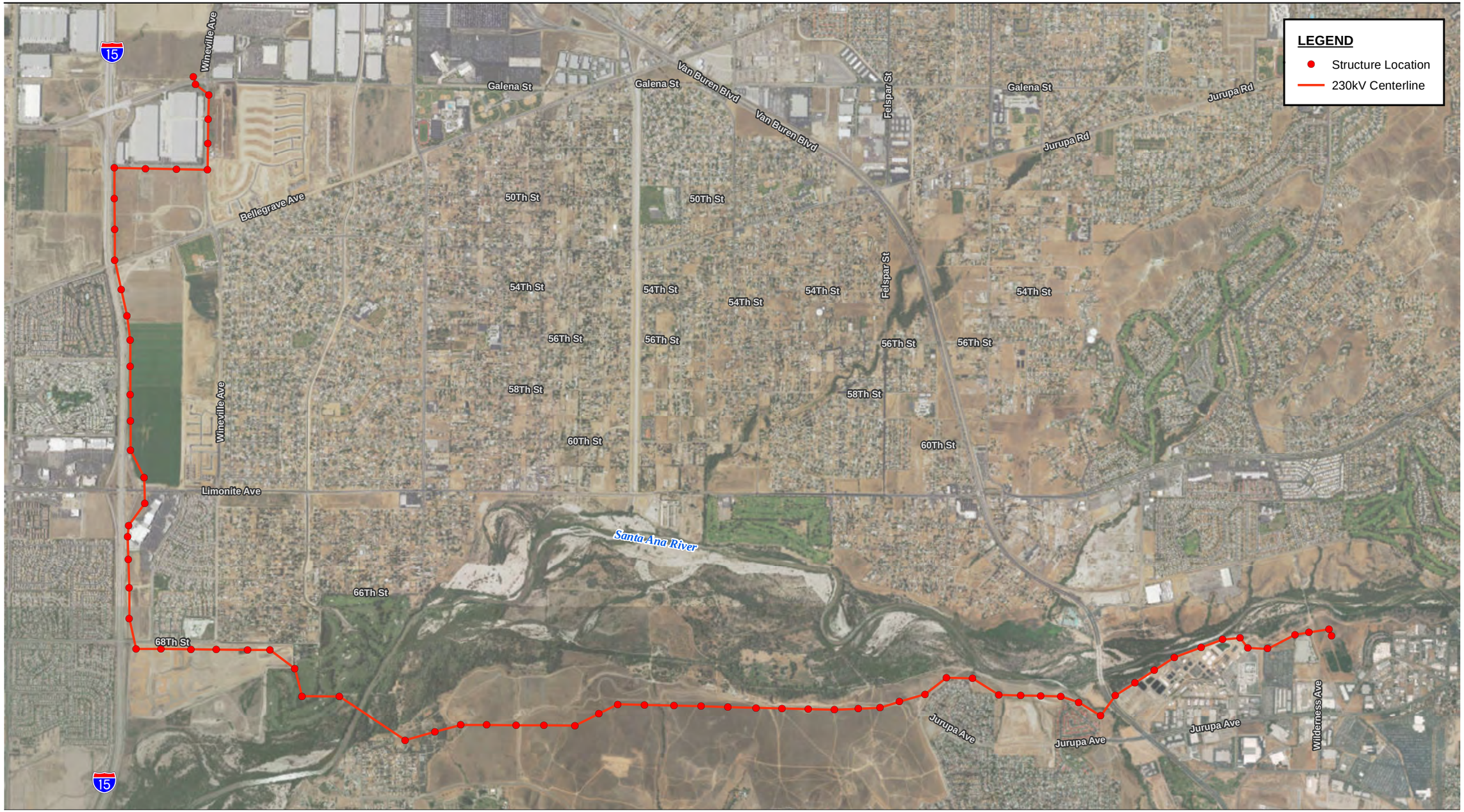

Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 2
Vicinity Map

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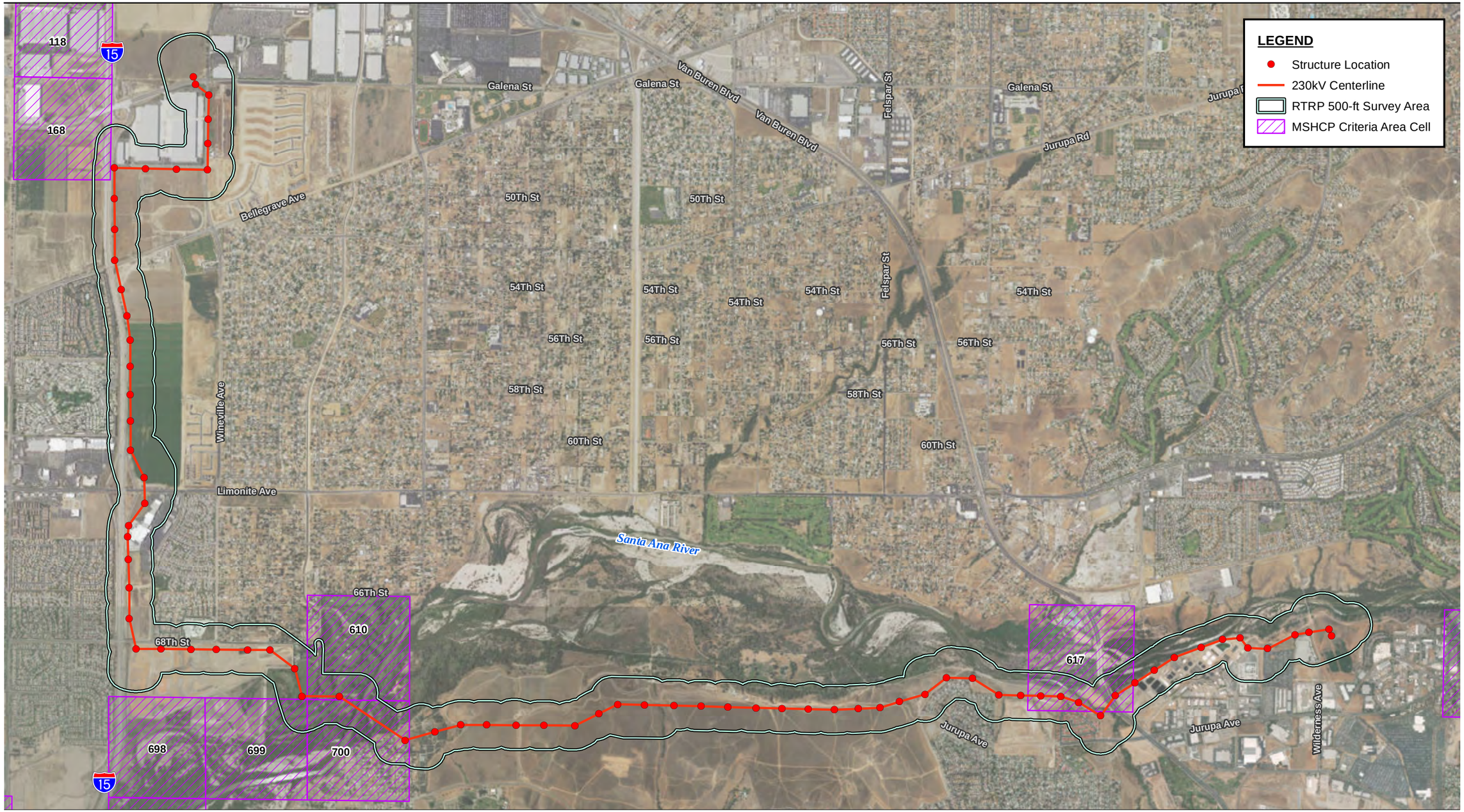


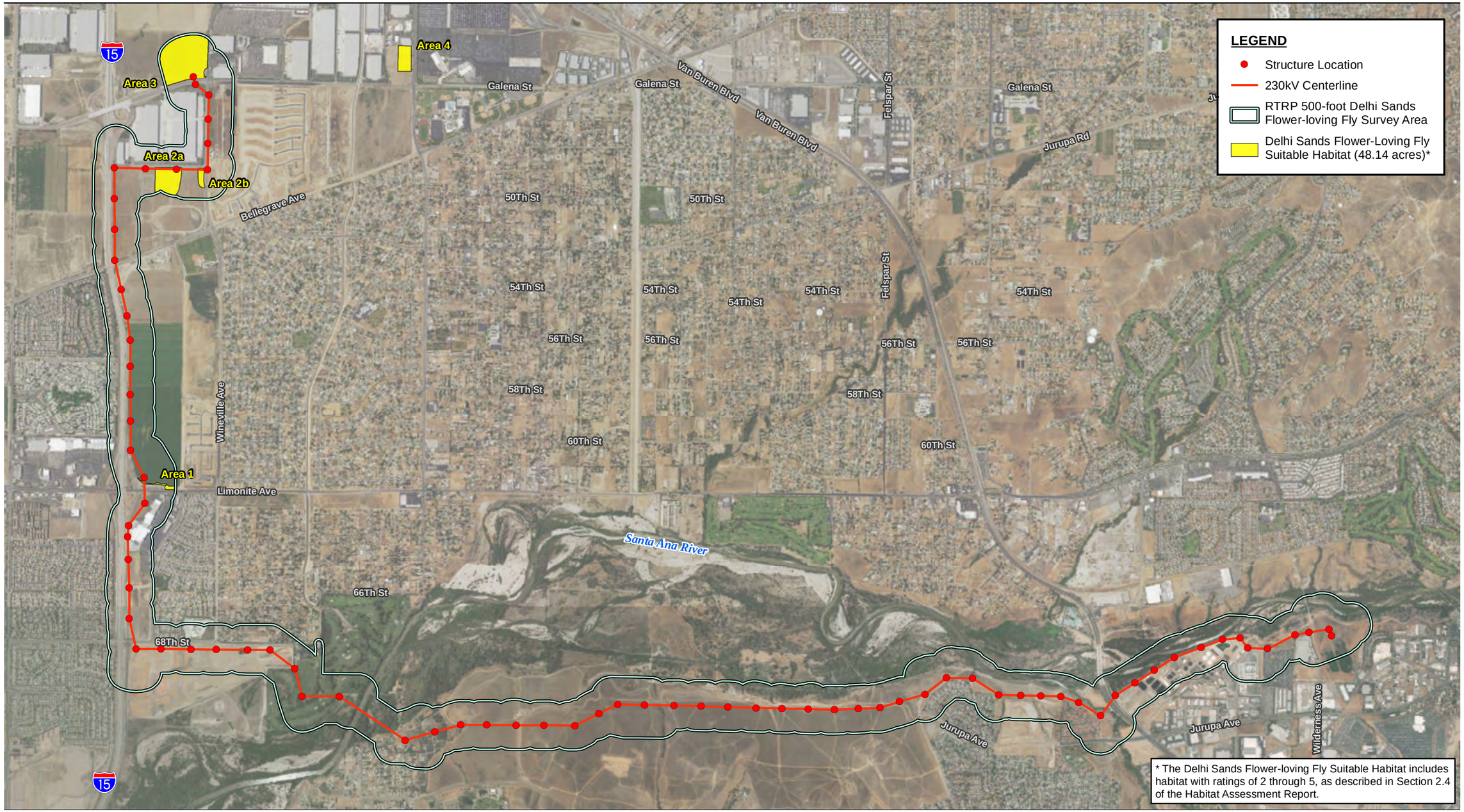
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009; County of Riverside 2016.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 3
MSHCP and Publically Owned Lands

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig3_MSHCP.mxd, 10/31/2016, daniel.arellano



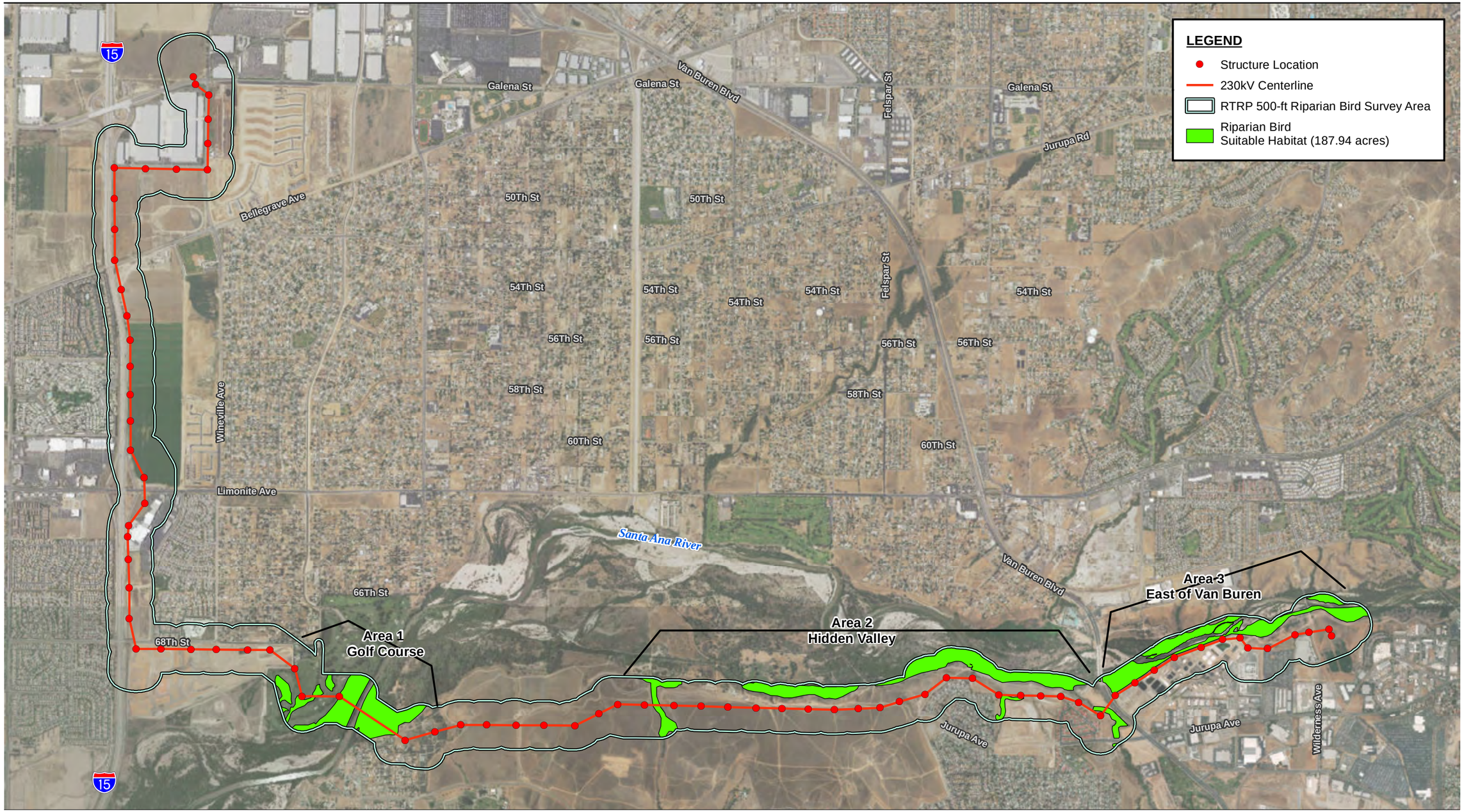
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 4a
Delhi Sands Flower-loving Fly Survey Area

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig4a_DSFLFHabitat.mxd, 10/28/2016, daniel.arellano



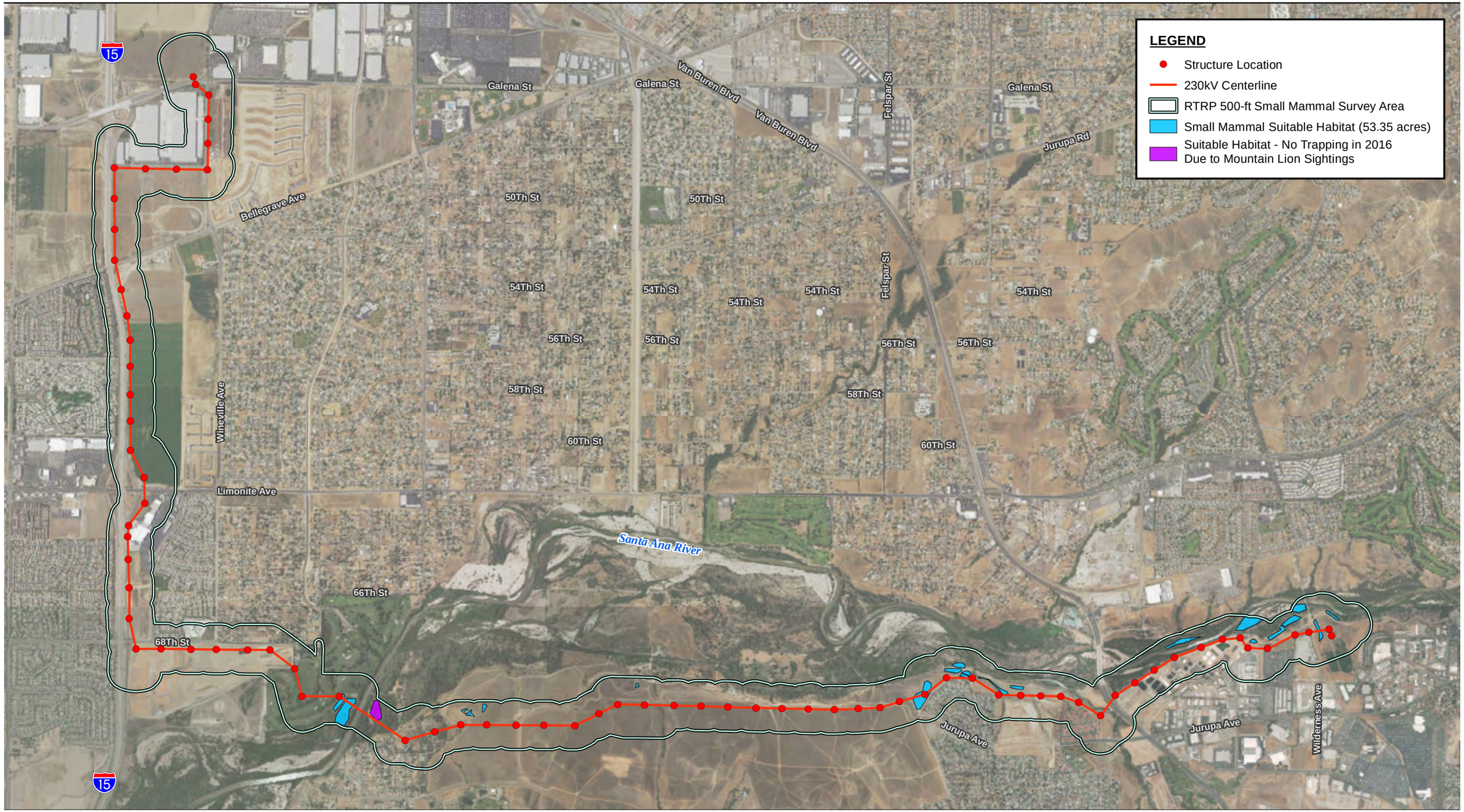
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 4b
Riparian Bird Survey Area

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig4b_RiparianBirdHabitat.mxd, 10/31/2016, daniel.arellano



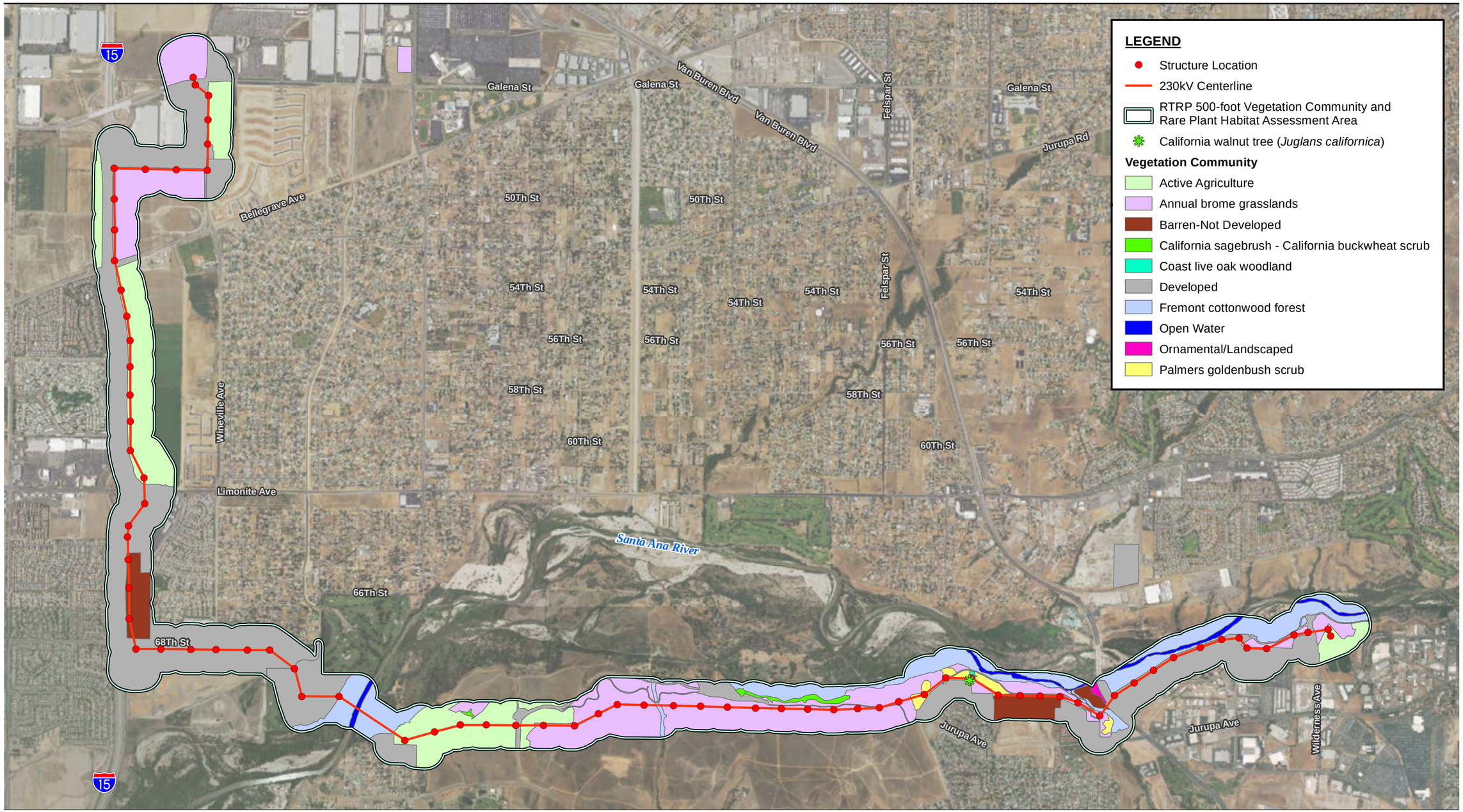
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 4c
Small Mammal Survey Area

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig4c_SmallMammalHabitat.mxd, 10/27/2016, daniel.arellano



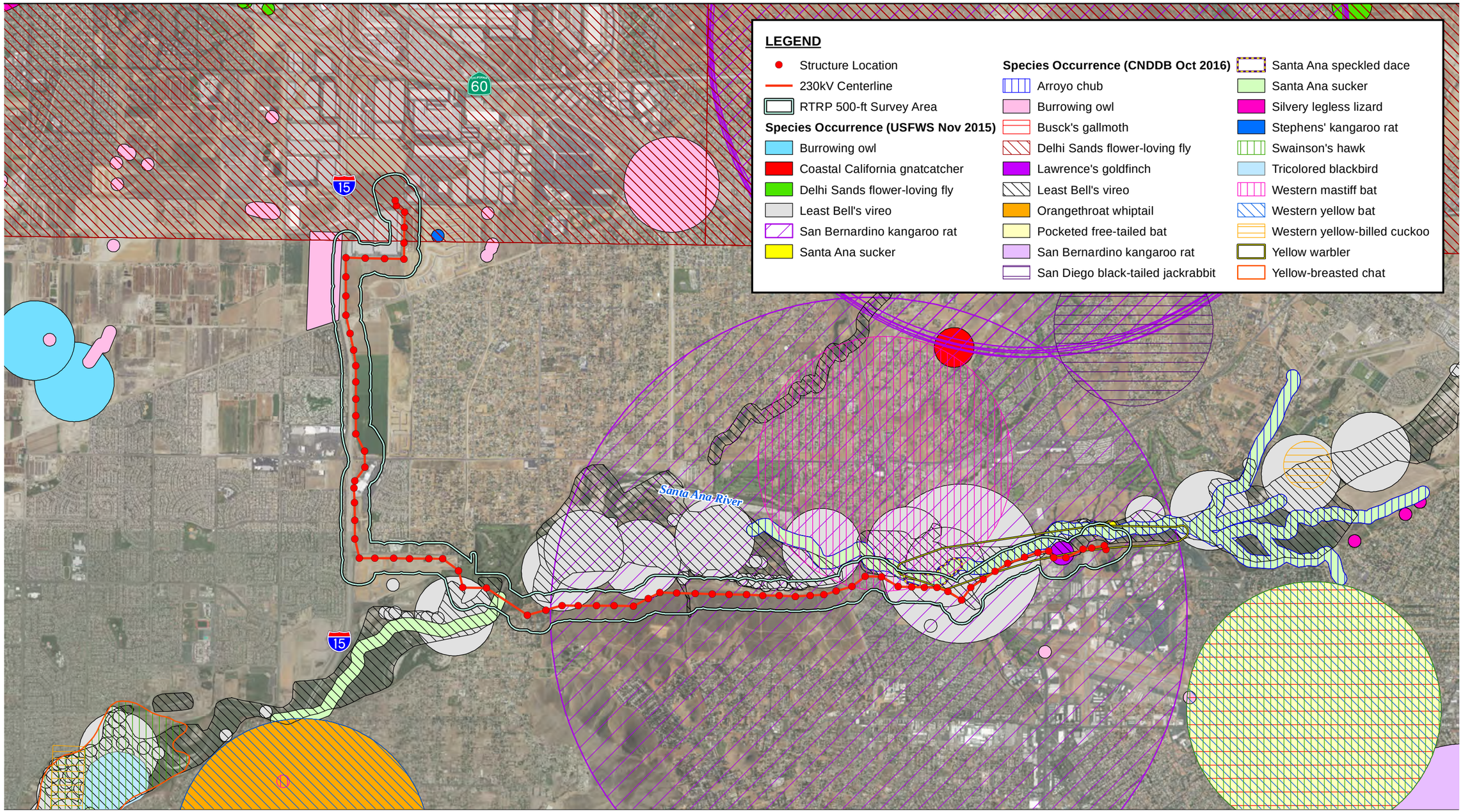
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 5
Vegetation Community and Other Land Cover Types

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig5_Vegetation.mxd, 10/27/2016, daniel.arellano



Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009; USFWS 2015; CNDDB 2016.

4,000 2,000 0 4,000 Feet

Scale: 1:48,000; 1 inch = 4,000 feet

Figure 6
Historical Species Occurrences

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig6_Occurrences.mxd, 10/28/2016, daniel.arellano

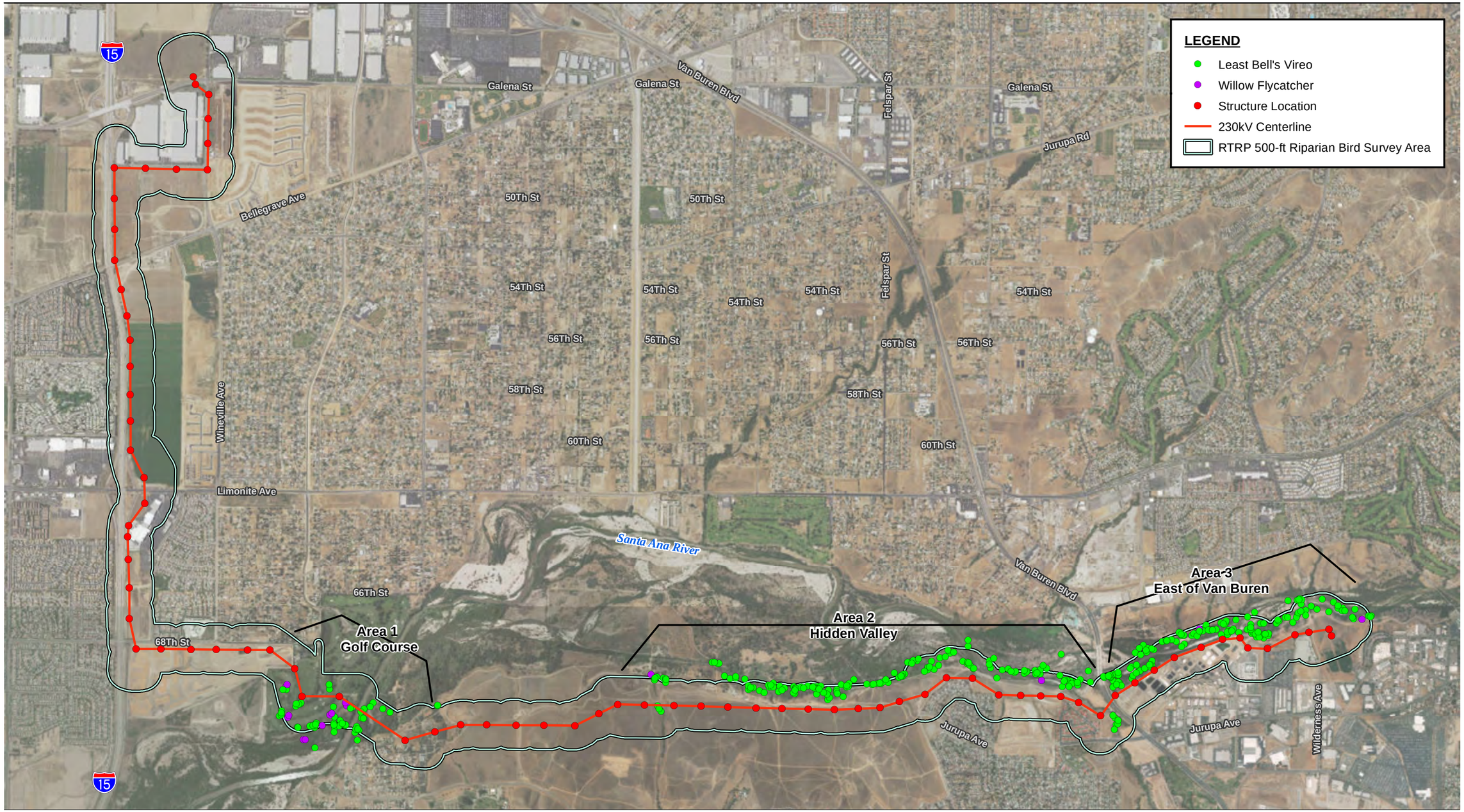
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009; USFWS 2015.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 7
USFWS Designated Critical Habitat

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig7_CriticalHabitat.mxd, 10/28/2016, daniel.arellano



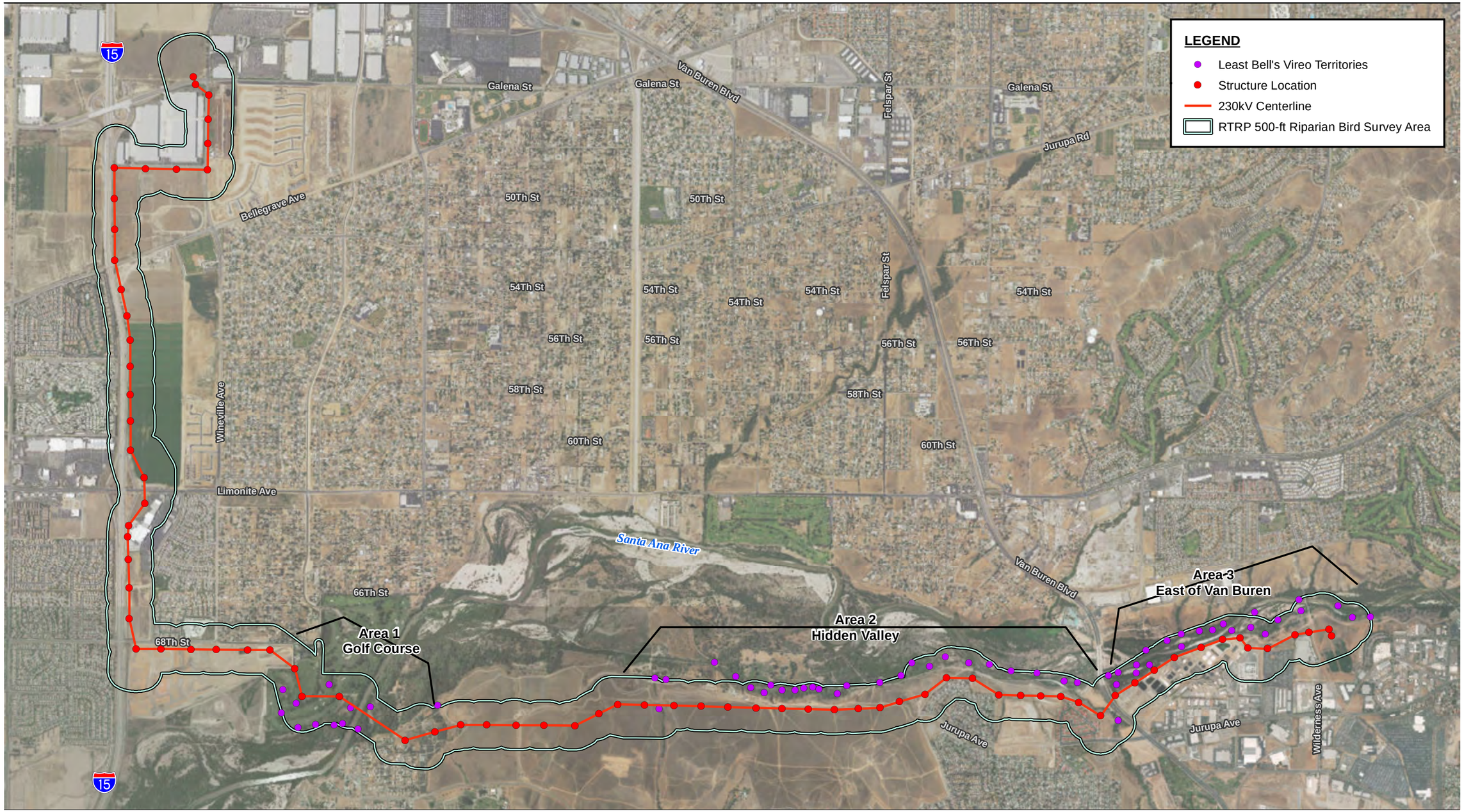
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 8a
Least Bell's Vireo and Willow Flycatcher Individual Locations
Riparian Bird Survey Results

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig8a_Results_LBVI_locations.mxd, 10/31/2016, daniel.arellano



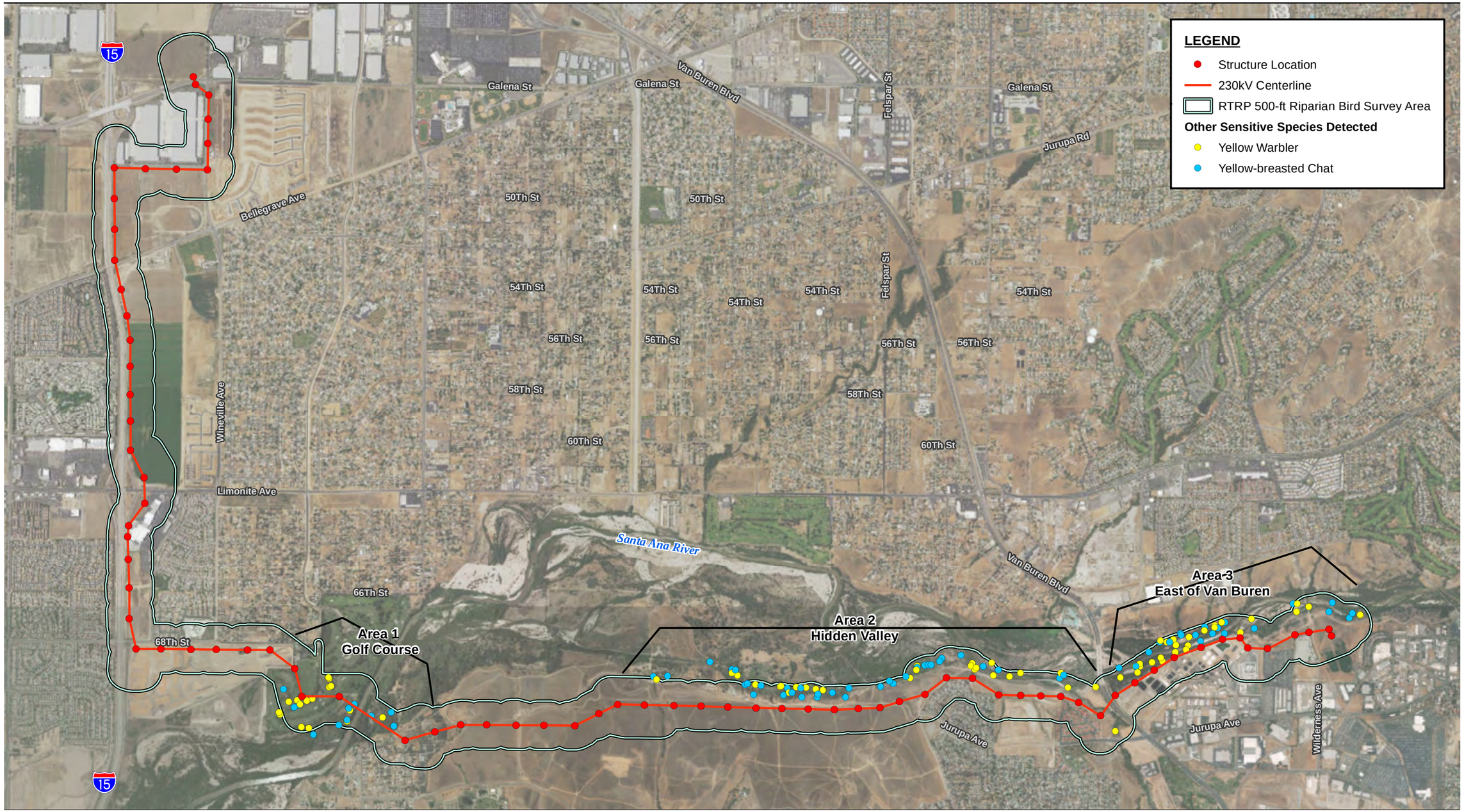
Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 8b
Least Bell's Vireo Territories
Riparian Bird Survey Results

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig8b_Results_LBVI_territories.mxd, 10/31/2016, daniel.arellano



Source: NAIP 2014; Essex 2010; SCE 2016; Esri 2009.

2,500 1,250 0 2,500 Feet

Scale: 1:30,000; 1 inch = 2,500 feet

Figure 8c
Other Sensitive Species Detected
Riparian Bird Survey Results

Path: P:\2015\60337535_SCE_On-Call\60504072_CWA16_RTRP_Jurupa_Valley_SSS\900-CAD-GIS\920 GIS\922_Maps\Reports\Focused_Survey\Fig8c_Results_Others.mxd, 10/31/2016, daniel.arellano

APPENDIX B

PLANT SPECIES COMPENDIUM

Scientific Name	Common Name	Special Status
EUDICOTS		
Adoxaceae - Muskroot family		
Sambucus nigra ssp. caerulea	Blue elderberry	
Amaranthaceae - Amaranth family		
* *Amaranthus albus*	Tumbleweed	
Amaranthus palmeri	Palmer's amaranth	
Anacardiaceae - Sumac Or Cashew family		
Malosma laurina	Laurel sumac	
* *Schinus molle*	Pepper tree	
Toxicodendron diversilobum	Western poison oak	
Asteraceae - Sunflower family		
Ambrosia acanthicarpa	Annual bur-sage	
Artemisia californica	California sagebrush	
Baccharis salicifolia ssp. salicifolia	Mule fat	
* *Centaurea melitensis*	Tocalote	
Ericameria palmeri var. pachylepis	Thickbracted goldenbush	
* *Erigeron bonariensis*	Flax-leaved horseweed	
Erigeron canadensis	Horseweed	
Hazardia squarrosa	Saw-toothed goldenbush	
Helianthus annuus	Common sunflower	
Heterotheca grandiflora	Telegraph weed	
* *Verbesina encelioides ssp. exauriculata*	Golden crownbeard	
Boraginaceae - Borage family		
Amsinckia intermedia	Common fiddleneck	
Brassicaceae - Mustard family		
* *Hirschfeldia incana*	Shortpod mustard	
* *Raphanus sativus*	Radish	
* *Sisymbrium irio*	London rocket	
* *Sisymbrium orientale*	Indian hedgemustard	
Cactaceae - Cactus family		
Cylindropuntia californica	California cholla	
Chenopodiaceae - Goosefoot family		
* *Atriplex rosea*	Tumbling orach	
* *Chenopodium album*	Lamb's quarters	
Chenopodium sp.	Goosefoot	
* *Kochia scoparia ssp. scoparia*	Kochia	

Scientific Name	Common Name	Special Status
* *Salsola tragus*	Russian thistle, tumbleweed	
Euphorbiaceae - Spurge family		
* *Ricinus communis*	Castorbean	
Fagaceae - Oak family		
Quercus agrifolia	Coast live oak, encina	
Geraniaceae - Geranium family		
* *Erodium cicutarium*	Redstem filaree	
Juglandaceae - Walnut family		
Juglans californica	Southern California black walnut	CRPR 4.2
Malvaceae - Mallow family		
* *Malva parviflora*	Cheeseweed, little mallow	
Myrtaceae - Myrtle family		
Eucalyptus sp.	Gum	
Platanaceae - Plane Tree, Sycamore family		
Platanus racemosa	Western sycamore	
Polygonaceae - Buckwheat family		
Eriogonum fasciculatum	California buckwheat	
Portulacaceae - Purslane family		
* *Portulaca oleracea*	Purslane	
Rosaceae - Rose family		
Rubus ursinus	California blackberry	
Salicaceae - Willow family		
Populus fremontii ssp. fremontii	Alamo or fremont cottonwood	
Salix exigua	Narrowleaf willow	
Salix gooddingii	Goodding's black willow	
Salix laevigata	Red willow	
Salix lasiolepis	Arroyo willow	
Solanaceae - Nightshade family		
* *Datura stramonium*	Jimsonweed	
Datura wrightii	Sacred thorn-apple	
* *Nicotiana glauca*	Tree tobacco	
Solanum americanum	American black nightshade	
Tamaricaceae - Tamarisk family		
* *Tamarix ramosissima*	Saltcedar	
Urticaceae - Nettle family		
Urtica dioica	Stinging nettle	
Vitaceae - Grape family		
Vitis californica	California wild grape	

Scientific Name	Common Name	Special Status
Zygophyllaceae - Caltrop family		
* *Tribulus terrestris*	Puncturevine	
MONOCOTS		
Poaceae - Grass family		
* *Arundo donax*	Giant reed	
* *Avena barbata*	Slender wild oat	
* *Avena fatua*	Wild oat	
* *Bromus diandrus*	Ripgut grass	
* *Bromus madritensis*	Compact brome	
* *Cynodon dactylon*	Bermuda grass	
* *Eleusine indica*	Goose grass, india goose grass	
* *Hordeum murinum*	Wall barley	
* *Sorghum bicolor*	Sorghum	
Typhaceae - Cattail family		
Typha latifolia	Broad-leaved cattail	

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened

CRPR – California Rare Plant Rank
1A. Presumed extinct in California
1B. Rare or Endangered in California and elsewhere
2. Rare or Endangered in California, more common elsewhere
3. Plants for which we need more information - Review list
4. Plants of limited distribution - Watch list

Threat Ranks
.1 - Seriously endangered in California
.2 – Fairly endangered in California

APPENDIX C

DATA SHEETS

Project:	SCE RTRP bird survey	Survey area:	East, Santa Ana
Biologist:	Brian Karpman, Yajaira	Survey #:	1
Species:	LBVI	Survey date:	May 9, 2016
Start :	5:45 PM	End :	12:31 PM
Start temp (f):	57	End temp (f):	70
Start weather:	100% cloud cover, wind 1-3 mph,	End weather:	90% cloud cover, wind 2-6 mph,

Species detected:

Use 4-letter AOU code

Notes: Due to the large survey area and the high number of individule within the survey it was not possible to spend any time with the detected individule to determine their breeding status.

Project:	SCE RTRP bird survey	Survey area:	West, Santa Ana
Biologist:	Brian Karpman	Survey #:	1
Species:	LBVI	Survey date:	May 8, 2016
Start :	5:45 AM	End :	12:15 PM
Start temp (f):	58	End temp (f):	71
Start weather:	100% cloud cover, wind 1-4 mph	End weather:	90% cloud cover, wind 3-5 mph

Species detected:

Use 4-letter AOU code

Notes: The farthest west section of the survey area was separated from the rest of the survey by a large River 150 feet wide. The depth of the river was a few feet on the sides but unknown in the center. The other side might be accessible form the golf course.

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman, Nina Kidd	Survey #:	2
Species:	LBVI	Survey date:	May 19, 2016
Start :	6:00 PM	End :	12:15 PM
Start temp (f):	60	End temp (f):	75
Start weather:	Wind 1-4 mph, 100% cloudcover	End weather:	Wind 3-7 mph, 0% cloudcover

Species detected:

Use 4-letter AOU code

Notes: Two new vireos were detected in comparison to survey 1.

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman, Nina Kidd	Survey #:	2
Species:	LBVI	Survey date:	May 17, 2016
Start :	6:00 AM	End :	12:40 PM
Start temp (f):	58	End temp (f):	75
Start weather:	Wind 1-4, 100% cloud cover	End weather:	Wind 3-6, 0% cloud cover

Species detected:

Use 4-letter AOU code

Notes: Several vireos were detected within the survey area

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian Karpman, Yajaira	Survey #:	2
Species:	LBVI	Survey date:	May 18, 2016
Start :	5:40 AM	End :	12:40 PM
Start temp (f):	60	End temp (f):	78
Start weather:	Wind 1-4, 100% cloudcover	End weather:	Wind 3-6, 0% cloudcover

Species detected:

Use 4-letter AOU code

Notes: 10 vireos were detected during the survey. Four were detected on the golf course.

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman and Yajaira	Survey #:	3
Species:	LBVI	Survey date:	May 27, 2016
Start :	5:15 AM	End :	12:00 PM
Start temp (f):	57	End temp (f):	70
Start weather:	Wind 0-3 mph, 100% cloud cover	End weather:	Wind 0 mph, 0% cloud cover

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman and Yajaira	Survey #:	3
Species:	LBVI	Survey date:	May 28, 2016
Start :	5:30 AM	End :	12:18 PM
Start temp (f):	54	End temp (f):	70
Start weather:	Wind 0 mph, 100% cloud cover	End weather:	Wind 2-4 mph, 0% cloud cover

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian Karpman and Yajaira	Survey #:	3
Species:	LBVI	Survey date:	May 29, 2016
Start :	5:30 AM	End :	12:15 PM
Start temp (f):	60	End temp (f):	72
Start weather:	Wind 0-3 mph, 100% cloud cover	End weather:	Wind 1-4 mph, 30% cloud cover

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman and Yajaira	Survey #:	4
Species:	LBVI	Survey date:	June 6, 2016
Start :	5:45 AM	End :	12:20 PM
Start temp (f):	56	End temp (f):	70
Start weather:	Wind 1-3 mph, 100% cloud cover	End weather:	Wind 1-3 mph, 0% cloud cover

Species detected:

Use 4-letter AOU code

Notes: Most to all of the same birds were detected singing. One pair was detected feeding fledglings.

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian karpman and Jon	Survey #:	4
Species:	LBVI	Survey date:	June 8, 2016
Start :	6:30 AM	End :	11:15 PM
Start temp (f):	65	End temp (f):	80
Start weather:	Wind 1-4 mph, 100% cloud cover	End weather:	Wind 3-6 mph, 0% cloud cover

Species detected:

Use 4-letter AOU code

Notes: There were five wifl detected during the survey with Jon Feenstra.

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman and Michelle	Survey #:	4
Species:	LBVI	Survey date:	June 7, 2016
Start :	7:30 PM	End :	12:45 AM
Start temp (f):	65	End temp (f):	78
Start weather:	Wind 1-3 mph, 100% cloud cover	End weather:	Wind 1-6 mph, 0% cloud cover

Species detected:

Use 4-letter AOU code

Notes: Many of the same individule were detected in the same location. One new territory was detected where there haven't been one in the previous weeks.

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman	Survey #:	5
Species:	LBVI	Survey date:	June 16, 2016
Start :	5:45 AM	End :	11:30 AM
Start temp (f):	50	End temp (f):	80
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes: John Feenstra and jim were on site. 18 LBVI were observed.

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman	Survey #:	5
Species:	LBVI	Survey date:	June 17, 2016
Start :	5:30 AM	End :	11:45 AM
Start temp (f):	52	End temp (f):	83
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 2-4 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian Karpman and Marley	Survey #:	5
Species:	LBVI	Survey date:	June 20, 2016
Start :	5:45 AM	End :	11:10 AM
Start temp (f):	65	End temp (f):	88
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian Karpman	Survey #:	6
Species:	LBVI	Survey date:	June 30, 2016
Start :	5:45 AM	End :	11:30 AM
Start temp (f):	56	End temp (f):	83
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 0-1 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman	Survey #:	6
Species:	LBVI	Survey date:	July 2, 2016
Start :	5:50 PM	End :	11:00 AM
Start temp (f):	58	End temp (f):	83
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 0-1 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman	Survey #:	6
Species:	LBVI	Survey date:	July 1, 2016
Start :	5:51 AM	End :	11:44 AM
Start temp (f):	53	End temp (f):	80
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 0-1 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian Karpman	Survey #:	7
Species:	LBVI	Survey date:	July 16, 2016
Start :	5:56 PM	End :	11:33 AM
Start temp (f):	60	End temp (f):	85
Start weather:	100% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman	Survey #:	7
Species:	LBVI	Survey date:	July 17, 2016
Start :	5:50 AM	End :	11:31 AM
Start temp (f):	59	End temp (f):	88
Start weather:	100% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman	Survey #:	7
Species:	LBVI	Survey date:	July 18, 2016
Start :	5:45 AM	End :	11:30 AM
Start temp (f):	60	End temp (f):	89
Start weather:	0% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	3
Biologist:	Brian Karpman	Survey #:	8
Species:	LBVI	Survey date:	July 29, 2016
Start :	6:00 AM	End :	11:27 AM
Start temp (f):	70	End temp (f):	88
Start weather:	40% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	1
Biologist:	Brian Karpman	Survey #:	8
Species:	LBVI	Survey date:	July 30, 2016
Start :	5:55 AM	End :	11:20 AM
Start temp (f):	70	End temp (f):	88
Start weather:	100% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

Project:	SCE RTRP bird survey	Survey area:	2
Biologist:	Brian Karpman	Survey #:	8
Species:	LBVI	Survey date:	July 31, 2016
Start :	6:00 AM	End :	11:23 AM
Start temp (f):	61	End temp (f):	88
Start weather:	40% cloud cover, wind 0-1 mph	End weather:	0% cloud cover, wind 3-6 mph

Species detected:

Use 4-letter AOU code

Notes:

DMC

TRAP RESULTS - SCE Riverside SBKR/LAPM/SDPM field sheet

Cont

Date Traps Checked	Area (1-19)	No. Traps Set	Animals Captured*											Notes
			SBKR	DKR	LAPM	CHFA	PEMA	PEFR	NEBR	REME	MUMU	RARA	SPBE	
8/29/16	18B	25								1		1		
	19B	25												No caps
8/30/16	11B						IIII			1				66.2°F, 0%, 1-2mph
	14						1			IIII 1				pulled traps
	15													pulled traps No caps
	16						1			1				pulled traps
	18B									III	1	III		pulled traps
	19B													No caps Pulled traps
8/31/16	12	20					IIII							63.6°F 0% 0mph
	11A	25					1			11				
	11B	25					IIII			11				
8/6/16	11A	25					1			11				65.9°F, 0%, 0mph
	11B	25					IIII				1	11	1	
	12	~~50~~ 20					III							
9/2/16	12	20					III							67.6°F, 100%, 0-1mph
	11A	25					11			11	1			
	11B	~~25~~					IIII 1							

traps pulled due to unsafe conditions in trap area

Dan went home after pulling traps.

Misc. Notes

Dan had 15 traps stolen 2 on grid 15A and 15 traps on grid 17. Weird afternoon. During baiting on 8/29/16 Dan noticed traps stolen on 2 grids. One homeless guy was promising to get traps back while younger guy stood by swinging machette(sp?) Encountered REALLY scary guy while leaving site 19. May pull traps tomorrow (30th) Safety is a concern around traps/homeless encampments.

DMC

TRAP RESULTS - SCE Riverside SBKR/LAPM/SDPM field sheet

(mid-morning)

Date Traps Checked	Area (1-19)	No. Traps Set	Animals Captured*											Temp/cloud cover/wind (mph) Notes
			SBKR	DKR	LAPM	CHFA	PEMA	PEFR	NEBR	REME	MUMU	RARA	SPBE	
7/9-7/10/16	1A	40					IIII			II				61.7°F, CC=0, 0-1mph — only set 1A - Returned to hotel to check on mom.
7/10-7/11/16	4	20					III							62.6°F CC=0, 0-1mph
	2A	4					II							No habitat site is scraped areas of scrub
	2B	16					II							
	3	20					II							Site has bedrock milling site gps# = 465
	5	10					I							
	1A	40					IIII			IIII				
	1B	40					IIII			IIII				
7/11-7/12/16	4	20					IIII							66.7°F, CC=100%, 0-2mph
	2A	4					III			I				
	2B	16					I							
	3	20					II							
	5	10					II							
	1A	40					IIII II			IIII III	I			
	1B	40					II			IIII		I		long tail
7/12/16-7/13	4	20					IIII							67.3°F, 0%, 0-1mph
	2A	4					III							
	2B	16												
	3	20												
	5	10												
	1A	40												
	1B	40												

Misc. Notes

1A/B Soft sandy soils / bamboo / small patch of CSS in SW area of 1B / horse trails. 1A adjacent to golfing fairway / Tee-off

4 = Tracks, disturbed scrub - rocks/boulder (SDPM??)

2A/B = site is heavily disturbed - surrounded by newly planted opuntia. Area is scraped.

3 = non-native bromes & disturbed scrub - milling site in bedrock - cool!

5 = small isolated scrub patch - dominated by buck wheat (CHFA??) very disturbed areas.

- Didn't trap site adjacent to SAR due to mountain lion sighting by Ranger (spoke w/ female ranger).
- Checked in w/ Ranger on day 1 and last day (7/9) 7/15

DMC

TRAP RESULTS - SCE Riverside SBKR/LAPM/SDPM field sheet

	Date Traps Checked	Area (1-19)	No. Traps Set	Animals Captured* SBKR	DKR	LAPM	CHFA	PEMA	PEFR	NEBR	REME	MUMU	RARA	SPBE	Notes
Session 1	7/13-7/14/16	4						IIII							64.6°F, 0%, 0-.5mph
		2A						++++							
		2B						I							
		3						III							
		5						III						I	
		1A						++++ ++++ ++++			++++ I	III			Grid picked up Day 5 for site 1A
	↓	1B						II			++++				
	7/14-7/15/16	4						III							
		2A						III							
		2B						I							
		3						IIII							
		5												I	
		1B						III			++++ ++++				All traps pulled
Session 2	7/25/16-7/26-15	6	100					++++ ++++			II				69°F, 0%, 0-.5mph
		~~8~~	30					II			IIII				
		7	30					III			I				
		~~9~~	3					I							
		10	30					III			I				
	7/26-7/27/16	6						++++ ++++ IIII			++++				71.2°F, 0%, 0-.5mph
		~~10~~						II			II				
		~~8~~ 9						I							

Misc. Notes

No scrub in majority of area 9. Squirrel burrows are abundant, concentrating higher trap densities in areas suitable to target species. Soils/scrub may yield CHFA, very disturbed scrub. Isolated patches-no connectivity.

DMC

TRAP RESULTS - SCE Riverside SBKR/LAPM/SDPM field sheet

Date Traps Checked	Area (1-19)	No. Traps Set	Animals Captured*											Notes
			SBKR	DKR	LAPM	CHFA	PEMA	PEFR	NEBR	REME	MUMU	RARA	SPBE	
cont. 7/26-7/27/16	8						1							lower gate locked btwn check & baiting Windy while baiting
	7						III			II				
7/27-7/28/16	6						IIII IIII III			IIII				70.0°F, 0%, 0-5mph
	9						I							
	10						II			IIII I				
	8						I			IIII				
	7						II			I			I	
7/28-7/29/16	6						IIII IIII			IIII	I			71.1, 0%, 0
	9						I							
	10						III			II				
	8						II			II				
	7						II							
7/29-7/30/16	6						IIII IIII			II				72.2°F, 100%, 0-1mph
	8						I			I				
	7						II							
	9						II							
	10						II			III				
/ / / / /	/ / / /	/ / / /	/	/	/	/	/	/	/	/	/	/	/	/
session 2 8/28-8/29	11B	25					IIII							Set traps No mid night check safety reasons
	14	20					I			IIII				65.2°F, 0%, 0-5mph
	15B	25								I				
	16	15					I			I				

Misc. Notes

DGrout

TRAP RESULTS - SCE Riverside SBKR/LAPM/SDPM field sheet

Date Traps Checked	Area (1-19)	No. Traps Set	Animals Captured*											Notes
			SBKR	DKR	LAPM	CHFA	PEMA	PEFR	NEBR	REME	MUMU	RARA	SPBE	
8/29/16	11A	25					II	1		II				
	12	20												NO CAPS
	13	25					III							
	15A	25								1				NO caps
	17	~~20~~ 15								II				
	18A	25								II				Homeless guy "tagged" along
	19A	25												NO caps
8/30/16	11A						II	1		II				
	12													NO caps
	13						III							
	15A													NO caps
	17									II				
	18A									II				
	19A													NO caps

Misc. Notes

Pulled Traps early. No Target species captured in sites pulled (13, 14, 15, 16, 17, 18, 19). Probability of target spp. in buffer zone is extreemly low. Disturbance in area is high due to constant activity from homeless encampments/disturbance.

APPENDIX D

SENSITIVE WILDLIFE SPECIES WITH POTENTIAL TO OCCUR

Appendix E
Sensitive Wildlife Species Potential for Occurrence Table

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
INVERTEBRATES			
vernal pool fairy shrimp *Branchinecta lynchi*	FT	Fully Covered	Found at scattered locations throughout southern California, although known only from Riverside and San Diego counties in southern California. Restricted to cool-water vernal pools, often early in the rainy season. *Moderate potential to occur along portions of the 250-kV alignment and the Etiwanda Avenue marshalling yard supporting flat open areas with impermeable soils below the ground surface. Unlikely to occur in the Clay Street marshalling yard.*
San Diego fairy shrimp *Branchinecta sandiegonensis*	FE	-	Known range limited to southern California, in Orange and San Diego counties, and adjacent northwestern Baja California. Occurs in vernal pools and similar ephemeral wetland habitats, including artificial habitats. All known localities below 2,300' elevation and within 40 miles of the Pacific Ocean. *Moderate potential to occur along portions of the 250-kV alignment and the Etiwanda Avenue marshalling yard supporting flat open areas with impermeable soils below the ground surface. Unlikely to occur in the Clay Street marshalling yard.*
Quino checkerspot butterfly *Euphydryas editha quino*	FE	Fully Covered	Range restricted to limited areas of southern California and northern Baja California; currently known in southern California only from relatively small populations within Riverside and San Diego counties. Inhabits openings within Riversidean sage scrub and chaparral; also found in grasslands, and vernal pool and lake margins. *Moderate potential to occur along portions of the 250-kV alignment supporting grassland and native scrub communities. Unlikely to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
Delhi Sands flower-loving fly *Rhaphiomidas terminatus abdominalis*	FE	Fully Covered	Known from a very small range in southern California, southwestern San Bernardino and northwestern Riverside counties; currently known only from a range encompassing an 8-mile radius, though presumed to have once occurred throughout the Colton Dunes formation, a 40-square-mile area. Its habitat is restricted to fine, sandy soils, often with wholly or partly consolidated dunes, and a particular soil type classified as the "Delhi" formation. *High potential to occur along the westernmost (north-south running) portion of the 250-kV alignment and on the Etiwanda Avenue marshalling yard. Unlikely to occur on the Clay Street marshalling yards.*
Riverside fairy shrimp *Streptocephalus woottoni*	FE	Fully Covered	Endemic to western Riverside County, as well as southern California coastal counties, from Ventura to San Diego. Restricted to relatively deep vernal pools in grasslands or in openings within coastal sage scrub and chaparral. Hatch in warm water later in season. *No potential to occur within 500 feet of the 250-kV alignment. Unlikely to occur in the two marshalling yards.*
FISH			
Santa Ana sucker *Catostomus santaanae*	FT SSC	Fully Covered	Endemic to southern California, known historically only from the San Gabriel, Los Angeles, and Santa Ana river systems of Los Angeles, Orange, Riverside, and San Bernardino counties. Prefers permanent streams and small to medium-sized rivers with cool temperatures. Riparian habitat is typically to provide cover and refuge from floods. Can inhabit reservoirs. *High potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
arroyo chub *Gila orcuttii*	SSC	Fully Covered	The arroyo chub is native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers and to Malibu and San Juan creeks. They prefer slow-moving mud or sand-bottomed sections of streams and are abundant only in portions of the Santa Margarita River and Trabuco, San Juan, and Malibu creeks. *High potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*
southern steelhead (southern California) *Oncorhynchus mykiss irideus*	FE SSC	-	Range is from the Santa Maria River, San Luis Obispo County, south to the larger remaining streams in San Diego County. Southern steelhead currently occurs in only four large river systems in their range: the Santa Maria, Santa Ynez, Ventura, and Santa Clara rivers. Adults migrate from the ocean into freshwater streams to spawn between December and April. Juveniles remain in freshwater streams for two to three years before migrating to the ocean. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
Santa Ana speckled dace *Rhinichthys osculus*	SSC	-	The "Santa Ana" population of speckled dace is restricted to the headwaters of the Santa Ana and San Gabriel river drainages. Prefers shallow, gravel and cobble riffles of permanent flowing streams, with overhanging riparian vegetation for cover. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
AMPHIBIANS			
arroyo toad *Anaxyrus californicus*	FE SSC	Partially Covered	Uncommon and local in primarily cismontane southern California from Santa Barbara County south into Baja California. Inhabits washes, streams, arroyos and adjacent uplands, generally where riparian woodlands (willow, cottonwood, sycamore, and/or coast live oak) are present. Typically requires shallow, gravelly pools adjacent to sandy terraces, with little or no emergent vegetation. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*
California red-legged frog *Rana aurora draytonii*	FT SSC	Partially Covered	Usually occurs in or near permanent water of low gradient streams, marshes, ponds, lakes, and other quiet bodies of water. Breeding occurs in permanent or seasonal pools. The only known location for this species to still occur in Riverside County is the Santa Rosa Plateau. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
Mountain yellow-legged frog *Rana muscosa*	FE SSC	Partially Covered	Now rare and extremely localized in southern California. They inhabit perennial, cool mountain streams with steep gradients. Typically in the chaparral belt, but may occur at higher elevations (e.g., most records between 1,500 and 7,500 feet elevation). *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
western spadefoot toad *Spea hammondii*	SSC	Fully Covered	Occurs in a variety of habitats, from lowlands to foothills, in grasslands, open chaparral and sage scrub, and open woodland. Most often prefers short-grass plains, with sandy or gravelly soils (e.g., alkali flats, washes, alluvial fans). Known to breed in stock tanks and other artificial water bodies. In upland habitats to avoid desiccation, becomes inactive and burrows underground. Active again in late winter and spring after the first rains. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
Coast Range newt *Taricha torosa torosa*	SSC	Fully Covered	Occurs along the coast and coast ranges of California from Mendocino County to San Diego County. Breeding occurs in ponds, reservoirs, and streams. Outside breeding season found in terrestrial habitats (e.g., grasslands, moist oak woodlands and chaparral); can migrate over 0.5 mile to find breeding ponds or slow-moving streams. Will spend drier periods burrowing in soil or under fallen logs and debris. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
REPTILES			
southwestern pond turtle *Actinemys (Clemmys) marmorata pallida*	SSC	Fully Covered	Occurs along the coastal slope of southern California, from the San Francisco Bay area south into Baja California, from sea level to over 5,900 feet elevation. Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation and either rocky or muddy bottoms. Generally requires permanent (or nearly permanent) water. Can also be found in woodland and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*
Belding's orange-throated whiptail *Aspidoscelis hyperythra (Cnemidophorus hyperythrus beldingi)*	SSC	Fully Covered	Occurs in a limited range within the coastal slope of southern California, from the Santa Ana River area portions of Orange, Riverside and San Bernardino counties, and south into Baja California. From sea level to approximately 2,000 feet elevation. Prefers semi-arid brushy areas, typically with loose soil and rocks, including coastal sage scrub, chaparral, rocky hillsides, washes and streamsides. *Moderate potential to occur within the undeveloped portions of the 250-kV alignment and in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
coastal whiptail *Aspidoscelis tigris stejnegeri*	-	Fully Covered	Found in coastal southern California habitats which have been altered and fragmented by development. Chaparral, woodland, and riparian areas. Inhabits a variety of ecosystems, primarily hot and dry open areas with sparse foliage. *Moderate potential to occur within the undeveloped portions of the 250-kV alignment and in the two marshalling yards.*
rosy boa *Charina trivirgata*	FSS	-	Occurs widely but sparsely distributed in the desert and chaparral habitats throughout southern California, south of Los Angeles, from the coast to the Mojave and Colorado deserts. In coastal areas it inhabits rocky chaparral-covered hillsides and canyons, while in the desert it is found on scrub flats with good cover and in the mountains. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
southern rubber boa *Charina umbratica*	ST FSS	Fully Covered	Found in only a few disjunct montane regions of southern California: the San Bernardino, San Jacinto and Tehachapi mountains. Inhabits oak-conifer and mixed-conifer forests at elevations between roughly 5,000 and 8,200 feet, where rocks, logs, or other debris provide shelter. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
northern red-diamond rattlesnake *Crotalus ruber ruber*	SSC	Fully Covered	Occurs in southern California from the Morongo Valley area of San Bernardino County west to the coast and south along the Peninsular Ranges to Baja California. Inhabits arid, rocky, brushy areas, including coastal sage scrub and chaparral, as well as oak and other woodlands and grasslands. *Moderate potential to occur within the undeveloped portions of the 250-kV alignment and in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
San Bernardino mountain kingsnake *Lampropeltis zonata (parvirubra)*	SSC FSS	Fully Covered	Limited range includes the San Jacinto, Santa Rosa, San Bernardino, Santa Susana, and San Gabriel mountains of southern California. Can be found in diverse habitats, including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, and coastal sage scrub. Preferred areas include wooded areas near a stream with rock outcrops, talus, or rotting logs. Found as high as 9,000 feet on Mt. San Jacinto. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*
California (San Diego) mountain kingsnake *Lampropeltis zonata (pulchra)*	SSC FSS	Fully Covered	Found in three restricted areas in southern California: 1) in the central San Diego County Peninsular Ranges (the Laguna, Palomar, Volcan, and Hot Springs mountains); 2) the Santa Ana Mountains; and 3) the Hollywood Hills and Santa Monica Mountains. Has similar habitat preferences to the San Bernardino Mountain kingsnake (see above). From near sea level along the south coast to above 6,500 feet in the Cuyamaca Mountains. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*
Coast (San Diego) horned lizard *Phrynosoma coronatum*	SSC FSS	Fully Covered	Found along the coastal slope of southern California from the San Francisco Bay area south into Baja California. Inhabits open areas of sandy soil, sandy ridges, and low vegetation in valleys, foothills, and semiarid mountains from sea level to 8,000 feet in elevation. Found in grasslands, woodlands, sage scrub, and chaparral in openings with areas of friable soil. Frequently found near harvester ant mounds, its preferred prey. *High potential to occur within the undeveloped portions of the 250-kV alignment and in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
coast patch-nosed snake *Salvadora hexalepis virgultea*	SSC	-	Occurs in southern California from the Carrizo Plains in San Luis Obispo County south through the coastal zone, west of the deserts, into coastal northern Baja California. Inhabits semi-arid brushy areas, including sage scrub and chaparral, in canyons, rocky hillsides, and mesas. *Low potential to occur within the undeveloped portions of the 250-kV. Unlikely to occur in the two marshalling yards.*
two-striped garter snake *Thamnophis hammondii*	SSC FSS	-	In southern California, ranges along the coast and east through the Transverse Ranges into limited portions of the western desert; then south through the Peninsular Ranges into northern Baja California. Can be found at elevations from sea level to 6,988 feet. Found in or near permanent fresh water, often along streams with rocky beds and riparian growth. *Moderate potential to occur along the southernmost (east-west running) portion of the 250-kV alignment that crosses or lies directly adjacent to the Santa Ana River. No potential to occur in the two marshalling yards.*
BIRDS			
Cooper's hawk *Accipiter cooperii*	-	Fully Covered	An uncommon, though increasing, breeding resident species in cismontane southern California, with an influx of birds during the winter months. Forages over a broad variety of woodland and shrub communities, especially wherever concentrations of birds (their preferred prey) may be found. Nests within a variety of woodland habitats, such as riparian or oak woodlands, but in recent years has shown a tolerance for developed areas and has begun nesting in suburban and urban "woodlands." *Moderate potential to nest in trees within 500 feet of the 250-kV alignment. Unlikely to nest on or directly adjacent to the marshalling yards. Moderate potential to forage along 250 kV alignment and in the two marshalling yards.*
northern goshawk *Accipiter gentiles*	SSC FSS	Fully Covered	Very rare, and extremely local, resident in a few southern California mountain ranges (e.g., the San Jacinto Mountains). Most records have been during the breeding season and have generally occurred in dense coniferous or mixed coniferous-deciduous woodlands. A rare winter visitor to the northern deserts. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
sharp-shinned hawk *Accipiter striatus*	-	Fully Covered	An uncommon winter visitor to southern California. Occurs in a variety of woodland and shrubland communities (native and nonnative), wherever concentrations of small birds (their preferred prey) may be found. *Moderate potential to nest in trees within 500 feet of the 250-kV alignment. Unlikely to nest on or directly adjacent to the marshalling yards. Moderate potential to forage along 250 kV alignment and in the two marshalling yards.*
tri-colored blackbird *Agelaius tricolor*	SSC BCC	Fully Covered	A resident breeder in cismontane southern California. When present, can often occur in large numbers, as a highly colonial species. However, has significantly declined in the region and is becoming somewhat rare and localized. Often more common and widespread in winter. For breeding, requires open water, protected nest sites (flooded or spiny/thorny vegetation), and suitable foraging sites within a mile or two of the nesting colony. Dense beds of freshwater emergent vegetation (cattails and/or bulrush) are often used by colonies for nest placement, with foraging occurring in nearby grasslands, agricultural fields, fallow fields, dairies, and feedlots. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	WL	-	A fairly common resident and breeder in cismontane southern California. Prefers relatively steep, often rocky hillsides, with dominant vegetation ranging from grasses and forbs to a moderate shrub cover (including coastal sage scrub or sparse chaparral communities). *Moderate potential to nest and forage in the upland habitats within 500 feet of the 250-kV alignment. Unlikely to nest or forage on the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
grasshopper sparrow *Ammodramus savannarum*	SSC	Fully Covered	An uncommon, localized summer resident (March through August), and breeder, in cismontane southern California. Declining throughout much of its former range. Nests and forages in areas of relatively expansive grasslands (both native and nonnative), including grasslands interspersed with occasional shrubs (e.g., sage scrub species) or taller weeds (e.g., wild artichoke). Can occur on level or sloping terrain; generally found in lower elevations. *Moderate potential to nest and forage in the grassland habitats within 500 feet of the 250-kV alignment. Unlikely to nest or forage on the two marshalling yards.*
Bell's sage sparrow *Amphispiza belli belli*	BCC	Fully Covered	An uncommon, localized resident and breeder in cismontane southern California. Preferred habitat includes low, dense chaparral (typically chamise dominant) in interior foothills, as well as coastal sage scrub (often with white sage). *Moderate potential to nest and forage in the upland habitats within 500 feet of the 250-kV alignment. Unlikely to nest or forage on the two marshalling yards.*
golden eagle *Aquila chrysaetos*	FP BCC	Fully Covered	A fairly rare resident, and breeder, in more remote regions of southern California, with generally some influx occurring into the region during winter. Forages over a variety of habitats and terrain, including grasslands, brushlands, and open woodland and savannah. This species is primarily restricted to rugged, mountainous terrain for nesting, generally well away from human disturbance. *Moderate potential to nest and forage in the undeveloped areas within 500 feet of the 250-kV alignment. Unlikely to nest or forage on the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
great blue heron *Ardea herodias*	-	-	Fairly common year-round in southern California, though somewhat smaller numbers during the breeding season. Breeds very locally, especially away from the coast. Forages at a wide variety of wetland habitats, including ponds, marshes, creeks, flood control channels, etc. Also will forage for rodents in fallow agricultural fields and vacant lots. Clusters of tall trees (e.g., eucalyptus) are often used for nesting. *High potential to nest and forage in the undeveloped areas within 500 feet of the 250-kV alignment. Unlikely to nest or forage on the two marshalling yards.*
long-eared owl *Asio otus*	SSC	-	A fairly rare resident, and very localized breeder, in cismontane southern California, although somewhat more widespread and common as a winter visitor here. Prefers dense riparian communities (including coast live oak, willows, and cottonwoods) or occasionally other types of cover (e.g., dense olive groves) for roosting and nesting. Generally, grasslands or other open habitats for foraging are adjacent to roosting/nesting sites. *Moderate potential to roost and nest in the riparian habitats associated with the Santa Ana River; also to forage within the upland habitats along the 250 kV alignment. Unlikely to roost, nest or forage in the two marshalling yards. substation and 500-kV study areas as a winter visitor and as a breeder.*
burrowing owl *Athene cunicularia hypugaea*	SSC BCC	Partially Covered	Now a fairly rare, and decreasing, resident breeder in southern California, away from the Imperial Valley. A small influx of nonbreeding birds often occurs during the winter. Prefers open, low-growing grasslands, fallow fields, agricultural areas, earth-lined flood control channels/ditches, and dairies. Relies on the presence of burrowing rodents (especially California ground squirrel) for roost and nest sites. *Moderate potential to nest and forage in the undeveloped areas within 500 feet of the 250-kV alignment and the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
American bittern *Botaurus lentiginosus*		Fully Covered	A fairly rare winter visitor to southern California; formerly a regular breeder throughout the coastal slope. Generally restricted to fairly extensive freshwater marsh habitats with dense patches of cattails and rushes. *No potential to occur within 500 feet of the 250-kV alignment or the two marshalling yards.*
ferruginous hawk *Buteo regalis*	BCC	Fully Covered	A rare to uncommon transient and winter visitor in southern California. Typically requires extensive grasslands, sparsely vegetated rolling hills, and agricultural fields for foraging habitat. Roosts in open areas, usually in a lone tree or utility pole. *No potential to nest within 500 feet of the 250-kV alignment or the two marshalling yards; low potential to roost and forage.*
Swainson's hawk *Buteo swainsoni*	ST FSS BCC	Fully Covered	A fairly rare, though increasing, spring and fall transient in southern California. Has been extirpated for years (from most of the region as a breeder. Forages over a variety of open habitats, including grasslands, rangeland, agricultural fields, etc. *No potential to nest within 500 feet of the 250-kV alignment or the two marshalling yards; low potential to roost and forage.*
coastal cactus wren *Campylorhynchus brunneicapillus sandiegensis*	SSC FSS BCC	Fully Covered	This population of cactus wren is an uncommon and declining resident breeder along the coastal slope of southern California. It occurs in coastal sage scrub, although it requires mature patches of tall prickly pear or cholla cactus for nesting and roosting. *No potential to nest within 500 feet of the 250-kV alignment or the two marshalling yards; low potential to roost and forage.*
Vaux's swift *Chaetura vauxi*	SSC	-	In southern California, the Vaux's swift occurs only as a spring and fall migrant. *Moderate potential to occur (as a transient) within 500 feet of the 250-kV alignment and the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
western snowy plover *Charadrius alexandrius nivosus*	FT SSC BCC	-	In southern California, an uncommon, declining breeding resident along the immediate coast and very rare, local breeder in the interior (away from the Salton Sea). In the interior, will opportunistically colonize receding lakeshores, sinks, and alkaline lakes, generally where devoid of any significant vegetation. Nests on sandy shorelines, salt flats, etc. *No potential to nest within 500 feet of the 250-kV alignment or the two marshalling yards; low potential to roost and forage.*
mountain plover *Charadrius montanus*	FT SSC BCC	Fully Covered	An uncommon and localized winter visitor to California (primarily Oct. to Feb.), with most populations occurring in the Central, San Joaquin and Imperial valleys. Flocks typically forage in short grasslands and agricultural fields. *No potential to nest within 500 feet of the 250-kV alignment or the two marshalling yards; low potential to roost and forage.*
northern harrier *Circus cyaneus*	SSC	Fully Covered	A generally uncommon winter visitor to southern California, with a few nonbreeders occasionally remaining through the summer. Now a rare and localized breeder in the region. Forages over a variety of open habitat (e.g., marshes, vegetated shorelines, grasslands, agricultural fields) and occasionally open coastal sage scrub and brushy fields. Nests on the ground in open areas, where patches of taller vegetation are protected from disturbance. *High potential to nest and forage in the undeveloped areas within 500 feet of the 250-kV alignment. Unlikely to nest or forage on the two marshalling yards.*
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	SE FSS BCC	Fully Covered	An extremely rare and localized summer resident (May to Aug.) and breeder, with breeding now restricted to only a few southern California sites. Requires relatively expansive tracts of mature floodplain riparian forest, generally consisting of dense cottonwoods and willows, with a well developed understory component. *High potential to nest and forage in the riparian habitats associated with the Santa Ana River. Unlikely to nest or forage on the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
black swift *Cypseloides niger*	SSC BCC	Fully Covered	A rare spring and fall transient and very local breeder (primarily May to Sept.) in southern California. In Riverside County it is known to breed in the San Jacinto Mountains. Nesting in this region is generally restricted to waterfalls in steep canyons. *Moderate potential to occur as a rare transient along the 250 kV alignment. Unlikely to breed.*
yellow warbler *Dendroica petechia brewsteri*	SSC BCC	Fully Covered	A common spring and fall transient throughout southern California and an uncommon, though increasing summer visitor (Apr. to Aug.) and breeder, primarily along the coastal slope. For breeding, requires mature riparian woodland, primarily consisting of tall cottonwoods, willows, or alders. *Occurs within the riparian habitats associated with the Santa Ana River. Unlikely to nest or forage on the two marshalling yards.*
white-tailed kite *Elanus leucurus*	FP	Fully Covered	An uncommon, resident breeder in cismontane southern California. A cyclic species, it has undergone fairly significant population fluctuations, although currently appears to be declining in the region due to habitat loss. Winter roost site concentrations occasionally form during winter. Occurs in a variety of open habitats, foraging over valley and foothill grasslands, meadows, open marshy bottomlands, and agricultural fields; requires scattered large trees or mature riparian groves for nesting and winter roost sites. *Moderate potential to nest within the woodland habitats associated with the Santa Ana River and forage in the undeveloped areas along the 250 kV alignment. Unlikely to forage or nest in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
southwestern willow flycatcher *Empidonax traillii extimus*	FE SE BCC	Fully Covered	A very rare, localized, and declining summer resident/breeder in southern California. Occurs from early to mid May to late Aug. Restricted as a breeder to moist riparian communities, with breeding documented from sea level to over 5,000 feet. In southern California, nesting habitat typically is dominated by willows, but may also be dominated by alders and (very locally) salt cedar and coast live oak. Nesting habitat nearly always includes areas with surface water, or at least saturated soils, and therefore the understory generally supports a variety of hydrophytic vegetation. *High potential to nest and forage in the riparian habitats associated with the Santa Ana River. Willow flycatchers detected within the Santa Ana River. Unlikely to nest or forage on the two marshalling yards.*
California horned lark *Eremophila alpestris actia*	-	Fully Covered	In southern California, a fairly common winter visitor, and uncommon, localized summer resident/breeder. Occurs in winter, and as a breeder in sparse grasslands, large vacant lots, fallow agricultural fields, rangeland, typically on relatively level terrain. *Moderate potential to occur in most undeveloped cover types along the 250 kV alignment and two marshalling yards.*
peregrine falcon *Falco peregrinus*	FD SD FP BCC	Fully Covered	A fairly rare perennial visitor throughout cismontane southern California, with most occurring along the coast, such as at estuaries and coastal bluffs and promontories. A very rare and local breeder along the coast; more widespread during migration and as a winter visitor. Locally, has adapted to breeding in urban environments, especially where high-rise buildings and concentrations of rock pigeons, as a reliable food source, are present. In more natural settings, foraging habitat typically includes a variety of coastal and interior wetland communities as well as open areas such as airports and farmland. *Low potential to forage or nest along the 250 kV alignment and two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
bald eagle *Haliaeetus leucocephalus*	FD SE FP FSS BCC	Fully Covered	Occurs primarily as a fairly rare, localized winter visitor to southern California, preferring ocean shore, estuaries, lake margins, and riverine habitats. Nesting has recently been documented in southern California mountain lakes (e.g., Lake Hemet). Nests and roosts in large, old-growth trees as well as tall snags, especially where near open water or other open wetland habitats and available sources of food. *Unlikely to nest along the 250 kV alignment and two marshalling yards; low potential to forage.*
yellow-breasted chat *Icteria virens*	SSC	Fully Covered	Summer resident in southern California (April to August), inhabiting willow riparian thickets and other brushy tangles near water courses. Typically nests in riparian-associated understory vegetation, including young willows, mule fat, blackberry, wild grape, etc. Generally forages and nests within 10 feet of the ground. *Occurs within the riparian habitats associated with the Santa Ana River. Unlikely to nest or forage on the two marshalling yards.*
loggerhead shrike *Lanius ludovicianus*	SSC BCC	Fully Covered	A rare to uncommon breeding resident in southern California, with an influx into the region during winter. Prefers open terrain with short vegetation, including rangeland, agricultural fields, open brushlands, etc. Was once more common and widely distributed in North America. *Moderate potential to nest and forage along the 250 kV alignment; low potential to forage in two marshalling yards.*
black-crowned night heron *Nycticorax nycticorax*	-	Fully Covered	An uncommon to fairly common resident in southern California, being most common near the coast; breeds locally. Foraging habitat includes a variety of coastal and interior wetland communities, riparian woodlands, and waterways. Roosts and breeds in dense marshes or groves of dense trees (native or nonnative) near water bodies or other foraging areas. *Moderate potential to nest and forage within the riparian habitats associated with the Santa Ana River. Unlikely to forage or nest in two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
mountain quail *Oreortyx pictus*	-	Fully Covered	A generally uncommon breeding resident in the mountains of southern California. Rarely comes down to the foothills on the coastal slopes of the mountains. Prefer montane chaparral and a variety of montane woodlands where a brushy understory is also present. *Unlikely to nest or forage along the 250 kV alignment or two marshalling yards.*
osprey *Pandion haliaetus*	-	Fully Covered	An uncommon, primarily nonbreeding visitor to southern California, with largest numbers occurring outside the breeding season. Nesting has been on the increase in recent years, especially near the coast. Most frequent along the immediate coast, although occurs also at larger inland bodies of water (e.g., lakes, reservoirs, rivers). *Low potential to occur as a nester in the Santa Ana River; moderate potential to forage. Unlikely to forage or nest in the two marshalling yards.*
double-crested cormorant *Phalacrocorax auritus*	-	Fully Covered	Fairly common, year-round in southern California, with largest numbers during the nonbreeding season. Breeding occurs locally, though is increasing, primarily along the coast. Preferred foraging areas typically include larger lakes, reservoirs, and rivers with tall trees and snags used for roosting. *Low potential to occur as a nester in the Santa Ana River; moderate potential to forage. Unlikely to forage or nest in the two marshalling yards.*
downy woodpecker *Picoides pubescens*	-	Fully Covered	An uncommon to fairly common breeding resident in cismontane southern California, being more common to the north and west of Riverside Co. Inhabits a variety of woodland communities, including urban settings, though is most typical in a variety of riparian communities. *Moderate potential to nest and forage in the Santa Ana River. Unlikely to forage or nest in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
white-faced ibis *Plegadis chihi*	-	Fully Covered	Generally an uncommon, though increasing, transient and winter visitor to southern California; also occurs as a very local summer resident and breeder. Foraging birds occur in flooded agricultural fields, marshes, flood control ditches, etc.; breeders typically require fairly extensive and undisturbed marshes with cattails, bulrush. *Low potential to forage in the Santa Ana River and agricultural fields; unlikely to nest. Unlikely to forage or nest in the two marshalling yards.*
coastal california gnatcatcher *Polioptila californica californica*	FT SSC BCC	Fully Covered	An uncommon resident species and breeder in cismontane southern California from southeastern Ventura County to western San Diego County. Restricted to Riversidean, Diegan, and Venturan sage scrub communities in arid washes and mesas and on mild to moderate slopes. Habitat typically dominated or codominated by California sagebrush, California buckwheat, and brittlebush. Most populations occur below 1,500 feet elevation. Breeding typically occurs between March and August. *Low potential to nest and forage in sage scrub communities. Unlikely to nest or forage in two marshalling yards.*
purple martin *Progne subis*	SSC	Fully Covered	A rare spring/fall transient throughout southern California, and a very rare, declining, and localized summer resident and breeder in the mountains and foothills of southern California. For nesting, they typically prefer old, tall sycamores, pines, etc., often where these trees occur in open oak woodland or coniferous forest. The availability of suitable nesting cavities and competition with European starlings over potential nest sites are factors which limit breeding opportunities for this species. *Unlikely to occur along the 250 kV alignment or the two marshalling yards.*
California spotted owl *Strix occidentalis occidentalis*	SSC FSS BCC	Fully Covered	A fairly rare to uncommon resident and breeder in the mountains and higher foothill canyons of southern California. Preferred habitat includes steep-walled canyons that are densely wooded with mixtures of mature live oaks and conifers. Other key components include a multi-layered forest canopy; large, old trees and snags; and woody debris on the forest floor. *No potential to occur along the 250 kV alignment or the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
tree swallow *Tachycineta bicolor*	-	Fully Covered	A common spring and fall transient throughout southern California, and an uncommon, localized summer resident and breeder. For nesting, typically prefers open bodies of water, including rivers and marshy areas, with scattered trees and/or snags, or artificial nest boxes. Availability of nest sites (natural cavities or nest boxes) and competition with European starlings over potential nest sites are factors which limit the breeding success of this species in southern California. *Moderate potential to nest and forage within the riparian habitats along the Santa Ana River. Unlikely to forage or nest within the two marshalling yards.*
least Bell's vireo *Vireo bellii pusillus*	FE SE BCC	Fully Covered	A fairly rare to locally uncommon summer resident (late March to early Sept.) and breeder in southern California in relatively low elevation riparian floodplain habitat. Prefers willow riparian communities, which may be in the vicinity of water or along dry river bottoms. Nesting habitat generally includes a well-developed understory, which is necessary for nest concealment. Nests usually placed in *Baccharis* or young willows adjacent to or in openings within the riparian community. *Occurs within the riparian habitats associated with the Santa Ana River. Unlikely to nest or forage on the two marshalling yards.*
MAMMALS			
pallid bat *Antrozous pallidus*	SSC FSS	-	Found over a broad range in southern California. Recorded in arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodland. Usually roosts in rock crevice or building, less often in caves, under bridges, tree hollows, mines, etc. *Moderate potential to occur along 250 kV alignment. Unlikely to occur in the two marshalling yards.*
Dulzura pocket mouse *Chaetodipus californicus femoralis*	SSC	-	Known to occur only from extreme southwestern Riverside County south through western and central San Diego County and into Baja California. Found from sea level to 4,600 feet elevation. Preferred habitat includes chaparral, coastal sage scrub, and, especially, shrub/grassland ecotones. *Low potential to occur along 250 kV alignment and two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	SSC	Fully Covered	Occurs on the coast slope of southern California from Los Angeles and San Bernardino counties south to San Diego County. It inhabits coastal sage scrub, scrub/grassland ecotones, and chaparral communities, often in rocky areas. *High potential to occur within sandy habitats along the 250kV alignment; however, trapping in 2016 yielded negative results. Unlikely to occur within the two marshalling yards.*
Aguanga kangaroo rat *Dipodomys merriami collinus*		Partially Covered	Found within a limited range from southwestern Riverside to northeastern San Diego counties. Appears to be associated with Riversidean sage scrub, chaparral, redshank chaparral, and nonnative grassland, where sandy-loam soils allow for ease of digging. Avoids rocky substrates. *No potential to occur along the 250kV alignment or two marshalling yards.*
San Bernardino kangaroo rat *Dipodomys merriami parvus*	FE SSC	Partially Covered	Occurs over a very limited range within western Riverside and southwest San Bernardino counties. Alluvial sage scrub on alluvial fans, flood plains, along washes, in adjacent upland areas, and in areas with historic braided stream channels. Prefers the more open early and intermediate stages of alluvial sage scrub, but mature scrub provides important habitat for animals to take refuge during floods. *High potential to occur within sandy habitats along the 250kV alignment; however, trapping in 2016 yielded negative results. Unlikely to occur within the two marshalling yards.*
Stephens' kangaroo rat *Dipodomys stephensi*	FE ST	Fully Covered	This species has a small range limited to western Riverside County and north-western and north-central San Diego County. Restricted to annual grassland and open Riversidean sage scrub with a shrub cover of less than 30%. Prefers loose, friable, well-drained soil (generally at least 1.5 feet deep) and flat or gently rolling terrain. This species may recolonize abandoned agricultural land. It is most abundant where stands of native vegetation remain. *No potential to occur along the 250kV alignment or two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
western mastiff bat *Eumops perotis californicus*	SSC	-	An uncommon bat that inhabits arid and semi-arid lowlands in southern California, including deciduous and coniferous woodlands, coastal sage scrub, chaparral, and grasslands. Is known to be active year-round. They primarily roost in crevices in vertical cliffs and rock faces; occasionally are found roosting in high buildings, trees, and tunnels, although it needs vertical faces to drop from in order to take flight. *Moderate potential to occur along 250 kV alignment. Unlikely to occur in the two marshalling yards.*
San Bernardino flying squirrel *Glaucomys sabrinus californicus*	SSC FSS	Fully Covered	A nocturnal resident of the San Bernardino and San Jacinto mountain ranges of southern California. An isolated, and the southern-most, subspecies of the wide-ranging northern flying squirrel. Typically inhabits old-growth forest comprised of nearly closed-canopy mixed coniferous woodland with some oak (especially black oak) usually present. *No potential to occur along the 250kV alignment or two marshalling yards.*
western red bat *Lasiurus blossevillii*	SSC FSS	-	Occurs over a large area of California but not found in the deserts. Can be locally common in some areas of California. Displays migratory movements between summer and winter, and transients may be outside their normal range. They prefer riparian areas for roosting, including areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores. Feeds over a wide variety of habitats, including grasslands, shrublands, open woodlands, and croplands. *Moderate potential to occur along 250 kV alignment. Unlikely to occur in the two marshalling yards.*
western yellow bat *Lasiurus xanthinus*	SSC	-	An uncommon species in California restricted primarily to the southern counties of Riverside, San Diego and Imperial. It has been recorded in valley foothill riparian, desert riparian, and palm oasis communities. Considered to be migratory and is known to be in California only during spring, summer, and fall. Roosts in trees and appears to especially favor palms. *Moderate potential to occur along 250 kV alignment. Unlikely to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	SSC	Fully Covered	Occurs west of the mountains in southern California, from Ventura to San Diego counties. A generalist that prefers a variety of open and semi-open habitats including grasslands, agricultural fields, sparse coastal sage scrub, open alluvial washes. Typically avoids dense chaparral and woodland habitats. *Moderate potential to occur along the 250 kV alignment; low potential to occur in the two marshalling yards.*
bobcat *Lynx rufus*	-	Fully Covered	Occurs throughout most of southern California, inhabiting a wide range of habitats including mixed woodlands and forest edge, marsh, riparian, and various brushland communities (such as sage scrub and chaparral). Large tracts of habitat are most often favored. Rests and/or dens in rocky clefts, caves/rock shelters, hollow logs, under fallen trees, etc. *High potential to occur within the Santa Ana River corridor. Unlikely to occur within the two marshalling yards.*
long-tailed weasel *Mustela frenata*	-	Fully Covered	A fairly common, though rarely seen, resident of southern California west of the deserts in a variety of habitats and elevations. Often near water. Favored habitats include brushlands, open woodlands, agricultural field edges, riparian communities, and marshlands. Tolerant of close proximity to humans. *High potential to occur within the Santa Ana River corridor. Unlikely to occur within the two marshalling yards.*
San Diego desert woodrat *Neotoma lepida intermedia*	SSC	Fully Covered	Occurs in coastal California from San Luis Obispo County south through the Transverse and Peninsular ranges into Baja California. Occurs in a variety of habitats and elevations. Prefers pinyon-juniper woodland, chaparral, and sage scrub communities and most desert habitats. Most abundant in rocky outcrops and on rocky slopes, building a stick nest typically in cracks within rocky outcrops and boulder piles. *Low potential to occur within the grassland and scrub communities along the 250kV alignment. Unlikely to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
pocketed free-tail bat *Nyctinomops femerosaccus*	SSC	-	Has been found in southern California in Riverside, San Diego and Imperial counties, though records are few. Occurs in a variety of arid habitats, mostly in desert regions, such as pinyon-juniper woodland, desert scrub, palm oasis, desert washes, and riparian. Prefers rocky areas with high cliffs. *Unlikely to occur along the 250 kV alignment or the two marshalling yards.*
southern grasshopper mouse *Onychomys torridus ramona*	SSC	-	Common in arid desert habitats of the Mojave Desert and southern Central Valley of California. Alkali desert scrub and desert scrub habitats are preferred, with somewhat lower densities expected in other desert habitats, including succulent shrub, wash, and riparian areas. Also occurs in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats. Uncommon in valley foothill and montane riparian and in a variety of other habitats. *Unlikely to occur along the 250 kV alignment or the two marshalling yards.*
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	SSC FSS	Partially Covered	Ranges historically from Los Angeles and San Bernardino counties south to portions of western Riverside County. Occurs in relatively arid, lower elevations with fine, sandy soils, typically in grassland or coastal sage scrub habitats. *High potential to occur within sandy habitats along the 250kV alignment; however, trapping in 2016 yielded negative results. Unlikely to occur within the two marshalling yards.*
mountain lion *Puma concolor*	SSC	Fully Covered	Associated generally with mountainous or remote high desert areas of southern California but also occurs on the coastal slope, closer to towns and human-altered landscapes. Occupies a wide variety of habitats, including brushlands and woodlands with good cover, wetlands, riparian communities, and occasionally more open habitats. Studies have determined that habitat areas of at least 750 square miles are needed to ensure long-term population persistence (e.g., individual territories average well over 100 sq. miles per male, less for females). Protection of viable wildlife movement areas is considered very important for healthy lion populations. *Occurs within the Santa Ana River corridor. Unlike to occur in the two marshalling yards.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	MSHCP COVERED SPECIES	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION, *POTENTIAL FOR OCCURRENCE*
American badger *Taxidea taxus*	SSC	-	Badgers are uncommon throughout southern California. They are generally associated with dry, open, treeless regions, including grasslands, rangeland and high deserts. In southern California they have been found in grassy openings within coastal sage scrub. The badger's altitudinal range extends from below sea level to over 12,000 feet. *Moderate potential to occur in the undisturbed areas along the 250kV alignment. Unlikely to occur in the two marshalling yards.*

Sources: Bond 1977; Unitt 1987, 2004; McKernan 1993, 1997; Yosef 1996; Beedy and Hamilton 1999; Collins 1999; Hughes 1999; Atwood et al. 2001; AECOM 2008a; Shuford and Gardali 2009; CDFW 2009b

Federal Status Designations:
FE – Federally Listed Endangered
FT – Federally Listed Threatened
FC – Federal Candidate Species for Listing
FD – Federally Delisted
BCC – U.S. Fish and Wildlife Service Birds of Conservation Concern
FSS – U.S. Department of Agriculture Forest Service Sensitive

State Status Designations:
SE – State-listed as Endangered
ST – State-listed as Threatened
SC – State Candidate Species for Listing
SSC – California Department of Fish and Wildlife Species of Special Concern
FP – California Department of Fish and Wildlife Fully Protected Species
WL – California Department of Fish and Wildlife Watch List Species

Notes:

Gray highlighted cells contain species that are listed (i.e., federal and/or state threatened and endangered.

Partially Covered Species under the MSHCP require additional mitigation if 90% avoidance cannot be demonstrated and a DBESP is required.

APPENDIX E

INVERTEBRATE/VERTEBRATE WILDLIFE SPECIES COMPENDIUM

Appendix F
Invertebrate Species List

Order	Family	*Genus / species*
DIPTERA		
	Mydidae	
		Nemomydas pantherinus
	Asilidae	
		Efferia albibarbis
		Eristalis tenax
		Mallophora fautrix
		Stenopogon brevisculus
	Tephritidae	
		Ceratitis capitata
	Therevidae	
		Ozodiceromyia sp.
	Bombyliidae	
		Aphoebantus sp.
		Exoprosopa butleri
		Geron sp.
		Neodiplocampta mira
		Poecilognathus
		Thyridanthrax atrata
		Villa lateralis
		Villa molitor
	Calophoridae	
		Lucilia sericata
	Muscidae	
		Musca domestica
	Sarcophagidae	
		Sarcophaga sp
	Tachinidae	
		Exorista mella
		Leschenaultia grossa
	Syrphidae	
		Copostylum marginatum
		Copostylum mexicana
		Copostylum quadratus
		Eristalis aenea
		Eristalis stipator
		Eristalis tenax
		Paragus tibialis
	Dolichopodidae	
		Condylostylus pilicornis
	Ulidiidae	
		Chaetopsis sp.
		Euxesta sp.
HYMENOPTERA		
	Anthophoridae	
		Diadasia sp.
		Nomada sp.
		Svastra texana
	Apidae	
		Apis mellifera
	Halictidae	
		Agapostemon
		Lasioglossum sp.
	Megachilidae	
		Chalicodoma sp.

Order	Family	*Genus / species*
HYMENOPTERA		
	Formicidae	
		Iridomyrmex humilis
		Pogonomyrmex californicus
	Chrysididae	
		Parnopes edwardsii
	Mutilidae	
		Dasymutilla californica
		Dasymutilla coccineohirta
	Pompilidae	
		Ageniella
	Crabionidae	
		Cerceris sextoides
		Gastrosericina sp.
		Tachysphex
		Bembix comate
	Sphecidae	
		Ammophila aberti
		Ammophila azteca
		Cerceris femurrubrum
		Chlorion aerarium
		Haplomelinus albitomentosus
		Hoplisoides semipunctatus
		Prionyx foxi
		Prionyx thomae
		Sceliphron caementarium
	Vespidae	
		Euodynerus annulatum
		Polistes apachus
		Polistes exclamans
COLEOPTERA		
	Chrysomelidae	
		Diabrotica balteata
	Coccinellidae	
		Coccinella septempunctata
	Scarabaeidae	
		Cotinus mutabilis
	Tenebrionidae	
		Elodes gracilis
NEUROPTERA		
	Chrysopidae	
		Chrysopa
	Mymerliontidae	
		Brachynemurus (small grey)
	Mymerliontidae	
		Brachynemurus ferox
LEPIDOPTERA		
	Pyralidae	
		Hellula rogatalis
	Crambidae	
		Spoladea recurvalis
	Arctiidae	
		Estigmene acrea
	Noctuidae	
		Spodoptera exigua
	Danaidae	
		Danaus plexippus

Order	Family	*Genus / species*
LEPIDOPTERA		
	Nymphalidae	
		Agraulis vanillae
	Pieridae	
		Colias eurytheme
		Eurema nicippe
		Phoebis agarithe
	Lycaenidae	
		Brephidium exilis
		Strymon melinus
	Hesperiidae	
		Heliopetes ericitorum
		Hylephila phyleus
		Lerodia eufala
		Pyrgus albescens
HEMIPTERA		
	Lygaeidae	
		Lygaeus kalmii
	Miridae	
		Lygus
	Pentatomidae	
		Bagrada hilaris
	Pentatomidae	
		Chlorochroa sayi
	Reduviidae	
		Sinea diadema
		Zelus
		Zelus renardii
	Cicadellidae	
	Membracidae	
		Unidentified
ORTHOPTERA		
	Acrididae	
		Derotmema saussuraenum
		Melanoplus
		Psoloessa thamnogaea
		Schistocerca nitens
		Trimerotropis californica
		Trimerotropis pallidipennis
	Gryllidae	
		Gryllus
MANTODEA		
	Mantidae	
		Iris oratoria
		Stagmomantis
ODONATA		
	Aeshnidae	
		Aeshna multicolor
		Anax junius
	Libellulidae	
		Libellula saturate
		Pantala flavescens
		Pantala hymenaea
		Sympetrum corruptum
		Tramea onusta

Order	Family	*Genus / species*
ARANEAE		
	Araneidae	
		Neoscona oxacensis
	Oxyopidae	
		Peucetia viridans
	Salticidae	
		Phidippus sp.
	Theridiidae	
		Latrodectus Hesperus
	Thomisidae	
		Mecaphesa sp.

Scientific Name	Common Name	Special Status
VERTEBRATES		
Birds		
Anas platyrhynchos	Mallard	
Callipepla californica	California Quail	
Ardea herodias	Great Blue Heron	
Ardea alba	Great Egret	
Egretta thula	Snowy Egret	
Accipiter cooperii	Cooper's Hawk	
Buteo lineatus	Red-shouldered Hawk	
Buteo jamaicensis	Red-tailed Hawk	
Falco sparverius	American Kestrel	
Fulica americana	American Coot	
Charadrius vociferus	Killdeer	
Larus delawarensis	Ring-billed Gull	
**Columba livia*	Rock Pigeon	
Zenaida macroura	Mourning Dove	
Columbina passerina	Common Ground-Dove	
Geococcyx californianus	Greater Roadrunner	
Tyto alba	Barn Owl	
Bubo virginianus	Great Horned Owl	
Aeronautes saxatalis	White-throated Swift	
Archilochus alexandri	Black-chinned Hummingbird	
Calypte anna	Anna's Hummingbird	
Melanerpes formicivorus	Acorn Woodpecker	
Colaptes auratus	Northern Flicker	
Empidonax traillii extimus	Southwestern Willow Flycatcher	FE, SE
Empidonax difficilis	Pacific-slope Flycatcher	
Sayornis nigricans	Black Phoebe	
Sayornis saya	Say's Phoebe	
Myiarchus cinerascens	Ash-throated Flycatcher	
Tyrannus verticalis	Western Kingbird	
Vireo bellii pusillus	Least Bell's Vireo	FE, SE

Scientific Name	Common Name	Special Status
Vireo huttoni	Hutton's Vireo	
Aphelocoma californica	Western Scrub-Jay	
Corvus brachyrhynchos	American Crow	
Corvus corax	Common Raven	
Stelgidopteryx serripennis	Northern Rough-winged Swallow	
Petrochelidon pyrrhonota	Cliff Swallow	
Psaltriparus minimus	Bushtit	
Thryomanes bewickii	Bewick's Wren	
Troglodytes aedon	House Wren	
Regulus calendula	Ruby-crowned Kinglet	
Chamaea fasciata	Wrentit	
Sialia mexicana	Western Bluebird	
Catharus ustulatus	Swainson's Thrush	
Turdus migratorius	American Robin	
Mimus polyglottos	Northern Mockingbird	
Toxostoma redivivum	California Thrasher	
**Sturnus vulgaris*	European Starling	
Dendroica petechia	Yellow Warbler	CSC
Dendroica coronata	Yellow-rumped Warbler	
Geothlypis trichas	Common Yellowthroat	
Icteria virens	Yellow-breasted Chat	CSC
Pipilo maculatus	Spotted Towhee	
Melozone crissalis	California Towhee	
Chondestes grammacus	Lark Sparrow	
Melospiza melodia	Song Sparrow	
Pheucticus melanocephalus	Black-headed Grosbeak	
Passerina caerulea	Blue Grosbeak	
Agelaius phoeniceus	Red-winged Blackbird	
Sturnella neglecta	Western Meadowlark	
Quiscalus mexicanus	Great-tailed Grackle	
**Molothrus ater*	Brown-headed Cowbird	
Icterus cucullatus	Hooded Oriole	
Icterus bullockii	Bullock’s Oriole	

Scientific Name	Common Name	Special Status
Carpodacus mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	
Mammals		
Spermophilus beecheyi	California Ground Squirrel	
Reithrodontomys megalotis	Western Harvest Mouse	
Peromyscus maniculatus	Deer Mouse	
**Rattus rattus*	Black Rat	
**Mus musculus*	House Mouse	

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened
CSC = California Species of Special Concern
CFP = California Fully Protected Species