Appendix E

Focused Surveys for Rare Plants

December 2, 2022

Matt Romero
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Subject: **Rare Plant Focused Survey Results in Support of the City of Riverside Gateway Project, in Riverside County, California**

Dear Mr. Romero:

This report documents the findings of a focused survey effort to determine the presence or absence of sensitive and rare plant species in support of the Riverside Gateway Project (Project) proposed by the City of Riverside Parks, Recreation, and Community Services Department (PRCSD) in the City of Riverside (City), Riverside County, California. This effort was performed under the survey guidelines of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), as implemented by the City. Portions of the Project fall within the MSHCP narrow-endemic plant survey area. ICF biologists performed focused surveys in April 2022.

Project Description

The Project involves a multidisciplinary effort for the planning, design, engineering, and associated community outreach and environmental compliance for California Environmental Quality Act (CEQA) review for nine identified park sites in the City, in Riverside County, California. The Santa Ana River Trail, adjacent to the Santa Ana River, is completed throughout its length in the City. After completing the 2018 update to the *Citywide Parks System Master Plan*, the PRCSD proposes to complete planning and design for improvements and enhancement to existing and proposed park areas located along the Santa Ana River and the 4.7 miles of the Santa Ana River Parkway from Fairmount Park to Martha McLean Anza Narrows Park. These park sites were initially identified as part of the planning process in development of the *Santa Ana River Parkway and Open Space Plan* completed in 2018. Development of these park sites would comply with the City's overarching goal to "put the river back into Riverside" by providing diverse recreational and educational opportunities, access to open space, and restoration of natural habitat for people and wildlife.

The entire 11-mile northern edge of the City fronts the Santa Ana River. In Riverside, the Santa Ana River is a juxtaposition of a natural and scenic riparian corridor running through an urban setting. The Santa Ana River is a vital resource in the City, and it supports several important functions for the City, including providing natural habitat that serves wildlife, recharging the groundwater basin that supplies water to residences and businesses, and providing recreational opportunities to

connect people to natural resources. There is also a need to provide no-cost and low-cost parks and recreational resources, open space access, and active transportation resources to support the disadvantaged communities identified near the project area in the City.

Conceptual improvement and engagement opportunities have been identified for each of the nine individual park sites, including, but not limited to, habitat conservation areas, woodland restoration, parking lots, an amphitheater, restroom and drinking water facilities, nature trails, active recreation and exercise stations, passive park amenities, camping, picnic areas, community garden and incubator farm, vista points, public art, interpretive and wayfinding signage, landscaping, irrigation, lighting, shade enhancements, equestrian facilities, and bicycle repair station and bike racks, among others. The nine park sites in the City are (1) Camp Evans; (2) Loring Park; (3) Carlson Park; (4) St. Francis Falls; (5) Santa Ana River Greenway; (6) Tequesquite Extension North; (7) Tequesquite Extension South; (8) Martha McLean Anza Narrows Park; and (9) Jurupa Avenue Trailhead, shown on Figure 2 (Appendix A).

The Project is a forward-looking proposal to recover, reconceive and re-engage with the Santa Ana River to deliver ecological, recreational, cultural, social, and economic value to the City's inhabitants. The Project is funded by a grant provided by the State Coastal Conservancy, a California state agency established in 1976 to protect and improve natural lands and waterways, help people get to and enjoy the outdoors, and sustain local economies along California's coast. The State Coastal Conservancy acts with others to protect, restore, and increase public access to California's coast, ocean, coastal watersheds, and the San Francisco Bay Area. Its vision is of a beautiful, restored, and accessible coast for current and future generations of Californians.

Location

The project is along the southern side of the Santa Ana River floodplain in the City, in Riverside County, California, as shown on Figure 2 (Appendix A). The Project occurs within the Cities of Riverside/Norco Area Plan and Jurupa Area Plan of the MSHCP. Portions of the Anza Creek/Old Ranch Creek and Lower Hole Creek sites are within the MSHCP Area Plan Subunits (SU) *SU1-Santa Ana River South, Cities of Riverside/Norco Area Plan* and *SU1-Santa Ana River North, Jurupa Area Plan* within Criteria Cells 187, 443, 534, 617, and 621 (Figure 2). Also shown on Figure 2, the Project overlaps with MSHCP Public/Quasi-Public Conserved Lands, which comprise a subset of the MSHCP Conservation Area identified for open space value and contribute to the conservation of Covered Species. The project sites are also within the MSHCP Existing Core A and Core Linkage area. Portions of the Project occur within the MSHCP Narrow Endemic Plant Species Survey Area for San Diego ambrosia (*Ambrosia pumila*), Brand's star phacelia (*Phacelia stellaris*), and San Miguel savory (*Clinopodium chandleri*).

Survey Areas

The rare plant survey areas include all portions of the project limits and 50-foot buffer for six of the nine park sites: Camp Evans, Loring Park, Santa Ana River Greenway, Tequesquite Extension North, Tequesquite Extension South, and Jurupa Avenue Trailhead. The remaining three park sites (Carlson Park, Martha McLean Anza Narrows Park, and St. Francis Falls), consist primarily of ornamental

landscape and development and were determined to have no suitable habitat to support rare plant species known from the region; therefore, focus surveys were not conducted at those three locations.

The survey area includes a variety of natural vegetation communities, many of which are riparian shrublands, forests and woodlands as well as ruderal and developed land covers. Descriptions of each vegetation community found within the survey areas are provided in the vegetation section below.

Vegetation

The vegetation communities identified in the survey areas are described below and illustrated on Figures 3a through 3d in Attachment A. The vegetation communities are classified using the plant community definitions provided by *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986) and revised by Oberbauer et al (2008). However, vegetation communities encountered that were not accurately described by the Holland classification system were characterized by the California Native Plant Society (CNPS) *Manual California of Vegetation* (MCVCNPS 2022).

Arrow Weed Scrub

Arrow weed scrub is a dense riparian shrub community dominated or co-dominated by arrow weed (*Pluchea sericea*), with associated species present, such as mulefat (*Baccharis salicifolia*), sandbar willow (*Salix exigua*), quail bush (*Atriplex lentiformis*), coyote bush (*Baccharis pilularis*), and arroyo willow (*Salix lasiolepis*). The shrub cover is variable, typically less than 3 meters in height, and emergent trees may be present at low cover. Within the project area, this community is characterized by dense, monotypic stands of arrow weed. The understory is typically bare to sparsely populated with nonnative grasses and mustards; however, saltgrass (*Distichlis spicata*) dominates the herbaceous portions of this community within the Santa Ana River Greenway.

Mulefat Scrub

Mulefat scrub is typically a dense, riparian shrub community dominated or co-dominated by mulefat. Within the project area, this community is strongly dominated by mulefat and varied from open canopy between dense patches of mulefat to densely closed shrub cover reaching heights of 3 meters. Associated species found in this community include arroyo willow, mugwort (*Artemisia douglasiana*), wild tarragon (*Artemisia dracunculus*), toyon (*Heteromeles arbutifolia*), and elderberry (*Sambucus nigra*). Disturbed mulefat within the project area has a generally more-open canopy and a heavily weedy herbaceous cover between patches of mulefat and other native shrubs and trees.

Southern Arroyo Willow Riparian Forest

Southern arroyo willow riparian forest is a dense growth of broadleaf, winter-deciduous riparian species dominated or co-dominated by arroyo willow. Within the project area, arroyo willow is the dominant species, but associated shrubs and trees, such as sandbar willow, mulefat, red willow

(*Salix laevigata*), and elderberry, are present. The tall shrub canopy is intermittent to closed, reaching heights of 4 to 6 meters. The low shrub layer is predominantly sparse and includes mugwort and wild tarragon. The herbaceous understory is also predominantly sparse and composed of ragweeds (*Ambrosia psilostachya/acanthicarpa*), nonnative grasses and mustards. This community only occurs within a small portion of the Santa Ana River Greenway project area.

Southern Coastal Live Oak Riparian Forest

Southern live oak riparian forest is a stream or lake associated community dominated by dense stands of coast live oak. It is found above the willow riparian zone, and the understory is usually denser than that found under oak woodland. This community within the project area is characterized by coast live oak (*Quercus agrifolia*) being dominant or co-dominant with California black walnut (*Juglans californica;* California Native Plant Society [CNPS] California Rare Plant Rank [CRPR] 4.2) within the tree canopy and can reach heights of 8 meters. California black walnut was observed within this vegetation community in the Camp Evans project area (Figure 4b, Appendix A). Associated small trees and tall shrubs, such as elderberry, arroyo willow, mulefat, poison oak (*Toxicodendron diversilobum*), and toyon, are also present within this community, as well as nonnative tree species, such as edible ficus (*Ficus carica*), mulberry (*Morus alba*), giant reed (*Arundo donax*), Mexican fan palm (*Washingtonia robusta*), and Tree-of-Heaven (*Ailanthus altissima*). Nonnative trees are typically present at low cover, but contributed to greater cover within portions of this community; furthermore, the shrub layer may be absent or sparse due to the high level of disturbance within the understory for portions of this community. The herbaceous layer, where present, is sparse and composed primarily of native ragweed, dwarf nettle (*Urtica urens*), and nonnative grasses and mustards.

Southern Cottonwood–Willow Riparian Forest

Southern cottonwood–willow riparian forest is a dense, multi-canopy growth of broadleaf, winter-deciduous riparian trees and shrub species dominated or co-dominated by Fremont cottonwood (*Populus fremontii*) within the tree layer. Within the project area, this community is often a highly disturbed community consisting of a codominant alliance of Fremont cottonwood and Goodding's willow (*Salix gooddingii*) that can reach heights of up to 20 meters. Associated native tree species within this vegetation community include species such as red willow, coast live oak, and arroyo willow. The shrub layer is intermittent to continuous and includes species such as southern California grape (*Vitis girdiana*), mugwort, mulefat, sandbar willow, poison oak, California blackberry (*Rubus ursinus*), and wild tarragon. The herbaceous understory is composed primarily of native ragweed, yerba mansa (*Anemopsis californica*), stinging nettle (*Urtica dioica*), and nonnative grasses and mustards. Due to the urban setting and past frequent fire disturbance, this community has a considerable cover of nonnative and invasive forbs and grasses, as well as perennial exotic trees and shrubs, which includes species such as Mexican fan palm, salt cedar (*Tamarix ramosissima*), giant reed, shamel ash (*Fraxinus uhdai*), pecan (*Carya illinoinensis*), and eucalyptus trees (*Eucalyptus* spp.). Furthermore, the shrub layer may be absent or sparse due to the high level of disturbance, such as in the Tequesquite South Extension portion of the project area, which lacks a developed understory of shrubs and was dominated by nonnative grasses and ruderal forbs in the herbaceous layer.

Southern Riparian Forest

Southern riparian forest is similar in structure to southern cottonwood–willow riparian forest but lacks cottonwoods within the tall tree canopy. This community is restricted to the Jurupa Avenue Trailhead portion of the project area. Southern riparian forest is highly disturbed within the project area, and willow species are co-dominant with nonnative trees, such as shamel ash, mulberry, and Mexican fan palm. The shrub layer is intermittent to continuous and includes species such as arroyo willow, mulefat, sandbar willow, and poison oak, as well as nonnative species, such as edible ficus and tobacco tree (*Nicotiana glauca*). The herbaceous understory is composed primarily of ragweed, stinging nettle, and nonnative grasses and mustards.

Southern Riparian Woodland

Southern riparian woodland is a moderately dense riparian woodland typically dominated by small trees or shrubs, with scattered taller riparian trees. Within the project area, this community has an open-to-intermittent tree canopy, and the understory is less developed compared to a riparian forest. Within the Camp Evans portion of the project area, Goodding's willow is the dominant tree species and reaches heights of 8 meters. The shrub layer is absent or nearly so, and the herbaceous layer is composed of nonnative ruderal mustards and thistles. Within the Tequesquite North Extension, this community is dominated by black elderberry and reaches heights of 4 meters, with scattered mulefat in the shrub canopy and an herbaceous layer composed of nonnative ruderal species.

Nonnative Riparian (Mexican Fan Palm Dominated)

This nonnative riparian community is dominated by Mexican fan palm. Within the project area, willows, cottonwoods, and native riparian shrubs may occur, but at very low cover within this community, or nonnative palms may occur as monospecific stands. These nonnative species are considered invasive, and cumulation of dead fronds on the ground can create a fire hazard. The herbaceous layer, where present, consists of nonnative mustards and grasses.

Nonnative Riparian (Tree-of-Heaven Dominated)

This nonnative riparian community is dominated by tree-of-heaven, a fast-growing, invasive tree whose roots emit an allelopathic poison to deter growth of neighboring trees and can form clonal monocultural stands by lateral root sprouting. Within the project area, this community is strongly dominated by Tree-of-Heaven, with associated trees, such as willows, cottonwoods, and other nonnative trees, present at very low cover or occurs as a monospecific stand of trees. The shrub layer if present, consists of scattered native and nonnative species at very low cover, and the herbaceous layer is composed of ruderal weedy species or is bare.

Disturbed Riparian (Arundo Dominated)

This nonnative riparian community is dominated by giant reed. A relative of bamboo and other grasses, giant reed is a tall, robust perennial that forms dense stands in riparian areas. Giant reed occurs as a small, dense, monospecific patch within the Jurupa Trailhead portion of the project area.

Tamarisk Scrub

Tamarisk scrub is a nonnative riparian shrub or tree community characterized by salt cedar or other *Tamarix* spp. being strongly dominant within the tall shrub or tree canopy. Tamarisk scrub occurs within the Camp Evans portion of the project area as a dense patch of athel trees (*Tamarix aphylla*) that reach 5 meters in height. This stand of athel trees is disconnected from the larger riparian corridor within the Camp Evans project area. The herbaceous layer is absent to sparse and composed of nonnative mustards and grasses.

Southern Riparian Scrub

Southern Riparian Scrub occurs along seasonally and temporarily flooded streams, levee banks, and other riparian or riparian ecotonal areas. It is typically dominated by small trees or shrubs and generally lacks taller riparian trees. Within the project area, this vegetation community is largely dominated by southern California grape, a perennial shrub that climbs on other plants and covers the ground with twisted, woody vines, trailing stems, and tendrils. Southern California grape dominated shrubland is associated with disturbed riparian habitats within the project area where it forms thick mats over scattered riparian shrubs and trees. The herbaceous layer is not present due to the dense, mat-like cover of the grape vines and leaves. Within the Camp Evans portion of the project area, a small thicket of western indigo bush (*Amorpha fruticosa*) associated with a small drainage is also defined as part of this riparian vegetation community.

Meadows and Marshes

Alkali Meadow

Alkali meadow is a dense-to-open growth of perennial grasses and sedges, composed of relatively few species, typically occurs in areas where the water table is shallow, and soils are alkaline. Within the project area, alkali meadows are strongly dominated by dense flats of saltgrass. Scattered native shrubs, such as arrow weed and mulefat, are present, but a very low cover, and associated annuals are primarily composed of nonnative grasses and ruderal forbs.

Uplands

Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub is a Mediterranean shrubland type that occurs in washes and on gently sloping alluvial fans throughout many drainages within western Riverside County. This community is a subset of coastal sage scrub composed predominantly of drought-deciduous, soft-

leaved shrubs. Scalebroom (*Lepidospartum squamatum*) is generally regarded as a primary indicator of this community, with associated species, such as white sage (*Salvia apiana*), redberry (*Rhamnus crocea*), Spanish bayonet (*Yucca whipplei*), California croton (*Croton californicus*), cholla (*Opuntia* spp.), wild tarragon, yerba santa (*Eriodictyon trichocalyx*), mulefat, and mountain-mahogany (*Cercocarpus betuloides*). Within the project area, this community is dominated by California croton and/or yerba santa that reach heights of 2.5 meters. The herbaceous layer is sparsely composed of native annual herbs, such as California sun cup (C*amissoniopsis bistora*), common phacelia (*Phacelia distans*), ragweeds, and Thurber eriogonum (*Eriogonum therberi)*. Federally and state-listed Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*; CNPS CRPR 1B.1) was observed within this vegetation community within the Tequesquite North Extension of the project area (Appendix A, Figure 4a). Santa Ana River woolly star are endemic to alluvial scrub vegetation in western Riverside County..

Eucalyptus Woodland

This nonnative woodland community is characterized by one or several different eucalyptus trees being dominant within the tree canopy. Within the project area, eucalyptus trees typically form monospecific stands with a continuous tree canopy reaching heights up to 40 meters. Within the project area this community has little to no shrub layer, and the herbaceous layer, where present, is sparse and primarily composed of nonnative grasses.

Fourwing Saltbush Scrub

Saltbush scrub is typically characterized as xerophytic vegetation community dominated by *Atriplex* spp. and generally associated with alkaline or saline conditions in arid environments. Fourwing saltbush is a type of saltbush scrub that can also exist as an early successional plant community within disturbed areas throughout southern California. Within the project area, this community is associated with disturbed slopes and dominated by fourwing saltbush (*Atrixplex canescens*), with little-to-no shrub diversity. The shrub canopy is open to intermittent and reaches heights of 1.5 meters, and the herbaceous layer is composed of nonnative grasses and mustards. Fourwing saltbush scrub is an MCV-defined vegetation community because this classification best characterizes the structure and composition of this vegetation community within the project area.

Nonnative Grassland

Nonnative grassland is an annual community dominated or co-dominated by any of several nonnative wild oat (*Avena* spp.) and/or annual brome (*Bromus* spp.) grass species and typically forms a continuous herbaceous cover that may reach heights of 1 meter. Within the project area, shrubs, such as California buckwheat (*Eriogonum fasciculatum*) and broom baccharis (*Baccharis sarothroides*), and native forbs, such as fiddleneck (*Amsinckia* spp.) and common phacelia, are present at very low cover. Invasive species, such as tobacco tree, Russian thistle (*Salsola tragus*), and ruderal upland mustards, are also common within this community. Within the project area, this community occurs on hillsides and terraces outside of riparian habitat.

Riversidian Coastal Sage Scrub

Riversidian sage scrub differentiates interior cismontane coastal sage scrub type from coastal forms and is the typical coastal sage type encountered in western Riverside County. This habitat type is the most xeric expression of coastal sage scrub and dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs and subshrub species. Characteristic species within this community include California sagebrush (*Artemisia californica*), California buckwheat, laurel sumac (*Malosma laurina*), California encelia (*Encelia californica*), and several species of sage (*Salvia* spp.). Within the Santa Ana River Greenway project area, this community is co-dominated by brittlebush and California sagebrush and also includes species found commonly in the desert, such as sweet bush (*Bebbia juncea*) and desert brickellia (*Brickellia desertorum*). Within the Jurupa Trailhead project area, this community is dominated by California buckwheat. Within both project areas, the shrub canopy is closed to intermittent and reaches heights of up to 1.25 meters. The herbaceous layer is primarily composed of nonnative grasses and mustards.

Ruderal Upland Mustards And Forbs

This ruderal herbaceous vegetation community is characterized by various invasive, annual, or biennial mustards, such as black mustard (*Brassica nigra*), small-podded mustard (*Hirschfeldia incana*), or radish (*Raphanus sativus*), and/or star thistle (*Centaurea solstitialis*/*melitensis*) or similar nonnative forbs being dominant (CNPS 2022). Within the project area, this community is typically dominated by small-podded mustard that forms a continuous herbaceous cover that reaches heights of 1 meter. Native forbs, such as fiddleneck and *Phacelia* spp., and shrubs, such as broom baccharis, mulefat, and California buckwheat, are present within this community, but at very low cover. Ruderal upland mustards and forbs is an MCV vegetation classification and would be considered a disturbed habitat according to the Holland classification.

Russian Thistle–Five Hook Bassia Fields

This ruderal herbaceous vegetation community is co-dominated by Russian thistle and five hook bassia fields (*Bassia hyssopifolia*). Scattered native trees and shrubs, such as four-wing saltbush and elderberry, are present at very low cover. Russian Thistle–Five Hook Bassia Fields is a CNPS MCV vegetation classification and would be considered a disturbed habitat according to the Holland classification.

Nonnative Woodland

Nonnative woodland comprises ornamental trees, such as pepper trees (*Schinus* spp.), ornamental pine trees (*Pinus* spp.), or Ngaio groves (*Myoporum laetum*) or other nonnative species. The tree canopy is open to continuous and may reach heights of 18 meters or taller. The shrub layer is sparse to intermittent, and the herbaceous layer is simple to diverse. Within the project area, this community is strongly dominated by pepper trees, with little diversity. The shrub layer is sparse to bare, and the herbaceous layer is sparsely composed of nonnative grasses and mustards or is bare.

Other Land Cover Types

Developed

Areas mapped as developed include paved roadways, buildings, residential housing, commercial development, golf courses, and parks, as well as landscaped areas.

Disturbed

Areas mapped as disturbed are mostly devoid of vegetation and have evidence of frequent human disturbance, such as waste areas, as well as dirt roads and areas of ground disturbance. These areas may have very sparse vegetation, typically composed of nonnative ruderal forbs or nonnative grassland species, but the cover is much reduced compared to areas mapped as ruderal vegetation types or nonnative grassland.

Open Water

Areas mapped as open water are free of vegetation and consist of typically year-round standing bodies of water. Open water exists as a small impoundment of water at the outlet end of a large box culvert at the Jurupa Avenue Trailhead project area.

Survey Methods

ICF lead botanist Shawn Johnston conducted focused surveys, assisted by ICF botanists Brian Cropper, Cole Sutter, and Jean-Luc Brullot, on April 5, 6, and 7, 2022. Resumes of the surveying botanists are provided in Attachment B.

Table 1. Rare Plant Survey Dates, Personnel, and Weather Conditions

Date	Time	Personnel	Conditions
4/6/22	0700–1530	Shawn Johnston Cole Sutter	70–96°F, winds 1–10 mph, clear, good visibility
4/7/22	0700–1545	Shawn Johnston Cole Sutter Brian Cropper	72–98°F, winds 1–12 mph, clear, good visibility
4/8/22	0630–1300	Shawn Johnston Jean-Luc Brullot	76–95°F, winds 1–6 mph, clear, good visibility

°F = degrees Fahrenheit; mph = miles per hour.

Prior to field surveys, ICF biologists conducted a literature and database review to identify the special-status plant species known to occur in the vicinity of the project area. *Sensitive plant species* are those species that have been given special recognition by federal, state, or local conservation agencies and organizations because of limited, declining, or threatened population sizes. This includes those species listed by the federal and state government as threatened or endangered, those species proposed for federal and/or state listing or candidates, those plant species found on Lists 1A, 1B, or 2 of the CNPS's Inventory of Rare and Endangered Plants of California (CNPS 2022),

and plant species found on the MSHCP Endemic Plant List. CNPS List 3 or List 4 species were included in discussions only when incidentally encountered during the field surveys.

The available data reviewed included:

- California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (2022) search of the project area and within a 1-mile radius
- CNPS *Inventory of Rare and Endangered Plants* nine-quad search centered on USGS 7.5-minute Riverside West topographic quadrangle (CNPS 2022)
- Consortium of California Herbaria online database (Consortium of California Herbaria 2022)
- Information for Planning and Consultation resource list from the U.S. Fish and Wildlife Service (USFWS 2022)
- The Calflora database (Calflora 2022)
- *The Jepson Manual, Vascular Plants of California* (Baldwin et al. 2012)
- *Western Riverside County Multiple Species Habitat Conservation Plan – 2019 Rare Plant Survey* (Biological Monitoring Program 2020)

Based on the above literature and database reviews, a list of potentially occurring sensitive plant species was developed for the project area. A table of potentially occurring species is provided in Attachment C and also provides the preferred habitat for each species and evaluates the potential for occurrence within the survey areas.

The survey for the sensitive plant species were based on: (1) the habitat preference, habit, and phenology for each species; (2) professional experience; and (3) any other additional information gathered from those sources listed above and in Attachment C. The survey for sensitive rare plants was conducted by walking meandering belt transects throughout the survey areas. The distance between transects was adjusted when necessary to provide adequate coverage and account for ground-surface visibility, terrain, vegetation density, and access. Surveys efforts were targeted within unique portions of the project area where microhabitats had an increased potential to support special-status species and followed the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). The locations of special-status plants discovered in the project area and the number of individuals observed were recorded with a Trimble GNSS R1 global positioning system receiver with sub-meter accuracy in conjunction with ArcGIS Field Maps software application on tablets.

Prior to the survey, reference population checks were conducted to confirm phenology of rare plants species with the potential to occur within the survey area and included Santa Ana River woolly star (*Eriastrum densifolium* var. *sanctorum*), San Diego Ambrosia, and Brand's phacelia. Table 2 provides the details of the reference population checks.

Table 2. Rare Plant Reference Population Site Visits

Species	Date	Location	Status/Phenology
Brand's Phacelia (*Phacelia stellaris*)	4/7/2022	West of Santa Ana River, southeast of Flabob Airport, and south of Crestmoore Road, Riverside, County	Species was not detected at the only known extant population of Brand's phacelia in western Riverside. The last documented observation of this species was in 2019, when one individual was detected (Biological Monitoring Program 2020).
San Diego Ambrosia (*Ambrosia pumilla*)	4/5/2022	Approximately 0.25 mile due west of I-15 off Nichols Road, Lake Elsinore, California	Large population, with many plants observed. Phenology approximately 100%, vegetative, 0% budding/ flower
Santa Ana River Woolly-Star (*Eriastrum densifolium* ssp. *sanctorum*)	4/7/2022	Santa Ana River wash, from 0.2 mile north to 0.6 mile south of SR 60 and west of Fairmount Park Golf Course, Riverside California	Historically small population, two plants observed north of SR 60. Phenology approximately 100%, vegetative: 0% budding/flower

I- = Interstate; SR = State Route.

All plant species encountered during the field surveys were identified and recorded for inclusion in Attachment D. Latin and common names of plants follow *The Jepson Manual* (Baldwin et al. 2012). Where not listed in Baldwin, common names were taken from The Calflora Database (Calflora 2022).

Results

Based on the literature and database searches, 14 special-status plant species were identified as occurring or potentially occurring within the region of the Project (Attachment C). Two special-status species were observed during the focused survey: Santa Ana River woolly Star (federally and state-listed endangered, CRPR 1B.1, MSHCP narrow endemic plant) and California black walnut (CRPR 4.2 and MSCHP-Covered species). The locations of these special-status plant species are shown in Figures 4a and 4b (Appendix A). The location of Santa Ana River woolly star occurs within alluvial scrub habitat within the Tequesquite Extension North portion of the project area. Santa Ana River woolly star is not expected to occur elsewhere within the project area because of the lack of suitable habitat outside of the Tequesquite Extension North. A California black walnut grove and individuals were observed within the Camp Evans project component in Southern Cottonwood–Willow Riparian Forest, Southern Coast Live Oak Riparian Forest, Southern Riparian Scrub, and Mulefat Scrub.

Eight of the 14 identified species were determined to have suitable habitat within the project area, but were not detected during focused surveys conducted in 2022 (Attachment C). The remaining

four species were determined to have no suitable or marginally suitable habitat within the survey area.

If there are questions or clarifications needed regarding this report, please contact ICF Senior Botanist Shawn Johnston.

Sincerely,

Shawn Johnston
ICF Senior Botanist
Shawn.Johnston@icf.com

Enclosed:
Attachment A: Figures
Attachment B: Resumes
Attachment C: Special-Status Plant Species Potential for Occurrence Table
Attachment D: Observed Plant Species

Literature Cited

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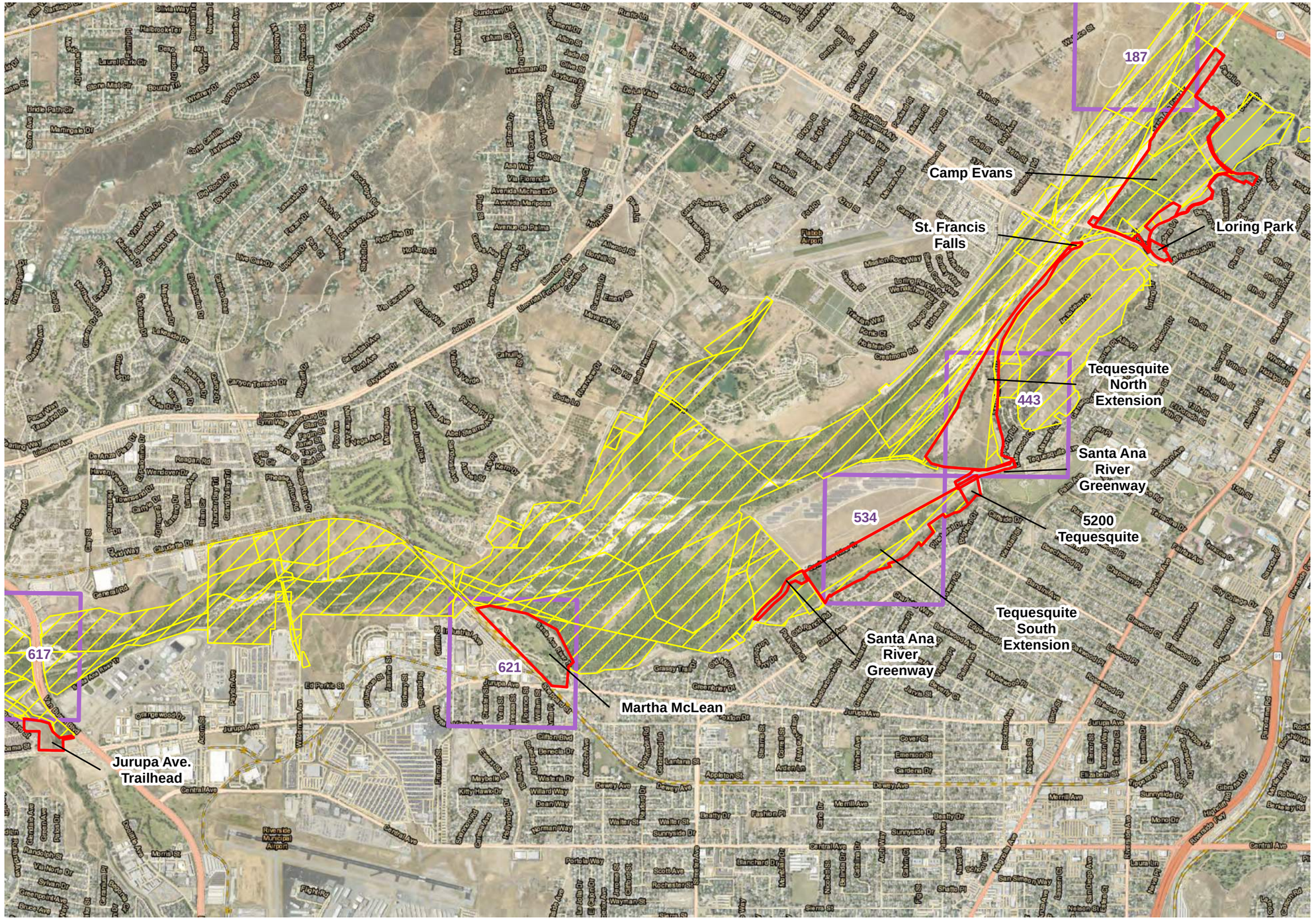
Figure 1
Vicinity Map
Riverside Gateway

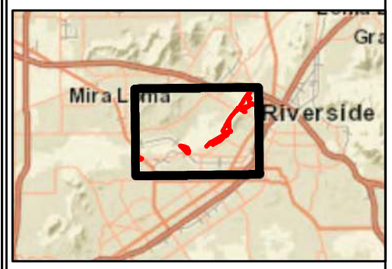


Legend

- Riverside Gateway Project Limits

WRMSHCP Units

- Criteria Area Cells
- Public/Quasi-public Conserved Lands



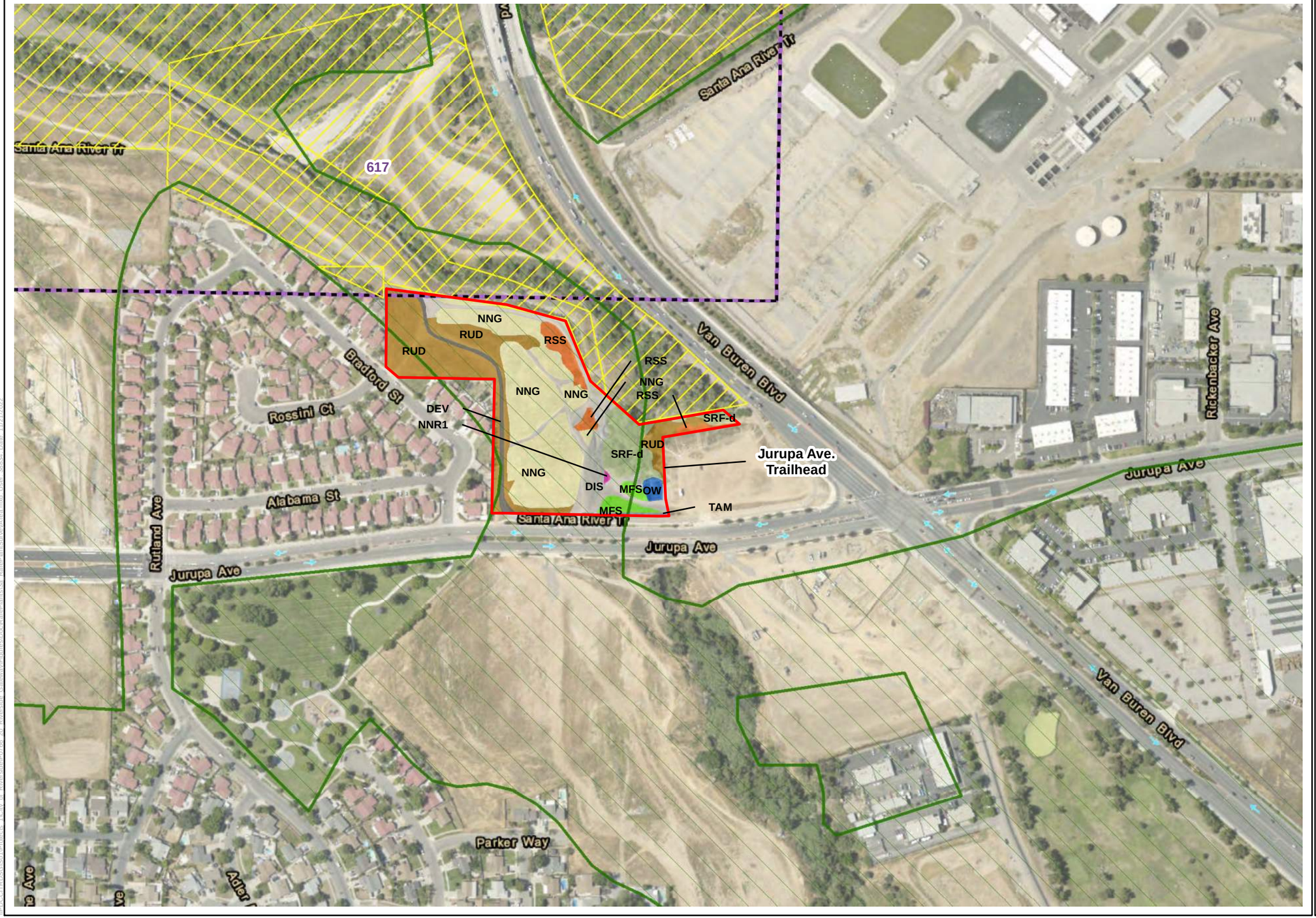
Source: ICF, USFWS, USGS; CNDDB 2019

0 1,050 2,100 Feet

1:26,000

N

Figure 2
Project Overview
Riverside Gateway

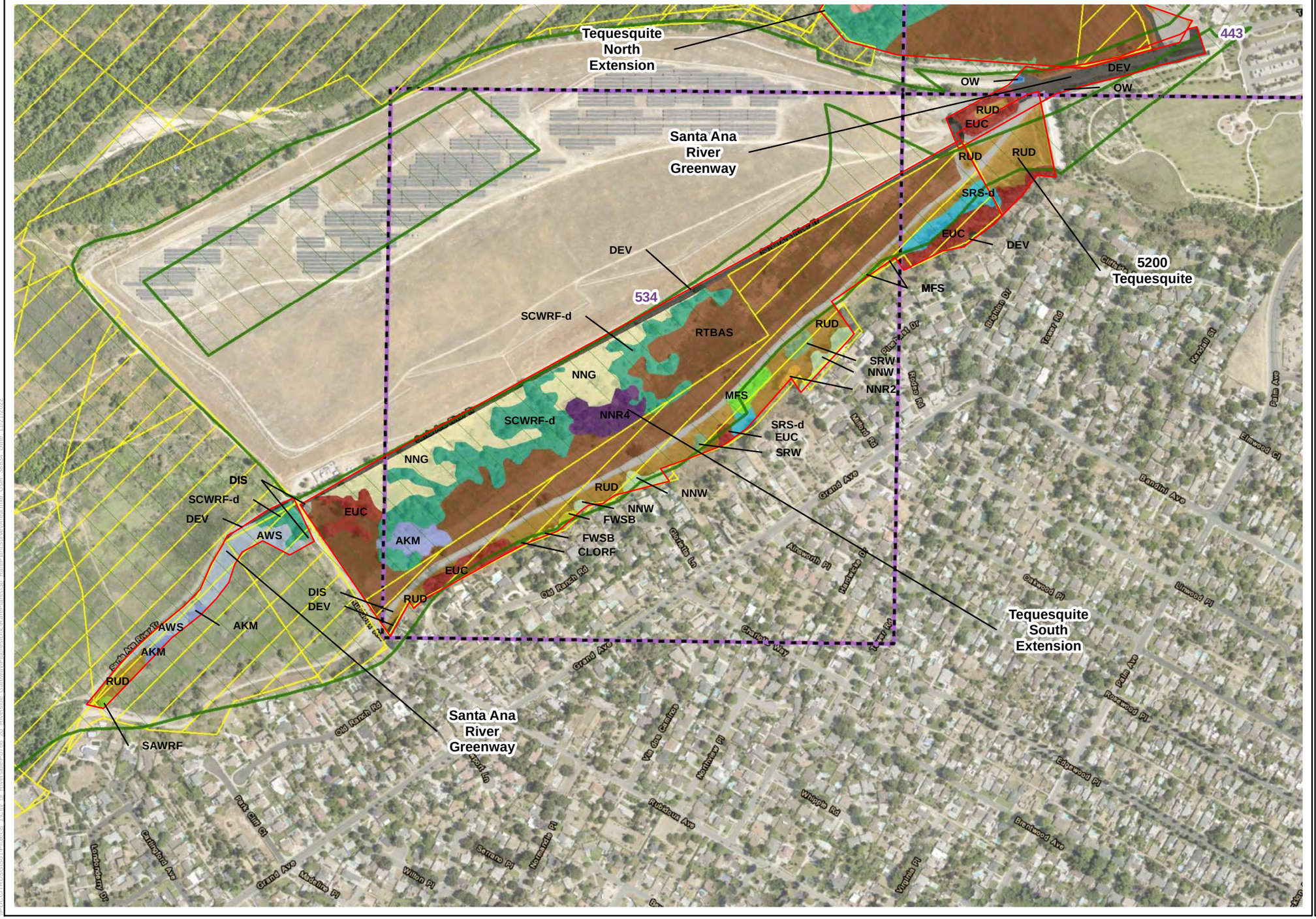


Source: ICF, USFWS, USGS; CNDDB 2019

0 150 300 Feet

1:3,600

Figure 3a
Vegetation and Land Cover
Riverside Gateway



Legend

Riverside Gateway Project Limits

WRMSHCP Units

- Criteria Area Cell
- Public/Quasi-public Conserved Lands
- Narrow Endemic Plants Survey Area

Uplands

- Eucalyptus Woodland [EUC]
- Fourwing Saltbush Scrub [FWSB]
- Nonnative Grassland [NNG]
- Nonnative Woodland [NNW]
- Riversidean Alluvial Fan Sage Scrub [RAS]
- Ruderal Upland Mustard and Forbs [RUD]
- Russia Thistle - Five Hook Bassisa Fields [RTBAS]

Riparian

- Arrowweed Scrub (AWS)
- Mule Fat Scrub (MFS)
- Non-native Riparian (Mexican Fan Palm Dominated) [NNR2]
- Nonnative Riparian (Tree of Heaven Dominated) [NNR4]
- Open Water [OW]
- Southern Arroyo Willow Riparian Forest [SAWRF]
- Southern Coast Live Oak Riparian Forest [CLORF]
- Southern Cottonwood - Willow Riparian Forest (Disturbed) [SCWRF-d]
- Southern Riparian Scrub (Disturbed) [SRS-d]
- Southern Riparian Woodland [SRW]

Meadows and Marshes

- Alkali Meadow (AKM)

Other

- Developed (DEV)
- Disturbed (DIS)

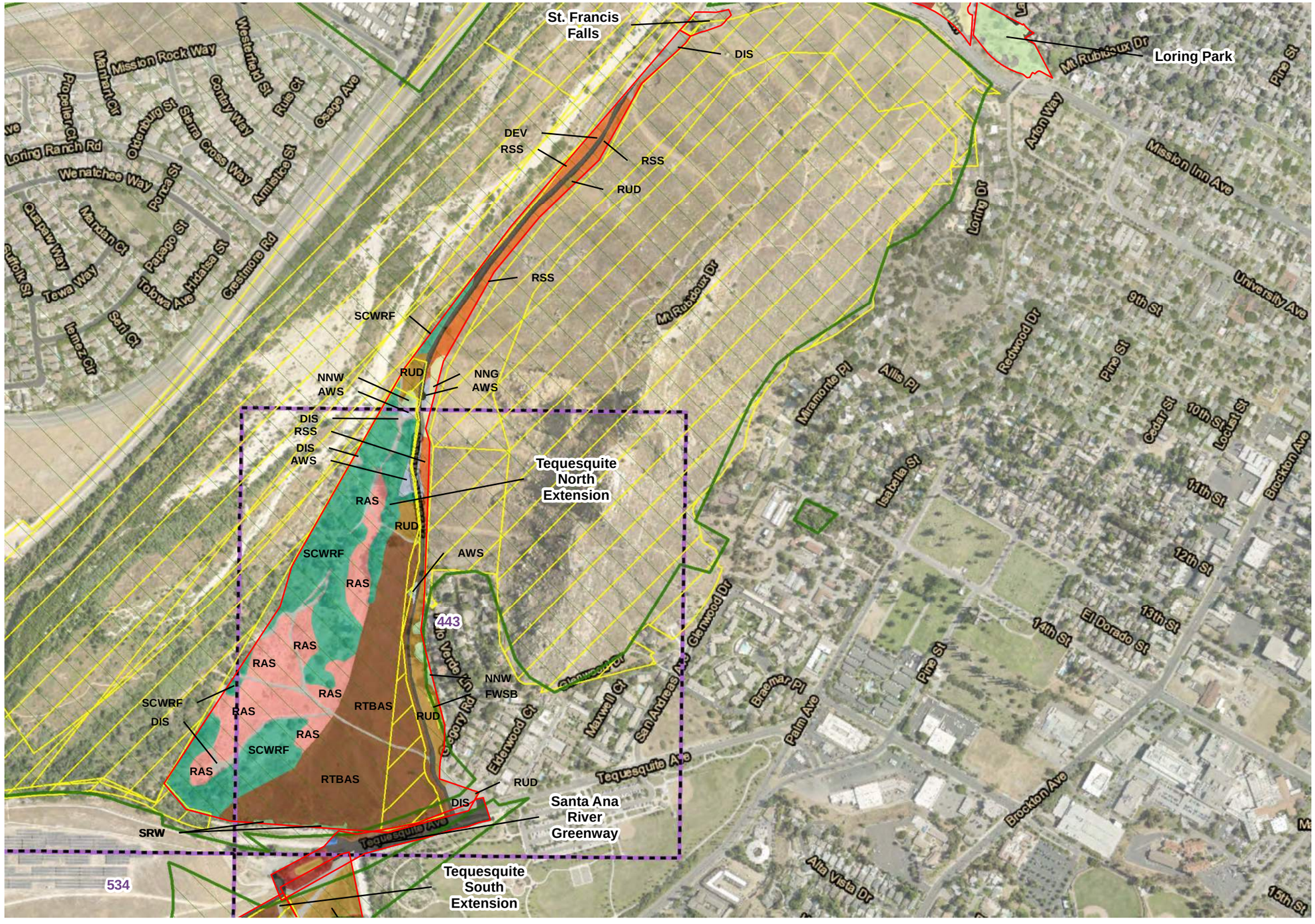
Source: ICF, USFWS, USGS; CNDDB 2019

0 250 500 Feet

1:6,000

N

Figure 3b
Vegetation and Land Cover
Riverside Gateway



Legend

- Riverside Gateway Project Limits

WRMSHCP Units

- Criteria Area Cell
- Public/Quasi-public Conserved Lands
- Narrow Endemic Plants Survey Area

Uplands

- Eucalyptus Woodland [EW]
- Fourwing Saltbush Scrub [FWSB]
- Nonnative Grassland [NNG]
- Nonnative Woodland [NNW]
- Riversidean Alluvial Fan Sage Scrub [RAS]
- Riversidean Sage Scrub [RSS]
- Ruderal Upland Mustard and Forbs [RUD]
- Russia Thistle - Five Hook Bassisa Fields [RTBAS]

Riparian

- Arrowweed Scrub [AWS]
- Open Water [OW]
- Southern Cottonwood - Willow Riparian Forest [SCWRF]
- Southern Riparian Woodland [SRW]

Other

- Developed [DEV]
- Disturbed [DIS]

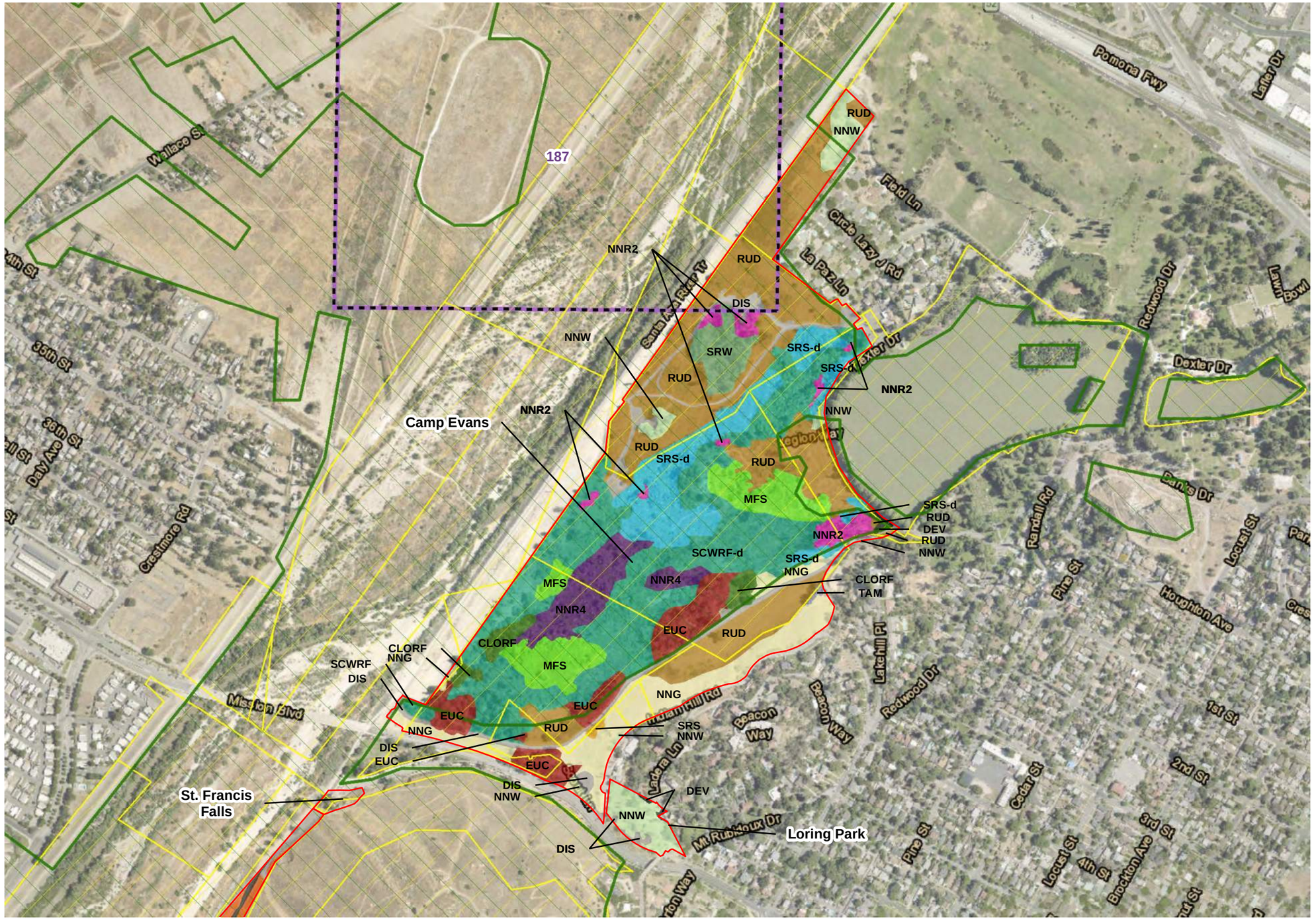
Source: ICF, USFWS, USGS; CNDDB 2019

0 300 600 Feet

1:7,200

N

Figure 3c
Vegetation and Land Cover
Riverside Gateway



Legend

Riverside Gateway Project Limits

WRMSHCP Units

- Criteria Area Cell
- Public/Quasi-public Conserved Lands
- Narrow Endemic Plants Survey Area

Uplands

- Eucalyptus Woodland [EUC]
- Nonnative Grassland [NNG]
- Nonnative Woodland [NNW]
- Riversidean Sage Scrub [RSS]
- Ruderal Upland Mustard and Forbs [RUD]

Riparian

- Mule Fat Scrub [MFS]
- Non-native Riparian (Mexican Fan Palm Dominated) [NNR2]
- Nonnative Riparian (Tree of Heaven Dominated) [NNR4]
- Southern Coast Live Oak Riparian Forest [CLORF]
- Southern Cottonwood - Willow Riparian Forest (Disturbed)
- Southern Riparian Scrub [SRS]
- Southern Riparian Scrub (Disturbed) [SRS-d]
- Southern Riparian Woodland [SRW]
- Tamarisk Scrub [TAM]

Other

- Developed [DEV]
- Disturbed [DIS]

Source: ICF, USFWS, USGS; CNDDB 2019

Figure 3d
Vegetation and Land Cover
Riverside Gateway

Legend

- Riverside Gateway Project Limits

Rare Plants

- Santa Ana woolly-Star (*Eriastrum densifolium ssp. sanctorum*)

WRMSHCP Units

- Criteria Area Cells
- Public/Quasi-public Conserved Lands
- Narrow Endemic Plants Survey Area

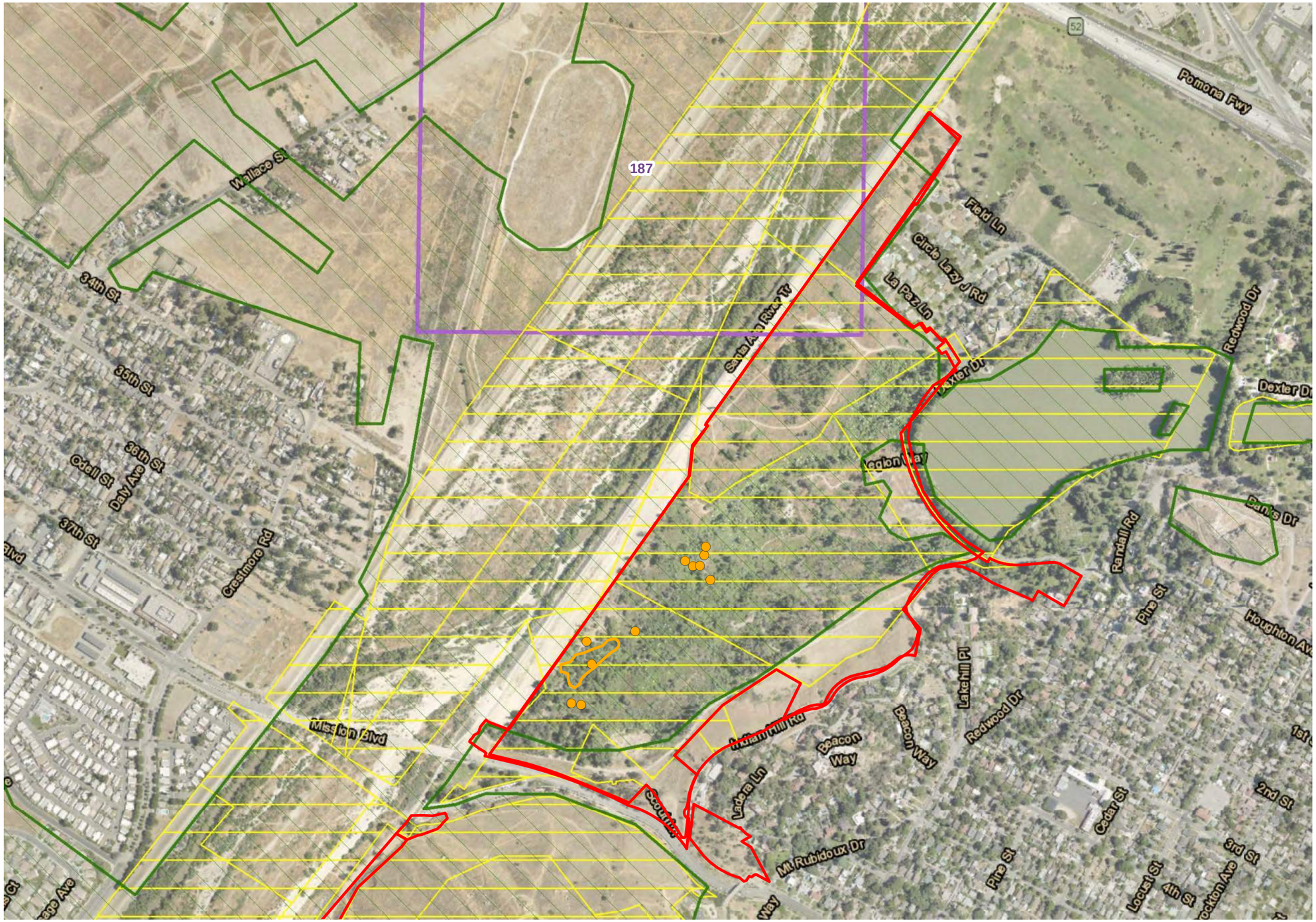
Source: ICF, USFWS, USGS; CNDDB 2019

0 300 600 Feet

1:7,200

N

Figure 4a
Rare Plant 2022 Survey Results
Riverside Gateway



Legend

Riverside Gateway Project Limits

RarePlants

Southern Black Walnut (*Juglans californica*)

Southern Black Walnut (*Juglans californica*)

WRMSHCP Units

Criteria Area Cells

Public/Quasi-public Conserved Lands

Narrow Endemic Plants Survey

Source: ICF, USFWS, USGS; CNDDB 2019

0 300 600 Feet

1:7,200

Figure 4b
Rare Plant 2022 Survey Results
Riverside Gateway

SHAWN JOHNSTON

Senior Botanist and Restoration Ecologist

Shawn Johnston has over 20 years of biological consulting experience with expertise and specialization in rare and special-status plant surveys, vegetation community characterization and biological habitat assessment. His botanical and taxonomic expertise encompasses a wide range of plant communities including desert scrubs and woodlands, coastal and inland scrubs, clay and hardpan vernal pools, chaparrals, grasslands, wetlands and riparian habitats.

In addition to his botanical expertise, Shawn has implemented and monitored both large- and small-scale ecological restoration projects in a myriad of habitats which has furthered his regional knowledge and understanding of the flora, ecology, and micro-habitats within southern California.

Years of Experience

- Professional start date: 06/2001
- ICF start date: 05/2016

Education

- BS, Biology (emphasis in Evolution and Systematics), San Diego State University

Representative Project Experience

Tule Wind Energy Project—Avangrid Renewables, San Diego County, California

Restoration Ecologist. Shawn is currently serving as a restoration ecologist for the revegetation of temporary impacts associated with the construction of the Tule Wind Project. Shawn supervises the execution of mitigation plans by the restoration contractor including remedial hydroseed application and transplanting of salvaged plants. In addition, he oversees on-going restoration site maintenance and weed abatement activities and provides annual vegetation sampling and performance reporting for the project. 2020 - Present

Lake Evans Riverside Gateway Park Project— Riverside County, California

Lead Botanist and Restoration Ecologist. Shawn led rare and special-status plant surveys, vegetation community mapping, and evaluation of habitat restoration potential for the proposed enhancement and development of Fairmont Park and additional open space areas located within the Santa Ana River riparian corridor within the City of Riverside. 2021 – 2022.

I-15 Express Lane Southern Extension—RCTC, Multiple Cities, Riverside County, California

Lead Botanist. Shawn led rare and special-status plant surveys and vegetation community mapping for the I-15 Express Lane between the cities of Lake Elsinore and Corona in support of a Natural Environmental Study. Survey habitats included Diegan and Riversidian sage scrub, alluvial fan scrub, riparian forests and shrublands, woodlands and marshes. 2020 and 2021.

Tehachapi Renewable Transmission Project (TRTP) Restoration Program Management, Segments 7, 8, and Underground Segment 6—Southern California Edison (SCE), Los Angeles County, California

Lead Restoration Ecologist. Shawn served as the led restoration ecologist for the revegetation of temporary impacts associated with the construction of SCE's TRTP Segments 6, 7 and 8, which includes portions of the179-mile 500kv transmission line form the southern edge of Angeles National Forest to Chino California. Shawn supervised the execution of restoration plans by the restoration contractor including hydroseed application, soil decompaction and installation of irrigation systems and container plants. He also oversaw the maintenance, remedial treatments, and weed abatement activities for the restoration project and provided annual vegetation monitoring and reporting. 2015 through 2020.

Mountain Meadow Preserve—County of San Diego DPR, San Diego County, California

Botanist. Shawn served as the lead botanist for a special status plant and vegetation mapping survey for a 768-acre San Diego County open space preserve. Shawn conducted focused surveys within mix-chaparral, coastal sage scrub, oak woodland and riparian habitats, and reported on the finding within an environmental assessment report. 2019.

Cities of Highland and Redlands Regional Connector—Highland and Redlands, San Bernardino County, California

Lead Botanist. Shawn led focused rare plant surveys for state and federally endangered slender-horned spineflower (*Dodecahema leptocerus*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) for a proposed bike trail alignment adjacent to Orange Street over the Santa Ana River and Plunge Creek. 2018.

Big Beau Solar Project—EDF Renewables, kern County, California

Lead Botanist. Shawn served as the lead botanist for focused rare and special status plant surveys and vegetation mapping for a proposed 3000-acre photovoltaic site and associated transmission corridors near Rosamond, California. 2018.

State Route 210 Mixed Flow Lane Addition Project— San Bernardino Associated Governments (SANBAG), San Bernardino County, California

Lead Botanist. Conducted reference site visits, habitat assessments, and focused rare plant surveys for slender-horned spineflower (*Dodecahema leptocerus*) and Santa Ana River Wooly Star (*Eriastrum densifolium* ssp. *sanctorum*) within portions of the Santa Ana River, Plunge Creek, and City Creek floodplains. Focused surveys for slender-horned spineflower were negative during the survey and approximately 140 individuals of Santa Ana River Wooly star were mapped and documented. 2017.

Otay Valley River Mitigation Bank Expansion (Phase 2)— City of Chula Vista, California

Lead Botanist. Shawn led rare and special-status plant surveys, and vegetation community mapping for an open space preserve and riverine restoration project. focused surveys were conducted within a wide range of habitats including mix-chaparral, coastal sage scrub, oak woodland, vernal pool and riparian. 2017 and 2018.

Pio Pico Energy Center Project Environmental Site Assessment—City of Chula Vista, California

Lead Botanist. While employed by URS, Shawn conducted rare plant surveys in coastal sage scrub, vernal pool, oak woodland, Tecate cypress woodland, and southern willow scrub habitats for a 250-acre environmental assessment study for a proposed power plant project near Otay Lakes in Chula Vista. 2010.

Hollenbeck Canyon Wildlife Area Land Management Plan—CDFW, South Coast Region, San Diego County, California

Botanist. While employed by AECOM (formerly EDAW), Shawn conducted rare plant surveys and vegetation community mapping within the proposed 3,200-acre Hollenbeck Canyon Wildlife Area. Habitats surveyed included coastal sage scrub, native and non-native grasslands, oak woodlands, chaparral, and mixed chaparral. 2006.

San Diego State Herbarium—San Diego State University, California

Herbarium/Research Assistant. Shawn served as herbarium assistant at San Diego State University. Under the guidance of Dr. Michael G. Simpson, he conducted research on Woolyleaf ceanothus (*Ceanothus tomentosus*) for potential subspecies determination based off distinct morphological characteristics correlated with geographical isolated groups within the species range. His additional herbarium work included collecting, cataloging, mounting, and managing specimens for the San Diego State University Herbarium. 2000 through 2001.

JEAN-LUC BRULLOT

Senior Habitat Restoration Specialist / Arborist

Mr. Brullot oversees maintenance crew scheduling, co-ordinates with project managers and restoration ecologists, and conducts restoration implementation and maintenance. Mr. Brullot is experienced with the restoration implementation and maintenance of desert, chaparral, vernal pool, wetland/riparian, and coastal sage scrub habitat. Mr. Brullot was a successful landscaper and served as project coordinator for native habitat restoration in Chollas Creek in the City of San Diego.

Years of Experience

- Professional start date: 06/2010
- ICF start date: 10/2016

Education

- AS, Landscape Architecture, Cuyamaca College, 2010

Certifications

- Qualified Applicator License (QAL) 129259 Category: Landscape Maintenance (B) Department Of Pesticide Regulation, CA, 01/01/2021-12/31/2022
- C-27 Landscaping Business License
- GIS Certificate of Accomplishment
- ISA Arborist Certificate
- ISA Tree Risk Assessment Qualification

Professional Development

- Propagation, Pest + Disease on Trees and Shrubs

Project Experience

Lake Evans Creek Restoration—SBVMWD, California, 07/2021 – 07/2021

Habitat Restoration Specialist / Arborist Lead: Jean-Luc led the Arborist survey and mapping of over 900 tree species and palms. Trees were mapped using a GPS device and a submeter to improve the accuracy and assist with the vegetation mapping. The mapping will be used for future habitat restoration designs. Also, installed water wells for future water table measurements. Jean-Luc monitor the water wells on a monthly basis.

Gateway Project, Riverside , City of Riverside. 08/2021-08/2021.

Habitat Restoration Specialist / Arborist Lead: Surveyed over 2,000 trees and palms at 10 different locations for future recreation park designs. Assist with the vegetation mapping including rare plant species. The survey included mapping, species identification, and overall health. Tree Reports including the results of the surveys submitted to the City of Riverside.

USACE, Corona , Santa Ana River. 11/2019-02/2022.

Habitat Restoration Specialist / Project Manager: Jean-Luc managed and monitored the implementation and maintenance of 425 acres. The restroration consisted of planting, watering, hydroseeding, and herbicide treatment. Protected present rare plants and seeded to increase the

density. Jean-Luc also led the annual transects data collection and wrote quarterly memos to be submits to the USACE [redacted]

[redacted]

USACE, Newport Beach , Santa Ana River. 07/2013-08/2016.

Habitat Restoration Specialist: Jean-Luc scheduled and oversee the progress of the weed removal and maintenance of the Tern Island. Led crew of 5-10 technicians spaying herbicide. Jean-Luc led the herbicide training, supervised the application, reported the amount used to the County, and scheduling.

USACE, Cornona , Santa Ana River, Prado Dam. 12/2020-Present.

Project Manager/Arborist. Jean-Luc is leading the mitigation of 500 coast live oak (Quercus agrifolia). Jean-Luc collected the acorns and had them germinate at a local nursery. Later, Jean-Luc supervised the proper planting installation. Jean-Luc tagged the trees and recorded their location using a GPS. Jean-Luc monitor the trees on quarterly basis, schedule the maintenance and watering visits for a period of five years. Write annual reports and quarterly memos to be submitted to USACE.

SR-125 South Vernal Pool and Quino Checkerspot Butterfly Habitat Restoration—Caltrans and South Bay Expressway, San Diego County, California, 6/2010-6/2012

Field Director / Habitat Restoration Specialist. Jean-Luc oversaw maintenance of the 100 acre site that includes upland and vernal pools for a period of two years. Main tasks were herbicide dispensing supervision and training, tracked herbicide levels, reported to the County of San Diego on a monthly basis, removed non-native plants, seeding, protect rare plants, scheduled crew, ordered materials, and wrote daily progress reports as part of mitigation for the SR-125 South project.

Otay and Sweetwater Rivers Revegetation Projects —Caltrans, San Diego County, California, 6/2010-7/2015

Field Director/Restoration Ecologist. Revegetation of portions of the Sweetwater and Otay Rivers that were temporarily impacted by construction of the State Route (SR) 125 South project, including 10 acres of wetland and upland habitats, was required as mitigation per the project permits. Performed field crew scheduling and oversight, as well as long-term maintenance of the revegetation areas.

Otay River Restoration Project and Mitigation Bank—HomeFed, Chula Vista, California, 2014 – 2021:

Habitat Restoration Specialist: Jean-Luc schedule, oversaw the progress, and success criteria. Lead crew of 5-10 technicians planting plants and trees, salvaging plants and trees, weed abatement, and maintaining the 148 acres site quality for a period of 5 years. Report weekly to project managers.

San Diego Thornmint, Wright Field Preserve, Alpine, 2013-2016. [redacted]

Habitat Restoration Specialist: Performed and supervised weed abatement to promote San Diego thornmint (endangered species) propagation. Collected seeds and propagated San Diego thormint. Habitiat maintained: Native grassland, Engelmann oak woodland, riparian habitat, coastal sage scrub/chaparral, vernal pools. 230 acres.

Sweetwater Regional Park Preserve, San Diego, 2012-2013.

Habitat Restoration Specialist: Performed and supervised weed abatement for the entire area. Habitiat: Native grassland, riparian habitat, vernal pools, and coastal sage scrub/chaparral. 500 acres.

Employment History

Groundwork Chollas Creek. Project Coordinator. San Diego, CA . 01/2010 – 05/2010.

AECOM. Habitat Restoration Specialist. San Diego, CA. 06/2010 – 10/2016.

ICF. Senior Habitat Restoration Specialst, Arborist. San Diego, CA. 10/2016– Present.

1.7 Years of Experience

Professional start date: 04/2021
ICF start date: 04/2021

Education

BS, Organismal Biology, California State University Long Beach, 2020

Professional Development

Field Herpetology of the Southwest, American Museum of Natural History
- July 2017, July 2018

Amphibians of the San Francisco Bay Area Workshop, Laguna de Santa Rosa Foundation
- November 2021

Introduction to the Mojave Desert Tortoise, Online Lecture Course & Field Workshop
- November 2022

NICHOLAS (COLE) SUTTER

Biologist

Cole Sutter's professional experience includes a variety of focused wildlife surveys, nesting bird surveys, rare plant surveys, vegetation mapping, restoration monitoring, construction monitoring, protected species and general habitat assessments, implementation and maintenance of wildlife cameras, wetland delineations, as well as bio and wetlands environmental clearance. In addition to relevant project experience, Cole has participated in a wide variety of biologically related projects in a volunteer capacity such as invasive plant removal and restoration monitoring efforts at Audubon Starr Ranch Sanctuary, restoration facilitation and nursery support at local wetlands, and avian vocalization analysis work at Cal State Long Beach.

Restoration Monitoring & Botanical Work:

SCE Remote Grids — Southern California Edison, Multiple Counties, California*

Biologist (Mar 2022-Apr 2022, November 2022) The purpose of this project is to build remote-power systems that will help mitigate wildfire risk and reduce impacts on customers during Public Safety Power Shut-off (PSPS) events. Cole performed baseline biological surveys and vegetation mapping for three different sites located in the Angeles National Forest. Cole also performed a rare plant survey and assisted with a jurisdictional delineation for one of the sites. All findings were later compiled into a habitat assessment and avoidance measures document provided to SCE.

Devil's Gate Reservoir Restoration Project — LACFCD, Pasadena, Los Angeles County, California

Biologist (Apr 2022-September 2022) The Devil's Gate Reservoir Restoration Project was a large-scale effort which aimed to increase flood protection for communities downstream of Devil's Gate Dam via sediment removal and restore habitat within a popular section of the Arroyo Seco Watershed. Cole provided restoration monitoring for a landscaping crew of 10+ people tasked with maintaining native vegetation communities and planted riparian sections on the eastern portion of the watershed. Cole also provided daily reporting and CNDDB submissions for any special status species located on site.

Tehachapi Renewable Transmission Project — SCE, Multiple Counties, California*

Biologist (Dec 2021, May 2022-September 2022) Massive project focused on creating new and upgraded high-voltage electric transmission lines and substations to carry electricity across multiple counties in Southern California spanning many years and costing hundreds of millions of dollars. Project construction was completed in 2016 and is now in its Restoration phase. Cole was trained by Rancho Santa Ana Botanic Garden employees at an SCE nursery in Auberry and aided in phytophthora and other pathogen testing for SCE nursery raised oaks. Cole later worked on the ANF annual performance monitoring (APM) for sections 6 and 11, which involved visiting restoration sites in the Angeles National

Forest to document the native plant composition and cover, and fill out rare plant datasheets or tree monitoring sheets where necessary. Following the APM, Cole assisted with quantitative site sampling involving laying down sample plots in natural areas to compare with restoration plots. Cole also assisted in long term monitoring (LTM) focused on progression of plant coverage, erosion, and anthropogenic disturbance. Rare plant and tree installations were given health assessments and soil moisture was documented where necessary. Cole also gained experience in using SCE's FRED form submission site for APM and LTM forms.

Dominguez Gap Wetlands Maintenance Program — LACFCD, Los Angeles County, California

Biologist (Oct 2021- Feb 2022, November 2022-Ongoing) Project involved vegetation control, clearing trash and debris, removing fallen or dead trees and shrubs, restoring open water areas to as-built condition, conducting repairs to bank stabilization, and surrounding wetland maintenance. Cole provided monitoring for vegetation removal, BMPs, animal mortalities, and water levels. Cole also recorded notable bird sightings and ensured no active nesting was occurring in any of the project's disturbance areas.

Sandrini Solar Project — EDP Renewables, Community of Mettler, Kern County, California

Biologist (Jan 2022) Proposed solar project to develop, construct, and operate a 300 MW solar facility on approximately 3,447 acres of privately owned land. Cole assisted in mapping the area's vegetation and running 25, 50m representative transects. Area was partially classified as sensitive valley sink scrub, and involved working around multiple occurrences of several rare plant species.

Lane Channel Maintenance Project — Orange County Public Works, MA-080-21010550, Irvine, Orange County, California

Biologist (Jun 2021, Mar 2022) Project consisted of repairing the eroded banks of the channel back to plan conditions. ICF provides restoration monitoring and reporting support for the approximate 8-acre restoration site. Cole provided qualitative restoration monitoring involving identifying hydroseeded and recruited natives as well as invasives and potentially problematic exotic species alongside follow-up reporting.

Wagon Wheel Creek Restoration and Stormwater Management Project — Orange County Parks, MA-080-21010550, Unincorporated Orange County, California

Biologist (May 2021, May 2022) Project consisted of installing structures to decrease velocity of storm water flows, reduce erosion, and restore portions of the severely incised Wagon Wheel Creek. ICF provides restoration monitoring and reporting support for the approximate 4-acre habitat restoration site. Cole provided annual quantitative monitoring support through use of established transects identifying plant species while organizing and producing data sheets used later in reporting.

Wildlife Surveys & Habitat Assessments:

I-215 Harley Knox Interchange — RCTC, Perris, Riverside County, California

Biologist (Apr 2022-June 2022) Project focused on expanding the Harley Knox Interchange to better facilitate traffic. Cole assisted with the pre-construction Burrowing Owl habitat assessment and following protocol surveys as outlined by the Western Riverside Multiple Species Habitat Conservation Plan Area (MSHCP).

I-210/Victoria Ave Interchange — SBCTA, Highland, San Bernardino County, California

Biologist (Apr 2022-June 2022) The SR 210 Lane Addition/Base Line Interchange project will widen a large stretch of the SR 210 to provide increased traffic flow throughout this corridor to eliminate the

existing bottleneck and provide lane continuity. Cole assisted with the pre-construction Burrowing Owl habitat assessment and four protocol surveys following.

I-405 Improvement Project — OCTA, Orange County, California

Biologist (Apr 2022-August 2022) A massive 16-mile widening project including a whole host of other transportation and infrastructure improvement elements. Cole provides as-needed routine nesting bird surveys for the stretches running along the highway and on/off-ramps as well as one-off surveys for other sections that may be affected by smaller efforts throughout the area.

Routine Line Clearing Support — Southern California Edison, Multiple Counties, California

Biologist (Feb 2022-Apr 2022) Project involves providing environmental inspections along electrical lines and poles/towers prior to the start of work of electrical maintenance activities. Cole provides nesting bird survey support as well as habitat assessments and identification of sensitive and protected species which may be impacted by maintenance work. Also provides pre-construction form reporting for surveyed areas.

Metro Purple Line Extension, Section 3 — Los Angeles Metropolitan, Los Angeles County, California

Biologist (Jan 2022-August 2022) The project involves providing environmental and cultural support for the expansion of the D Line of Metro's rail system to the Westside region. Cole provided nesting bird survey support for surrounding construction in Section 3, and follow-up biological reporting.

Riverside Gateway Project — Studio MLA, Riverside, Riverside County, California*

Biologist (Dec 2021, April 2022-July 2022) The project aims to improve and expand upon park infrastructure alongside the Santa Ana River in downtown Riverside. Cole staked suitable locations and called in the dig-alerts for soil pit testing, and later assisted wetlands staff in running the delineation while gaining experience filling out wetland data forms. Cole later assisted with 8 Least Bell's Vireo protocol surveys on site, 5 Southwestern Willow Flycatcher protocol surveys and a Southwestern Willow Flycatcher and Yellow-billed Cuckoo habitat assessment alongside a permitted biologist. Cole also assisted in mapping suitable burrows and conducting Burrowing Owl surveys for portions of the site. Additionally, Cole helped with rare plant surveys of the site, which led to multiple rare species detections, and associated mapping.

Oso Parkway and Crown Valley Parkway Bridge Bat Surveys — Orange County public works, MA-080-21010550, Mission Viejo, Orange County, California

Biologist (Nov 2021) A small project aimed to determine the level of bat usage in two bridges scheduled for maintenance work inside the cells. Assisted with the visual surveys and audio collection for later Anabat analysis over the course of two early mornings and late evenings.

On-Call Biological Task Orders — Caltrans District 5, Santa Barbara and San Benito County, California

Projects aimed to improve highway functionality and capacity. Cole served as a biologist assisting in pre-construction California Tiger Salamander surveys and field labor/burrow excavation for the task orders including:

- **TO 27, San Benito Route 156 Project.**
- **TO 20, Solomon Canyon Rumble Strip/Shoulder Widening.**

Physical and Camera Trapping:

On-Call Biological Task Orders — Caltrans District 5, Santa Barbara and San Benito County, California

Project aims to assess the usage of culverts, bridges, and other passageways under and along highway 101 running through Gaviota Pass by animals to later propose wildlife crossing solutions to reduce animal mortality. Cole assisted in installing 20 wildlife cameras throughout the pass to best capture nearby animal movement. He has continually supported documentation of further camera installation as well as data and photo processing.

- TO 29, US 101 Gaviota Pass Wildlife Connectivity Study

Santa Ysabel Preserve — County of San Diego Department of Parks and Recreation, Santa Ysabel, San Diego County, California

Biologist (May-Jun 2021) This project involved a variety of baseline biological and cultural resource surveys focused on a newly acquired parcel of land for the Santa Ysabel Preserve. Cole assisted with the baseline herpetological surveys utilizing funnel traps alongside a senior biologist, later providing insight for the biodiversity report, and assisted with wildlife camera trapping.

Bullhead Solar Project — EDF Renewables, Rosamond, Kern County, California*

Biologist (May 2021, June 2022) Conducted several focused biological technical surveys under supervision of the lead field biologists for a proposed solar project consisting of nearly 2,000 acres and over 30 miles in the western Mojave Desert. Help conduct two of four focused burrowing owl surveys, which resulted in detection of one burrowing owl pair, several desert kit fox dens, and hundreds of potential burrowing owl burrows. Also supported the Mohave ground squirrel biologist during two 5-day camera-trapping sessions throughout the project area. Set up, installed, maintained, baited, and downloaded the memory cards from 15 game cameras over the 10-day period. During all of these surveys, recorded any Joshua trees observed in the project area. Cole later assisted with a vegetation mapping effort aimed to gain information for Swainson's Hawk mitigation approach.

Construction Monitoring:

OCPW On-Call Tasks — Various Cities, Orange County, California*

- **Talbert Ocean Outlet Emergency Sand Removal (June 2022)** — Project was focused on clearing the Talbert Outlet to restore tidal flushing. Cole monitored the work to ensure the nearby nesting Least Terns were not disturbed as well as ensured no Snowy Plovers nor any other wildlife wandered into the work area.
- **San Diego Creek Sediment Removal (Oct 2022)** — Project involved removing sediment from a partially channelized stretch of creek. Cole performed compliance checks on Southwestern Pond Turtle exclusion fencing and BMP measures.
- **Santa Ana River Outlet Sediment Removal (Oct-Nov 2022)** — Project involved dredging sand from the Santa Ana River Outlet and hauling it further down the beach. Cole performed pre-construction Snowy Plover surveys and compliance checks.

Caltrans On-Call Biological Task Orders — District 5, Santa Barbara and San Benito County, California

Project adding one high-occupancy vehicle lane in each direction on US 101 from 0.2 mile south of Bailard Avenue in the City of Carpinteria to Sycamore Creek in the City of Santa Barbara. Cole monitored a landscaping crew during the removal and trimming of willows growing in a draining running along the construction site.

- **TO 28, South Coast Highway 101 HOV Lanes**

Environmental Clearance and Permitting:

SCE Desktop Support/EHSync Environmental Clearance — Southern California Edison, Multiple Counties, California

Bio and Wetlands SME (August 2022 – Ongoing) SCE Project planners/managers/personnel enter O&M projects in EHSync for environmental review if the project involves ground, vegetation, and/or overland travel disturbance activities. EHSync is used to manage the environmental review/support process. Cole acted as a bio and wetlands subject matter expert and was involved in writing and submitting desktop reviews within EHSync for a variety of Edison work.

Waters:

Aliso Creek at Trabuco Road Project — Orange County Public Works, Lake Forest, Orange County, California

Biologist (Jun 2021) The project will consist of repairing the eroded banks of Aliso Creek near Trabuco Road. Cole assisted with the delineation of U.S. Army Corps of Engineer (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) jurisdictions in the study area.

* Project involves more than one type of work

Attachment C. Special-Status Plant Species Potential to Occur Table, City of Riverside Gateway Project

Common / Scientific Name	**[a]Status (Federal/ State/ CNPS/ MSHCP)**	**Habitat Description**	**[+]Habitat Present /Habitat Absent /Species Present/Species Absent**	**Rationale**
San Diego Ambrosia *(Ambrosia pumila)*	E/-/1B.1/ MSHCP	Occurs in open floodplain terraces or in the watershed margins of vernal pools. This species occurs in a variety of associations that are dominated by sparse nonnative grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas. San Diego ambrosia generally occurs at low elevations generally less than 1,600 ft in the Riverside populations and less than 600 ft in San Diego County.	HP/A	Suitable habitat is present in the project area; however, this species was not detected in 2022 during focused rare plant surveys for the project.
Marsh Sandwort *(Arenaria paludicola)*	E/E/1B.1/-	Occurs in wetland and freshwater marshes and grows up through dense mats of Typha sp., Juncus spp. and Scirpus spp. within freshwater marshes. Elevation ranges from sea level to 558 ft. Species was historically documented within the Santa Ana River; however, the species is now believed to be extirpated from southern California (USFWS 2020).	HA/A	Project area lacks suitable freshwater marshes; furthermore, this species is considered extirpated from southern California, and is not expected to occur.
Nevin's Barberry (*Berberis nevinii)*	E/E/1B.1/ MSHCP	This evergreen shrub is very rare and local; found on steep north facing slopes or in low-grade sandy washes in chaparral, coastal sage scrub, riparian scrub, and cismontane woodland from 968 ft to 2700 ft. In western Riverside County; known only in the vicinity of Vail Lake and Timoteo Canyon (USFW 2009).	HP/A	This large evergreen conspicuous species was not detected during surveys conducted in 2022 and is not expected to occur.
Smooth Tarplant (*Centromadia pungens ssp. laevis)*	-/-/1B.1/ MSHCP	Found in fine or alkaline soils of seasonally wet chenopod scrub, meadows and seeps, playas, riparian woodland, fallow fields, drainage ditches, and moist situations within valley and foothill grasslands below about 1,575 ft elevation. Tolerant of rural and agricultural land use. Found primarily in southwestern Riverside County, but also a few sites in the interior valleys of San Bernardino, Los Angeles, and San Diego Counties.	HP/A	Marginally suitable habitat is present in project area but generally lacks the combination of suitable mesic habitat and fine or alkaline soils. A focused rare plant survey was performed in 2022, and the species was not detected within the project area.

Attachment C. Special-Status Plant Species Potential to Occur Table, City of Riverside Gateway Project

Salt Marsh Bird's-beak (*Chloropyron maritimum ssp. maritimum)*	E/E/1B.2/-	Occurs within coastal dunes, salt marshes, and coastal swamps, but has been documented inland in the San Bernardino Valley within alkaline meadows. Elevations range from sea level to 99 ft.	HA/A	Suitable mesic alkaline habitat is not present within the project area. This species is not expected to occur within the project area and was not detected during surveys in 2022.
Peninsular Spineflower (*Chorizanthe leptotheca)*	-/-/4.2/MSHCP	Found on alluvial fans and granitic soils within chaparral, coastal scrub, and lower montane coniferous forests. Elevations range from 980 to 6,235 ft and the species blooms between May and August. Closely related to and difficult to distinguish from C. staticoides.	HP/A	Suitable alluvial and coastal scrub habitat is present in the rare plant study area. A focused rare plant survey was performed in 2022, and the species was not detected within the project area.
San Miguel Savory (*Clinopodium chandleri)*	-/-/1B.2/MSHCP	Associated with rocky, gabbroic, and metavolcanic substrates in valley and foothill grassland, coastal sage scrub, chaparral, cismontane woodland, and riparian woodland. The majority of populations and individuals are associated with the Santa Rosa Plateau and the Santa Ana Mountains. Known from 3 miles south of De Luz Road in the Santa Ana Mountains and 3 miles southwest of Murrieta near Warner's Ranch. Expected within the vicinity of the Santa Rosa Plateau, the Hogbacks, and the Santa Ana Mountains. Elevation range for this species is 65–3,530 ft, and blooming period is from March to July.	HA/A	Suitable habitats with rocky, gabbroic or metavolcanic soils are not present in the project area. This species is not expected to occur within the project area and was not detected during surveys in 2022.
Santa Ana River Woollystar (*Eriastrum densifolium ssp. sanctorum*)	E/E/1B.1/MSHCP	A perennial herb known from a single extended but heavily fragmented population in Riverside and San Bernardino Counties; it formerly extended into Orange County. An inhabitant of alluvial fan sage scrub in sandy to gravelly soils and typically blooms during the period of June through August. Can be found from 450 to 2,000 ft.	P	Santa Ana River woolly-star is present within alluvial scrub habitat Tequesquite Extension North (Figure 4a) portion of the project area.
Southern California Black Walnut (*Juglans californica)*	-/-/4.2/-	Found in alluvial areas within chaparral, cismontane woodlands, coastal scrub, and riparian woodlands. Known to occur between 160 and 2,955 ft, and bloom from September to May. Walnut forest is a much fragmented, rare, and declining vegetation community. Threatened by urbanization,	P	This species was observed within the Camp Evans portion of the project area (Figure 4b).

		grazing, nonnative plants, and possibly by lack of natural reproduction.		
Coulter's Goldfields (*Lasthenia glabrata ssp. coulteri*)	-/-/1B.1/ MSHCP	Wide-ranging herb in southern California, with known occurrences including Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, among others. This is an annual herb, blooming from February through June. Floodplains (seasonal wetlands) dominated by alkali scrub, alkali plays, vernal pools, and alkali grasslands provide potential habitat for this species. Found on clay and alkaline, silty-clay soils. In Riverside County, primarily restricted to alkali floodplains of the San Jacinto River, Mystic Lake, and Salt Creek in association with Willows, Domino, and Traver Soils. Also known in the alkali flats between Alberhill and Lake Elsinore. Found in grasslands, playas, and vernal pools in these areas, below about 4,002 feet.	HA/A	Suitable mesic alkaline habitat is not present within the project area. This species is not expected to occur within the project area and was not detected during surveys in 2022.
Robinson's Pepper-Grass (*Lepidium virginicum var. robinsonii*)	-/-/1B.2/-	Found in dry soils in chaparral and coastal sage scrub openings up to 3,100 ft.	HP/A	Suitable habitat is present in the project area within coastal sage scrub. A focused rare plant survey was performed in 2022, and the species was not detected within the rare plant study area.
Brand's Phacelia (*Phacelia stellaris*)	-/-/1B.1/ MSHCP	This species occurs within coastal dunes and coastal scrub habitats at elevations ranging between 3 and 131 ft. Blooms from March through June. The last known documented observation within Western Riverside County for this species was in 2019 where 1 individual was detected within the Santa Ana Wilderness Area (Biological Monitoring Program 2020). Suitable habitat for Brand's phacelia includes coastal dunes and/or coastal scrub in sandy openings, sandy benches, dunes, sandy washes, or flood plains of rivers and is restricted to clay soils at elevations between 0 and 1,350 ft.	HP/A	Suitable sandy floodplain habitat is present within the rare plant study area. A focused rare plant survey was performed in 2022, and the species was not detected within the rare plant study area.
Chaparral Ragwort	-/-/2.2/-	Found in chaparral, cismontane woodland, and coastal scrub	HP/A	Suitable habitat is present in the project area.

Attachment C. Special-Status Plant Species Potential to Occur Table, City of Riverside Gateway Project

Senecio aphanactis)		habitats from 49 to 2,625 ft. Also associated with alkaline soils.		A focused rare plant survey was performed in 2022, and the species was not detected.
Praire wedge grass (*Spenopholis obtusata*)	-/-/2.2/-	Found in meadows and seeps and mesic sites within cismontane woodlands from 985 to 6560 ft.	HP/A	Suitable habitat is present in the project area. A focused rare plant survey was performed in 2022, and the species was not detected.

a Status Codes

Federal

E = Federally listed; Endangered

PE = Proposed Endangered

T = Federally listed; Threatened

State

T = State listed; Endangered

E = State listed; Threatened

SC = State Candidate for Listing

R = Rare (Native Plant Protection Act)

CSC = California Species of Special Concern

CFP = California Fully Protected Species

MSHCP = Covered species

CNPS

1A = Plants presumed extinct in California

1B = Plants rare, threatened, or endangered in California and elsewhere

2 = Plants rare, threatened, or endangered in California, but more common elsewhere

3 = Plants about which we need more information

4 = Limited distribution (Watch List)

0.1 = Seriously endangered in California

+Habitat Presence/Absence Codes

P= The species is present.

HP=Habitat is or may be present. The species may be present.

HA= No habitat present and no further work needed.

A= This species is absent.

Work Cited

Biological Monitoring Program. 2020. *Western Riverside County MSHCP Biological Monitoring Program 2019 Rare Plant Survey Report*. Prepared for the Western Riverside County Multiple Species Habitat Conservation Plan. Riverside, CA. Available: 2019 Rare Plants Report (wrc-rca.org). Accessed: April 2022.

U.S. Fish and Wildlife Service (USFWS). 2009. *Berberis nevinii (*Nevin's barberry*) 5-Year Review: Summary and Evaluation*. Carlsbad, CA: Carlsbad Fish and Wildlife Office.

U.S. Fish and Wildlife Service (USFWS). 2020. *Arenaria paludicola (*Marsh Sandwort*) 5-Year Review: Summary and Evaluation*. Ventura, CA: Ventura Fish and Wildlife Office.

Attachment D - Riverside Gateway Project: Plant Species List

Scientific Name	Common Name	Special Status
FERNS		
Equisetaceae - Horsetail family		
Equisetum hyemale ssp. affine	Winter horsetail	
GYMNOSPERMS		
Pinaceae - Pine family		
Pinus pinea	Italian stone pine	
MAGNOLIIDS		
Saururaceae - Lizard's-tail family		
Anemopsis californica	Yerba mansa	
EUDICOTS		
Adoxaceae - Muskroot family		
Sambucus nigra ssp. caerulea	Blue elderberry	
Anacardiaceae - Sumac Or Cashew family		
* *Pistacia chinensis*	Chinese pistachio	
* *Schinus molle*	Peruvian pepper tree	
* *Schinus polygamus*	Chilean pepper tree	
* *Schinus terebinthifolius*	Brazilian pepper tree	
Toxicodendron diversilobum	Western poison oak	
Apiaceae - Carrot family		
* *Anthriscus caucalis*	Bur-chervil	
* *Conium maculatum*	Poison hemlock	
Apocynaceae - Dogbane family		
* *Nerium oleander*	Oleander	
Asteraceae - Sunflower family		
Ambrosia acanthicarpa	Annual bur-sage	
Ambrosia psilostachya	Western ragweed	
Artemisia californica	California sagebrush	
Artemisia douglasiana	Douglass' sagebrush	
Artemisia dracunculus	Tarragon sagebrush	
Artemisia tridentata ssp. tridentata	Big sagebrush	
Baccharis salicifolia ssp. salicifolia	Mule fat	
Baccharis salicina	Emory's baccharis	
Baccharis sarothroides	Broom baccharis	
* *Carduus pycnocephalus ssp. pycnocephalus*	Italian thistle	

Scientific Name	Common Name	Special Status
* *Centaurea melitensis*	Tocalote	
* *Cirsium vulgare*	Bull thistle	
Corethrogyne filaginifolia	Common sand aster	
Encelia farinosa	Brittlebush	
Erigeron canadensis	Horseweed	
Erigeron foliosus var. foliosus	Leafy daisy	
Eriophyllum confertiflorum	Golden woolly sunflower	
Helianthus annuus	Annual sunflower	
* *Helminthotheca echioides*	Bristly ox-tongue	
Heterotheca grandiflora	Telegraph weed	
* *Hypochaeris glabra*	Smooth cat's-ear	
* *Lactuca serriola*	Prickly lettuce	
* *Logfia gallica*	French cottonrose	
* *Oncosiphon piluliferum*	Stinknet	
Pluchea sericea	Arrow-weed	
Pseudognaphalium californicum	California everlasting	
* *Pulicaria paludosa*	Spanish false fleabane	
* *Sonchus asper ssp. asper*	Prickly sow thistle	
* *Sonchus oleraceus*	Common sow thistle	
Stephanomeria virgata	Rod wire-lettuce	
Stephanomeria virgata ssp. virgata	Rod wire-lettuce	
Uropappus lindleyi	Silver puffs	
* *Verbesina encelioides ssp. exauriculata*	Golden crownbeard	
Xanthium strumarium	Cocklebur	
Boraginaceae - Borage family		
Amsinckia intermedia	Common fiddleneck	
Cryptantha intermedia var. intermedia	Nievitas Cryptantha	
Cryptantha sp.	Cryptantha	
Eriodictyon trichocalyx	Hairy yerba santa	
Heliotropium curassavicum var. oculatum	Alkali heliotrope	
Phacelia distans	Wild heliotrope phacelia	
Phacelia ramosissima	Branching phacelia	
Brassicaceae - Mustard family		
* *Brassica nigra*	Black mustard	

Scientific Name	Common Name	Special Status
* *Hirschfeldia incana*	Shortpod mustard	
* *Lepidium latifolium*	Perennial pepper-grass	
* *Raphanus raphanistrum*	Jointed charlock	
* *Raphanus sativus*	Radish	
* *Sisymbrium altissimum*	Tumble mustard	
* *Sisymbrium irio*	London rocket	
Cactaceae - Cactus family		
Cylindropuntia californica var. parkeri	Cane cholla	
* *Opuntia ficus-indica*	Mission prickly pear	
Opuntia littoralis	Coastal prickly pear	
Caryophyllaceae - Pink family		
* *Spergularia rubra*	Red sand-spurrey	
Chenopodiaceae - Goosefoot family		
Atriplex canescens	Four-wing saltbush	
* *Atriplex semibaccata*	Australian saltbush	
* *Bassia hyssopifolia*	Fivehorn smotherweed	
* *Chenopodium album*	Lamb's quarters	
Kochia americana	American Fireweed	
* *Salsola tragus*	Prickly russian thistle	
Convolvulaceae - Morning-glory family		
Cuscuta californica	Chaparral dodder	
Cuscuta californica var. californica	Chaparral dodder	
Cucurbitaceae - Gourd family		
Cucurbita palmata	Coyote melon	
Marah macrocarpa	Large fruit wild cucumber	
Euphorbiaceae - Spurge family		
Croton californicus	California croton	
Croton setigerus	Doveweed	
* *Euphorbia maculata*	Spotted spurge	
Euphorbia polycarpa	Many seed spurge	
* *Ricinus communis*	Castorbean	
Fabaceae - Legume family		
Acmispon americanus var. americanus	Spanish-Clover	
Acmispon glaber	Deerweed	
Acmispon strigosus	Strigose lotus	

Scientific Name	Common Name	Special Status
Amorpha fruticosa	Desert false indigo	
Astragalus douglasii var. parishii	Parish's milkvetch	
Lupinus bicolor	Miniature lupine	
Lupinus hirsutissimus	Stinging lupine	
* *Melilotus albus*	White sweetclover	
* *Melilotus indicus*	Indian sweetclover	
* *Parkinsonia aculeata*	Mexican palo verde	
* *Robinia pseudoacacia*	Black locust	
* *Trifolium hirtum*	Rose clover	
* *Vicia villosa*	Winter vetch	
Fagaceae - Oak family		
Quercus agrifolia	Coast live oak	
Hamamelidaceae - Witch Hazel family		
* *Liquidsambar styraciflua*	Liquid Amber	
Juglandaceae - Walnut family		
* *Carya illinoinensis*	Pecan	
Juglans californica	Southern California black walnut	CRPR 4.2
Lamiaceae - Mint family		
* *Lamium amplexicaule*	Henbit	
* *Marrubium vulgare*	Horehound	
Salvia apiana	White sage	
Malvaceae - Mallow family		
* *Malva parviflora*	Cheeseweed	
Montiaceae - Purslane family		
Claytonia perfoliata	Round leaf miner's lettuce	
Moraceae - Mulberry family		
* *Ficus carica*	Edible fig	
* *Morus alba*	White mulberry	
Myrsinaceae - Myrsine family		
* *Anagallis arvensis*	Scarlet pimpernel	
Myrtaceae - Myrtle family		
* *Eucalyptus camaldulensis*	Red gum	
* *Eucalyptus globulus*	Blue gum	
Oleaceae - Olive family		
Fraxinus uhdei	Shamel Ash	

Scientific Name	Common Name	Special Status
Fraxinus velutina	Velvet ash	
* *Olea europaea*	Olive	
Onagraceae - Evening Primrose family		
Camissoniopsis bistorta	California sun cup	
Oenothera elata	Great marsh evening primrose	
Papaveraceae - Poppy family		
Eschscholzia californica	California poppy	
Plantaginaceae - Plantain family		
* *Plantago lanceolata*	English plantain	
Platanaceae - Plane Tree, Sycamore family		
Platanus racemosa	Western sycamore	
Polemoniaceae - Phlox family		
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	FE, SE, CRPR 1B.1
Gilia diegensis	San Diego gilia	
Polygonaceae - Buckwheat family		
Eriogonum fasciculatum	California buckwheat	
Eriogonum thurberi	Thurber's buckwheat	
* *Rumex conglomeratus*	Clustered dock	
* *Rumex crispus*	Curly dock	
Rosaceae - Rose family		
Heteromeles arbutifolia	Toyon	
Prunus ilicifolia	Holly leaf cherry	
Rosa californica	California rose	
Rubus ursinus	California blackberry	
Rubiaceae - Madder family		
Galium aparine	Common bedstraw	
Salicaceae - Willow family		
Populus fremontii ssp. fremontii	Fremont cottonwood	
Salix exigua	Sand bar willow	
Salix gooddingii	Goodding's black willow	
Salix laevigata	Red willow	
Salix lasiolepis	Arroyo willow	
Simaroubaceae - Quassia Or Simarouba family		
* *Ailanthus altissima*	Tree of heaven	
Solanaceae - Nightshade family		
Datura wrightii	Wright's jimsonweed	

Scientific Name	Common Name	Special Status
* *Nicotiana glauca*	Tree tobacco	
Solanum douglasii	Douglas' nightshade	
Tamaricaceae - Tamarisk family		
* *Tamarix aphylla*	Athel tamarix	
* *Tamarix chinensis*	Chinese tamarix	
Urticaceae - Nettle family		
Urtica dioica	Stinging nettle	
* *Urtica urens*	Dwarf nettle	
Vitaceae - Grape family		
Vitis girdiana	Desert wild grape	
Zygophyllaceae - Caltrop family		
* *Tribulus terrestris*	Puncturevine	
MONOCOTS		
Agavaceae - Century Plant family		
* *Agave americana*	American century plant	
Hesperoyucca whipplei	Chaparral yucca	
* *Yucca gloriosa*	Garden yucca	
Arecaceae - Palm family		
* *Phoenix canariensis*	Canary Island palm	
* *Washingtonia robusta*	Mexican fan palm	
Cyperaceae - Sedge family		
* *Cyperus involucratus*	Umbrella flatsedge	
Schoenoplectus californicus	California bulrush	
Juncaceae - Rush family		
Juncus mexicanus	Mexican rush	
Juncus sp.	Rush	
Poaceae - Grass family		
* *Arundo donax*	Giant reed	
* *Avena barbata*	Slender wild oat	
* *Bromus diandrus*	Ripgut brome	
* *Bromus hordeaceus*	Soft brome	
* *Bromus madritensis*	Compact brome	
* *Cortaderia selloana*	Pampas grass	
* *Cynodon dactylon*	Bermuda grass	
Distichlis spicata	Salt grass	

Scientific Name	Common Name	Special Status
* *Ehrharta calycina*	Perennial veldt grass	
* *Festuca myuros*	Rattail fescue	
* *Festuca perennis*	Rye grass	
Hordeum jubatum ssp. jubatum	Foxtail barley	
* *Hordeum murinum*	Wall barley	
Melica imperfecta	Coast range onion grass	
* *Polypogon monspeliensis*	Rabbit foot beard grass	
* *Schismus barbatus*	Mediterranean schismus	
Stipa cernua	Nodding needle grass	
* *Stipa miliacea var. miliacea*	Smilo grass	
Themidaceae - Brodiaea family		
Dichelostemma capitatum	Blue dicks	
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 and elsewhere
1B. Rare or Endangered in California and elsewhere
2A. Presumed extinct in California, more common elsewhere
2B. 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
.3 – Not very endangered in California

Appendix F

Focused Surveys for Western Burrowing Owl

December 2, 2022

Matt Romero, ASLA
Senior Associate
Studio MLA
251 South Mission Road
Los Angeles, CA 90033

Subject: **Burrowing Owl Focused Survey Results in Support of the City of Riverside Gateway Project, in Riverside County, California**

Dear Mr. Romero:

This report documents the findings of a focused survey effort to determine presence or absence of burrowing owl (*Athene cunicularia*) in support of the Riverside Gateway Project (Project) proposed by the City of Riverside Parks, Recreation, and Community Services Department (PRCSD) in the City of Riverside, Riverside County, California (Figure 1). This effort was performed under the survey guidelines of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), as implemented by the City of Riverside. Portions of the Project falls within the MSHCP habitat assessment area for burrowing owl. Focused surveys were conducted by ICF International (ICF) biologists in July and August 2022.

Project Description

The Project involves a multidisciplinary effort for the planning, design, engineering, and associated community outreach and environmental compliance for California Environmental Quality Act (CEQA) review for nine identified park sites in the City, in Riverside County, California. The Santa Ana River Trail, adjacent to the Santa Ana River, is completed throughout its length in the City. After completing the 2018 update to the *Citywide Parks System Master Plan*, the PRCSD proposes to complete planning and design for improvements and enhancement to existing and proposed park areas located along the Santa Ana River and the 4.7 miles of the Santa Ana River Parkway from Fairmount Park to Martha McLean Anza Narrows Park. These park sites were initially identified as part of the planning process in development of the *Santa Ana River Parkway and Open Space Plan* completed in 2018. Development of these park sites would comply with the City's overarching goal to "put the river back into Riverside" by providing diverse recreational and educational opportunities, access to open space, and restoration of natural habitat for people and wildlife.

The entire 11-mile northern edge of the City fronts the Santa Ana River. In Riverside, the Santa Ana River is a juxtaposition of a natural and scenic riparian corridor running through an urban setting. The Santa Ana River is a vital resource in the City, and it supports several important functions for the City, including providing natural habitat that serves wildlife, recharging the groundwater basin

that supplies water to residences and businesses, and providing recreational opportunities to connect people to natural resources. There is also a need to provide no-cost and low-cost parks and recreational resources, open space access, and active transportation resources to support the disadvantaged communities identified near the project area in the City.

Conceptual improvement and engagement opportunities have been identified for each of the nine individual park sites, including, but not limited to, habitat conservation areas, woodland restoration, parking lots, an amphitheater, restroom and drinking water facilities, nature trails, active recreation and exercise stations, passive park amenities, camping, picnic areas, community garden and incubator farm, vista points, public art, interpretive and wayfinding signage, landscaping, irrigation, lighting, shade enhancements, equestrian facilities, and bicycle repair station and bike racks, among others. The nine park sites in the City are (1) Camp Evans; (2) Loring Park; (3) Carlson Park; (4) St. Francis Falls; (5) Santa Ana River Greenway; (6) Tequesquite Extension North; (7) Tequesquite Extension South; (8) Martha McLean Anza Narrows Park; and (9) Jurupa Avenue Trailhead, shown on Figure 2 (Appendix A).

The Project is a forward-looking proposal to recover, reconceive and re-engage with the Santa Ana River to deliver ecological, recreational, cultural, social, and economic value to the City's inhabitants. The Project is funded by a grant provided by the State Coastal Conservancy, a California state agency established in 1976 to protect and improve natural lands and waterways, help people get to and enjoy the outdoors, and sustain local economies along California's coast. The State Coastal Conservancy acts with others to protect, restore, and increase public access to California's coast, ocean, coastal watersheds, and the San Francisco Bay Area. Its vision is of a beautiful, restored, and accessible coast for current and future generations of Californians.

Location

The Project is along the southern side of the Santa Ana River floodplain in the City, in Riverside County, California, shown on Figure 2 (Appendix A). Portions of the Project that fall within MSHCP burrowing owl survey area include Jurupa Avenue Trailhead, Santa Ana River Greenway, Tequesquite Extension South, Tequesquite Extension North, Carlson Park and St. Francis Falls, and Camp Evans, shown on Figures 3a–3c (Appendix A).

The burrowing owl survey area is depicted within Township 2 South, Range 6 West, Sections 25 and Unsectioned areas around Mount Rubidoux in Township 2 South, Range 5 West of the Riverside West, California, U.S. Geological Survey 7.5-minute quadrangle map (USGS 2022).

Survey Area

The burrowing owl survey area includes all portions of the Project limits that fall within the MSHCP burrowing owl survey area, plus an additional 500-feet where the MSHCP burrowing owl survey area extends beyond the project limits, shown on Figures 3a–3c (Appendix A). No areas outside the MSHCP burrowing owl survey area were surveyed.

Some portions of the Project's burrowing owl survey area provided suitable conditions for burrowing owl in the form of open areas, bare ground, or low-growing vegetation and numerous

potentially suitable burrowing features. such as California ground squirrel burrows, debris piles, and piles of boulders associated with erosion-control riprap. Dominant vegetation communities within these suitable areas included nonnative grassland, disturbed, Russia thistle–five hook bassia fields, ruderal upland mustard and forbs, and California croton scrub.

Other portions of the Project's burrowing owl survey area were lacking suitable conditions for burrowing owl because these areas consisted of dense tree and/or shrub cover with little-to-no potentially suitable burrowing features. Dominant vegetation communities exhibiting poor burrowing owl conditions included riparian communities such as Arrow Weed Scrub, Southern Arroyo Willow Riparian Forest, Mulefat Scrub, Southern Riparian Woodland, Black Willow Riparian Woodland, Southern Cottonwood–Willow Riparian Forest, and non-native riparian communities dominated by Mexican fan palm (*Washingtonia robusta*), giant reed (*Arundo donax*), athel (*Tamarix aphylla*), or Tree-of-Heaven (*Ailanthus altissima*). Specifically, riparian areas associated with Camp Evans, Jurupa Avenue Trailhead, Santa Ana River Greenway, and Tequesquite Extension North.

Representative photographs of the survey area are provided in Appendix B.

Survey Methods

Surveys for burrowing owl followed the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside Environmental Programs Department 2006). Under the MSCHP, the focused survey protocol was split in two parts: (a) Focused Burrow Survey; and (b) Focused Burrowing Owl Survey. The work was conducted during the breeding season as defined under the MSCHP (March 1 to August 31). All work was conducted during weather that was conducive to observing owls outside their burrows and detecting burrowing owl sign. Surveys were not performed within 5 days following rain, during rain, high winds (i.e., >20 miles per hour), and dense fog, nor when temperatures exceeded 90 degrees Fahrenheit. For Part B, surveys were conducted in the morning between 1 hour before sunrise and 2 hours after sunrise.

The entire burrowing owl survey area consisted of approximately 492 acres. As a result, the survey area was separated into three manageable survey units, referred to as Area A, Area B, and Area C, shown in Figures 3a–3c (Appendix A). Burrowing owl survey Area A consisted of approximately 141 acres, Area B approximately 197 acres, and Area C approximately 153 acres.

Part A. Focused Burrow Survey

A systematic survey for burrows, including burrowing owl sign, was conducted by walking through potentially suitable habitat over the entire survey area (i.e., the project site and 500-foot buffer). Transects were walked to allow 100-percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters (approximately 100 feet) and was reduced to account for differences in terrain, vegetation density, and ground-surface visibility. The locations of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped, including GPS coordinates, on the ESRI Field Maps mobile application. Natural or human-made structures and debris piles that could potentially support burrowing owls also were noted and mapped.

Part B. Focused Burrowing Owl Surveys

The focused surveys consisted of site visits on four separate days. The first was conducted concurrently with Part A. All potentially suitable habitat, as well as mapped burrows and known locations of owl sign and perch locations (if any), were scanned using binoculars. Part B activities occurred prior to any walking of transects associated with Part A. Once this had been completed, a survey for owls and owl sign was conducted by walking through suitable habitat within the entire project limits and all areas within 150 meters (approximately 500 feet) of the project limits. These pedestrian surveys followed transects spaced to allow 100-percent visual coverage of the ground surface and spaced no more than 30 meters (approximately 100 feet) apart. For potentially suitable habitat within the 150-meter buffer for which legal access had not been acquired, binoculars were used to determine if owls were present.

Results

The findings of the Part A focused burrow survey revealed the Project's burrowing owl survey areas provide suitable conditions for burrowing owl. All observed California ground squirrel burrows, potential perches, debris piles, and suitable rip-rap located within the survey areas were mapped and thoroughly inspected (where access to those features was obtained) for burrowing owl sign. Figures 4a to 4c (Appendix A) depict survey boundaries and locations of observed potential burrowing features. Table 1 provides the focused burrow survey dates, personnel, and weather conditions. Appendix C provides a list of wildlife species detected during the surveys.

Table 1. Focused Burrow Survey Dates, Personnel, and Weather Conditions

Survey Area	Visit #	Date	Time	Personnel	Conditions
A	1	7/5/22	0830–1430	Phil Richard Cole Sutter Vincent Baker Brian Cropper	75–86°F, winds 1–4 mph, clear, good visibility
B	1	7/6/22	0830–1345	Phil Richards Vincent Baker Garrett Moss Brian Cropper	76–85°F, winds 1–4 mph, clear, good visibility
C	1	7/14/22	0830–1300	Phil Richards Vincent Baker Garrett Moss	72–88°F, winds 1–6 mph, clear, good visibility

°F = degrees Fahrenheit; mph = miles per hour.

The results of the Part B focused burrowing owl survey yielded no burrowing owls or potential burrowing owl sign (e.g., white wash, feathers, pellets, or tracks) within the Project's burrowing owl survey areas. Table 2 provides the focused burrowing owl survey dates, personnel, and weather conditions.

Table 2. Focused Burrowing Owl Survey Dates, Personnel, and Weather Conditions

Survey Area	Visit #	Date	Time	Personnel	Conditions
A	1	7/5/22	0535–0740	Phil Richard Cole Sutter Vincent Baker	61–70°F, winds 1–4 mph, clear, good visibility
A	2	7/18/22	0540–0750	Phil Richards Cole Sutter	73–74°F, winds 1–2 mph, partly cloudy, good visibility
A	3	7/28/22	0545–0800	Phil Richards Vincent Baker	66–68°F, winds 0–3 mph, partly cloudy, good visibility
A	4	8/09/22	0555–0800	Phil Richards James Hickman	74–75°F, winds 0–2 mph, partly cloudy, good visibility
B	1	7/6/22	0540–0745	Phil Richards Vincent Baker	63–71°F, winds 1–3 mph, clear, good visibility
B	2	7/19/22	0530–0750	Phil Richards Vincent Baker	70–76°F, winds 0–2 mph, clear, good visibility
B	3	8/2/22	0550–0800	Phil Richards James Hickman	71–73°F, winds 0–3 mph, clear, good visibility
B	4	8/11/22	0615–0805	Phil Richards Vincent Baker	69–76°F, winds 0–3 mph, clear, good visibility
C	1	7/14/22	0550–0750	Phil Richards Vincent Baker	65–68°F, winds 1–4 mph, clear, good visibility
C	2	7/26/22	0530–0755	Phil Richards Cole Sutter	66–68°F, winds 0–3 mph, clear, good visibility
C	3	8/4/22	0550–0800	Phil Richards James Hickman	72–74°F, winds 0–3 mph, clear, good visibility
C	4	8/23/22	0615–0810	Phil Richards Vincent Baker	69–71°F, winds 0–3 mph, clear, good visibility

°F = degrees Fahrenheit; mph = miles per hour.

If you have questions or need clarification regarding this report, please contact the lead biologist at (949) 333-6643 or Phillip.Richards@icfi.com.

Sincerely,

Phillip Richards
ICF Biologist

Enclosed:
Appendix A: Figures
Appendix B: Site Photographs
Appendix C: Wildlife Species Detected
Appendix D: Certification Statement

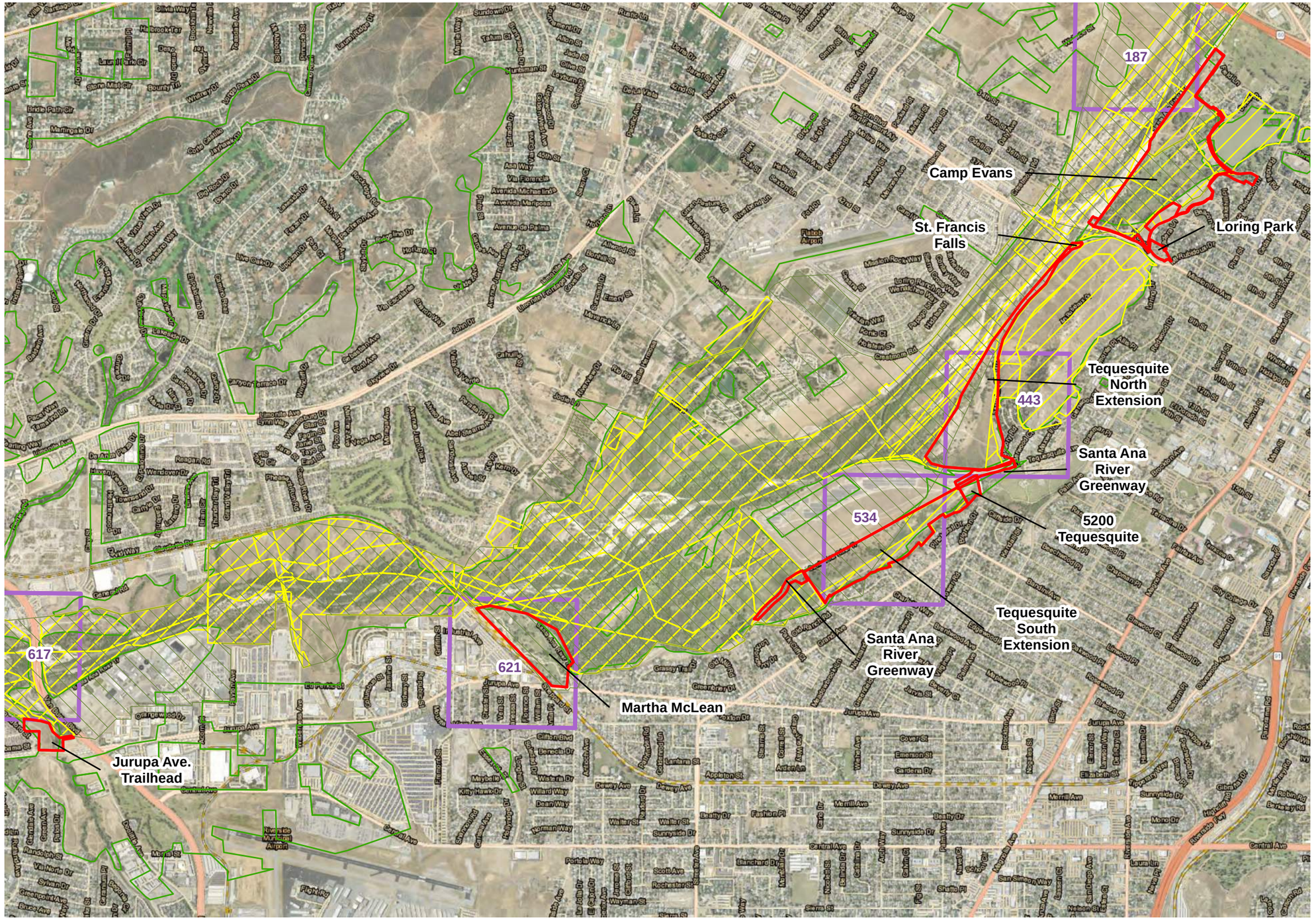
Literature Cited

County of Riverside Environmental Programs Department. 2006. *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area, March 29, 2006*.

U.S. Geological Survey (USGS). 2022. Geographic Names Information System. Available: https://www.usgs.gov/the-national-map-data-delivery. Accessed: November 9, 2022.

Appendix A

Figures

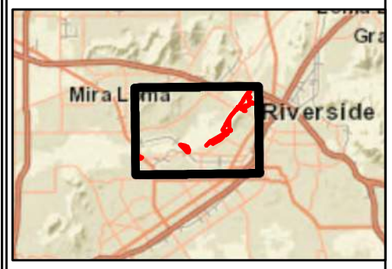


Legend

- Riverside Gateway Project Limits

WRMSHCP Units

- Criteria Area Cells
- Riverside County Core Linkage
- Public/Quasi-public Conserved Lands



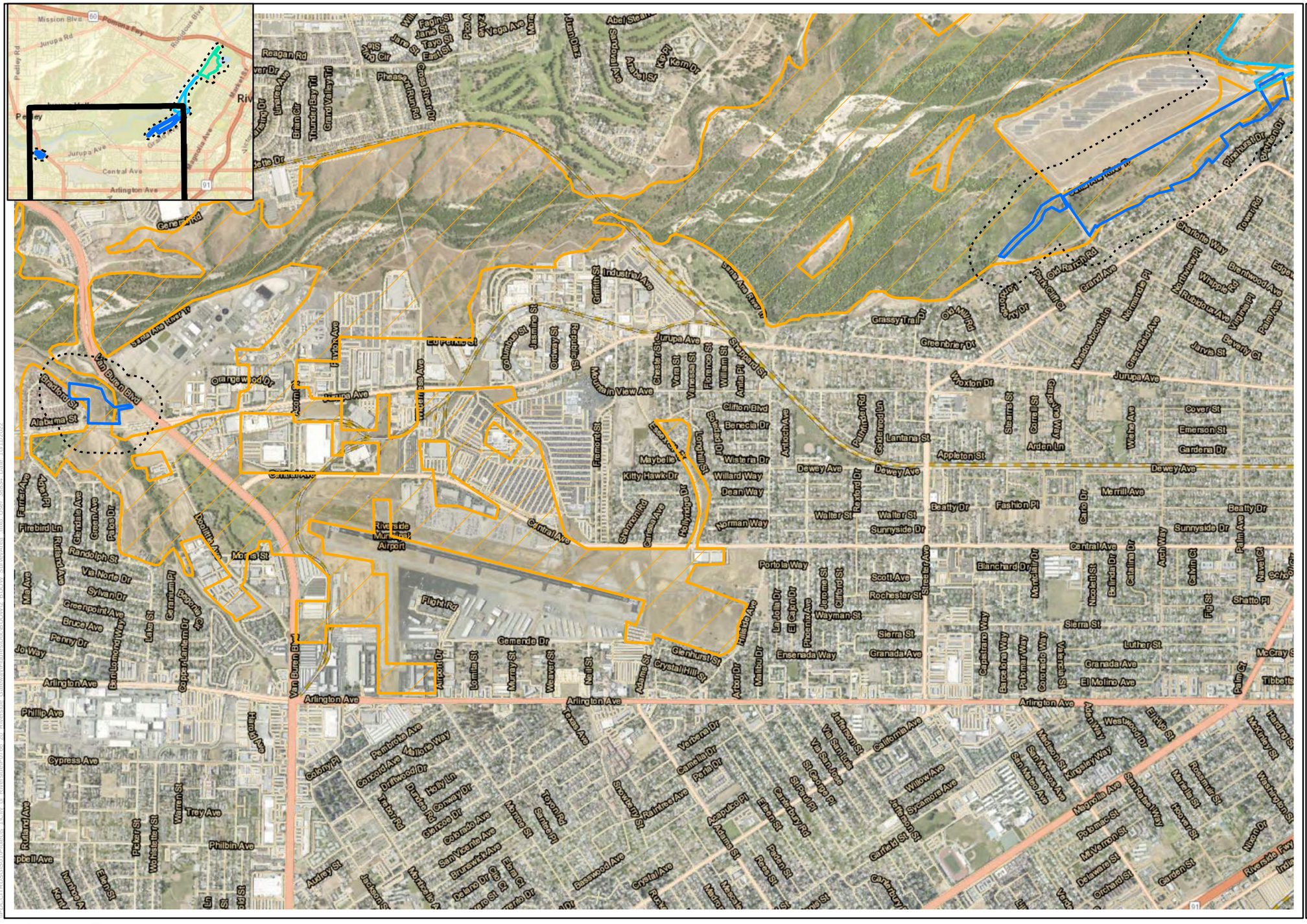
Source: ICF, USFWS, USGS; CNDDB 2019

0 1,050 2,100 Feet

1:26,000

N

Figure 1
Project Overview
Riverside Gateway



Legend

- Burrowing Owl Survey Area A
- Burrowing Owl Survey Area B
- Survey Area 500-foot Buffers

WRMSHCP Units

- Burrowing Owl Survey Area

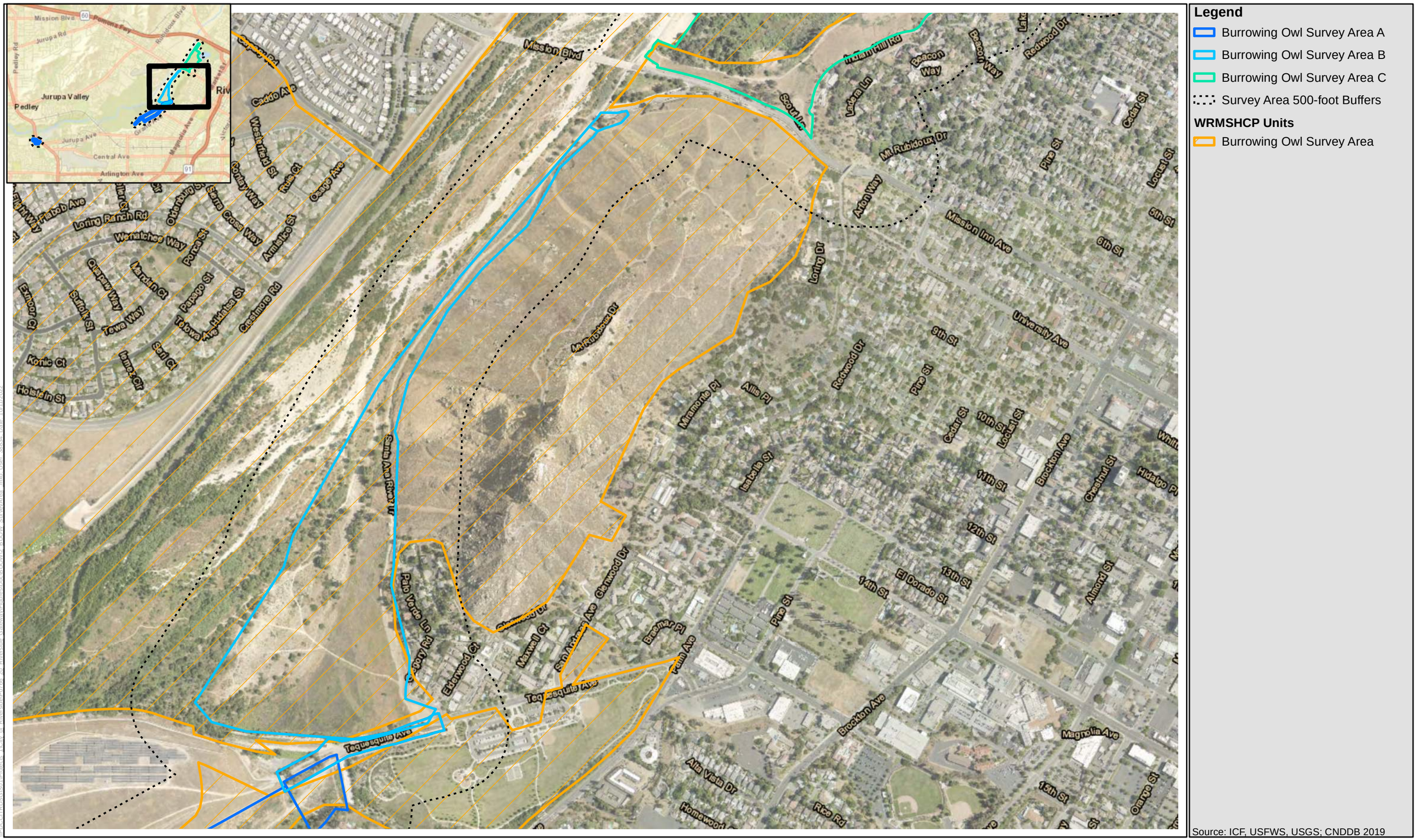
Source: ICF, USFWS, USGS; CNDDB 2019

0 800 1,600 Feet

1:20,000

N

Figure 2a
Burrowing Owl 2022 Survey Area A
Riverside Gateway



Legend

- Burrowing Owl Survey Area A
- Burrowing Owl Survey Area B
- Burrowing Owl Survey Area C
- Survey Area 500-foot Buffers

WRMSHCP Units

- Burrowing Owl Survey Area

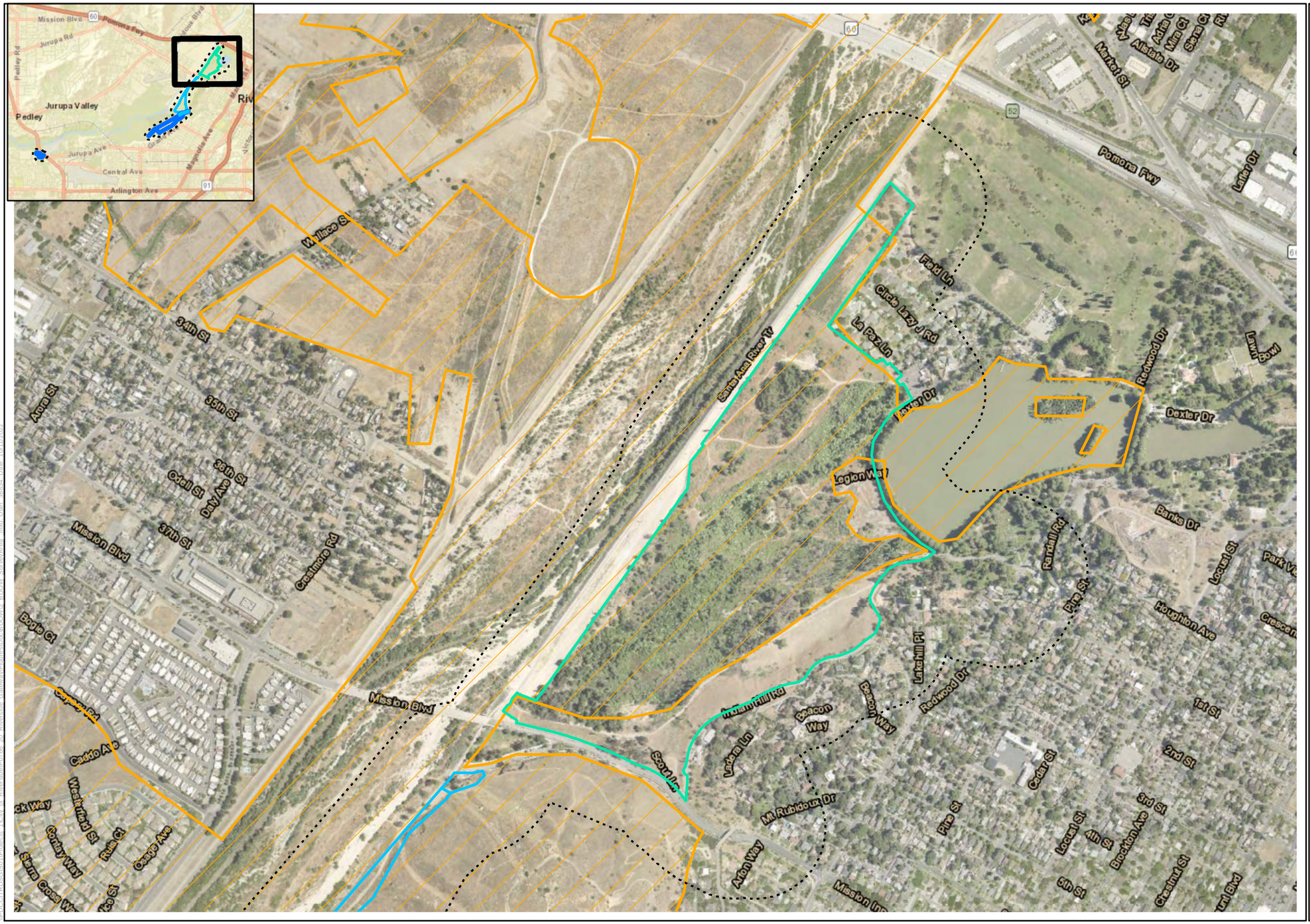
Source: ICF, USFWS, USGS; CNDDB 2019

0 350 700 Feet

1:8,400

N

Figure 2b
Burrowing Owl 2022 Survey Area B
Riverside Gateway

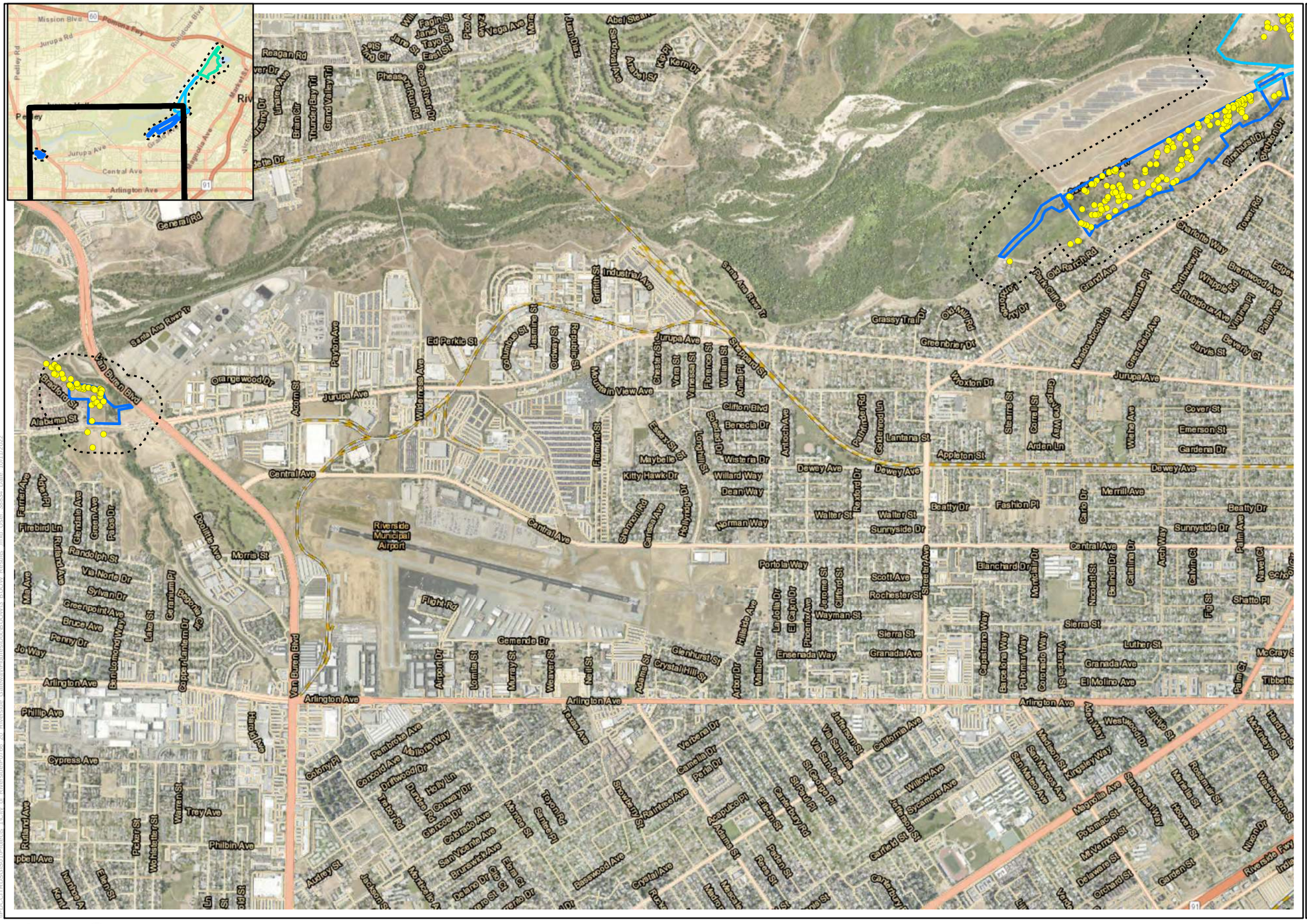


Source: ICF, USFWS, USGS; CNDDB 2019

0 350 700 Feet

1:8,400

Figure 2c
Burrowing Owl 2022 Survey Area C
Riverside Gateway



Legend

- Potential BUOW Features
- Burrowing Owl Survey Area A
- Burrowing Owl Survey Area B
- Survey Area 500-foot Buffers

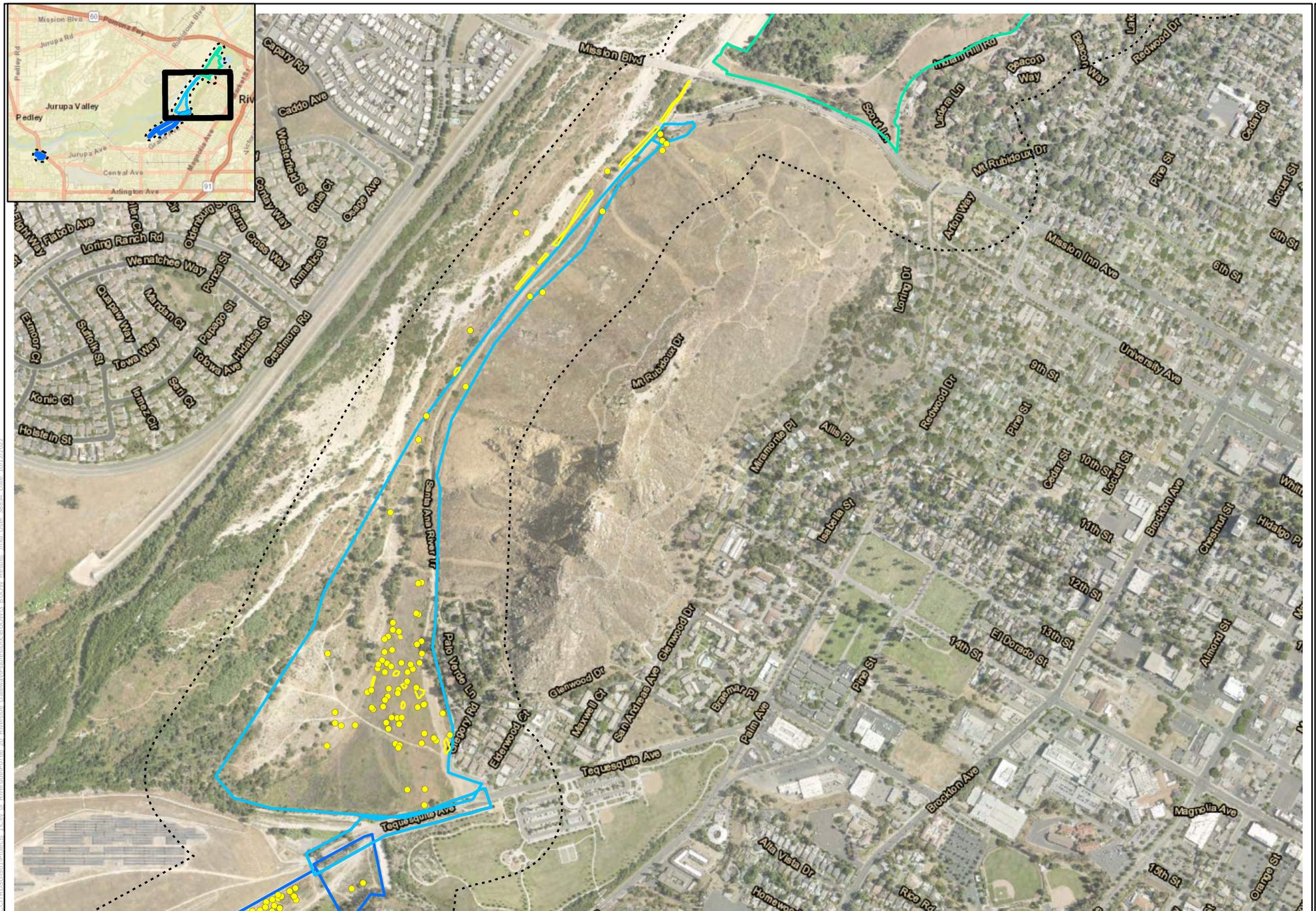
Source: ICF, USFWS, USGS; CNDDB 2019

0 800 1,600 Feet

1:20,000

N

Figure 3a
Burrowing Owl 2022 Survey Results - Area A
Riverside Gateway



Legend

- Potential BUOW Features
- Potential BUOW Features
- Burrowing Owl Survey Area A
- Burrowing Owl Survey Area B
- Burrowing Owl Survey Area C
- Survey Area 500-foot Buffers

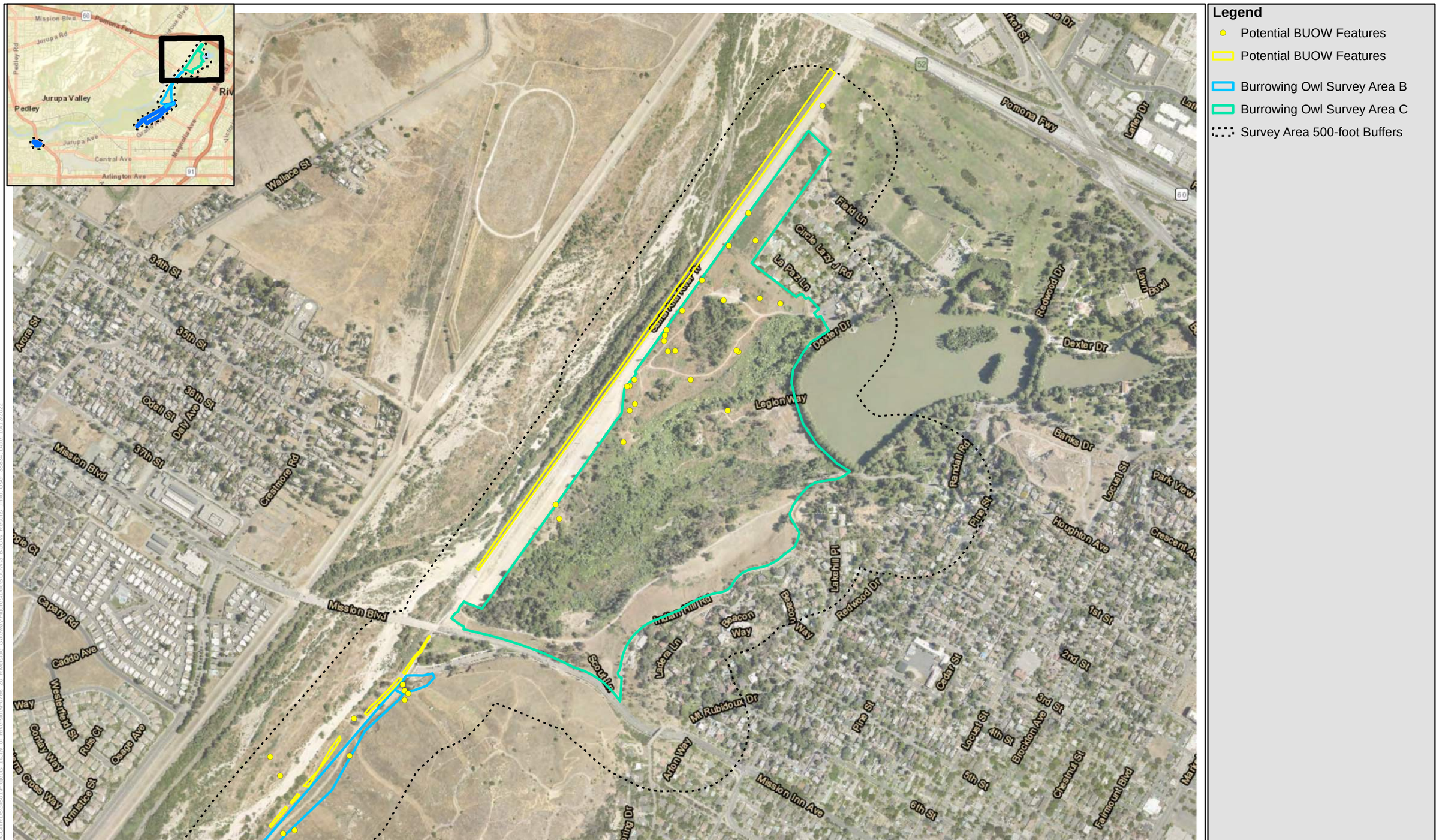
Source: ICF, USFWS, USGS; CNDDB 2019

0 350 700 Feet

1:8,400

N

Figure 3b
Burrowing Owl 2022 Survey Results - Area B
Riverside Gateway



Legend

- Potential BUOW Features
- Potential BUOW Features
- Burrowing Owl Survey Area B
- Burrowing Owl Survey Area C
- Survey Area 500-foot Buffers

Source: ICF, USFWS, USGS; CNDDB 2019

0 350 700 Feet

1:8,400

Figure 3c
Burrowing Owl 2022 Survey Results - Area C
Riverside Gateway

Appendix B

Site Photographs

Photograph: 1

Photo Date: July 5, 2022

Location: Area A – Jurupa Ave. Trailhead, south side of Jurupa Ave.

Direction: View facing southeast

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 2

Photo Date: July 5, 2022

Location: Area A – Jurupa Ave. Trailhead, north side of Jurupa Ave.

Direction: View facing north

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 3

Photo Date: October 20, 2020

Location: Area A – Jurupa Ave. Trailhead, north side of Jurupa Ave.

Direction: View facing northwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 4

Photo Date: July 5, 2022

Location: Area A – Santa Ana River Greenway (south)

Direction: View facing southwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 5

Photo Date: July 5, 2022

Location: Area A – west end of Tequesquite South Extension.

Direction: View facing north

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 6

Photo Date: July 5, 2022

Location: Area A – center part of Tequesquite South Extension.

Direction: View facing southwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 7

Photo Date: July 5, 2022

Location: Area A – northeast part of Tequesquite South Extension

Direction: View facing southwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 8

Photo Date: July 5, 2022

Location: Area A – east end of Tequesquite South Extension

Direction: View facing north

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 9

Photo Date: July 6, 2022

Location: Area B – southwest corner of Tequesquite North Extension

Direction: View facing northwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 10

Photo Date: July 6, 2022

Location: Area B – south end of Tequesquite North Extension

Direction: View facing west

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 11

Photo Date: July 6, 2022

Location: Area B – center part of Tequesquite North Extension

Direction: View facing northeast

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 12

Photo Date: July 6, 2022

Location: Area B – north end of Tequesquite North Extension

Direction: View facing southeast

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 13

Photo Date: July 14, 2022

Location: Area C – south end of Camp Evans along existing paved bike trail

Direction: View facing northeast

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 14

Photo Date: July 14, 2022

Location: Area C – center part of Camp Evans along existing paved bike trail

Direction: View facing southwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 15

Photo Date: July 14, 2022

Location: Area C – south end of Camp Evans along existing paved bike trail

Direction: View facing northwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 16

Photo Date: July 14, 2022

Location: Area C – north end of Camp Evans

Direction: View facing southwest

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 17

Photo Date: July 14, 2022

Location: Area C – center part of Camp Evans

Direction: View facing northeast

Comment: Photo depicts existing conditions at the time of the survey

Photograph: 18

Photo Date: July 14, 2022

Location: Area C – center part of Camp Evans

Direction: View facing southwest

Comment: Photo depicts existing conditions at the time of the survey

Appendix C

Wildlife Species Detected

Appendix B. Wildlife Species Detected

Scientific Name	Common Name	Special Status
VERTEBRATES		
Reptiles		
Phrynosomatidae - Spiny Lizard Family		
Sceloporus occidentalis	Western Fence Lizard	
Birds		
Anatidae - Swan, Goose, and Duck Family		
Anas platyrhynchos	Mallard	
Ardeidae - Heron Family		
Ardea herodias	Great Blue Heron	
Ardea alba	Great Egret	
Egretta thula	Snowy Egret	
Threskiornithidae - Ibis Family		
Plegadis chihi	White-faced Ibis	
Cathartidae - New World Vulture Family		
Cathartes aura	Turkey Vulture	
Accipitridae - Hawk Family		
Accipiter cooperii	Cooper's Hawk	
Buteo lineatus	Red-shouldered Hawk	
Buteo jamaicensis	Red-tailed Hawk	
Charadriidae - Plover Family		
Charadrius vociferus	Killdeer	
Columbidae - Pigeon and Dove Family		
Patagioenas fasciata	Band-tailed Pigeon	
**Streptopelia decaocto*	Eurasian Collared-Dove	
Zenaida macroura	Mourning Dove	
Columbina passerina	Common Ground-Dove	
Cuculidae - Cuckoo and Roadrunner Family		
Geococcyx californianus	Greater Roadrunner	
Strigidae - Typical Owl Family		
Bubo virginianus	Great Horned Owl	
Apodidae - Swift Family		
Aeronautes saxatalis	White-throated Swift	
Trochilidae - Hummingbird Family		
Calypte anna	Anna's Hummingbird	
Calypte costae	Costa's Hummingbird	

Scientific Name	Common Name	Special Status
Selasphorus sasin	Allen's Hummingbird	
Picidae - Woodpecker Family		
Melanerpes formicivorus	Acorn Woodpecker	
Picoides nuttallii	Nuttall's Woodpecker	
Picoides pubescens	Downy Woodpecker	
Colaptes chrysoides	Northern Flicker	
Falconidae - Falcon Family		
Falco sparverius	American Kestrel	
Tyrannidae - Tyrant Flycatcher Family		
Sayornis nigricans	Black Phoebe	
Sayornis saya	Say's Phoebe	
Myiarchus cinerascens	Ash-throated Flycatcher	
Tyrannus vociferans	Cassin's Kingbird	
Tyrannus verticalis	Western Kingbird	
Vireonidae - Vireo Family		
Vireo bellii pusillus	Least Bell's Vireo	FE, SE
Vireo gilvus	Warbling Vireo	
Corvidae - Jay and Crow Family		
Aphelocoma californica	California Scrub-Jay	
Corvus brachyrhynchos	American Crow	
Corvus corax	Common Raven	
Alaudidae - Lark Family		
Eremophila alpestris	Horned Lark	
Hirundinidae - Swallow Family		
Stelgidopteryx serripennis	Northern Rough-winged Swallow	
Petrochelidon pyrrhonota	Cliff Swallow	
Hirundo rustica	Barn Swallow	
Aegithalidae - Bushtit Family		
Psaltriparus minimus	Bushtit	
Troglodytidae - Wren Family		
Salpinctes obsoletus	Rock Wren	
Catherpes mexicanus	Canyon Wren	
Troglodytes aedon	House Wren	
Thryomanes bewickii	Bewick's Wren	
Regulidae - Kinglet Family		
Regulus calendula	Ruby-crowned Kinglet	

Scientific Name	Common Name	Special Status
Turdidae - Thrush Family		
Sialia mexicana	Western Bluebird	
Mimidae - Thrasher Family		
Toxostoma redivivum	California Thrasher	
Mimus polyglottos	Northern Mockingbird	
Sturnidae - Starling Family		
**Sturnus vulgaris*	European Starling	
Motacillidae - Pipit and Wagtail Family		
Anthus rufescens	American Pipit	
Ptilogonatidae - Silky-flycatcher Family		
Phainopepla nitens	Phainopepla	
Parulidae - Wood-Warbler Family		
Geothlypis trichas	Common Yellowthroat	
Setophaga petechia	Yellow Warbler	CSC
Setophaga coronata	Yellow-rumped Warbler	
Setophaga townsendi	Townsend's Warbler	
Cardellina pusilla	Wilson's Warbler	
Icteria virens	Yellow-breasted Chat	CSC
Emberizidae - Sparrow Family		
Pipilo maculatus	Spotted Towhee	
Melozone crissalis	California Towhee	
Melospiza melodia	Song Sparrow	
Melospiza lincolnii	Lincoln's Sparrow	
Junco hyemalis	Dark-eyed Junco	
Cardinalidae - Cardinals, Grosbeaks and Allies Family		
Pheucticus melanocephalus	Black-headed Grosbeak	
Passerina caerulea	Blue Grosbeak	
Passerina amoena	Lazuli Bunting	
Icteridae - Blackbird, Cowbird and Oriole Family		
Sturnella neglecta	Western Meadowlark	
**Molothrus ater*	Brown-headed Cowbird	
Icterus cucullatus	Hooded Oriole	
Icterus bullockii	Bullock’s Oriole	
Fringillidae - Finch Family		
Haemorhous mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	

Scientific Name	Common Name	Special Status
Carduelis tristis	American Goldfinch	
Mammals		
Leporidae - Hare and Rabbit Family		
Sylvilagus audubonii	Desert Cottontail	
Sciuridae - Squirrel Family		
Ostospermophilus beecheyi	California Ground Squirrel	
Canidae - Canid Family		
Canis latrans	Coyote	
Felidae - Cat Family		
Lynx rufus	Bobcat	

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

Appendix D

Certification Statement

I certify that the information contained in this survey report and attached exhibits fully and accurately represents my work. Should you have any questions regarding the methodology or findings in this report, please do not hesitate to contact Phillip C. Richards by email (Phillip.Richards@icfi.com) or call (949) 333-6643.

Sincerely,

Phillip C. Richards
Biologist
ICF International

Appendix G

Surveys for Southwestern Willow Flycatcher

December 2, 2022

Matt Romero
Senior Associate
Studio MLA
251 South Mission Road
Los Angeles, CA 90033

Subject: **Protocol Southwestern Willow Flycatcher and Least Bell's Vireo Survey Results in Support of the City of Riverside Gateway Project, in Riverside County, California**

Dear Mr. Romero:

This report documents the findings of protocol southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*) surveys in support of the Riverside Gateway Project (Project) proposed by the City of Riverside Parks, Recreation, and Community Services Department (PRCSD) in the City of Riverside (City), Riverside County, California (Appendix A, Figure 1). Based on the availability of suitable habitat and lack of prior focused surveys, only a portion of the overall project area received focused surveys: the Jurupa Avenue Trailhead parcel received protocol surveys for southwestern willow flycatcher; and the Tequesquite Extension South parcel received protocol surveys for least Bell's vireo. ICF biologists performed these surveys between April and July 2022.

Project Description

The Project involves a multidisciplinary effort for the planning, design, engineering, and associated community outreach and environmental compliance for California Environmental Quality Act (CEQA) review for nine identified park sites in the City, in Riverside County, California. The Santa Ana River Trail, adjacent to the Santa Ana River, is completed throughout its length in the City. After completing the 2018 update to the *Citywide Parks System Master Plan*, the PRCSD proposes to complete planning and design for improvements and enhancement to existing and proposed park areas located along the Santa Ana River and the 4.7 miles of the Santa Ana River Parkway from Fairmount Park to Martha McLean Anza Narrows Park. These park sites were initially identified as part of the planning process in development of the *Santa Ana River Parkway and Open Space Plan* completed in 2018. Development of these park sites would comply with the City's overarching goal to "put the river back into Riverside" by providing diverse recreational and educational opportunities, access to open space, and restoration of natural habitat for people and wildlife.

The entire 11-mile northern edge of the City fronts the Santa Ana River. In Riverside, the Santa Ana River is a juxtaposition of a natural and scenic riparian corridor running through an urban setting.

The Santa Ana River is a vital resource in the City, and it supports several important functions for the City, including providing natural habitat that serves wildlife, recharging the groundwater basin that supplies water to residences and businesses, and providing recreational opportunities to connect people to natural resources. There is also a need to provide no-cost and low-cost parks and recreational resources, open space access, and active transportation resources to support the disadvantaged communities identified near the project area in the City.

Conceptual improvement and engagement opportunities have been identified for each of the nine individual park sites, including, but not limited to, habitat conservation areas, woodland restoration, parking lots, an amphitheater, restroom and drinking water facilities, nature trails, active recreation and exercise stations, passive park amenities, camping, picnic areas, community garden and incubator farm, vista points, public art, interpretive and wayfinding signage, landscaping, irrigation, lighting, shade enhancements, equestrian facilities, and bicycle repair station and bike racks, among others. The nine park sites in the City are (1) Camp Evans; (2) Loring Park; (3) Carlson Park; (4) St. Francis Falls; (5) Santa Ana River Greenway; (6) Tequesquite Extension North; (7) Tequesquite Extension South; (8) Martha McLean Anza Narrows Park; and (9) Jurupa Avenue Trailhead, shown on Figure 2 (Appendix A).

The Project is a forward-looking proposal to recover, reconceive and re-engage with the Santa Ana River to deliver ecological, recreational, cultural, social, and economic value to the City's inhabitants. The Project is funded by a grant provided by the State Coastal Conservancy, a California state agency established in 1976 to protect and improve natural lands and waterways, help people get to and enjoy the outdoors, and sustain local economies along California's coast. The State Coastal Conservancy acts with others to protect, restore, and increase public access to California's coast, ocean, coastal watersheds, and the San Francisco Bay Area. Its vision is of a beautiful, restored, and accessible coast for current and future generations of Californians.

Location

The Project is along the southern side of the Santa Ana River floodplain in the City, in Riverside County, California, as shown on Figure 2 (Appendix A). The surveys were conducted where suitable riparian bird habitat was identified in the project area and where no recent riparian bird surveys had been performed. As a result, the Jurupa Avenue Trailhead parcel received protocol surveys for southwestern willow flycatcher. and the Tequesquite Extension South parcel received protocol surveys for least Bell's vireo.

The Jurupa Avenue Trailhead southwestern willow flycatcher survey area is on the northwestern corner of Jurupa Avenue and Van Buren Boulevard, as depicted within Township 2 South, Range 5 West, Section 1 of the Riverside West, California, U.S. Geological Survey 7.5-minute quadrangle map (USGS 2022), shown on Figure 3a (Appendix A).

The Tequesquite Extension South least Bell's vireo survey area is generally between Rubidoux Avenue and Tequesquite Avenue, west of Ryan Bonaminio Park, as depicted within Township 2 South, Range 5 West, Section 33 of the Riverside West, California, U.S. Geological Survey 7.5-minute quadrangle map (USGS 2022), shown on Figure 3b (Appendix A).

Survey Area

A significant area within and adjacent to the project limits is annually surveyed by the Santa Ana Watershed Association (SAWA 2021) for southwestern willow flycatcher and least Bell's vireo[1]. As a result, most potentially suitable riparian habitat for these species has been adequately surveyed; however, based on a review of the SAWA data and existing conditions within the project limits, the riparian habitat within and adjacent to the Jurupa Avenue Trailhead parcel was determined to be adequately surveyed for least Bell's vireo, but not for southwestern willow flycatcher. Similarly, a review of the SAWA data and existing conditions within the project limits, the riparian habitat within and adjacent to the Tequesquite Extension South parcel was determined not to have been adequately surveyed for least Bell's vireo (and did not provide suitable southwestern willow flycatcher habitat).

The survey area for southwestern willow flycatcher includes all potentially suitable habitat within the Jurupa Avenue Trailhead parcel, plus any additional habitat within 500 feet, shown on Figure 3a (Appendix A). The riparian habitat within this survey area consists of mostly Southern Riparian Forest, but also included Mulefat Scrub, Disturbed Riparian (Arundo dominated) , and Tamarisk Scrub. The riparian communities within this survey area are highly disturbed and dominated by Goodding's willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*). Co-dominant nonnative trees, such as Shamel ash (*Fraxinus uhdai*), mulberry (*Morus alba*), and Mexican fan palm (*Washingtonia robusta*), also were present. The shrub layer is intermittent to continuous and includes species such as mugwort (*Artemisia douglasiana*), mulefat (*Baccharis salicifolia*), sandbar willow (*Salix exigua*), and poison oak (*Toxicodendron diversilobum*), as well as nonnative species, such as edible fig (*Ficus carica*) and tobacco tree (*Nicotiana glauca*). The herbaceous understory is composed primarily of ragweed (*Ambrosia psilostachya*), yerba mansa (*Anemopsis californica*), stinging nettle (*Urtica dioica*), and nonnative grasses and mustards.

The survey area for least Bell's vireo includes all potentially suitable habitat within the Tequesquite Extension South parcel, plus any additional habitat within 500 feet, shown on Figure 3b (Appendix A). The riparian habitat within this survey area consists of a mosaic of vegetation communities, including Arrow Weed Scrub dominated by arrow weed (*Pluchea sericea*), Mulefat Scrub dominated by mulefat, Southern Arroyo Willow Riparian Forest dominated by arroyo willow with associated species, such as sandbar willow, mulefat, red willow, and elderberry (*Sambucus nigra*), Southern Coast Live Oak Riparian Forest dominated by coast live oak (*Quercus agrifolia*), Southern Cottonwood–Willow Riparian Forest dominated or co-dominated by Fremont cottonwood (*Populus fremontii*), Southern Riparian Woodland dominated by Goodding's willow, Wild Grape Shrubland dominated by wild grape (*Vitus girdiana*), and Non-native Riparian dominated by Mexican fan palm and Tree-of-Heaven (*Ailanthus altissima*).

Representative photographs of the survey area are provided in Appendix B.

[1] These annual reports are available on the SAWA website at Santa Ana Watershed Association Reports and Studies (sawatershed.org).

Survey Methods

Southwestern Willow Flycatcher

Surveys for the southwestern willow flycatcher followed the protocol outlined by Sogge et al. (2010). The 2010 protocol recommends five surveys during three survey periods, with two surveys occurring within each of the last two survey periods. These three survey periods are Period 1: May 15–31, Period 2: June 1–24, and Period 3: June 25–July 17.

Surveys were conducted within all areas of suitable habitat using a single transect along the easterly side of the survey area. Southwestern willow flycatcher vocalizations were played at approximately 100-foot intervals along each transect using an MP3 player and portable speaker system. The vocalization was played following an initial approximate 1-minute period of listening. The period of listening, followed by audio playback, was repeated with another period of listening at the end, before moving to the next 100-foot interval. The locations of willow flycatchers and any other sensitive species detections were recorded using a handheld GPS unit capable of 3- to 10-foot accuracy. Survey data were recorded in the field and copied onto Willow Flycatcher Survey and Detection Forms (Appendix C).

Least Bell's Vireo

Surveys for least Bell's vireo followed the protocol outlined in USFWS 2001. USFWS protocol for least Bell's vireo surveys specifies eight surveys spaced at least 10 days apart between April 10 and July 31 (USFWS 2001). All areas of suitable least Bell's vireo habitat within the survey area were traversed on foot, with frequent stops to look and listen for least Bell's vireos.

Results

Surveys were performed by ICF biologist Ben Smith, who is authorized to conduct protocol surveys for southwestern willow flycatcher under Federal Recovery Permit TE-67390A-2 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding. Southwestern willow flycatchers were not detected during any of the surveys. Figure 4a (Appendix A) depicts survey boundaries and locations where least Bell's vireo were incidentally detected during the southwestern willow flycatcher surveys at the Jurupa Avenue Trailhead parcel. Table 1 summarizes the dates, times, personnel, and weather conditions for each survey. Completed survey forms are included in Appendix C. Southwestern willow flycatcher surveys one through five were each conducted in one day.

Table 1. Southwestern Willow Flycatcher Survey Dates, Personnel, and Weather Conditions

Visit #	Date	Time	Personnel	Conditions
1	05/23/22	0630–0740	Ben Smith Cole Sutter	54–57°F, winds 1–3 mph, overcast, good visibility
2	06/06/22	0650–0900	Ben Smith	60–68°F, winds 1–3 mph, clear, good visibility
3	06/20/22	0620–0745	Ben Smith Cole Sutter	61–69°F, winds 1–3 mph, clear, good visibility
4	07/01/22	0620–0745	Ben Smith Cole Sutter	66–70°F, winds 1–3 mph, clear, good visibility
5	07/12/22	0620–0730	Ben Smith Cole Sutter	61–63°F, winds 1–3 mph, clear/hazy, good visibility

°F = degrees Fahrenheit; mph = miles per hour.

Within the Tequesquite Extension South parcel, two least Bell's vireo territories were confirmed and located along the southeastern and northwestern corners of the survey area (Figure 4b, Appendix A). Table 2 summarizes the dates, times, personnel, and weather conditions for each survey.

Table 2. Least Bell's Vireo Survey Dates, Personnel, and Weather Conditions

Visit #	Date	Time	Personnel	Conditions
1	04/18/22	0715–1030	Phil Richard Cole Sutter	54–67°F, winds 1–5 mph, clear, good visibility
2	05/02/22	0700–1050	Phil Richards Cole Sutter	59–66°F, winds 2–6 mph, partly cloudy, good visibility
3	05/12/22	0700–1015	Phil Richards Cole Sutter	50–73°F, winds 1–5 mph, clear, good visibility
4	05/23/22	0755–1010	Ben Smith Cole Sutter	59–62°F, winds 1–3 mph, overcast–clear, good visibility
5	06/16/22	0700–1025	Phil Richards Cole Sutter	62–78°F, winds 1–4 mph, clear, good visibility
6	06/27/22	0700–1040	Phil Richards	72–93°F, winds 1–3 mph, clear, good visibility
7	07/12/22	0755–1050	Ben Smith Cole Sutter	65–77°F, winds 1–5 mph, clear, good visibility
8	07/22/22	0705–1035	Phil Richards Cole Sutter	67–80°F, winds 1–5 mph, clear, good visibility

°F = degrees Fahrenheit; mph = miles per hour.

The southeastern territory was located between the skateboard park and Ryan Bonaminio Park. A nest associated with this pair was discovered in wild grape growing over a chain-link fence on the southern end of a stand of willows. Two least Bell's vireo fledglings were observed being fed by both adults on several occasions.

The northwestern territory was located on both sides of the existing Santa Ana River Trail, just east of Rubidoux Avenue. A pair of least Bell's vireos was confirmed at this territory, but successful nesting was not confirmed.

In addition, toward the later dates of the survey effort, several dispersing juvenile least Bell's vireos were detected within the survey area. The location of detected dispersing juveniles is shown on Figure 4b (Appendix A).

Wildlife species included on the CDFW special animals list (CDFW 2022) were incidentally observed within the survey areas. Adult and juvenile yellow warblers (*Setophaga petechia)*, a CDFW Species of Special Concern (SSC), were observed throughout both survey areas. White-faced ibises (*Plegadis chihi*), an SSC, were seen flying over the Tequesquite Extension South parcel survey area. Yellow-breasted chats (*Icteria virens*), an SSC, were observed along the western end of the Tequesquite Extension South parcel survey area. A separate list of wildlife species observed during visits to the Jurupa Avenue Trailhead parcel and Tequesquite Extension South parcel is included as Appendix D.

If you have questions or need clarifications regarding this report, please contact us at Ben.Smith@icf.com or Phillip.Richards@icf.com.

Sincerely,

Ben Smith
ICF Biologist

Phil Richards
ICF Biologist

Enclosed:
Appendix A: Figures
Appendix B: Site Photographs
Appendix C: Completed Willow Flycatcher Survey and Detection Forms
Appendix D: Wildlife Species Detected
Appendix E: Certification Statements

Literature Cited

California Department of Fish and Wildlife (CDFW). 2022. Special Animals List. Available: https://www.wildlife.ca.gov/Conservation/SSC. Accessed: November 9, 2022.

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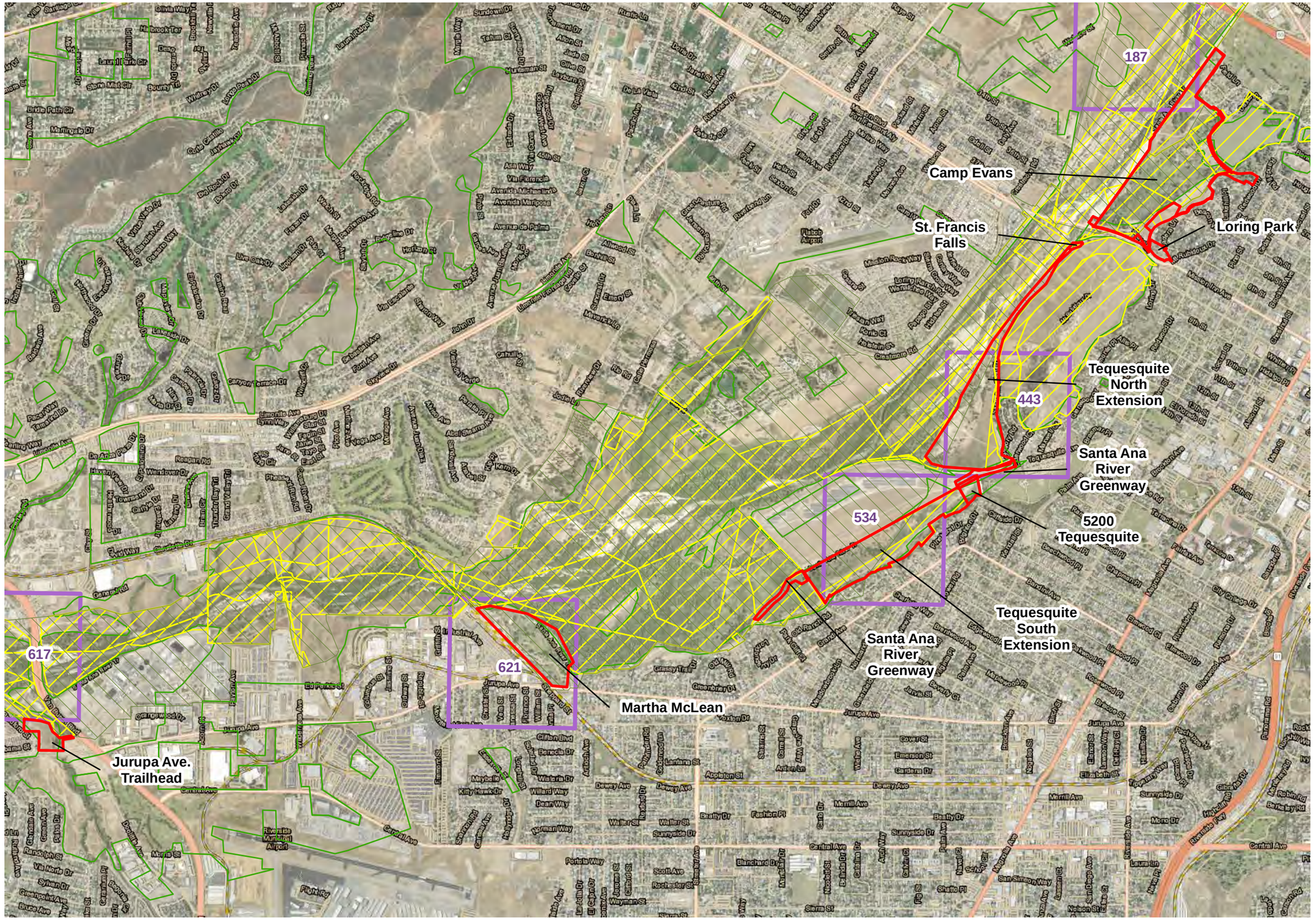
Sogge, M. K., D. Ahlers, and S. J. Sferra. 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*: U.S. Geological Survey Techniques and Methods 2A-10, 38 pp.

U.S. Fish and Wildlife Service (USFWS). 2001. Least Bell's Vireo Survey Guidelines. Carlsbad, CA: U.S. Department of the Interior, 3 pp.

U.S. Geological Survey (USGS). 2022. Geographic Names Information System. Available: https://www.usgs.gov/the-national-map-data-delivery. Accessed: November 9, 2022.

Appendix A

Figures

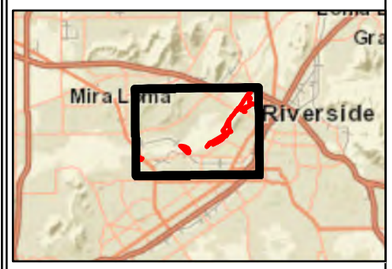


Legend

- Riverside Gateway Project Limits

WRMSHCP Units

- Criteria Area Cells
- Riverside County Core Linkage
- Public/Quasi-public Conserved Lands



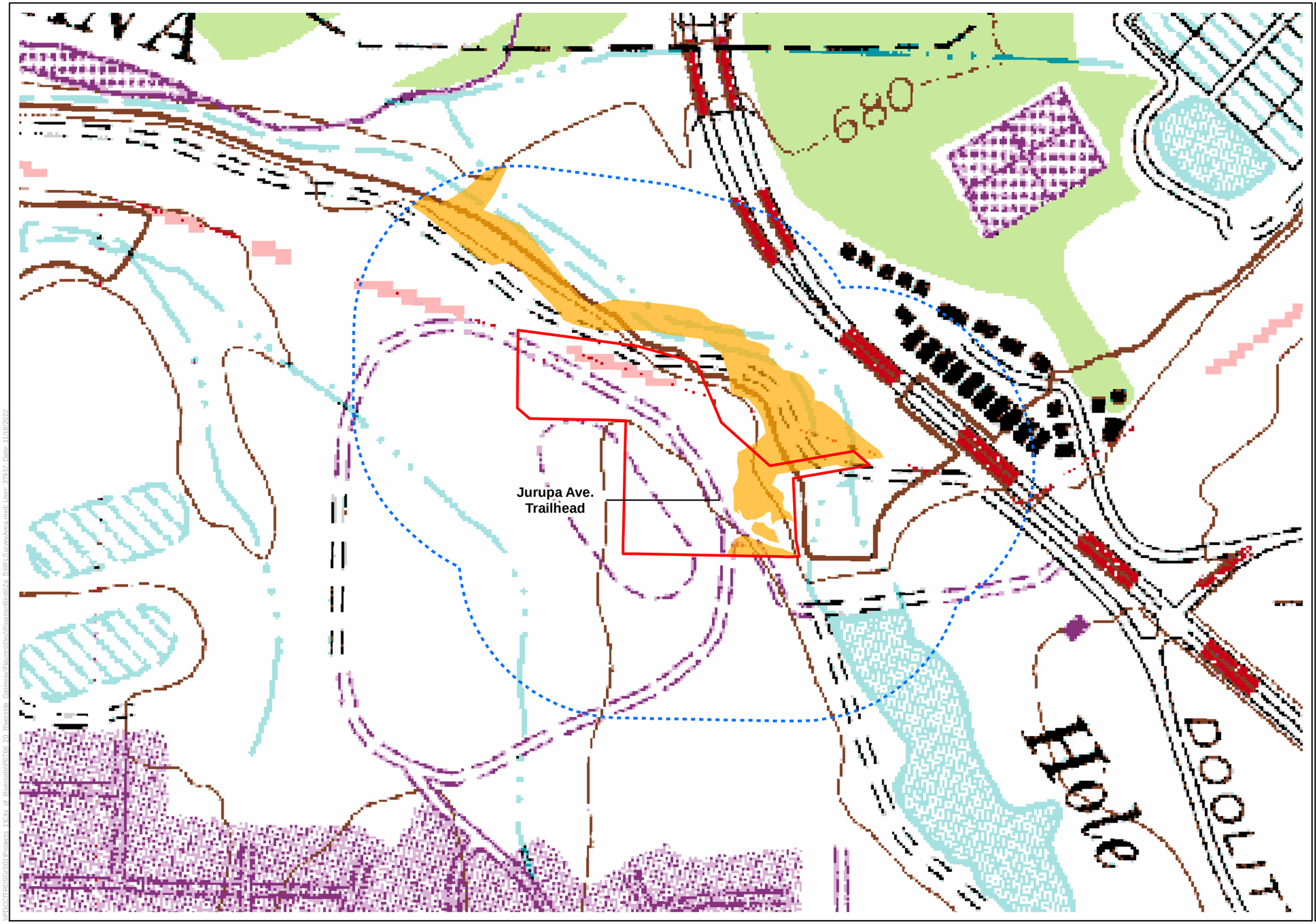
Source: ICF, USFWS, USGS; CNDDB 2019

0 1,050 2,100 Feet

1:26,000

N

Figure 1
Project Overview
Riverside Gateway



Legend

- Riverside Gateway Project Limits
- SWFL Survey Area (500-ft buffer)
- Potentially Suitable SWFL Habitat

Source: ICF, USFWS, USGS; CNDDB 2019

ICF

N

0 150 300 Feet

1:3,600

Figure 2a
SWFL 2022 Survey Area
Riverside Gateway

Legend

- Riverside Gateway Project Limits
- LBV Survey Area (500-ft Buffer)
- Potentially Suitable LBV Habitat

Source: ICF, USFWS, USGS; CNDDB 2019

0 300 600 Feet

1:7,200

N

Figure 2b
LBV 2022 Survey Area
Riverside Gateway

Legend

Incidental Observations (2022)

- Confirmed Adult
- Confirmed LBV Nest
- Dispersing LBV Juvenile(s)
- Riverside Gateway Project Limits
- SWFL Survey Area (500-ft Buffer)

Riparian

- Black Willow Riparian Woodland
- Giant Reed
- Mulefat Thicket (Disturbed)
- Open Water
- Tamarisk Thicket

Uplands

- Riversidian Coastal Sage Scrub (Distubed)
- Nonnative Grassland
- Ruderal Upland Mustard and Forbs (nonnative)

Other Cover Types

- Developed
- Disturbed

Source: ICF, USFWS, USGS; CNDDB 2019

0 100 200 Feet

1:2,400

N

Figure 3a
SWFL 2022 Survey Results
Riverside Gateway

Legend

LBV 2022 Survey Results

- Confirmed Adult LBV
- Confirmed LBV Nest
- Dispersing LBV Juvenile(s)
- SAWA Results (2021)
- Riverside Gateway Project Sites
- LBV Survey Area (500-ft Buffer)
- Potentially Suitable LBV Habitat

Riparian

- Arrowweed Thicket
- Arroyo Willow Scrub
- Black Willow Riparian Woodland
- Fremont Cottonwood Forest and Woodland
- Mulefat Thicket
- Open Water
- Salt Grass Flats

Uplands

- Calfornia Croton Scrub
- Elderberry Woodland
- Eucalyptus Woodland (nonnative)
- Fourwing Saltbush Scrub
- Mexican Fan Palm Grove (nonnative)
- Nonnative Grassland
- Oak Woodland
- Pepper Tree Grove (nonnative)
- Ruderal Upland Mustard and Forbs (nonnative)
- Russia Thistle - Five Hook Bassisa Fields (nonnative)
- Tree of Heaven Grove (nonnative)
- Wild Grape Shrubland

Other Cover Types

- Developed
- Disturbed

Source: ICF, USFWS, USGS; CNDDB 2019

0 250 500 Feet

1:6,000

N

Figure 3b
LBV 2022 Survey Results
Riverside Gateway

Appendix B

Site Photographs

Photograph: 1

Photo Date: March 15, 2022

Location: East side of the Jurupa Ave. Trailhead Parcel.

Direction: View facing northwest.

Comment: Photo depicts an overview of the habitat within survey area.

Photograph: 2

Photo Date: March 15, 2022

Location: Upstream end of Jurupa Ave. Trailhead Parcel.

Direction: View facing northwest.

Comment: Photo provides a representative example of habitat exterior.

Photograph: 3

Photo Date: March 15, 2022

Location: Northeast corner of Jurupa Ave. Trailhead Parcel

Direction: View facing northwest.

Comment: Photo provides a representative example of habitat exterior.

Photograph: 4

Photo Date: March 15, 2022

Location: Northeast corner of Jurupa Ave. Trailhead Parcel.

Direction: View facing southwest.

Comment: Photo provides a representative example of habitat interior.

Photograph: 5

Photo Date: March 15, 2022

Location: North side of Jurupa Ave. Trailhead Parcel.

Direction: View facing northwest.

Comment: Photo depicts provides a representative example of habitat interior.

Photograph: 6

Photo Date: May 2, 2022

Location: Southwest corner of Tequesquite South Extension LBV survey area.

Direction: View facing north.

Comment: Photo potentially suitable LBV habitat along western boundary of the survey area.

Photograph: 7

Photo Date: May 2, 2022

Location: West end of Tequesquite South Extension LBV survey area.

Direction: View facing southeast.

Comment: Photo potentially suitable LBV habitat along western boundary of the survey area.

Photograph: 8

Photo Date: May 2, 2022

Location: Northwest corner of Tequesquite South Extension LBV survey area.

Direction: View facing west.

Comment: Photo depicts potentially suitable LBV habitat along western boundary of the survey area.

Photograph: 9

Photo Date: May 2, 2022

Location: Near center of Tequesquite South Extension LBV survey area.

Direction: View facing northwest.

Comment: Photo depicts fragmented clusters of mixed riparian/non-native woodlands within interior of this survey area.

Photograph: 10

Photo Date: May 2, 2022

Location: South side of Tequesquite South Extension LBV survey area.

Direction: View facing southwest.

Comment: Photo depicts isolated willow stand along the south side of this survey area.

Photograph: 11

Photo Date: May 2, 2022

Location: Southeast corner of the Tequesquite South Extension LBV survey area, between skate park and Ryan Bonaminio Park.

Direction: View facing south.

Comment: Photo depicts conditions in area where LBV nesting was confirmed.

Photograph: 12

Photo Date: July 1, 2022

Location: North end of the survey area at Jurupa Ave. Trailhead parcel.

Direction: View facing north.

Comment: Photo depicts juvenile least Bell's vireo playing with a leaf.

Appendix C

Completed Willow Flycatcher Survey and Detection Forms

Appendix 1. Willow Flycatcher Survey and Detection Form

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

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

Site Name Riverside Gateway Project State CA County Riverside
USGS Quad Name Riverside West Elevation 210 (meters)
Creek, River, Wetland, or Lake Name Tributary to Santa Ana River
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes X*** ***No____***

Survey Coordinates: Start: E 501288 3757688 UTM Datum WGS84 (See instructions)
Stop: E 501180 N 3757990 UTM Zone 11S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) Ben Smith Cole Sutter	Date5/23/22 Start 0630 Stop 0740 Total hrs 1.25	0	0	0	N					
Survey # 2 Observer(s) Ben Smith	Date 6/6/22 Start 0650 Stop 0900 Total hrs 2.25	0	0	0	N					
Survey # 3 Observer(s) Ben Smith Cole Sutter	Date 6/20/22 Start 0620 Stop 0745 Total hrs 1.5	0	0	0	N					
Survey # 4 Observer(s) Ben Smith Cole Sutter	Date 7/1/22 Start 0620 Stop 0745 Total hrs 1.5	0	0	0	N					
Survey # 5 Observer(s) Ben Smith Cole Sutter	Date 7/12/22 Start 0620 Stop 0730 Total hrs 1.25	0	0	0	N					

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 7.75	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No ___ If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Benjamin Smith Date Report Completed
US Fish and Wildlife Service Permit # 67390A-3 State Wildlife Agency Permit #

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

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

Reporting Individual Benjamin Smith Phone # 949-922-5992
Affiliation ICF E-mail Ben.Smith@icf.com
Site Name Santa Ana River tributary Date Report Completed _____
Was this site surveyed in a previous year? Yes___ No _X_ Unknown ____
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _____ Not Applicable _X_
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes ____ No ____ If no, summarize below.

Management Authority for Survey Area: Federal___Municipal/County __X__ State ____ Tribal ____ Private ____ Name of Management Entity or Owner (e.g., Tonto National Forest) _County_of_Riverside

Length of area surveyed: 0.65_ (km)

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

__ Native broadleaf plants (entirely or almost entirely, > 90% native)

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

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

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

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix gooddingii and Fraxinus velutina_____

Average height of canopy (Do not include a range): _____7_____ (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

_____
_____
_____
_____
_____
_____

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

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

Attach additional sheets if necessary

Appendix D

Wildlife Species Detected

Appendix C: Wildlife Species Detected - Jurupa Avenue Trailhead Parcel

Scientific Name	Common Name	Special Status
VERTEBRATES		
Birds		
Columbidae - Pigeon and Dove Family		
Zenaida macroura	Mourning Dove	
Apodidae - Swift Family		
Aeronautes saxatalis	White-throated Swift	
Trochilidae - Hummingbird Family		
Archilochus alexandri	Black-chinned Hummingbird	
Calypte anna	Anna's Hummingbird	
Picidae - Woodpecker Family		
Picoides nuttallii	Nuttall's Woodpecker	
Picoides pubescens	Downy Woodpecker	
Tyrannidae - Tyrant Flycatcher Family		
Sayornis nigricans	Black Phoebe	
Sayornis saya	Say's Phoebe	
Vireonidae - Vireo Family		
Vireo bellii pusillus	Least Bell's Vireo	FE, SE
Vireo huttoni	Hutton's Vireo	
Hirundinidae - Swallow Family		
Stelgidopteryx serripennis	Northern Rough-winged Swallow	
Petrochelidon pyrrhonota	Cliff Swallow	
Troglodytidae - Wren Family		
Thryomanes bewickii	Bewick's Wren	
Mimidae - Thrasher Family		
Mimus polyglottos	Northern Mockingbird	
Parulidae - Wood-Warbler Family		
Setophaga petechia	Yellow Warbler	CSC
Emberizidae - Sparrow Family		
Pipilo maculatus	Spotted Towhee	
Melozone crissalis	California Towhee	
Melospiza melodia	Song Sparrow	
Cardinalidae - Cardinals, Grosbeaks and Allies Family		
Passerina caerulea	Blue Grosbeak	
Icteridae - Blackbird, Cowbird and Oriole Family		
Icterus cucullatus	Hooded Oriole	

Scientific Name	Common Name	Special Status
Fringillidae - Finch Family		
Haemorhous mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	
Carduelis lawrencei	Lawrence's Goldfinch	
Carduelis tristis	American Goldfinch	

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

Appendix C: Wildlife Species Detected - Tequesquite Extension South

Scientific Name	Common Name	Special Status
VERTEBRATES		
Reptiles		
Colubridae - Colubrid Snake Family		
Coluber flagellum piceus	Red Racer	
Birds		
Anatidae - Swan, Goose, and Duck Family		
Anas platyrhynchos	Mallard	
Ardeidae - Heron Family		
Ardea herodias	Great Blue Heron	
Ardea alba	Great Egret	
Threskiornithidae - Ibis Family		
Plegadis chihi	White-faced Ibis	
Accipitridae - Hawk Family		
Accipiter cooperii	Cooper's Hawk	
Buteo lineatus	Red-shouldered Hawk	
Buteo jamaicensis	Red-tailed Hawk	
Columbidae - Pigeon and Dove Family		
**Columba livia*	Rock Pigeon	
Patagioenas fasciata	Band-tailed Pigeon	
**Streptopelia decaocto*	Eurasian Collared-Dove	
Zenaida macroura	Mourning Dove	
Columbina passerina	Common Ground-Dove	
Cuculidae - Cuckoo and Roadrunner Family		
Geococcyx californianus	Greater Roadrunner	
Strigidae - Typical Owl Family		
Bubo virginianus	Great Horned Owl	
Apodidae - Swift Family		
Aeronautes saxatalis	White-throated Swift	
Trochilidae - Hummingbird Family		
Archilochus alexandri	Black-chinned Hummingbird	
Calypte costae	Costa's Hummingbird	
Selasphorus sasin	Allen's Hummingbird	
Picidae - Woodpecker Family		
Melanerpes formicivorus	Acorn Woodpecker	

Scientific Name	Common Name	Special Status
Picoides nuttallii	Nuttall's Woodpecker	
Picoides pubescens	Downy Woodpecker	
Colaptes auratus	Northern Flicker	
Falconidae - Falcon Family		
Falco sparverius	American Kestrel	
Tyrannidae - Tyrant Flycatcher Family		
Empidonax difficilis	Pacific-slope Flycatcher	
Sayornis saya	Say's Phoebe	
Myiarchus cinerascens	Ash-throated Flycatcher	
Tyrannus vociferans	Cassin's Kingbird	
Tyrannus verticalis	Western Kingbird	
Vireonidae - Vireo Family		
Vireo bellii pusillus	Least Bell's Vireo	FE, SE
Corvidae - Jay and Crow Family		
Aphelocoma californica	California Scrub-Jay	
Corvus brachyrhynchos	American Crow	
Corvus corax	Common Raven	
Hirundinidae - Swallow Family		
Stelgidopteryx serripennis	Northern Rough-winged Swallow	
Petrochelidon pyrrhonota	Cliff Swallow	
Hirundo rustica	Barn Swallow	
Aegithalidae - Bushtit Family		
Psaltriparus minimus	Bushtit	
Troglodytidae - Wren Family		
Troglodytes aedon	House Wren	
Thryomanes bewickii	Bewick's Wren	
Turdidae - Thrush Family		
Sialia mexicana	Western Bluebird	
Mimidae - Thrasher Family		
Toxostoma redivivum	California Thrasher	
Mimus polyglottos	Northern Mockingbird	
Sturnidae - Starling Family		
**Sturnus vulgaris*	European Starling	
Ptilogonatidae - Silky-flycatcher Family		
Phainopepla nitens	Phainopepla	

Scientific Name	Common Name	Special Status
Parulidae - Wood-Warbler Family		
Geothlypis tolmiei	MacGillivray's Warbler	
Setophaga petechia	Yellow Warbler	CSC
Cardellina pusilla	Wilson's Warbler	
Icteria virens	Yellow-breasted Chat	CSC
Emberizidae - Sparrow Family		
Pipilo maculatus	Spotted Towhee	
Melozone crissalis	California Towhee	
Melospiza melodia	Song Sparrow	
Cardinalidae - Cardinals, Grosbeaks and Allies Family		
Piranga ludoviciana	Western Tanager	
Passerina caerulea	Blue Grosbeak	
Passerina amoena	Lazuli Bunting	
Icteridae - Blackbird, Cowbird and Oriole Family		
Icterus cucullatus	Hooded Oriole	
Icterus bullockii	Bullock’s Oriole	
Fringillidae - Finch Family		
Haemorhous mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	
Carduelis tristis	American Goldfinch	
Mammals		
Leporidae - Hare and Rabbit Family		
Sylvilagus audubonii	Desert Cottontail	
Sciuridae - Squirrel Family		
Otospermophilus beecheyi	California Ground Squrrel	
Canidae - Canid Family		
Canis latrans	Coyote	
Felidae - Cat Family		
Lynx rufus	Bobcat	

Scientific Name	Common Name	Special Status

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

Appendix E

Certification Statement

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Part of the field work conducted for this survey effort was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or the applicant's representative and that I have no financial interest in the project.

DATE: 11/10/2022 SIGNED: 

Benjamin Smith

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Part of the field work conducted for this survey effort was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or the applicant's representative and that I have no financial interest in the project.

Sincerely,

Phillip C. Richards
Biologist
ICF International

Date: 11/10/2022

Appendix H

Cultural Resources Technical Report

Confidential

Appendix I

Noise and Vibration Analysis

Riverside Gateway Parks Program

Martha McLean Anza Narrows Park

Modeling Appendices

Construction Noise Analysis Table 2. Phase 1, Demolition

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA
Item No.	Description				
48	Saw, Concrete	89.6	0.2	1	82.6
18	Excavator	80.7	0.4	3	81.5
13	Dozer	81.7	0.4	2	80.7
	Combined Equipment				***86.5***

Construction Noise Analysis Table 3. Phase 2, Site Preparation

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA
Item No.	Description				
13	Dozer	81.7	0.4	3	82.5
29	Loader (Front End Loader)	79.1	0.4	4	81.1
	Combined Equipment				***84.9***

Construction Noise Analysis Table 4. Phase 3, Grading

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA
Item No.	Description				
18	Excavator	80.7	0.4	1	76.7
23	Grader	85	0.4	1	81.0
13	Dozer	81.7	0.4	1	77.7
29	Loader (Front End Loader)	79.1	0.4	3	79.9
	Combined Equipment				***85.2***

Construction Noise Analysis Table 5. Phase 4, Building Construction

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA
Item No.	Description				
12	Crane	80.6	0.16	1	72.1
72	Forklift (based on front loader)	79.1	0.4	3	79.9
20	Generator	80.6	0.5	1	77.6
29	Loader (Front End Loader)	79.1	0.4	3	79.3
69	Welder/Torch	74.0	0.4	1	70.0
	Combined Equipment				***84.3***

Construction Noise Analysis Table 6. Phase 5, Paving

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA
Item No.	Description				
34	Paver	77.2	0.5	2	77.2
75	Paving Equipment (based on p	77.2	0.5	2	77.2
44	Roller	80.0	0.2	2	76.0
	Combined Equipment				***81.6***

Construction Noise Analysis Table 7. Phase 6, Architectural Coating

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA
Item No.	Description				
10	Compressor, Air	77.7	0.4	2	76.7
	Combined Equipment				***76.7***

1. Obtained or estimated from:
FHWA Roadway Construction Noise Model (RCNM), Version 1.1, December 8, 2008; and/or
September 2018; and/or "Noise from Construction Equipment and Operations, Building
2. Usage Factor = percentage of time equipment is operating in noisiest mode while in use

Construction Noise Analysis Table 8. Noise Levels at Closest Receivers

			Construction Noise Level, Leq(h), dBA					
City	Receiver	Acoustical Average	Phase 1 Demolition	Phase 2 Site Preparation	Phase 3 Grading	Phase 4 Building Construction	Phase 5 Paving	Phase 6 Architectural Coating
Riverside	Reference distance, 50 feet	50	86.5	84.9	85.2	84.3	81.6	76.7
	5681 Tucson Ct	236	70	68	68	67	65	60
	5965 Tucson Ct	234	70	68	68	68	65	60
	6027 Sheppard St	699	58	56	57	56	53	48
	6019 William St	906	55	53	54	53	50	45
Jurupa Valley	5760 Riverview Dr	2158	46	44	44	43	41	36

Operational Noise Analysis Table 1. Noise Levels Due to Martha McLean Park Play Areas at the Nearest Sensitive Receptors in the City of Riverside

Receiver/Noise Source	Reference Noise Level @ 50 feet, L_{50} dBA[1]	Reference Number of Children Playing[1]	Assumed Number of Children Playing	Noise Adjustment for Number of Children, dBA[2]	Reference Distance, feet	Distance, feet	Hard or Soft Site?	Noise Adjustment for Distance[3]	Play Noise Levels, dBA L_{50}	Combined
5681 Tucson Ct										
Water Play Arroyo	66.4	58	100	2.4	50.0	2020	Soft	-40.2	28.6	31.8
Nature Play	66.4	58	100	2.4	50.0	1950	Soft	-39.8	29.0	
5965 Tucson Ct										
Water Play Arroyo	66.4	58	100	2.4	50.0	1940	Soft	-39.7	29.0	32.2
Nature Play	66.4	58	100	2.4	50.0	1880	Soft	-39.4	29.4	
6027 Sheppard St										
Water Play Arroyo	66.4	58	100	2.4	50.0	1800	Soft	-38.9	29.9	33.2
Nature Play	66.4	58	100	2.4	50.0	1700	Soft	-38.3	30.5	
6019 William St										
Water Play Arroyo	66.4	58	100	2.4	50.0	1010	Soft	-32.6	36.1	39.3
Nature Play	66.4	58	100	2.4	50.0	980	Soft	-32.3	36.5	

1. Source data from Linda Vista Elementary School in San Diego during morning and lunchtime recess.
2. Adjustment = 10 × log (assumed # children / reference # children); i.e., 10 × log (100 / 58)
3. Assumes acoustically soft site/ground conditions with an attenuation rate of 7.5 dB per doubling of distance.

Operational Noise Analysis Table 2. Noise Levels Due to Martha McLean Park Play Areas at the Nearest Sensitive Receptors in the City of Jurupa Valley

Receiver/Noise Source	Reference Noise Level @ 60 feet, L_{max} dBA[1]	Reference Number of Children Playing[1]	Assumed Number of Children Playing	Noise Adjustment for Number of Children, dBA[2]	Reference Distance, feet	Distance, feet	Hard or Soft Site?	Noise Adjustment for Distance[3]	Play Noise Levels, dBA L_{max}	Combined
5760 Riverview Dr										
Water Play Arroyo	82.0	58	100	0.0	60.0	1610	Soft	-35.7	46.3	49.1
Nature Play	82.0	58	100	0.0	60.0	1670	Soft	-36.1	45.9	

1. Source data from Linda Vista Elementary School in San Diego during morning and lunchtime recess.
2. Max level assumed to correlate to a single noise event, such as a child screaming.
3. Assumes acoustically soft site/ground conditions with an attenuation rate of 7.5 dB per doubling of distance.

Operational Noise Analysis Table 3. Noise Levels Due to Marth McLean Park Band Shell Muscial Performances at the Nearest Sensitive Recceptors in the City of Riverside

Receiver/Noise Source	Reference Noise Level, L_{eq} dBA[1]	Reference Noise Distance, feet	Distance, feet	Hard or Soft Site?	Noise Adjustment for Distance[2]	Band Shell Noise Levels, dBA L_{50}
5681 Tucson Ct	73.3	100.0	1160	Soft	-26.6	46.7
5965 Tucson Ct	73.3	100.0	1080	Soft	-25.8	47.5
6027 Sheppard St	79.1	200.0	1050	Soft	-18.0	61.1
6019 William St	79.1	200.0	1000	Soft	-17.5	61.6

1. Source data obtained at the Irvine Regional Park Amphitheater. This venue has a permanent band shell with a solid back, roof, and sides.
2. Assumes acoustically soft site/ground conditions with an attenuation rate of 7.5 dB per doubling of distance.

Operational Noise Analysis Table 4. Noise Levels Due to Marth McLean Park Band Shell Muscial Performances at the Nearest Sensitive Receptors in the City of Jurupa Valley

Receiver/Noise Source	Reference Noise Level, L_{max}dBA[1]	Reference Noise Distance, feet	Distance, feet	Hard or Soft Site?	Noise Adjustment for Distance[2]	Band Shell Noise Levels, dBA L_{max}
5760 Riverview Dr	90.4	100.0	2400	Soft	-34.5	55.9

1. Source data obtained at the Irvine Regional Park Amphitheater. This venue has a permanent band shell with a solid back, roof, and sides.
2. Assumes acoustically soft site/ground conditions with an attenuation rate of 7.5 dB per doubling of distance.

Operational Noise Analysis Table 5. Noise Levels Due to Martha McLean Parking Lot at the Nearest Sensitive Receptors in the City of Riverside

Receiver	Sound Power Level, dBA[1]	Q[2]	Reference Noise Level @ 50 feet, L_{50} dBA[3]	Acoustical Average Distance, feet	Hard or Soft Site?	Noise Reduction Due to Distance[4]	Parking Lot Noise Levels, dBA L_{50}
5681 Tucson Ct	91.0	2	59.3	287	hard	-15.2	44.2
5965 Tucson Ct	91.0	2	59.3	504	hard	-20.1	39.3
6027 Sheppard St	91.0	2	59.3	1044	soft	-33.0	26.4
6019 William St	91.0	2	59.3	1114	Soft	-33.7	25.6

1. Sound power level estimated using SoundPLAN software based on 71 trips per hour.
2. Q = directivity factor. A value of 2 corresponds to hemispherical spreading over solid ground.
3. $Lp = Lw + 10 \times \log (Q / 4 \pi r^2)$; Lp = sound pressure (noise) level, Lw = sound power level, r = distance in meters (50' = 15.24 m)
4. Hard site calculations assume acoustically hard ground conditions with an attenuation rate of 6 dB per doubling of distance. Soft site calculations assume acoustically soft ground conditions with an attenuation rate of 7.5 dB per doubling of distance. Hard site conditions are assumed where noise propagates primarily over the parking lot surface.

Operational Noise Analysis Table 6. Noise Levels Due to Martha McLean Parking Lot at the Nearest Sensitive Receptors in the City of Jurupa Valley

Receiver	Sound Power Level, dBA[1]	Q[2]	Reference Noise Level @ 50 feet, L_{max} dBA[3]	Acoustical Average Distance, feet[4]	Hard or Soft Site?	Noise Reduction Due to Distance[5]	Parking Lot Noise Levels, dBA L_{max}
5760 Riverview Dr	98.1	2	66.5	1610	Soft	-37.7	28.8

1. Sound power level estimated using SoundPLAN software based on car door slamming.
2. Q = directivity factor. A value of 2 corresponds to hemispherical spreading over solid ground.
3. $Lp = Lw + 10 \times \log (Q / 4 \pi r^2)$; Lp = sound pressure (noise) level, Lw = sound power level, r = distance in meters (50' = 15.24 m)
4. Lmax noise levels typically occur when the loudest source is closest to the receiver. For this reason, calculations for Lmax propagation only consider the closest distance between the source and receiver.
5. Hard site calculations assume acoustically hard ground conditions with an attenuation rate of 6 dB per doubling of distance. Soft site calculations assume acoustically soft ground conditions with an attenuation rate of 7.5 dB per doubling of distance. Hard site conditions are assumed where noise propagates primarily over the parking lot surface.

Operational Noise Analysis Table 5. Noise Levels Due to Martha McLean Parking Lot at the Nearest Sensitive Receptors in the City of Riverside

Receiver	Sound Power Level, dBA[1]	Q[2]	Reference Noise Level @ 50 feet, L_{50} dBA[3]	Closest Distance, feet	Farthest Distance, feet	Acoustical Average Distance, feet	Hard or Soft Site?	Noise Reduction Due to Distance[4]	Parking Lot Noise Levels, dBA L_{50}
5681 Tucson Ct	91.0	2	59.3	35	2350	287	hard	-15.2	44.2
5965 Tucson Ct	91.0	2	59.3	110	2310	504	hard	-20.1	39.3
6027 Sheppard St	91.0	2	59.3	540	2020	1044	soft	-33.0	26.4
6019 William St	91.0	2	59.3	690	1800	1114	Soft	-33.7	25.6

1. Sound power level estimated using SoundPLAN software based on 71 trips per hour.
2. Q = directivity factor. A value of 2 corresponds to hemispherical spreading over solid ground.
3. $Lp = Lw + 10 \times \log (Q / 4 \pi r^2)$; Lp = sound pressure (noise) level, Lw = sound power level, r = distance in meters (50' = 15.24 m)
4. Hard site calculations assume acoustically hard ground conditions with an attenuation rate of 6 dB per doubling of distance. Soft site calculations assume acoustically soft ground conditions with an attenuation rate of 7.5 dB per doubling of distance. Hard site conditions are assumed where noise propagates primarily over the parking lot surface.

Operational Noise Analysis Table 6. Noise Levels Due to Martha McLean Parking Lot at the Nearest Sensitive Receptors in the City of Jurupa Valley

Receiver	Sound Power Level, dBA[1]	Q[2]	Reference Noise Level @ 50 feet, L_{max} dBA[3]	Closest Distance, feet	Farthest Distance, feet	Acoustical Average Distance, feet[4]	Hard or Soft Site?	Noise Reduction Due to Distance[5]	Parking Lot Noise Levels, dBA L_{max}
5760 Riverview Dr	98.1	2	66.5	1610	-	-	Soft	-37.7	28.8

1. Sound power level estimated using SoundPLAN software based on car door slamming.
2. Q = directivity factor. A value of 2 corresponds to hemispherical spreading over solid ground.
3. $Lp = Lw + 10 \times \log (Q / 4 \pi r^2)$; Lp = sound pressure (noise) level, Lw = sound power level, r = distance in meters (50' = 15.24 m)
4. Lmax noise levels typically occur when the loudest source is closest to the receiver. For this reason, calculations for Lmax propagation only consider the closest distance between the source and receiver.
5. Hard site calculations assume acoustically hard ground conditions with an attenuation rate of 6 dB per doubling of distance. Soft site calculations assume acoustically soft ground conditions with an attenuation rate of 7.5 dB per doubling of distance. Hard site conditions are assumed where noise propagates primarily over the parking lot surface.

Operational Noise Analysis Table 7. Combined Noise Levels Due to On Site Activity at Martha McLean Park at the Nearest Sensitive Receptors in the City of Riverside

Receiver	Play Noise Levels, dBA L_{50}	Band Shell Noise Levels, dBA L_{50}	Parking Lot Noise Levels, dBA L_{50}	Combined Noise Levels, dBA L_{50}
5681 Tucson Ct	31.8	46.7	44.2	48.7
5965 Tucson Ct	32.2	47.5	39.3	48.2
6027 Sheppard St	33.2	61.1	25.6	61.1
6019 William St	39.3	61.6	25.6	61.7

Operational Noise Analysis Table 8. Combined Noise Levels Due to On Site Activity at Martha McLean Park at the Nearest Sensitive Receptors in the City of Jurupa Valley

Receiver	Play Noise Levels, dBA L_{max}	Band Shell Noise Levels, L_{max}	Parking Lot Noise Levels, dBA L_{max}	Combined Noise Levels, dBA L_{max}
5760 Riverview Dr	49.1	55.9	28.8	56.7

Construction Vibration Analysis Table 1. Potential Building Damage

Vibration attenuation constant (n):			1.1					
		Building Category:	**Extremely fragile historic buildings, ruins, ancient monuments**	**Fragile buildings**	**Historic and some old buildings**	**Older residential structures**	**New residential structures**	**Modern industrial/ commercial buildings**
Equipment Item	**Reference PPV at 25 feet, in/s [a]**	**Vibration Damage Impact Criteria, PPV, in/s:**	**0.08**	**0.1**	**0.25**	**0.3**	**0.5**	**0.5**
Vibratory roller	0.21	Distance to Impact Criteria, feet:	61	50	22	19	12	12
Large bulldozer[b]	0.089		28	23	10	9	6	6
Small bulldozer[c]	0.003		2	2	1	1	1	1

[a] Obtained from "Transportation and Construction Vibration Guidance Manual", Caltrans 2020

[b] Considered representative of any full size/large excavator, dozer, backhoe, etc.

[c] Considered representative of any small excavator, dozer, backhoe, etc.

Construction Vibration Analysis Table 2. Human Perception

Vibration attenuation constant (n):	1.1					
		Perceptibility Classification:	**Barely perceptible**	**Distinctly perceptible**	**Strongly perceptible**	**Severe**
Equipment Item	**Reference PPV at 25 feet, in/s [a]**	**Perceptibility Criteria, PPV, in/s:**	**0.01**	**0.04**	**0.1**	**0.4**
Vibratory roller	0.21	Distance to Impact Criteria, feet:	399	113	50	14
Large bulldozer[b]	0.089		183	52	23	7
Small bulldozer[c]	0.003		9	3	2	1

[a] Obtained from "Transportation and Construction Vibration Guidance Manual", Caltrans 2020

[b] Considered representative of any full size/large excavator, dozer, backhoe, etc.

[c] Considered representative of any small excavator, dozer, backhoe, etc.

Riverside Gateway Parks Program

Jurupa Avenue Trailhead

Modeling Appendices

Construction Noise Analysis Table 1. Phase 1, Site Preparation

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA	Lmax, dBA
Item No.	Description					
13	Dozer	81.7	0.4	1	77.7	81.7
29	Loader (Front End Loader)	79.1	0.4	1	75.1	79.1
	Combined Equipment				***79.6***	***81.7***

Construction Noise Analysis Table 2. Phase 2, Grading

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA	Lmax, dBA
Item No.	Description					
23	Grader	85.0	0.4	1	81.0	85.0
18	Excavator	80.7	0.4	1	76.7	80.7
13	Dozer	81.7	0.4	1	77.7	81.7
29	Loader (Front End Loader)	79.1	0.4	2	78.1	79.1
	Combined Equipment				***84.7***	***85.0***

Construction Noise Analysis Table 3. Phase 3, Building Construction

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA	Lmax, dBA
Item No.	Description					
12	Crane	80.6	0.16	1	72.1	80.6
72	Forklift (based on front loader)	79.1	0.4	2	78.1	79.1
29	Loader (Front End Loader)	79.1	0.4	1	74.5	79.1
69	Welder/Torch	74	0.4	1	70.0	74.0
	Combined Equipment				***80.8***	***80.6***

Construction Noise Analysis Table 4. Phase 4, Paving

Equipment		Typical Level @ 50', dBA[1]	Usage Factor[1,2]	Number of Units	Leq(h), dBA	Lmax, dBA
Item No.	Description					
34	Paver	77.2	0.5	2	77.2	77.2
75	Paving Equipment (based on p	77.2	0.5	2	77.2	77.2
31	Mixer, Concrete (or concrete m	78.8	0.4	1	74.8	78.8
29	Loader (Front End Loader)	79.1	0.4	1	75.1	79.1
44	Roller	80.0	0.2	2	76.0	80.0
	Combined Equipment				***83.2***	***80.0***

1. Obtained or estimated from:
FHWA Roadway Construction Noise Model (RCNM), Version 1.1, December 8, 2008; and/or
"Transit Noise and Vibration Impact Assessment Manual", FTA Report No. 0123, September 2018; and/or "Noise from Construction Equipment and Operations, Building Equipment, and Home
2. Usage Factor = percentage of time equipment is operating in noisiest mode while in use

Construction Noise Analysis Table 5. Noise Levels at Closest Receivers

		Construction Noise Level, Leq(h), dBA			
Receiver	**Acoustical Average**	**Phase 1 Site Preparation**	**Phase 2 Grading**	**Phase 3 Building Construction**	**Phase 4 Paving**
Reference distance, 50 feet	50	79.6	84.7	80.8	83.2
7164 Bradford Street	126	70	75	71	73
7120 Bradford Street	100	72	77	73	76
7106 Bradford Street	140	68	74	70	72
6948 Glendale Avenue	977	47	52	48	51
8607 Parker Way	1187	45	50	46	49

Operational Noise Analysis Table 1. Noise Levels Due to Jurupa Avenue Trailhead Play Areas

Receiver/Noise Source	Reference Noise Level @ 50 feet, L_{50} dBA[1]	Reference Number of Children Playing[1]	Assumed Number of Children Playing	Noise Adjustment for Number of Children, dBA[2]	Distance, feet	Hard or Soft Site?	Noise Adjustment for Distance[3]	Play Noise Levels, dBA L_{50}	Combined
7164 Bradford St									
Music Play	66.4	58	10	-7.6	470	Soft	-24.3	34.4	37.8
Arroyo Play	66.4	58	10	-7.6	550	Soft	-26.0	32.7	
Nature Play	66.4	58	10	-7.6	620	Soft	-27.3	31.4	
7120 Bradford St									
Music Play	66.4	58	10	-7.6	95	Soft	-7.0	51.8	53.2
Arroyo Play	66.4	58	10	-7.6	160	Soft	-12.6	46.1	
Nature Play	66.4	58	10	-7.6	220	Soft	-16.1	42.7	
7106 Bradford St									
Music Play	66.4	58	10	-7.6	140	Soft	-11.2	47.6	50.7
Arroyo Play	66.4	58	10	-7.6	160	Soft	-12.6	46.1	
Nature Play	66.4	58	10	-7.6	220	Soft	-16.1	42.7	
6948 Glendale Avenue									
Music Play	66.4	58	10	-7.6	980	Soft	-32.3	26.5	31.4
Arroyo Play	66.4	58	10	-7.6	960	Soft	-32.1	26.7	
Nature Play	66.4	58	10	-7.6	960	Soft	-32.1	26.7	
8607 Parker Way									
Music Play	66.4	58	10	-7.6	1080	Soft	-33.4	25.4	30.8
Arroyo Play	66.4	58	10	-7.6	1010	Soft	-32.6	26.1	
Nature Play	66.4	58	10	-7.6	980	Soft	-32.3	26.5	

1. Source data from Linda Vista Elementary School in San Diego during morning and lunchtime recess.
2. Adjustment = 10 × log (assumed # children / reference # children); i.e., 10 × log (10 / 58)
3. Hard site calculations assume acoustically hard ground conditions with an attenuation rate of 6 dB per doubling of distance. Soft site calculations assume acoustically soft ground conditions with an attenuation rate of 7.5 dB per doubling of distance.

Operational Noise Analysis Table 2. Noise Levels Due to Jurupa Avenue Trailhead Parking Lot

Receiver	Sound Power Level, dBA[1]	Q[2]	Reference Noise Level @ 50 feet, L_{50} dBA[3]	Closest Distance, feet	Farthest Distance, feet	Acoustical Average Distance, feet	Hard or Soft Site?	Noise Reduction Due to Distance[4]	Parking Lot Noise Levels, dBA L_{50}
7164 Bradford St	77.0	2	45.4	520	720	612	Soft	-27.2	18.2
7120 Bradford St	77.0	2	45.4	65	260	130	Soft	-10.4	35.0
7106 Bradford St	77.0	2	45.4	50	230	107	Hard	-6.6	38.8
6948 Glendale Avenue	77.0	2	45.4	760	910	832	Soft	-30.5	14.9
8607 Parker Way	77.0	2	45.4	820	950	883	Soft	-31.2	14.2

1. Sound power level estimated using SoundPLAN software based on 9 trips per hour.
2. Q = directivity factor. A value of 2 corresponds to hemispherical spreading over solid ground.
3. $Lp = Lw + 10 \times \log (Q / 4 \pi r^2)$; Lp = sound pressure (noise) level, Lw = sound power level, r = distance in meters (50 feet = 15.24 meters)
4. Hard site calculations assume acoustically hard ground conditions with an attenuation rate of 6 dB per doubling of distance. Soft site calculations assume acoustically soft ground conditions with an attenuation rate of 7.5 dB per doubling of distance. Hard site conditions are assumed where noise propagates primarily over the parking lot surface.

Operational Noise Analysis Table 3. Combined Noise Levels Due to On-Site Activity at Jurupa Avenue Trailhead

Receiver	Play Noise Levels, dBA L_{50}	Parking Lot Noise Levels, dBA L_{50}	Combined Noise Levels, dBA L_{50}
7164 Bradford St	37.8	18.2	37.9
7120 Bradford St	53.2	35.0	53.3
7106 Bradford St	50.7	38.8	51.0
6948 Glendale Avenue	31.4	14.9	31.5
8607 Parker Way	30.8	14.2	30.9

Construction Vibration Analysis Table 1. Potential Building Damage from Construction at Jurupa Avenue Trailhead

Vibration attenuation constant (n):		1.1						
		Building Category:	**Extremely fragile historic buildings, ruins, ancient monuments**	**Fragile buildings**	**Historic and some old buildings**	**Older residential structures**	**New residential structures**	**Modern industrial/ commercial buildings**
Equipment Item	**Reference PPV at 25 feet, in/s [a]**	**Vibration Damage Impact Criteria, PPV, in/s:**	**0.08**	**0.1**	**0.25**	**0.3**	**0.5**	**0.5**
Vibratory roller	0.21	Distance to Impact Criteria, feet:	61	50	22	19	12	12
Large bulldozer[b]	0.089		28	23	10	9	6	6
Small bulldozer[c]	0.003		2	2	1	1	1	1

[a] Obtained from "Transportation and Construction Vibration Guidance Manual", Caltrans 2020

[b] Considered representative of any full size/large excavator, dozer, backhoe, etc.

[c] Considered representative of any small excavator, dozer, backhoe, etc.

Construction Vibration Analysis Table 2. Human Perception of Construction at Jurupa Avenue Trailhead

Vibration attenuation constant (n):	1.1					
		Perceptibility Classification:	**Barely perceptible**	**Distinctly perceptible**	**Strongly perceptible**	**Severe**
Equipment Item	**Reference PPV at 25 feet, in/s [a]**	**Perceptibility Criteria, PPV, in/s:**	**0.01**	**0.04**	**0.1**	**0.4**
Vibratory roller	0.21	Distance to Impact Criteria, feet:	399	113	50	14
Large bulldozer[b]	0.089		183	52	23	7
Small bulldozer[c]	0.003		9	3	2	1

[a] Obtained from "Transportation and Construction Vibration Guidance Manual", Caltrans 2020

[b] Considered representative of any full size/large excavator, dozer, backhoe, etc.

[c] Considered representative of any small excavator, dozer, backhoe, etc.