

## **APPENDIX B: Biological Resources Documentation**

# **SANTA ANA RIVER TRAIL - PHASE 6 (SART – PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT**

CITIES OF CORONA AND CHINO HILLS, COUNTIES OF RIVERSIDE AND  
SAN BERNARDINO, CALIFORNIA

## **Habitat Assessment and MSHCP Consistency Analysis**

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April 2021

JN 167982

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CITIES OF CORONA AND CHINO HILLS, COUNTIES OF RIVERSIDE AND  
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## Habitat Assessment and MSHCP Consistency Analysis

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The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



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April 2021  
JN 167982

# Executive Summary

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This report contains the findings of Michael Baker International's (Michael Baker) habitat assessment and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) consistency analysis for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project (project) located in the cities of Corona and Chino Hills, counties of Riverside and San Bernardino, California. Michael Baker biologists conducted a field survey/habitat assessment on January 23, 2019 and again on June 11, 2019. The field surveys were conducted to characterize existing site conditions and assess the potential for special-status<sup>1</sup> biological resources to occur within the survey area that could pose a constraint to implementation of the proposed project.

The survey area is approximately 149.38 acres in size, spans across both Riverside and San Bernardino Counties, and is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the Burlington Northern Santa Fe railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River. Eight (8) natural vegetation communities were observed and mapped within the boundaries of the survey area: southern willow scrub, southern cottonwood willow riparian forest, mule fat scrub, disturbed mule fat scrub, elderberry savannah, coastal sage scrub (CSS), restored CSS, and non-native grassland. In addition, the survey area contains four (4) land cover types that would be classified as open water, disturbed, ornamental, and developed.

Three (3) drainage features (Santa Ana River, Aliso Canyon, and Drainage 1) occur within the survey area and would fall under regulatory authority of the United States Army Corps of Engineers (Corps), the Regional Water Quality Control Board (Regional Board), and the California Department of Fish and Wildlife (CDFW). Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acres of permanent impacts and approximately 0.10 acres of temporary impacts would occur to Corps/Regional Board jurisdiction (non-wetland waters of the U.S.). In addition, Alternative 1 would result in approximately 0.003 acres of permanent impacts and approximately 0.17 acres of temporary impacts to CDFW jurisdiction (streambed/associated riparian vegetation). Therefore, the following regulatory approvals would be required: 1) Corps CWA Section 404 Nationwide Permit No. 14: *Linear Transportation Projects*, 2) Regional Board CWA Section 401 Water Quality Certification, and 3) CDFW Section 1602 Streambed Alteration Agreement.

No special-status plant species were observed within the survey area during the field surveys. Based on the results of the literature review and the field surveys, Michael Baker determined that all special-status plant

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<sup>1</sup> As used in this report, "special-status" refers to species that are either federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; State/locally rare vegetation communities; or species covered under the Western Riverside County Multiple Species Habitat Conservation Plan.

species either have a low potential to occur or are not expected within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions.

Special-status wildlife species that were observed within or adjacent to the survey area during the field surveys included: Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), tricolored blackbird (*Agelaius tricolor*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), Vaux's swift (*Chaetura vauxi*), northern harrier (*Circus hudsonius*), merlin (*Falco columbarius*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), California gull (*Larus californicus*), double-crested cormorant (*Phalacrocorax auritus*), coastal California gnatcatcher (*Polioptila californica californica*; CAGN), vermilion flycatcher (*Pyrocephalus rubinus*), yellow warbler (*Setophaga petechia*), and least Bell's vireo (*Vireo bellii pusillus*). Based on the results of the literature review and the field surveys, Michael Baker determined that California horned lark (*Eremophila alpestris actia*), Santa Ana sucker (*Catostomus santaanae*), and arroyo chub (*Gila orcuttii*) have a moderate to high potential to occur within the survey area. All other special-status wildlife species identified during the literature review either have a low potential to occur or are not expected within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions. Impacts to Cooper's hawk, sharp-shinned hawk, tricolored blackbird, southern California rufous-crowned sparrow, coastal whiptail, northern harrier, merlin, yellow-breasted chat, loggerhead shrike, double-crested cormorant, CAGN, yellow warbler, Santa Ana sucker, arroyo chub, and California horned lark are all fully covered under the MSHCP. Vaux's swift, California gull, and vermilion flycatcher are not covered under the MSHCP. However, with incorporation of the guidelines and standard best management practices summarized in Sections 5.8 and 5.9 of this report, the proposed project is not expected to result in significant impacts to this species or its habitat.

Approximately 2.28 acres of CSS habitat is located adjacent to the proposed additional trail segment near the State Route 91 and State Route 71 interchange in Riverside County, specifically within Criteria Cells 1612 and 1616 in the eastern portion of the survey area. In addition, CAGN was incidentally observed within this area during the 2019 focused burrowing owl (*Athene cunicularia* [BUOW]) surveys. Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.12 acres of temporary impacts and approximately 0.03 acres of permanent impacts to CSS habitat within Criteria Cell 1612, would occur. Within Criteria Cell 1616, approximately 0.005 acres of temporary impacts to CSS habitat would occur. No permanent impacts to CSS habitat within Criteria Cell 1616 would occur. Although any potential impacts to CAGN and its habitat within Riverside County are fully covered under the MSHCP, Permittees are required by the Migratory Bird Treaty Act Special-Purpose Take Permit (issued by USFWS) to avoid clearing CAGN occupied habitat in the Criteria Area and in Public/Quasi-Public (P/QP) Lands between March 1 and August 15. As such, all habitat clearing, grubbing, grading, and other associated project activities located within Criteria Area and P/QP Lands would occur outside of the active breeding season for CAGN which is March 1 to August 15. If it is not possible to construct the proposed project outside of the CAGN breeding season, then protocol-level focused surveys for CAGN would need to be conducted to fully prove absence. If CAGN is determined to be absent during the protocol-level focused surveys, then construction activities (i.e., vegetation clearing, grubbing, grading) may commence.

Although potential impacts to CAGN within Riverside County are fully covered under the MSHCP, take authorization may still be required if the proposed project (Alternative 1) would result in impacts to CAGN within San Bernardino County. Based on direction provided by the United States Fish and Wildlife Service (USFWS) staff (Karin Cleary-Rose and Jim Thiede) on October 8, 2019, Michael Baker conducted focused “spatial use” (non-protocol) surveys during the 2020 breeding season to confirm if and how CAGN are using the existing habitats within and adjacent to Alternative 1 in San Bernardino County and to analyze potential impacts that would occur as a result of the proposed project. Based on the results of the CAGN focused surveys, three (3) CAGN pairs were found to be present within the 500-foot survey area. At least two (2) of the pairs were confirmed to make nesting attempts in 2020, with only one (1) nest known to have been successful. Although territories were located in proximity to the proposed Alternative 1 alignment in 2020, all territories and suitable CAGN habitat is located to the west of the alignment, ultimately resulting in a low chance of CAGN moving across the alignment to the area to the east. Since Alternative 1 would not result in the removal of CSS habitat or other habitat being used by CAGN in 2020, direct project impacts during construction other than routine nesting bird risks due to territory proximity are not expected to occur.

To avoid indirect impacts and take of CAGN in San Bernardino County, it is recommended that all project-related construction occur outside of the recognized CAGN breeding season (March 1 to August 15). Although the proposed project would not result in the loss of CSS habitat, timing the construction to be outside of this window of time would avoid impacts to CAGN that may be nesting in the CSS habitat adjacent to the proposed project. If it is not possible to construct the proposed project outside of the CAGN breeding season, a nesting bird survey would need to be conducted within seven (7) days prior to the start of construction in a 500-foot buffer from the proposed limits of construction. The survey would need to be conducted by a qualified biologist with demonstrable experience identifying CAGN nesting behavior and finding CAGN nests, and who has been approved by the USFWS to conduct the survey. If an active CAGN nest is found during the survey, no project-related construction will be allowed within 500 feet of the nest, or within an alternative safe distance as determined by the qualified biologist based on topography, visual shielding, nest progress, and the type of construction and associated disturbance, until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). Results of the nesting bird/nesting CAGN survey shall be compiled in a memorandum and submitted to the Riverside County Transportation Commission (RCTC) and USFWS for the project record.

Although no BUOW or sign (i.e., pellets, white wash, feathers, or prey remains) were observed during the 2019 focused surveys, the survey area does contain suitable burrows and habitat that may become occupied prior to construction. Due to the presence of potentially suitable habitat, a 30-day pre-construction survey for BUOWs is required prior to initial ground-disturbing activities (e.g., vegetation clearing, clearing and grubbing, grading, tree removal, site watering, equipment staging) to ensure that no BUOWs have colonized the site in the days or weeks preceding the ground-disturbing activities. If BUOWs have colonized the project site prior to the initiation of ground-disturbing activities, the project proponent will immediately inform the Western Riverside County Regional Conservation Authority’s (RCA) and the Wildlife Agencies (CDFW and USFWS), and will need to coordinate further with RCA and the Wildlife Agencies, including

the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If ground-disturbing activities occur, but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure that BUOW have not colonized the site since it was last disturbed. If BUOW is found, the same coordination described above will be necessary.

According to the RCA's online MSHCP Information Application, portions of the proposed project are located within Subunit 2: Prado Basin of the Temescal Canyon Area Plan. In addition, portions of the survey area are located within Criteria Cells 1612 and 1616, Existing Core A, and P/QP Lands. The proposed project is considered a Covered Activity under Section 7.4.2 MSHCP and therefore is not subject to any Reserve Assembly conservation requirements and not subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) review process.

The Santa Ana River, Aliso Canyon, and Drainage 1, including associated riparian vegetation communities, would qualify as riparian/riverine resources pursuant to Section 6.1.2 of the MSHCP; a total of approximately 9.08 acres occurs within the survey area. Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acres of permanent impacts and approximately 0.17 acres of temporary impacts would occur to riparian/riverine resources. In accordance with the MSHCP requirements, a Determination of Biologically Equivalent or Superior Preservation (DBESP) report was prepared and analyzes the effects/benefits of the proposed project and identifies specific mitigation and compensation measures that will be implemented to offset the loss of riparian/riverine resources. The DBESP report will be submitted to the RCA, CDFW, and USFWS for review and approval prior to implementation of the proposed project.

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- Appendix C Potentially Occurring Special-Status Biological Resources
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**ACRONYMS AND ABBREVIATIONS**

° F	degrees Fahrenheit
amsl	above mean sea level
ADA	Americans with Disabilities
APN	assessor parcel number
BMPs	best management practices
BNSF	Burlington Northern Santa Fe
BUOW	burrowing owl
CAGN	coastal California gnatcatcher
CAL-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CSS	coastal sage scrub
CWA	federal Clean Water Act
DBESP	Determination of Biologically Equivalent or Superior Preservation
FESA	federal Endangered Species Act
GIS	Geographic Information System
HANS	Habitat Evaluation and Acquisition Negotiation Strategy
LBVI	least Bell's vireo
MBTA	Migratory Bird Treaty Act
Michael Baker	Michael Baker International
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NEPS	Narrow Endemic Plant Species
NWP	Nationwide Permit
P/QP	Public/Quasi-Public
project	Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project
RCA	Western Riverside County Regional Conservation Authority
RCTC	Riverside County Transportation Commission
Regional Board	Regional Water Quality Control Board
ROW	right-of-way
SAA	Streambed Alteration Agreement
SART	Santa Ana River Trail
SAWA	Santa Ana Watershed Association
SWFL	southwestern willow flycatcher
USDA	United States Department of Agriculture, Natural Resource Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoUS	waters of the U.S.
WQC	Water Quality Certification
YBCU	western yellow-billed cuckoo

# Section 1 Introduction

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This report contains the findings of Michael Baker International’s (Michael Baker) habitat assessment and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) consistency analysis for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project (project). Michael Baker biologists conducted a field survey/habitat assessment on January 23, 2019 and again on June 11, 2019. The field surveys were conducted to characterize existing site conditions and assess the potential for special-status<sup>2</sup> biological resources to occur within the survey area that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of the habitat within survey area and its potential to support special-status biological resources that were identified by the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CNDDDB), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (Online Inventory), and the Western Riverside County Regional Conservation Authority’s (RCA) online MSHCP Information Application as potentially occurring in the vicinity of the survey area.

## 1.1 PROJECT LOCATION

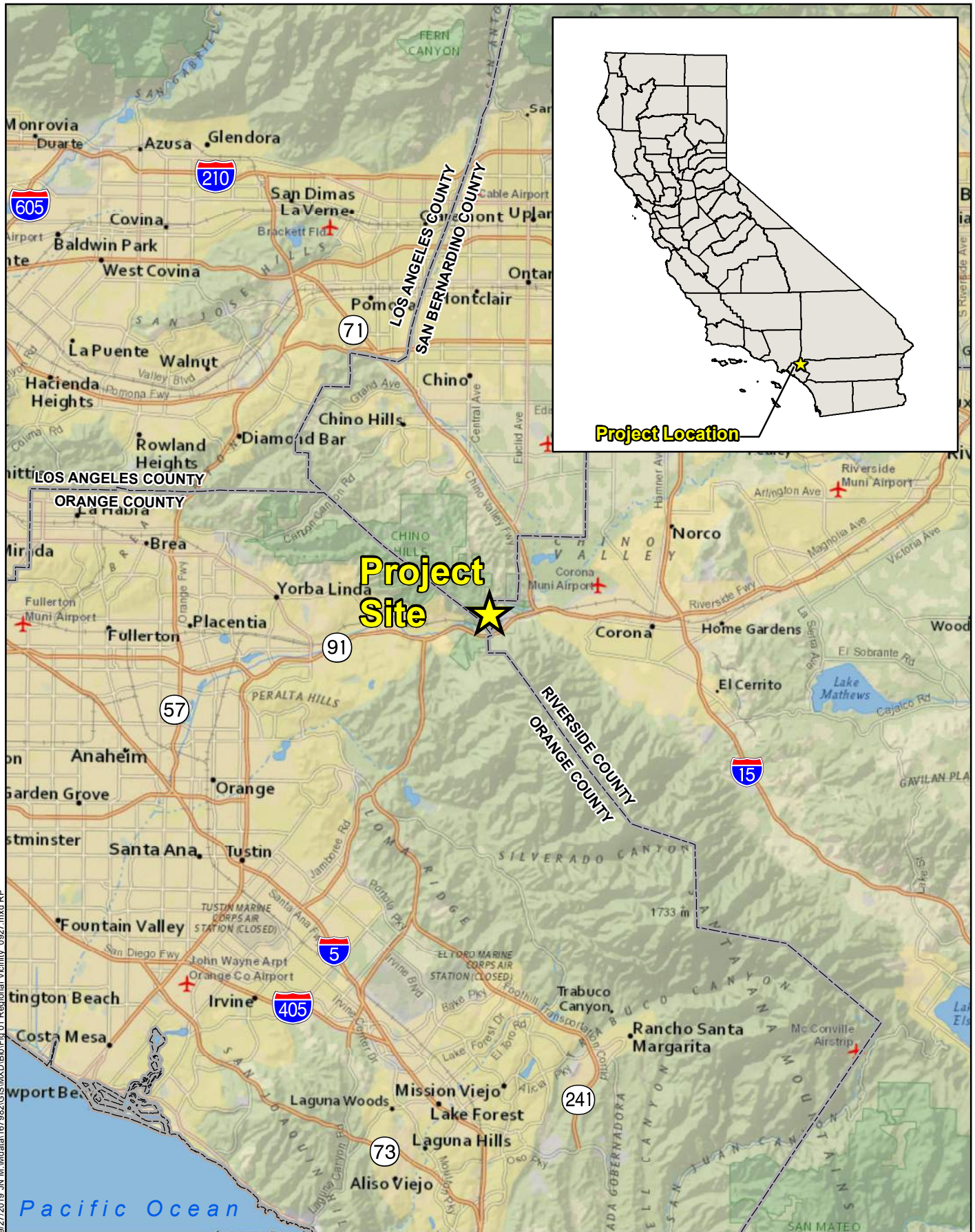
The survey area is generally located within the west end of the City of Corona and the southeast corner of the City of Chino Hills, north of State Route 91 in both Riverside and San Bernardino Counties (refer to Figure 1, *Regional Vicinity*). The survey area is depicted in Sections 25 and 30, Township 3 South, Range 7 and 8 West, on the United States Geological Survey’s (USGS) *Black Star Canyon* and *Prado Dam, California* 7.5-minute quadrangles (refer to Figure 2, *Project Vicinity*). Specifically, the survey area is approximately 149.38 acres in size and is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the Burlington Northern and Santa Fe (BNSF) railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River (refer to Figure 3, *Survey Area*).

## 1.2 PROJECT ALTERNATIVES

The proposed project (SART – Phase 6) consists of a 1.5-mile segment through the Green River Golf Course and a 0.2-mile segment between Phase 5 and Phase 3 of the larger 110-mile SART project. More specifically, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the Santa Ana River Parkway Extension (currently in final design) located west of the proposed project in Orange County, with the existing SART – Phase 5 (completed March 2019) in Chino Hills State Park on the east within Riverside County. Additionally, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the eastern terminus of the SART – Phase 5 and the western terminus of SART – Phase 3 (currently under environmental review), near the State Route 91 and State Route 71 interchange in Riverside County.

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<sup>2</sup> As used in this report, “special-status” refers to species that are either federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; State/locally rare vegetation communities; or species covered under the Western Riverside County Multiple Species Habitat Conservation Plan.



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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

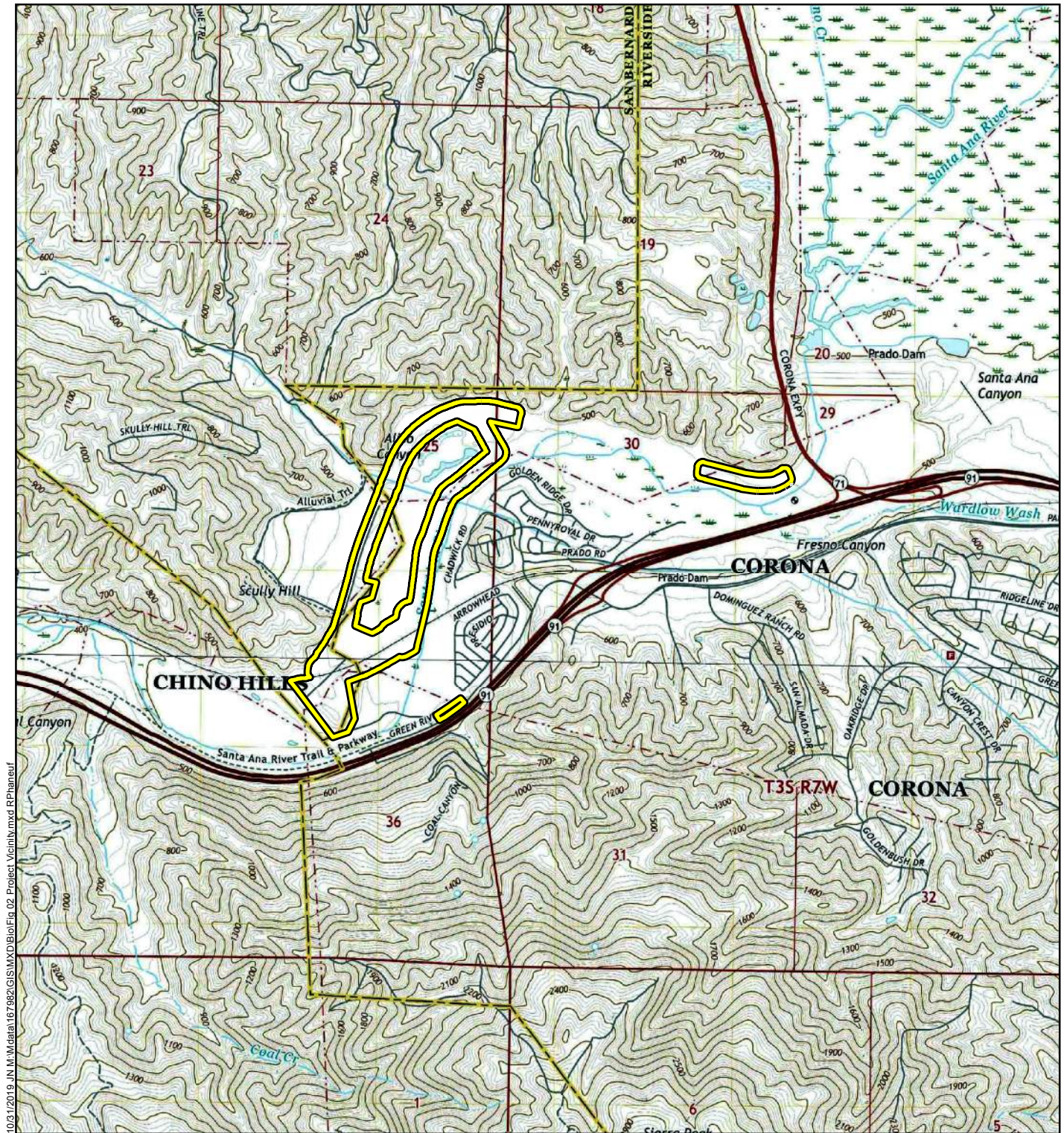
Regional Vicinity

Michael Baker INTERNATIONAL



Source: ArcGIS Online, 2018

Figure 1

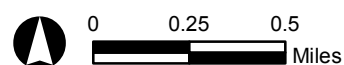


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**Legend**

 Survey Area

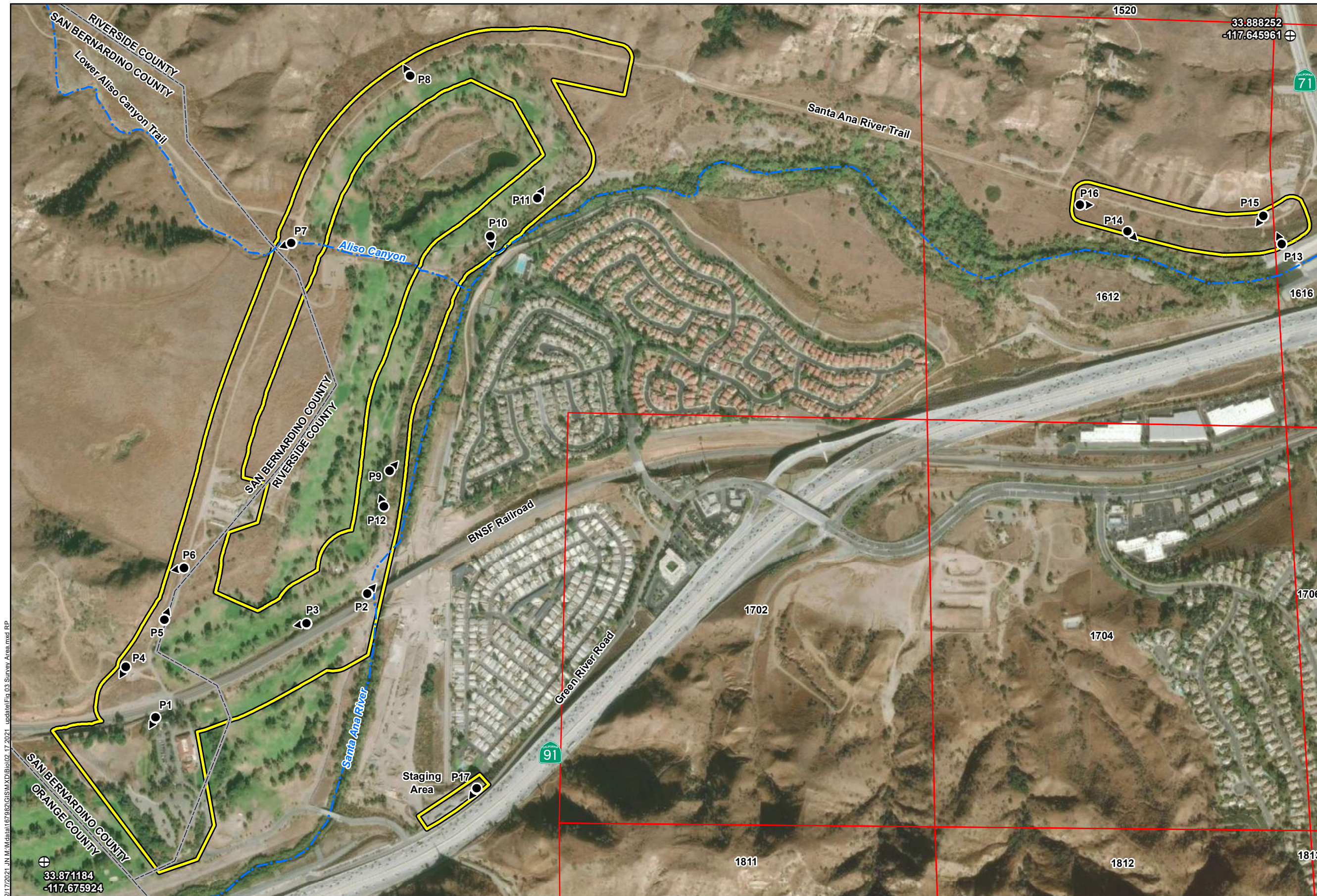
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS



**Project Vicinity**

Source: ArcGIS Online, 2018, USGS 7.5-Minute topographic quadrangle maps: Prado Dam, Black Star Canyon, California (2018)

Figure 2



**Legend**

- Survey Area
- County Boundary
- Criteria Cells
- Photograph Point and Direction
- Reference Point

0 350 700 Feet

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33.871184  
-117.675924

33.888252  
-117.645961

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS



Two build alternatives were analyzed (Alternative 1 and 2) for the proposed project; however, Alternative 2 has been eliminated from consideration. As such, only Alternative 1 is analyzed in this document. Implementation of the proposed project would serve the needs of recreational users, including pedestrians, hikers, bicyclists, and equestrians, as well as provide commuters an opportunity for alternative means and routes of transportation in the project area. Alternative 1 would generally extend along the western boundary of the Green River Golf Course; construction access would occur entirely within the existing developed and disturbed areas and the existing dirt trail (refer to Figure 4, *Project Depiction/Alternatives*). The designated staging area for the proposed project is situated along Green River Road, adjacent to State Route 91. The designated staging area for the project consists of a disturbed area that is currently being used as a staging area for the BNSF railroad bridge project.

### **Trail Characteristics**

The proposed project would primarily consist of a parallel Class I multi-use path and natural surface trail. Based on Michael Baker’s mapping of the limits of the existing maintenance trail, the width of the existing trail ranges from a minimum of 7 feet to a maximum of 27 feet. In areas located outside of Public/Quasi-Public (P/QP) Lands and the Criteria Area, permanent impacts would typically be limited to a 22 foot trail width plus the 2 foot hinges (on either side of the trail) for a total trail width of 26 feet (i.e., the hardscape boundary). Please refer to Appendix D for a cross section of the proposed trail within areas located outside of P/QP Lands and the Criteria Area. To accommodate the maximum allowable width of 20 feet (permanent impact footprint) for future proposed trails within the Criteria Area and P/QP Lands per MSHCP Section 7.4.2, the hardscape boundary of the proposed trail narrows to 20 feet just before the golf course limits end (refer to Appendix D). In addition, the hardscape boundary of the proposed trail would narrow to 20 feet east of the existing SART Phase 5 to SART Phase 3. Temporary impacts in these areas would be approximately 10 feet wider than the hardscape boundary. All temporary impacts would be associated with the outer areas of the proposed trail, within the construction limits. Temporarily impacted areas would be restored through hydroseeding with a native seed mix that would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP and listed by the California Invasive Plant Council (CAL-IPC). The native seed mix would be consistent with the native species located in the impact area’s surrounding. The final landscape plans would need to be reviewed and verified by RCA. In addition, the project applicant shall implement Best Management Practices (BMPs) to mitigate impacts to riparian/riverine resources in accordance with Appendix C of the MSHCP. At the proposed bridge locations, the trail would merge into a combined paved trail, as described below.

- **Class I Multi-Use Path.** Outside of the P/QP Lands and the Criteria Area, the Class 1 multi-use path would be an Americans with Disabilities (ADA) accessible 12-foot-wide paved bike path, consisting of asphalt concrete pavement with an additional two-feet of unpaved dirt shoulder, for a total of 14 feet. This Class 1 multi-use path is intended to be used by bicyclists and pedestrians. Within P/QP lands and the Criteria Area, the Class I Multi-Use Path would be 12 feet wide with a 1-foot unpaved shoulder, for a total of 13 feet.



SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

Project Depiction/Alternatives

Figure 4

- **Natural Surface Trail.** Outside of the P/QP Lands and the Criteria Area, the natural surface trail would be a 10-foot-wide trail consisting of decomposed granite (DG) or a similar permeable surface of compacted dirt with an additional two-foot shoulder, for a total of 12 feet. The natural surface trail is intended to be used by mountain bicyclists, equestrians, pedestrians, and hikers. Within P/QP lands and the Criteria Area, the natural surface trail would be 6 feet wide with a 1-foot unpaved shoulder, for a total of 7 feet.
- **Combined Paved Trail.** At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 20 feet wide on the bridges.

### **Alternative 1 – West of Golf Course**

The southwesterly end of the proposed project alignment would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line, south of the existing BNSF railroad. Alternative 1 generally extends east-west (within the existing golf course) south of, and parallel to, the BNSF railroad until it reaches the golf course parking lot.

From the parking lot, Alternative 1 would extend north, spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge ranging in width from 20 feet to 37 feet. Once across the railroad line, the trail would continue north along the existing maintenance road. A bridge would be installed to cross Aliso Canyon. The trail would then continue north/northeast and connect with the SART – Phase 5 in Chino Hills State Park.

### **Additional Trail Alignment**

Both build alternatives would include construction of the approximate 1,000-foot segment of the SART located east of the golf course (refer to Figure 4, *Project Depiction/Alternatives*). This portion of the SART would connect the eastern terminus of the SART – Phase 5 with the western terminus of SART – Phase 3, near the State Route 91 and State Route 71 interchange.

## Section 2 Methodology

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Michael Baker conducted thorough literature reviews and records searches to determine which special-status biological resources have the potential to occur on or within the general vicinity of the survey area prior to conducting the field surveys. General habitat assessments or field surveys were conducted in order to document existing conditions and determine the potential for special-status plant and wildlife species to occur within the survey area.

### 2.1 LITERATURE REVIEW

Prior to conducting the field surveys, literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the survey area. Previous special-status plant and wildlife species occurrence records within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles were determined through a query of the CNDDDB (CDFW, 2020a), BIOS (CDFW, 2020b), the CNPS Online Inventory (CNPS, 2020), the Calflora Database (Calflora, 2020), and those species covered under the MSHCP and associated technical documents. Current conservation status of species was verified through lists and resources provided by the CDFW, specifically the *Special Animals List* (CNDDDB, 2020c), *State and Federally Listed Endangered and Threatened Animals of California* (CNDDDB, 2020d), *Special Vascular Plants, Bryophytes, and Lichens List* (CNDDDB, 2020e), and *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CNDDDB, 2020f).

In addition to the databases referenced above, Michael Baker reviewed all available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the survey area to understand existing site conditions, confirm previous species observations, and note the extent of any disturbances, if present, that have occurred in the survey area that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources.

On-site and adjoining soils were researched prior to conducting the habitat assessment using the United States Department of Agriculture, Natural Resource Conservation Service (USDA) *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2020). In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes and disturbances that may have occurred within the survey area.

Aerial photography was reviewed prior to the field survey to locate potential natural corridors and linkages that may support the movement of wildlife through the area. The literature review provided a baseline from which to inventory the existing biological resources and evaluate the ability of the survey area to support special-status biological resources. Additional occurrence records of those species that have been documented on or within the vicinity of the survey area were derived from database queries. The CNDDDB

was used, in conjunction with GIS ArcView software, to identify special-status species occurrence records within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. Refer to Section 7 for a complete list of technical references that were reviewed by Michael Baker throughout the course of the habitat assessment.

## 2.2 HABITAT ASSESSMENT

Michael Baker biologists Frances Yau, Stephen Anderson, and Tom Millington conducted a habitat assessment or field survey on January 23, 2019 to document the extent and conditions of the vegetation communities occurring within the boundaries of the survey area. An additional field survey was conducted by Michael Baker biologists Ashley Spencer and Stephen Anderson on June 11, 2019.

Vegetation communities preliminarily identified on aerial photographs during the literature review were verified in the field by walking meandering transects through the vegetation communities and along boundaries between vegetation communities. Naturally vegetated areas typically have a higher potential to support special-status plant and wildlife species than areas that are highly disturbed or developed, which usually have lower quality and/or reduced amounts of habitat for wildlife. All plant and wildlife species observed during the habitat assessment, as well as dominant plant species within each vegetation community, were recorded in a field notebook, as described below. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, and the overall condition of on-site vegetation communities were recorded.

## 2.3 VEGETATION COMMUNITIES

Vegetation communities occurring within the survey area were delineated on an aerial photograph during the habitat assessment and later digitized using the GIS ArcView software to quantify the area of each vegetation community in acres. Vegetation communities occurring within the survey area were classified in accordance with vegetation descriptions provided in the *Manual of California Vegetation* (Sawyer *et al.*, 2009) and cross referenced with the vegetation descriptions described in the MSHCP via the RCA's online MSHCP Information Application.

## 2.4 PLANTS

Plant species observed during the habitat assessment were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unfamiliar plants were photographed in the field and later identified in the laboratory using taxonomic guides. Plant nomenclature used in this report follows the *Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin *et al.*, 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

## 2.5 WILDLIFE

Wildlife species detected during the habitat assessment by sight, calls, tracks, scat, or other types of sign were recorded in a field notebook. Field guides used to assist with identification of species during the habitat assessment included *The Sibley Guide to Birds* (Sibley, 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins, 2003) for herpetofauna, and *A Field Guide to Mammals of North America* (Reid, 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union's *Checklist of North American Birds* (Chesser et al., 2019), nomenclature of amphibians and reptiles follows *Amphibian and Reptile Species of Special Concern in California* (California Department of Fish and Game, 1994), *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother, 2017), and nomenclature for mammals follows the *Bats of the United States and Canada* (Harvey et al., 2011) and *Revised Checklist of North American Mammals North of Mexico* (Bradley et al., 2014).

## 2.6 OTHER FIELD STUDIES

### 2.6.1 BURROWING OWL FOCUSED SURVEYS

Michael Baker biologists conducted a focused burrow survey and focused survey for burrowing owls (*Athene cunicularia* [BUOW]) on seven (7) separate days during the 2019 breeding season: during the morning of June 11, July 3, July 23, August 13, August 27, the morning and evening of August 28, and the morning of August 29, 2019. The focused burrow survey and focused surveys were conducted in accordance with the survey guidelines and protocols provided in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) and the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (RCA, 2006). The results of Michael Baker's focused surveys are summarized in Section 5.6.3 of this report.

### 2.6.2 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Michael Baker certified wetland delineators Josephine Lim and Tim Tidwell conducted a jurisdictional delineation on January 23, 2019 and subsequent site visits on June 11, August 7, and October 22, 2019 and October 13, 2020 to identify and map the jurisdictional limits of waters of the U.S. (WoUS), including potential wetlands, and waters of the State within the boundaries of the survey area. During the field delineation, Michael Baker utilized the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (United States Army Corps of Engineers [Corps], 2008) to document the presence and extent of jurisdictional features that would fall under the regulatory authority of the Corps, the Regional Water Quality Control Board (Regional Board), and the CDFW. The results of Michael Baker's jurisdictional delineation are summarized in Section 4.4 of this report.

### 2.6.3 COASTAL CALIFORNIA GNATCATCHER FOCUSED SURVEYS

Based on direction provided by United States Fish and Wildlife Service (USFWS) staff (Karin Cleary-Rose and Jim Thiede) on October 8, 2019, Michael Baker conducted focused “spatial use” (non-protocol) surveys to confirm if and how coastal California gnatcatcher (*Polioptila californica californica*; CAGN) are using the existing habitats within and adjacent to Alternative 1 in San Bernardino County and to analyze potential impacts that would occur as a result of the proposed project. Focused spatial use surveys for CAGN were conducted between February and June 2020 along, and in areas of suitable habitat within 500 feet of, an approximately 0.7-mile segment of Alternative 1 in San Bernardino County, and generally followed the guidelines described in the USFWS protocol *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines, February 28, 1997* (USFWS, 1997). The notable difference between the survey protocol and Michael Baker’s surveys, however, is that Michael Baker’s surveys did not use any audio playback; surveys were instead conducted in a relatively non-intrusive and passive way based on guidance provided by USFWS. All surveys were conducted by Michael Baker biologists Ryan Winkleman (recovery permit TE-88331A-2), Stephen Anderson, and Ashley Spencer between February and June 2020.

## Section 3 Existing Conditions

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### 3.1 LOCAL CLIMATE

The Chino/Chino Hills area features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Climatological data obtained from nearby weather stations indicates the annual precipitation in these two cities averages 14.48 inches per year.<sup>3</sup> Almost all the precipitation occurs in the form of rain in the months between November and March, with hardly any occurring between the months of June and September. The wettest month is February, with a monthly average total precipitation of 3.47 inches, and the driest month is July with monthly average total precipitation of 0.01 inches. The average maximum and minimum temperatures are 78- and 50-degrees Fahrenheit (° F) respectively with August (monthly average high 91° F) being the hottest month and December (monthly average low 41° F) being the coldest. The temperature during the site visits were in the high 60s to low 70s° F.

### 3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 404 to 482 feet above mean sea level (amsl) and generally slopes to the southwest. According to the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2020), the survey area is underlain by the following soil units: Garretson gravelly very fine sandy loam, 8 to 15% slopes, eroded (GdD2); Garretson very fine sandy loam, 2 to 9% slopes (GaC); Gaviota rocky very fine sandy loam, 25 to 50% slopes, eroded (GgF2); Gaviota very fine sandy loam, 15 to 50% slopes, eroded (GfF2); Metz loamy sand (163); Metz loamy sand, 0 to 15% slopes (MeD); Monserate sandy loam, 2 to 9% slopes (MoC); Riverwash (RsC); San Emigdio fine sandy loam, 0 to 2% slopes (ScA); San Emigdio fine sandy loam, 2 to 9% slopes (SrC); San Emigdio fine sandy loam, deep, 0 to 2% slopes (SfA); San Emigdio loam, 0 to 2% slopes (SgA); Soper gravelly loam, 30 to 50% slopes MLRA 20 (Srf); and Water (W). Refer to Figure 5, *USDA Soils*, for a depiction of soil units within the survey area.

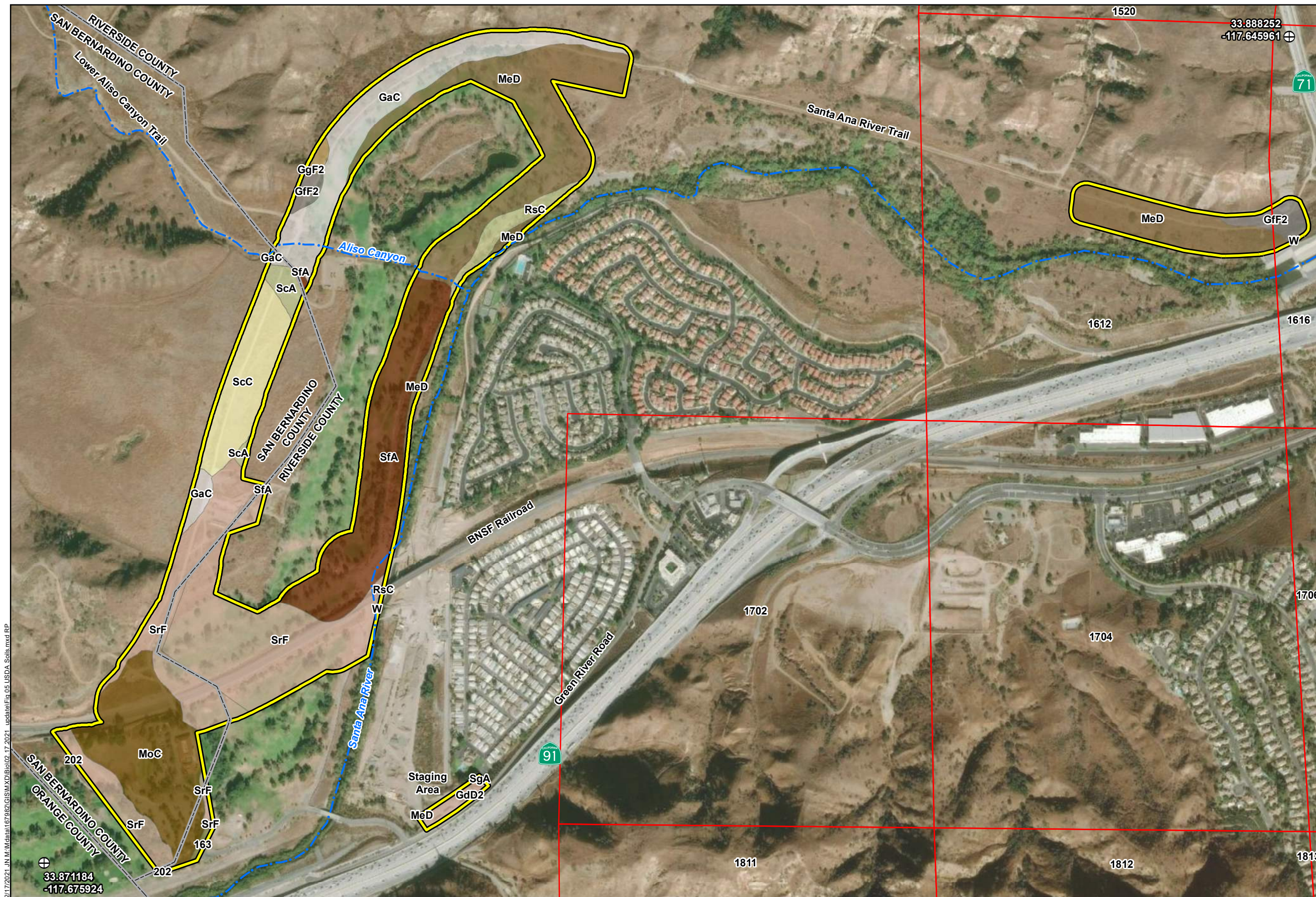
### 3.3 SURROUNDING LAND USES

Land uses surrounding the survey area mainly consist of high-density residential land uses, open space associated with Chino Hills State Park, the Green River Golf Course, as well as some disturbed and vacant land. State Route 91 is located immediately adjacent to the southern boundary of survey area and runs in an east-west direction. Additionally, State Route 71 is approximately 1 mile east of the survey area and runs in a north-south direction. Chino Hills State Park is located immediately north/west of the survey area, whereas the Santa Ana River and existing residential developments are located immediately east. Additionally, the survey area is located approximately 1.5 miles southwest of Prado Dam and Basin.

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<sup>3</sup> <http://www.intellicast.com>.





### Legend

- Survey Area
- County Boundary
- Criteria Cells
- GdD2** Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded
- GaC** Garretson very fine sandy loam, 2 to 9 percent slopes
- GgF2** Gaviota rocky very fine sandy loam, 25 to 50 percent slopes, eroded
- GfF2** Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded
- 163** Metz loamy sand
- MeD** Metz loamy sand, channeled, 0 to 15 percent slopes
- MoC** Monserate sandy loam, 2 to 9 percent slopes
- Rsc** Riverwash
- ScA** San Emigdio fine sandy loam, 0 to 2 percent slopes
- SrC** San Emigdio fine sandy loam, 2 to 9 percent slopes
- SfA** San Emigdio fine sandy loam, deep, 0 to 2 percent slopes
- SgA** San Emigdio loam, 0 to 2 percent slopes
- SrF** Soper gravelly loam, 30 to 50 percent slopes, MLRA 20
- W** Water
- Reference Point



0 350 700 Feet

2/17/2021 J:\M\MapData\167982\GIS\MXD\BIO\02\_17\_2021\_update\Fig.05\_USDA\_Soils.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

## Section 4 Discussion

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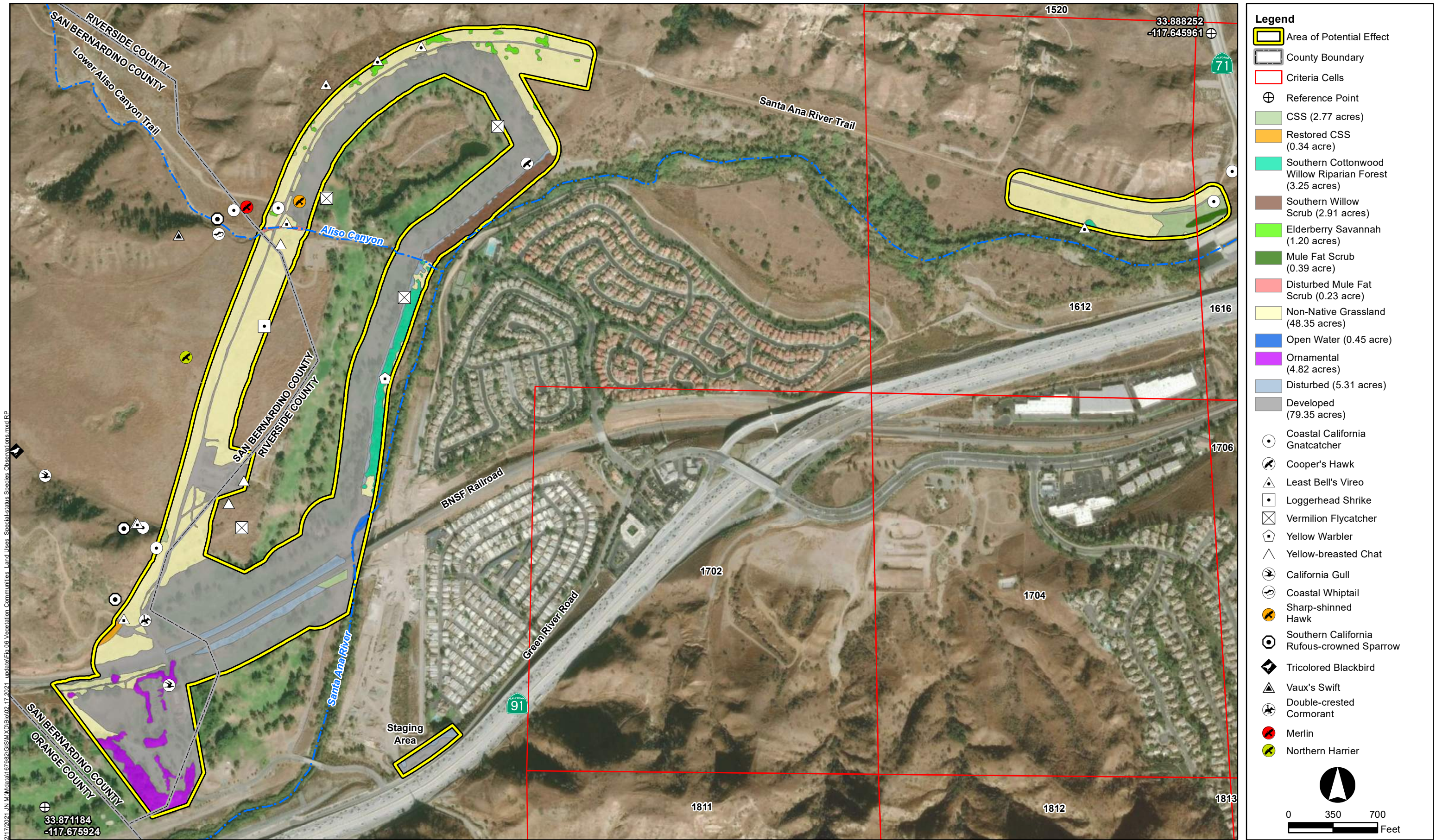
The survey area is located within the west end of the City of Corona and the southeast corner of the City of Chino Hills, north of State Route 91 in both Riverside and San Bernardino Counties. The survey area is approximately 149.38 acres in size and is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the BNSF railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River. The topography of the survey area consists of a nearly flat plateau surrounded by steep slopes to the north, south, and west and a relatively flat plateau to the east. The eastern portion of the survey area consists of moderately steep hillsides that slope down towards the Santa Ana River. Additionally, Aliso Canyon runs through the survey area in a west to east direction and eventually flows into the Santa Ana River. Based on a review of Google Earth historical aerial imagery, several undeveloped portions of the survey area have been routinely disturbed and maintained through weed abatement (i.e. disking) and goat/cattle grazing activities since 1994. Refer to Figure 3 and Appendix A for representative photographs taken throughout the survey area.

### 4.1 VEGETATION COMMUNITIES AND LAND COVER TYPES

Eight (8) natural vegetation communities were observed and mapped within the boundaries of the survey area: southern willow scrub, southern cottonwood willow riparian forest, mule fat scrub, disturbed mule fat scrub, elderberry savannah, coastal sage scrub (CSS), restored CSS, and non-native grassland. In addition, the survey area contains four (4) land cover types that would be classified as open water, disturbed, ornamental, and developed. These vegetation communities and land cover types are depicted on Figure 6, *Vegetation Communities, Land Uses, and Special-Status Species Observations*, and described in further detail below. In addition, refer to Appendix B for a complete list of plant species that were observed within the survey area during the field surveys.

#### 4.1.1 SOUTHERN WILLOW SCRUB

Approximately 2.91 acres of southern willow scrub, a State-Designated S-2.1 “imperiled” vegetation community, occurs along the Santa Ana River within the eastern portion of the survey area. This vegetation community is primarily dominated by arroyo willow (*Salix lasiolepis*), mule fat (*Baccharis salicifolia*), and red willow (*Salix laevigata*), with scattered patches of giant reed (*Arundo donax*). Herbaceous plant species such as wild oat (*Avena fatua*), castor bean (*Ricinus communis*), and western ragweed (*Ambrosia psilostachya*) also occur at lower densities.



#### **4.1.2 SOUTHERN COTTONWOOD WILLOW RIPARIAN FOREST**

Approximately 3.25 acres of southern cottonwood willow riparian forest, a State-Designated S-3.2 “vulnerable” vegetation community, occurs within the eastern portion of the survey area. The southern willow scrub vegetation community begins to transition to a southern cottonwood willow riparian forest as you move south along the Santa Ana River. This vegetation community is dominated by Fremont cottonwood (*Populus fremontii*), arroyo willow, red willow, and mule fat. Additionally, Brazilian pepper tree (*Schinus terebinthifolius*) and tree tobacco (*Nicotiana glauca*) also occur throughout this vegetation community.

#### **4.1.3 MULE FAT SCRUB**

Approximately 0.39 acres of mule fat scrub occurs immediately south of the unpaved segment between SART – Phase 3 and SART – Phase 5 on a terrace above the Santa Ana River. Mule fat is the dominant plant species within this vegetation community.

#### **4.1.4 DISTURBED MULE FAT SCRUB**

Approximately 0.23 acres of disturbed mule fat scrub occurs along the banks of Aliso Canyon at the west end of the survey area. The characteristic plant species found within this vegetation community (e.g., mule fat) is sparse and in poor condition. This area of disturbed mule fat scrub is similar to the mule fat scrub vegetation community described above, but with a higher concentration of non-native vegetation, including foxtail barley (*Hordeum murinum*), London rocket (*Sisymbrium irio*), and riggut brome (*Bromus diandrus*).

#### **4.1.5 ELDERBERRY SAVANNAH**

Approximately 1.20 acres of elderberry savannah occurs immediately adjacent to the existing maintenance road located within the northern portion of the survey area. This vegetation community is dominated by stands of black elderberry (*Sambucus nigra*) with short podded mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and other non-native grasses also occur within the understory.

#### **4.1.6 COASTAL SAGE SCRUB**

Approximately 2.77 acres of CSS occurs within the southwest and eastern portion of the survey area. This vegetation community is primarily dominated by California sagebrush (*Artemisia californica*), with California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*) spread throughout.

#### **4.1.7 RESTORED COASTAL SAGE SCRUB**

Approximately 0.34 acres of restored CSS occurs within the southwest corner of the survey area. Specifically, this area occurs within the southern portion of Chino Hills State Park and has been planted with CSS vegetation by California State Parks. The plantings in this restoration area include California

sagebrush, laurel sumac, white sage, prickly pear cactus (*Opuntia littoralis*), and California sunflower (*Encelia californica*).

#### **4.1.8 NON-NATIVE GRASSLAND**

Approximately 48.35 acres of non-native grassland occurs within the northern and western portions of the survey area. Certain portions of this vegetation community undergo routine weed abatement (i.e., disking) and appeared to have been recently disked prior to the January 23, 2019 field survey. Additionally, the non-native grassland vegetation community can be found intermixing with the elderberry savannah in the northern portion of the survey area, along with the southern cottonwood willow riparian forest and southern willow scrub in the eastern portion of the survey area. Dominant species observed within this vegetation community include short-podded mustard, Russian thistle, riggut brome, and wild oat.

#### **4.1.9 OPEN WATER**

Approximately 0.45 acres of open water occurs within the survey area. Specifically, open water occurs within the Santa Ana River diversion channel associated with the Santa Ana River Reach 9: BNSF Railroad Bridge Project.

#### **4.1.10 DISTURBED**

Approximately 5.31 acres of disturbed land occurs immediately adjacent to the BNSF railroad to the west of the Santa Ana River. Plant species observed within these areas include castor bean, tree tobacco, black mustard (*Brassica nigra*), and poison hemlock (*Conium maculatum*). A few individuals of black elderberry, laurel sumac, and mule fat also occur.

#### **4.1.11 ORNAMENTAL**

Approximately 4.82 acres of ornamental vegetation occurs within the southern portion of the survey area, surrounding the existing Green River Golf Course clubhouse and parking lot. Ornamental trees observed include black poui (*Jacaranda mimosifolia*), red iron bark (*Eucalyptus sideroxylon*), blue gum (*Eucalyptus globulus*), and carrotwood (*Cupaniopsis anacardioides*).

#### **4.1.12 DEVELOPED**

Approximately 79.35 acres of developed land occurs within the survey area. Areas of developed land consists of the BNSF railroad and existing maintenance roads/trails, parking lots, structures, and landscaped fairways associated with the Green River Golf Course.

### **4.2 WILDLIFE**

Natural vegetation communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a general discussion of those wildlife species that were observed

during the field surveys or that are expected to occur based on existing site conditions. The discussion is to be used as a general reference and is limited by the season, time of day, and weather conditions in which the field surveys were conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation. Refer to Appendix B for a complete list of wildlife species observed during the field surveys.

#### **4.2.1 FISH**

No fish were observed within the survey area during the field surveys. The section of Aliso Canyon that occurs within the northern portion of the survey area is ephemeral and was dry during the field surveys. As a result, this segment of Aliso Canyon is not expected to support populations of fish. The Santa Ana River, a perennial stream, occurs within the survey area and provides suitable habitat for a variety of native/non-native fish species, including the Santa Ana sucker (*Catostomus santaanae*), arroyo chub (*Gila orcuttii*), common carp (*Cyprinus carpio*), fathead minnow (*Pimephales promelas*), largemouth bass (*Micropterus salmoides*), yellow bullhead (*Ameiurus natalis*), mosquito fish (*Gambusia affinis*), and channel catfish (*Ictalurus punctatus*).

#### **4.2.2 AMPHIBIANS**

No amphibians were observed during the field surveys. However, the Santa Ana River and adjacent vegetation communities provides suitable breeding and dispersal habitat for amphibians that may be present under leaf litter or aestivating underneath the surface. Common amphibian species most likely to occur within these areas include Baja California treefrog (*Pseudacris hypochondriaca*), California treefrog (*Pseudacris cadaverina*), western toad (*Anaxyrus boreas*), and American bullfrog (*Lithobates catesbeianus*).

#### **4.2.3 REPTILES**

Great Basin fence lizard (*Sceloporus occidentalis longipes*), western side-blotched lizard (*Uta stansburiana elegans*), San Diego gopher snake (*Pituophis catenifer annectens*), and southern pacific rattlesnake (*Crotalus oreganus helleri*) were the only common species of reptiles observed during the field surveys. In addition, one (1) special-status reptile species, coastal whiptail (*Aspidoscelis tigris stejnegeri*), was observed adjacent to the survey area during the 2020 CAGN field surveys. Other common reptiles that may occur include woodland alligator lizard (*Elgaria multicarinata webbii*), red racer (*Coluber flagellum piceus*), and California kingsnake (*Lampropeltis californiae*).

#### **4.2.4 BIRDS**

Bird species that were observed within or adjacent to the survey area included red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Anna's hummingbird (*Calypte anna*), turkey vulture (*Cathartes aura*), northern flicker (*Colaptes auratus*), American crow (*Corvus brachyrhynchos*), American kestrel (*Falco sparverius*), house finch (*Haemorhous mexicanus*), dark-eyed junco (*Junco hyemalis*), California towhee (*Melospiza crissalis*), northern mockingbird (*Mimus polyglottos*), savannah sparrow

(*Passerculus sandwichensis*), Nuttall's woodpecker (*Picoides nuttallii*), American bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), yellow-rumped warbler (*Setophaga coronata*), western bluebird (*Sialia mexicana*), lesser goldfinch (*Spinus psaltria*), western meadowlark (*Sturnella neglecta*), European starling (*Sturnus vulgaris*), American robin (*Turdus migratorius*), Cassin's kingbird (*Tyrannus vociferans*), mourning dove (*Zenaida macroura*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), ash-throated flycatcher (*Myiarchus cinerascens*), blue-gray gnatcatcher (*Polioptila caerulea*), Bewick's wren (*Thryomanes bewickii*), house sparrow (*Passer domesticus*), and rock pigeon (*Columba livia*). In addition, fourteen (14) special-status bird species were observed within or adjacent to the survey area during the field surveys: Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), tricolored blackbird (*Agelaius tricolor*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Vaux's swift (*Chaetura vauxi*), northern harrier (*Circus hudsonius*), merlin (*Falco columbarius*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), California gull (*Larus californicus*), double-crested cormorant (*Phalacrocorax auritus*), CAGN, vermilion flycatcher (*Pyrocephalus rubinus*), yellow warbler (*Setophaga petechia*), and least Bell's vireo (*Vireo bellii pusillus* [LBVI]). Refer to Figure 6 for a depiction of special-status bird observations within and adjacent to the survey area.

Nesting birds are protected pursuant to the federal Migratory Bird Treaty Act (MBTA) of 1918 and the California Fish and Game Code<sup>4</sup> (CFGF). No active or remnant bird nests or birds displaying nesting behaviors were observed within the survey area during the field surveys. However, the southern willow scrub, southern cottonwood willow riparian forest, elderberry savannah, mule fat scrub, CSS, and ornamental vegetation communities within the survey area provide suitable nesting opportunities for a variety of resident and migratory bird species. Additionally, the non-native grassland and unvegetated areas on the plateau could provide nesting opportunities for birds that nest on the open ground (e.g., western meadow lark).

#### 4.2.5 MAMMALS

The survey area has the potential to support a variety of mammalian species; however, most mammalian species are nocturnal and are difficult to observe during a diurnal habitat assessment. Mammalian species detected during the field surveys included California ground squirrel (*Otospermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and Audubon's cottontail rabbit (*Sylvilagus audubonii*). Additionally, woodrat (*Neotoma* sp.) middens and bobcat (*Lynx rufus*) tracks were observed within the western portion of the survey area. Other common mammalian species that are expected to occur within the survey area include deer mouse (*Peromyscus maniculatus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), and coyote (*Canis latrans*).

<sup>4</sup> Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by CFGF or any regulation made pursuant thereto; Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey); and Section 3513 makes it unlawful to take or possess any migratory non-game bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA, as amended (16 U.S.C. § 703 *et. sq.*).

The survey area has the potential to provide suitable foraging habitat for various species of bats (Order Chiroptera). In addition, trees within the southern willow scrub and southern cottonwood willow riparian forest vegetation communities could provide marginally suitable roosting habitat for bat species that typically roost in three hollows or on the underside of leaves. Bat species that prefer to roost in mines, caves, rock outcrops, deep rock crevices, and buildings would not be expected to occur as these features are absent from the survey area.

### 4.3 MIGRATORY CORRIDORS AND LINKAGES

Wildlife corridors and linkages are key features for wildlife movement between habitat patches. Wildlife corridors are generally defined as those areas that provide opportunities for individuals or local populations to conduct seasonal migrations, permanent dispersals, or daily commutes, while linkages generally refer to broader areas that provide movement opportunities for multiple keystone/focal species or allow for propagation of ecological processes (e.g., for movement of pollinators), often between areas of conserved land.

Wildlife movement within and adjacent to the survey area potentially occurs throughout the Santa Ana River, Aliso Canyon, and the surrounding interior areas, foothills, and mountain ranges within Chino Hills State Park. Additionally, the survey area itself consists of an unvegetated trail that allows wildlife to move freely across to surrounding habitats. The survey area and open space provide movement opportunities for coyote and bobcat as well as provide suitable nesting/foraging habitat for a variety of seasonal bird species that migrate through the region. It should be noted that the northern portion of the survey area occurs within Existing Core A, which consists of Prado Basin and the Santa Ana River, located in the northwest region of the MSHCP. According to the MSHCP, the core functions as a linkage, connecting Orange County to the west with San Bernardino County to the north, and provides habitat for Santa Ana sucker, arroyo chub, western pond turtle (*Emys marmorata*), Cooper's hawk, tricolored blackbird, BUOW, American bittern (*Botaurus lentiginosus*), cactus wren (*Campylorhynchus brunneicapillus cousei*), northern harrier, western yellow-billed cuckoo (*Coccyzus americanus occidentalis* [YBCU]), yellow warbler, white-tailed kite (*Elanus leucurus*), southwestern willow flycatcher (*Empidonax traillii extimus* [SWFL]), California horned lark (*Eremophila alpestris actia*), peregrine falcon (*Falco peregrinus*), yellow-breasted chat, loggerhead shrike, black-crowned night heron (*Nycticorax nycticorax*), osprey (*Pandion haliaetus*), double-crested cormorant, downy woodpecker (*Picoides pubescens*), white-face ibis (*Plegadis chihi*), tree swallow (*Tachycineta bicolor*), LBVI, bobcat, mountain lion (*Puma concolor*), and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*). Refer to Section 5 for additional information regarding Existing Core A.

### 4.4 STATE AND FEDERAL JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredged or fill material into "waters of the United States" pursuant to Section 404 of the federal Clean Water Act (CWA) and Section 10 of the Rivers



and Harbors Act. Of the State agencies, the Regional Board regulates discharges to surface waters pursuant to Section 401 of the CWA and Section 13263 of the California Porter-Cologne Water Quality Control Act and the CDFW regulates alterations to streambed and associated vegetation communities under Section 1600 *et seq.* of the CFGC.

As documented in the *Delineation of State and Federal Jurisdictional Waters* (Michael Baker, 2020), three (3) drainage features were documented within the boundaries of the survey area as follows: Santa Ana River, Aliso Canyon, and Drainage 1. Refer to the following sections for a summary of jurisdictional features documented within the survey area and impacts that are expected to occur as a result of the proposed project.

#### 4.4.1 UNITED STATES ARMY CORPS OF ENGINEERS

The Santa Ana River, Aliso Canyon, and Drainage 1 would fall under the regulatory authority of the Corps due to the presence of an ordinary high-water mark. In addition, the Santa Ana River is a Relatively Permanent Water, and Aliso Canyon and Drainage 1 have a direct surface and/or culverted connection to the Santa Ana River. The Santa Ana River flows southwest out of the survey area, through Yorba Linda, Anaheim, and Orange, south towards Fountain Valley to Huntington Beach and terminates in the Pacific Ocean, which is considered a Traditional Navigable Waterway. As such, approximately 1.17 acres of Corps jurisdiction (non-wetland WoUS) is located within the survey area (Michael Baker, 2020).

Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acres of permanent impacts and approximately 0.10 acres of temporary impacts would occur to Corps non-wetland WoUS (refer to Table 1 below). Therefore, it would be necessary for the project proponent to acquire a Section 404 permit from the Corps prior to impacts occurring within Corps jurisdictional areas. Since impacts to Corps jurisdiction would be less than a ½-acre, it is anticipated that the proposed project can be authorized via a Nationwide Permit (NWP), specifically NWP No. 14: *Linear Transportation Projects*.

**Table 1: State and Federal Jurisdictional Features and Proposed Impacts**

Jurisdictional Feature	Acreage			
	Proposed Impacts for Alternative 1			
	Corps/Regional Board (Non-wetland WoUS)		CDFW (Streambed/Riparian)	
	Temporary Impacts	Permanent Impacts	Temporary Impacts	Permanent Impacts
Santa Ana River	0.00	0.00	0.00	0.00
Aliso Canyon	0.10	0.00	0.17	0.00
Drainage 1	0.00	0.003	0.00	0.003
<b>TOTAL</b>	<b>0.10</b>	<b>0.003</b>	<b>0.17</b>	<b>0.003</b>

#### 4.4.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters under Section 401 of the CWA and Section 13263 of the California Porter-Cologne Water Quality Control Act. Based on the results of the field

delineation, approximately 1.17 acres of Regional Board jurisdiction (non-wetland WoUS) is located within the survey area (Michael Baker, 2020).

Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acres of permanent impacts and approximately 0.10 acres of temporary impacts would occur to Regional Board non-wetland WoUS (refer to Table 1 above). Prior to the issuance of a Section 404 permit, the Corps requires that a Section 401 Water Quality Certification (WQC) be obtained from the Regional Board to ensure that impacts would comply with the State's water quality standards. Therefore, it would be necessary for the project proponent to acquire a Section 401 WQC from the Regional Board prior to impacts occurring within Regional Board jurisdictional areas.

#### 4.4.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The Santa Ana River, Aliso Canyon, and Drainage 1 exhibit a bed and bank and fall under the regulatory authority of the CDFW. Based on the results of the field delineation, approximately 8.71 acres of CDFW jurisdiction (streambed/riparian) is located within the survey area (Michael Baker, 2020).

Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acres of permanent impacts and approximately 0.17 acres of temporary impacts would occur to CDFW streambed and associated riparian vegetation (refer to Table 1 above). Therefore, it would be necessary for the project proponent to acquire a Section 1602 Streambed Alteration Agreement (SAA) prior to the alteration of CDFW jurisdictional features.

#### 4.5 SPECIAL-STATUS BIOLOGICAL RESOURCES

The CNDDDB and CNPS Online Inventory were queried for reported locations of special-status plant and wildlife species as well as special-status natural vegetation communities in the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. The habitat assessment was conducted to assess and evaluate the existing condition of the habitat(s) within the boundaries of the survey area to determine if the existing vegetation communities, at the time of the field surveys, have the potential to provide suitable habitat(s) for special-status plant and wildlife species. Additionally, the potentials for special-status species to occur within the survey area were determined based on the reported locations in the CNDDDB and CNPS Online Inventory and the following:

- **Present:** the species was observed or detected within the survey area during the field survey.
- **High:** Occurrence records (within 20 years) indicate that the species has been known to occur on or within one mile of the survey area and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the survey area and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate:** Occurrence records (within 20 years) indicate that the species has been known to occur within one mile of the survey area and the site is within the normal expected range of this

species. There is suitable habitat within the survey area, but the site is ecologically isolated from any local known extant populations or sightings.

- **Low:** Occurrence records (within 20 years) indicate that the species has been known to occur within five miles of the survey area, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the survey area.
- **Not Expected:** There are no occurrence records of the species occurring within five miles of the survey area, there is no suitable habitat within the survey area, and/or the survey area is outside of the normal expected range for the species.

The literature search identified forty-four (44) special-status plant species, seventy-three (73) special-status wildlife species, and ten (10) special-status vegetation communities as having the potential to occur in the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the survey area based on habitat requirements, availability and quality of suitable habitat, and known distributions. Special-status biological resources identified during the literature review as having the potential to occur within the vicinity of the survey area are presented in *Table C – 1: Potentially Occurring Special-Status Biological Resources*, provided in Appendix C.

#### 4.5.1 SPECIAL-STATUS PLANT SPECIES

Forty-four (44) special-status plant species have been recorded in the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles (refer to Appendix C). Based on the results of the literature review and the field surveys, Michael Baker determined that all special-status plant species either have a low potential to occur or are not expected within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions.

#### 4.5.2 SPECIAL-STATUS WILDLIFE SPECIES

Seventy-three (73) special-status wildlife species have been recorded in the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles (refer to Appendix C). Special-status wildlife species that were observed within or adjacent to the survey area during the field surveys included: Cooper's hawk, sharp-shinned hawk, tricolored blackbird, southern California rufous-crowned sparrow, coastal whiptail, Vaux's swift, northern harrier, merlin, yellow-breasted chat, loggerhead shrike, California gull, double-crested cormorant, CAGN, vermilion flycatcher, yellow warbler, and LBVI. Based on the results of the literature review and the field surveys, Michael Baker determined that Santa Ana sucker and arroyo chub have a high potential to occur within portions of the Santa Ana River that provided open water habitat flow near the existing BNSF railroad bridge crossing. In addition, it was determined that California horned lark has a moderate potential to occur within the survey area. All other special-status wildlife species identified during the literature review either have a low potential to occur or are not expected within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions.

### 4.5.3 SPECIAL-STATUS VEGETATION COMMUNITIES

Ten (10) special-status vegetation communities have been reported within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles by the CNDDDB. Based on the result of field surveys, three (3) of these special-status vegetation communities were observed within the survey area: southern California arroyo chub/Santa Ana sucker stream (open water), southern cottonwood willow riparian forest, and southern willow scrub. Refer to Table 2 below for a summary of special-status vegetation communities and impacts that are expected to occur as a result of the proposed project.

**Table 2: Special-Status Vegetation Communities and Proposed Impacts**

Special-Status Vegetation Community	Acreage		
	Total Within Survey Area	Proposed Impacts for Alternative 1	
		Temporary Impacts	Permanent Impacts
Southern California Arroyo Chub/Santa Ana Sucker Stream	0.45	0.00	0.00
Southern Cottonwood Willow Riparian Forest	3.25	0.00	0.00
Southern Willow Scrub	2.91	0.00	0.00
<b>TOTAL</b>	<b>6.61</b>	<b>0.00</b>	<b>0.00</b>

### 4.6 CRITICAL HABITAT

Under the definition used by the federal Endangered Species Act (FESA), designated Critical Habitat refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the occupied areas are inadequate to ensure the species' recovery. If a project may result in take or adverse modification to a species' designated Critical Habitat and the project has a federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus include those that occur on federal lands, require federal permits (e.g., federal Clean Water Act [CWA] Section 404 permit), or receive any federal oversight or funding. If there is a federal nexus, then the federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

Approximately 9.85 acres of the survey area occurs within designated Critical Habitat for Santa Ana sucker, specifically *Critical Habitat Unit 1, Subunit 1C: Lower Santa Ana River* (USFWS, 2010). Areas identified as designated Critical Habitat for Santa Ana sucker within the survey area include the Santa Ana River and eastern portions of the Green River Golf Course (refer to Figure 7, *Critical Habitat*). However, areas of



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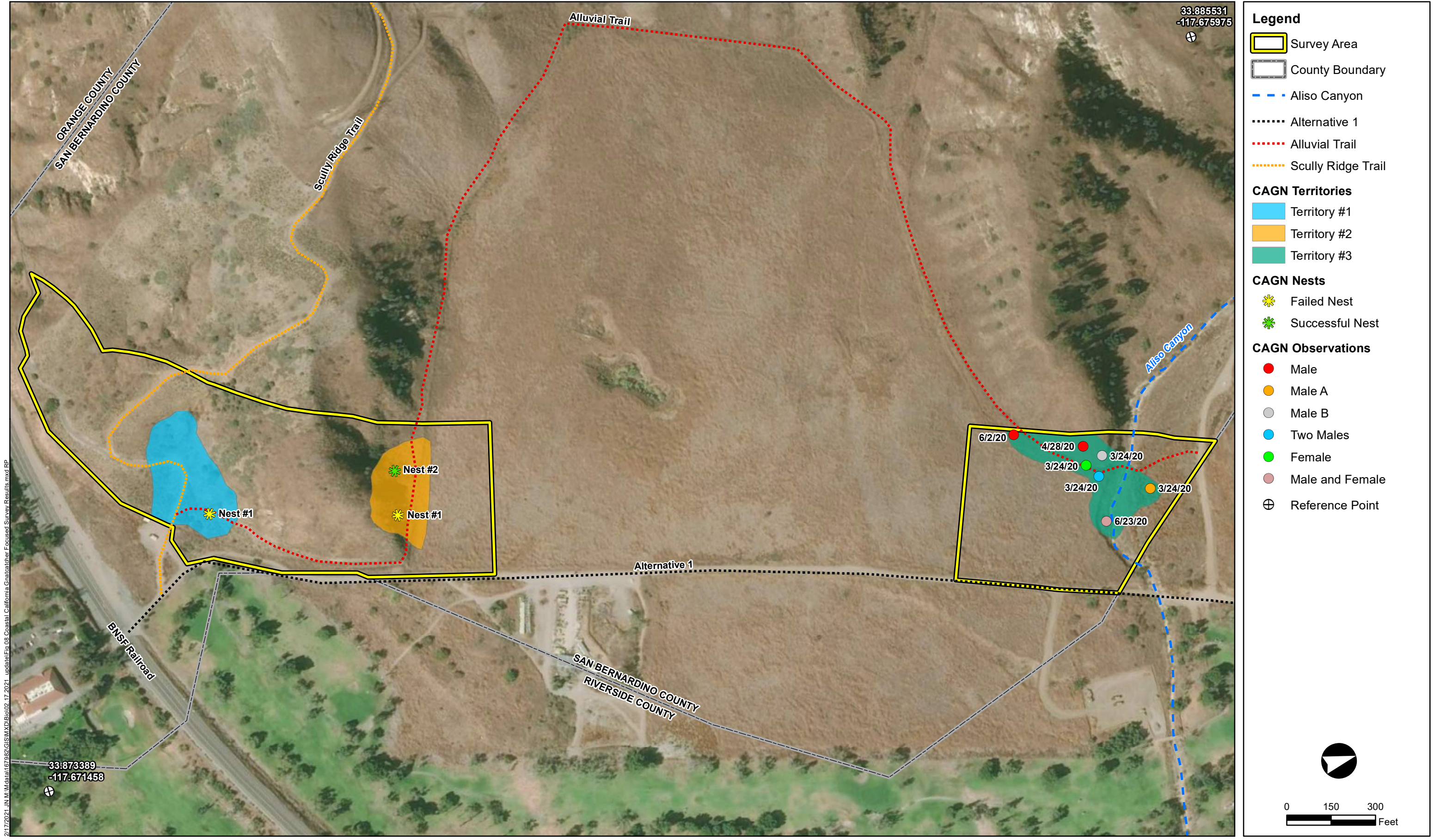
open water habitat within the Santa Ana River are the only portions of the survey area that would be occupied by Santa Ana sucker.

Approximately 12.73 acres of the survey area occurs within designated Critical Habitat for CAGN, specifically within *Critical Habitat Unit 9: Los Angeles, San Bernardino, and Orange Counties* (USFWS, 2007). Areas identified as designated Critical Habitat for CAGN include western portions of the survey area within San Bernardino County (refer to Figure 7, *Critical Habitat*). CAGN is known to occur within the Chino Hills State Park and was observed during the 2019 field surveys. Specifically, multiple individuals were observed foraging within the CSS and non-native grassland vegetation communities adjacent to the western boundary of the survey area (refer to Figure 6, *Vegetation Communities, Land Uses, and Special-Status Species Observations*). Although potential impacts to CAGN within Riverside County would be fully covered under the MSHCP, take authorization may be required if the proposed project would result in impacts to CAGN within San Bernardino County.

#### 4.6.1 COASTAL CALIFORNIA GNATCATCHER FOCUSED SURVEY RESULTS

Based on direction provided by United States Fish and Wildlife Service (USFWS) staff (Karin Cleary-Rose and Jim Thiede) on October 8, 2019, Michael Baker conducted focused “spatial use” (non-protocol) surveys during the 2020 breeding season to confirm if and how CAGN are using the existing habitats within and adjacent to Alternative 1 in San Bernardino County and to analyze potential impacts that would occur as a result of the proposed project. Focused spatial use surveys for CAGN were conducted between February and June 2020 along, and in areas of suitable habitat within 500 feet of, an approximately 0.7-mile segment of Alternative 1 in San Bernardino County, and generally followed the guidelines described in the USFWS protocol *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines, February 28, 1997* (USFWS, 1997). The notable difference between the survey protocol and Michael Baker’s surveys, however, is that Michael Baker’s surveys did not use any audio playback; surveys were instead conducted in a relatively non-intrusive and passive way based on guidance provided by USFWS. All surveys were conducted by Michael Baker biologists Ryan Winkleman (recovery permit TE-88331A-2), Stephen Anderson, and Ashley Spencer between February and June 2020.

Based on the results of the CAGN focused surveys, three (3) CAGN pairs were found to be present within the 500-foot survey area (refer to Figure 8, *Coastal California Gnatcatcher Focused Survey Results*). At least two (2) of the pairs were confirmed to make nesting attempts in 2020, with only one (1) nest known to have been successful. Although territories were located in proximity to the proposed Alternative 1 alignment in 2020, all territories and suitable CAGN habitat is located to the west of the alignment, ultimately resulting in a low chance of CAGN moving across the alignment to the area to the east. Because only one nest successfully fledged young just before the final survey, a limited opportunity was available to see areas that the young birds were using because they were still tied closely to their parents. The area that the birds used, including the fledglings during the final survey, is encompassed within the Territory 2 boundaries displayed in Figure 8. Since Alternative 1 would not result in the removal of CSS habitat or other habitat being used by CAGN in 2020, direct project impacts during construction other than routine nesting bird risks due to territory proximity are not expected to occur.



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Coastal California Gnatcatcher Focused Survey Results

Figure 8

2/17/2021 J:\M\MapData\167982\GIS\MXD\Bio\02\_17\_2021\_update\Fig 08 Coastal California Gnatcatcher Focused Survey Results.mxd RP

To avoid indirect impacts and take of CAGN within San Bernardino County, it is recommended that all project-related construction occur outside of the recognized CAGN breeding season (March 1 to August 15). Although the proposed project would not result in the loss of CSS habitat, timing the construction to be outside of this window of time would avoid impacts to CAGN that may be nesting in the CSS habitat adjacent to the proposed project. If it is not possible to construct the proposed project outside of the CAGN breeding season, a nesting bird survey would need to be conducted within seven (7) days prior to the start of construction in a 500-foot buffer from the proposed limits of construction. The survey would need to be conducted by a qualified biologist with demonstrable experience identifying CAGN nesting behavior and finding CAGN nests, and who has been approved by the USFWS to conduct the survey. If an active CAGN nest is found during the survey, no project-related construction will be allowed within 500 feet of the nest, or within an alternative safe distance as determined by the qualified biologist based on topography, visual shielding, nest progress, and the type of construction and associated disturbance, until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). Results of the nesting bird/nesting CAGN survey shall be compiled in a memorandum and submitted to the Riverside County Transportation Commission (RCTC) and USFWS for the project record.

Approximately 2.28 acres of CSS habitat is located adjacent to the proposed additional trail segment near the State Route 91 and State Route 71 interchange in Riverside County, specifically within Criteria Cells 1612 and 1616 in the eastern portion of the survey area. In addition, CAGN was incidentally observed within this area during the 2019 focused BUOW surveys. Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.12 acres of temporary impacts and approximately 0.03 acres of permanent impacts to CSS habitat within Criteria Cell 1612, would occur. Within Criteria Cell 1616, approximately 0.005 acres of temporary impacts to CSS habitat would occur. No permanent impacts to CSS habitat within Criteria Cell 1616 would occur. Although any potential impacts to CAGN and its habitat within Riverside County are fully covered under the MSHCP, Permittees are required by the Migratory Bird Treaty Act Special-Purpose Take Permit (issued by USFWS) to avoid clearing CAGN occupied habitat in the Criteria Area and in P/QP Lands between March 1 and August 15. As such, all habitat clearing, grubbing, grading, and other associated project activities located within Criteria Area and P/QP Lands would occur outside of the active breeding season for CAGN which is March 1 to August 15. If it is not possible to construct the proposed project outside of the CAGN breeding season, then protocol-level focused surveys for CAGN would need to be conducted to fully prove absence. If CAGN is determined to be absent during the protocol-level focused surveys, then construction activities (i.e., vegetation clearing, grubbing, grading) may commence.



## Section 5 MSHCP Consistency Analysis

This section contains the findings of Michael Baker’s MSHCP consistency analysis for the proposed project. The purpose of this consistency analysis is to summarize the biological data for the proposed project and to document the project’s consistency with the goals and objectives of the MSHCP. According to the RCA’s online MSHCP Information Application, portions of the proposed project are located within Subunit 2: Prado Basin of the Temescal Canyon Area Plan (refer to Figure 9, *MSHCP Conservation Areas*). In addition, portions of the survey area are located within Criteria Cells 1612 and 1616, Existing Core A, and P/QP Lands.

### 5.1 PROJECT INTRODUCTION AND SETTING

#### 5.1.1 PROJECT AREA

The survey area is approximate 149.38 acres, spans across both Riverside and San Bernardino Counties, and encompasses assessor parcel number’s (APN): 101-040-004, -10, -011, -006, -007, -008, -009, -018, 101-140-004, -005, -006, -007, -027, -029, -031, -032, 101-170-001, -009, -033, 101-190-060, 101-250-022, -023, -069, -071, -074, -075, 102-360-043, -060, -061, 102-472-003, -004, -005, -006, -007, -008, -009, -010, -011, -012, 102-473-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022, 102-474-001, -017, 102-475-001, -002, and 102-484-023. Refer to Tables 3 and 4 below for a summary of APNs that occur within Criteria Cells 1612 and 1616 that would be impacted as a result of the proposed project.

**Table 3: APNs Within Criteria Cell 1612 and Proposed Impacts**

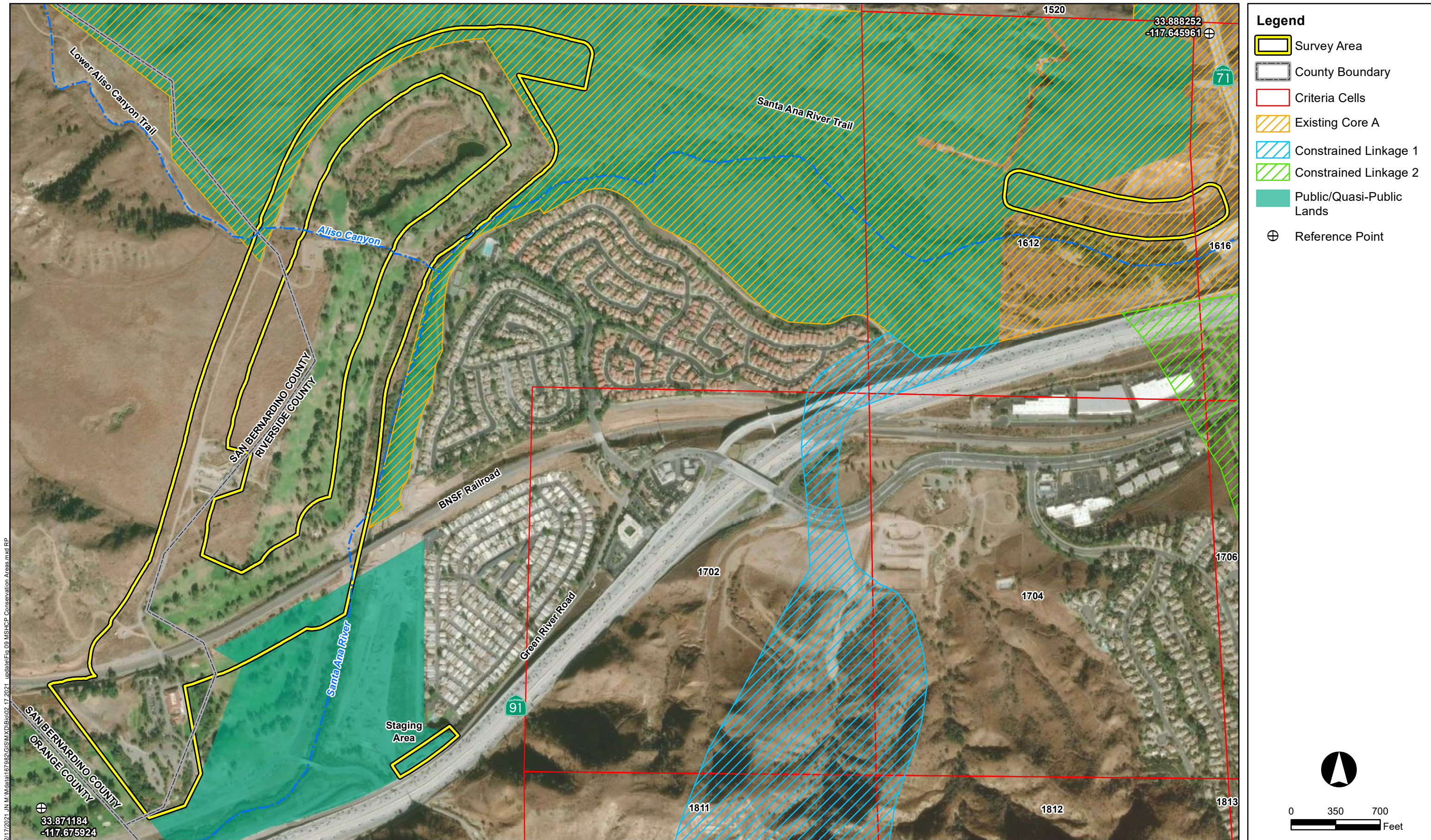
APN	Acreage		
	Total Within APN	Proposed Impacts for Alternative 1	
		Temporary Impacts	Permanent Impacts
101-120-018	117.16	0.06	0.04
101-140-005	32.84	0.48	0.44
	<b>TOTAL*</b>	<b>0.54</b>	<b>0.48</b>

\*Total may not equal to sum due to rounding.

**Table 4: APNs Within Criteria Cell 1616 and Proposed Impacts**

APN	Acreage		
	Total Within APN	Proposed Impacts for Alternative 1	
		Temporary Impacts	Permanent Impacts
101-140-005	0.61	0.01	0.00
	<b>TOTAL*</b>	<b>0.01</b>	<b>0.00</b>

\*Total may not equal to sum due to rounding.

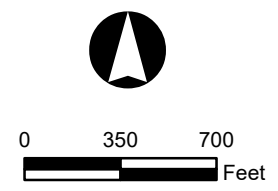


- Legend**
- Survey Area
  - County Boundary
  - Criteria Cells
  - Existing Core A
  - Constrained Linkage 1
  - Constrained Linkage 2
  - Public/Quasi-Public Lands
  - ⊕ Reference Point

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33.871184  
-117.675924

33.888252  
-117.645961



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## MSHCP Conservation Areas

### 5.1.2 PROJECT DESCRIPTION

The proposed project (SART – Phase 6) consists of a 1.5-mile segment through the Green River Golf Course and a 0.2-mile segment between Phase 5 and Phase 3 of the larger 110-mile SART project. More specifically, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the Santa Ana River Parkway Extension (currently in final design) located west of the proposed project in Orange County, with the existing SART – Phase 5 (completed March 2019) in Chino Hills State Park on the east within Riverside County. Additionally, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the eastern terminus of the SART – Phase 5 and the western terminus of SART – Phase 3 (currently under environmental review), near the State Route 91 and State Route 71 interchange in Riverside County.

Two build alternatives were analyzed (Alternative 1 and 2) for the proposed project; however, Alternative 2 has been eliminated from consideration. As such, only Alternative 1 is analyzed in this document. Implementation of the proposed project would serve the needs of recreational users, including pedestrians, hikers, bicyclists, and equestrians, as well as provide commuters an opportunity for alternative means and routes of transportation in the project area. Alternative 1 would generally extend along the western boundary of the Green River Golf Course; construction access would occur entirely within the existing developed and disturbed areas and the existing dirt trail (refer to Figure 4, *Project Depiction/Alternatives*). The designated staging area for the proposed project is situated along Green River Road, adjacent to State Route 91. The designated staging area for the project consists of a disturbed area that is currently being used as a staging area for the BNSF railroad bridge project.

#### Trail Characteristics

The proposed project would primarily consist of a parallel Class I multi-use path and natural surface trail. Based on Michael Baker's mapping of the limits of the existing maintenance trail, the width of the existing trail ranges from a minimum of 7 feet to a maximum of 27 feet. In areas located outside of P/QP Lands and the Criteria Area, permanent impacts would typically be limited to a 22 foot trail width plus the 2 foot hinges (on either side of the trail) for a total trail width of 26 feet (i.e., the hardscape boundary). Please refer to Appendix D for a cross section of the proposed trail within areas located outside of P/QP Lands and the Criteria Area. To accommodate the maximum allowable width of 20 feet (permanent impact footprint) for future proposed trails within the Criteria Area and P/QP Lands per MSHCP Section 7.4.2, the hardscape boundary of the proposed trail narrows to 20 feet just before the golf course limits end (refer to Appendix D). In addition, the hardscape boundary of the proposed trail would narrow to 20 feet east of the existing SART Phase 5 to SART Phase 3. Temporary impacts in these areas would be approximately 10 feet wider than the hardscape boundary. All temporary impacts would be associated with the outer areas of the proposed trail, within the construction limits. Temporarily impacted areas would be restored through hydroseeding with a native seed mix that would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP and listed by the CAL-IPC. The native seed mix would be consistent with the native species located in the impact area's surrounding. The final landscape plans would need to be reviewed and verified by RCA. In addition, the project applicant shall implement BMPs to mitigate impacts

to riparian/riverine resources in accordance with Appendix C of the MSHCP. At proposed bridge locations, the trail would merge into a combined paved trail, as described below.

- **Class I Multi-Use Path.** Outside of the P/QP Lands and the Criteria Area, the Class 1 multi-use path would be an ADA accessible 12-foot-wide paved bike path, consisting of asphalt concrete pavement with an additional two-feet of unpaved dirt shoulder, for a total of 14 feet. This Class 1 multi-use path is intended to be used by bicyclists and pedestrians. Within P/QP lands and the Criteria Area, the Class I Multi-Use Path would be 12 feet wide with a 1-foot unpaved shoulder, for a total of 13 feet.
- **Natural Surface Trail.** Outside of the P/QP Lands and the Criteria Area, the natural surface trail would be a 10-foot-wide trail consisting of decomposed granite (DG) or a similar permeable surface of compacted dirt with an additional two-foot shoulder, for a total of 12 feet. The natural surface trail is intended to be used by mountain bicyclists, equestrians, pedestrians, and hikers. Within P/QP lands and the Criteria Area, the natural surface trail would be 6 feet wide with a 1-foot unpaved shoulder, for a total of 7 feet.
- **Combined Paved Trail.** At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 20 feet wide on the bridges.

### **Alternative 1 – West of Golf Course**

The southwesterly end of the proposed project alignment would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line, south of the existing BNSF railroad. Alternative 1 generally extends east-west (within the existing golf course) south of, and parallel to, the BNSF railroad until it reaches the golf course parking lot.

From the parking lot, Alternative 1 would extend north, spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge ranging in width from 20 feet to 37 feet. Once across the railroad line, the trail would continue north along the existing maintenance road. A bridge would be installed to cross Aliso Canyon. The trail would then continue north/northeast and connect with the SART – Phase 5 in Chino Hills State Park.

### **Additional Trail Alignment**

Both build alternatives would include construction of the approximate 1,000-foot segment of the SART located east of the golf course. This portion of the SART would connect the eastern terminus of the SART – Phase 5 with the western terminus of SART – Phase 3, near the State Route 91 and State Route 71 interchange.

### **5.1.3 COVERED ROADS**

The proposed project does not include the construction of, or improvements to, any Covered Roads referenced in Section 7 of the MSHCP. Therefore, a discussion related to the proposed project and Covered Roads is not warranted.

### **5.1.4 COVERED TRAILS**

MSHCP Section 7.4.2, *Conditionally Compatible Uses*, states that although the main goal of the MSHCP Conservation Area is to protect biological resources, another primary objective is to provide recreational and educational opportunities within the MSHCP Conservation Area, while providing adequate protection for the biological resources. In addition, Section 7.4.2 states that the covered public access uses within the MSHCP Conservation Area will be comprised of trails, facilities, and passive recreational activities. Assumptions were made regarding trail widths and facility sizes; a disturbance width of 20 feet was assumed for the existing adopted and future proposed regional trails. Although a 20 foot disturbance width was assumed, the actual width of these trails will be determined by County regulations and will range between 10 and 20 feet.

Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, the proposed trail width would not exceed the maximum allowable width of 20 feet on P/QP Lands and the Criteria Area.

### **5.1.5 GENERAL SETTING**

The survey area is located within the west end of the City of Corona and the southeast corner of the City of Chino Hills, north of State Route 91 in both Riverside and San Bernardino Counties. The survey area is approximately 149.38 acres in size and is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the BNSF railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River. The topography of the survey area consists of a nearly flat plateau surrounded by steep slopes to the north, south, and west and a relatively flat plateau to the east. The eastern portion of the survey area consists of moderately steep hillsides that slope down towards the Santa Ana River. Additionally, Aliso Canyon runs through the survey area in a west to east direction and eventually flows into the Santa Ana River. Based on a review of Google Earth historical aerial imagery, several undeveloped portions of the survey area have been routinely disturbed and maintained through weed abatement (i.e. disking) and goat/cattle grazing activities since 1994.

Land uses surrounding the survey area consists mainly of high-density residential land uses, the Green River Golf Course, as well as some disturbed and vacant land. State Route 91 is located immediately adjacent to the south of survey area and runs in an east-west direction. Chino Hills State Park is located adjacent to the north and western boundary of the survey area, whereas the Santa Ana River and residential

land uses are located adjacent to the eastern boundary of the survey area. Additionally, the survey area is located approximately 1.5 miles to the southwest of Prado Dam and Prado Basin.

## **5.2 RESERVE ASSEMBLY ANALYSIS**

Based on a review of the RCA's online MSHCP Information Application, portions of the proposed project are located within Subunit 2: Prado Basin of the Temescal Canyon Area Plan. Subunit 2 has a target acreage range for Additional Reserve Lands of approximately 200 to 395 acres. Planning species associated with this subunit include coast range newt (*Taricha tarosa tarosa*), cactus wren, California horned lark, northern harrier, white-tailed kite, bobcat, mountain lion, and western pond turtle.

Existing Core A consists of Prado Basin and the Santa Ana River, located in the northwest region of the Plan Area. Existing Core A extends in a southwest-to-northeast direction and is composed largely of P/QP Lands owned by a variety of entities, but also contains a small number of privately-owned lands. Planning species associated with Existing Core A include Santa Ana sucker, arroyo chub, western pond turtle, Cooper's hawk, tricolored blackbird, BUOW, American bittern, cactus wren, northern harrier, YBCU, yellow warbler, white-tailed kite, SWFL, California horned lark, peregrine falcon, yellow-breasted chat, loggerhead shrike, black-crowned night heron, osprey, double-crested cormorant, downy woodpecker, white-faced ibis, tree swallow, LBVI, bobcat, mountain lion, and Santa Ana River woollystar. Per the MSHCP, Existing Core A totals approximately 10,740 acres, of which approximately 26.38 acres (< 1%) occurs within the survey area.

### **5.2.1 CRITERIA CELL ANALYSIS**

Based on a review of the RCA's online MSHCP Information Application, portions of the survey area are located within Criteria Cells 1612 and 1616 (refer to Figure 9, *MSHCP Conservation Areas*). However, the proposed project is considered a Covered Activity under Section 7.4.2 of the MSHCP and therefore is not subject to any Reserve Assembly conservation requirements and not subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) review process. Refer to the following subsections for an analysis of Criteria Cells 1612 and 1616.

#### **Criteria Cell 1612**

According to the MSHCP, conservation within Criteria Cell 1612 (Cell Group B) will contribute to the assembly of the Proposed Extension of Existing Core 1 and Existing Core A. Conservation within Cell Group B will focus on a variety of wetland habitats associated within the Prado Flood Control Basin and the Santa Ana River, and grassland habitat. Areas conserved within Cell Group B will be connected to wetlands and uplands proposed for conservation in Criteria Cell 1616 to the east, and Cell Group A to the north. The MSHCP states that conservation within Cell Group B will range from 20 to 30%, focusing on the northern and southeastern portions of Cell Group B. According to RCA's online MSHCP Information Application, the survey area encompasses approximately 10.37 acres (6%) of Criteria Cell 1612. In

addition, Existing Core A encompasses approximately 145.88 acres (82%) of Criteria Cell 1612. Refer to Table 5 below for a summary of Criteria Cell 1612 and associated acreages.

**Table 5: Criteria Cell 1612**

Criteria Cell #	% Conservation Within Criteria Cell	Acreage		
		Total Within Criteria Cell	Total Within Survey Area	Existing/Pending Conservation (Existing Core A)
1612	20-30% of northern and southeastern portion of Cell Group B.	178.14	10.37	145.88

Based on the results of the field surveys, the following vegetation communities and land cover types were mapped within Criteria Cell 1612: CSS, mule fat scrub, non-native grassland, southern cottonwood willow riparian forest, and developed land. As previously stated, conservation within Criteria Cell 1612 will contribute to assembly of Proposed Extension of Existing Core 1 and Existing Core A. Conservation within Cell Group B will focus on a variety of wetland habitat associated within the Prado Flood Control Basin and the Santa Ana River, and grassland habitat. Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 1.03 acres (10%) of CSS, non-native grassland, and developed land would be impacted within Criteria Cell 1612. Therefore, approximately 9.35 acres (90%) of CSS, non-native grassland, southern cottonwood willow riparian forest, and developed land occurring within Criteria Cell 1612 would be avoided. Refer to Table 6 below for a summary of vegetation communities mapped within Criteria Cell 1612 and impacts that are expected to occur as a result of the proposed project.

**Table 6: Vegetation Communities Within Criteria Cell 1612 and Proposed Impacts**

Vegetation Communities/Land Cover Types	Acreage			
	Total Within Survey Area	Total Within Criteria Cell	Proposed Impacts for Alternative 1	
			Temporary Impacts	Permanent Impacts
Coastal Sage Scrub	2.77	1.36	0.12	0.03
Mule Fat Scrub	0.39	0.09	0.00	0.00
Non-Native Grassland	48.35	8.25	0.32	0.15
Southern Cottonwood Willow Riparian Forest	3.25	0.16	0.00	0.00
Developed	79.35	0.52	0.11	0.30
<b>TOTAL*</b>	<b>134.11</b>	<b>10.38</b>	<b>0.55</b>	<b>0.48</b>

\*Total may not equal to sum due to rounding.

**Criteria Cell 1616**

According to the MSHCP, conservation within Criteria Cell 1616 (Not in Cell Group) will contribute to the assembly of Existing Core A. Conservation within this Cell Group will focus on a variety of wetland habitat associated within the Prado Flood Control Basin and the Santa Ana River, and grassland habitat. Areas conserved within this Cell will be connected to wetlands and uplands proposed for conservation in Cell

Group B to the west and Criteria Cell 1706 to the south. The MSHCP states that conservation within this Cell will range from 25 to 35%, focusing on the central and western portions of the Cell. According to RCA’s online MSHCP Information Application, the survey area encompasses approximately 1.75 acres (< 1%) of Criteria Cell 1616. In addition, Existing Core A encompasses approximately 115.69 acres (59%) of Criteria Cell 1616. Refer to Table 7 below for a summary of Criteria Cell 1616 and associated acreages.

**Table 7: Criteria Cell 1616**

Criteria Cell #	% Conservation Within Criteria Cell	Acreage		
		Total Within Criteria Cell	Total Within Survey Area	Existing/Pending Conservation (Existing Core A)
1616	25-35% of the central and western portions of the Criteria Cell.	195.14	1.75	115.69

Based on the results of the field surveys, the following vegetation communities and land cover types were mapped within Criteria Cell 1616: CSS, mule fat scrub, non-native grassland, and developed. As previously stated, conservation within Criteria Cell 1616 will contribute to assembly of Existing Core A. Conservation within Criteria Cell 1616 will focus on a variety of wetland habitat associated within the Prado Flood Control Basin and the Santa Ana River, and grassland habitat. Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.009 acres (1%) of CSS and developed land would be impacted within Criteria Cell 1616. Therefore, approximately 1.75 acres (99%) of CSS, mule fat scrub, non-native grassland, and developed land occurring within Criteria Cell 1616 would be avoided. Refer to Table 8 below for a summary of vegetation communities mapped within Criteria Cell 1616 and impacts that are expected to occur as a result of the proposed project.

**Table 8: Vegetation Communities Within Criteria Cell 1616 and Proposed Impacts**

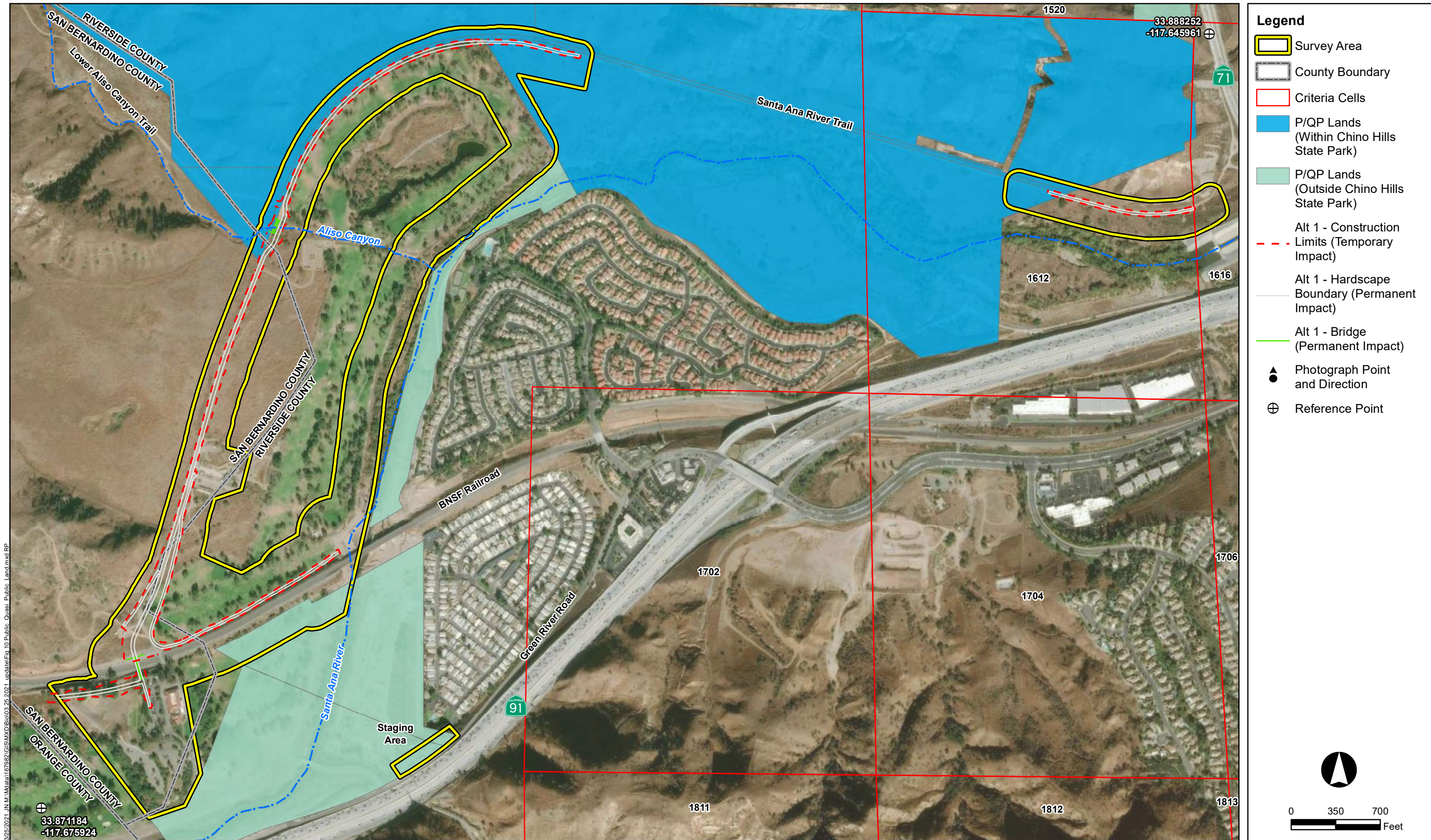
Vegetation Communities/Land Cover Types	Acreage			
	Total Within Survey Area	Total Within Criteria Cell	Proposed Impacts for Alternative 1	
			Temporary Impacts	Permanent Impacts
Coastal Sage Scrub	2.77	0.92	0.005	0.00
Mule Fat Scrub	0.39	0.31	0.00	0.00
Non-Native Grassland	48.35	0.47	0.00	0.00
Developed	79.35	0.06	0.004	0.00
<b>TOTAL*</b>	<b>130.86</b>	<b>1.76</b>	<b>0.009</b>	<b>0.00</b>

\*Total may not equal to sum due to rounding.

### 5.2.2 PUBLIC/QUASI-PUBLIC LANDS ANALYSIS

Based on a review of the RCA’s online MSHCP Information Application, portions of the proposed project are located on P/QP Lands (refer to Figure 10, *Public/Quasi-Public Lands*). The P/QP Lands within the survey area include land within and outside of Chino Hills State Park. Conservation within these P/QP





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Lands contributes to the assembly of Existing Core A. Refer to Table 9 below for a summary of P/QP Lands and impacts that are expected to occur as a result of the proposed project.

**Table 9: P/QP Lands and Proposed Impacts**

P/QP Lands and Vegetation Communities/Land Cover Types	Acreage						
	Total Within Survey Area	Total Within Criteria Cell 1612	Total Within Criteria Cell 1616	Proposed Impacts for Alternative 1			
				Temporary Impacts within Criteria Cell 1612	Permanent Impacts within Criteria Cell 1612	Temporary Impacts within Criteria Cell 1616	Permanent Impacts within Criteria Cell 1616
P/QP Lands within Chino Hills State Park	16.59	104.52	0.26	0.06	0.04	0.00	0.00
P/QP Lands outside Chino Hills State Park	6.48	0.00	0.00	0.00	0.00	0.00	0.00
Non-Native Grassland	48.35	2.41	0.00	0.05	0.01	0.00	0.00
Developed	79.35	0.15	0.00	0.01	0.03	0.00	0.00

Based on a review of the construction limits and hardscape boundaries for the project, Alternative 1 would temporarily impact approximately 0.97 acres and permanently impact approximately 0.35 acres of P/QP Lands located within Riverside County. Specifically, Alternative 1 would temporarily impact approximately 0.06 acre and permanently impact approximately 0.04 acre of P/QP Lands located within Criteria Cell 1612. No impacts to P/QP Lands would occur within Criteria Cell 1616. On the P/QP Lands of Criteria Cell 1612, non-native grassland and developed land cover would be impacted; approximately 0.01 acre of permanent impact and approximately 0.05 acre of temporary impact to non-native grassland would occur, and approximately 0.03 acre of permanent impact and 0.01 acre of temporary impact to developed land cover would occur as a result of the proposed project. No impacts would occur to P/QP Lands and vegetation communities located within Criteria Cell 1616.

The vegetation communities located on P/QP Lands within Criteria Cell 1612 consist of non-native grassland and developed land. Within these areas, the majority of the proposed trail would follow the path of the existing maintenance trail that has been mapped as developed. The developed maintenance trail is heavily disturbed and no longer provides natural, undisturbed vegetation communities.

Based on discussions during pre-application meetings with the RCA on June 12, 2019 and April 8, 2020, Alternative 1 has been designed to minimize both direct and indirect effects to surrounding vegetation communities and associated functions and values to the greatest extent possible. In addition, project design follows the guidelines listed in Section 7.4.2, *Guidelines for the Siting and Design of Trails and Facilities*, of the MSHCP. Temporary impacts associated with Alternative 1 include elevated noise levels, edge treatments, landscaping, and elevation difference. In addition, the proposed project would construct a span bridge to avoid permanent impacts to Aliso Canyon and maintain the existing functions and values of those P/QP Lands at Aliso Canyon. Further, the proposed bridge would provide a long-term biological benefit by preventing trail users from using the existing maintenance road within Aliso Canyon allowing the channel

to maintain its natural course and vegetation. All temporarily impacted areas located on P/QP Lands within the Criteria Area would be restored to pre-construction contours/conditions. In addition, temporarily impacted areas on P/QP Lands and within the Criteria Area would be further restored by hydroseeding with a native seed mix that would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP and listed by CAL-IPC. The native seed mix would be consistent with the native species located in the impact area's surroundings. Further, the proposed project would implement BMPs in accordance with Appendix C of the MSHCP. Therefore, temporary impacts associated with the project would not affect the conservation values of these P/QP Lands.

Permanent impacts to P/QP Lands located within Criteria Cell 1612 would consist of the direct removal and disturbance to land and resources. Specifically, approximately 0.01 acres of non-native grassland and 0.03 acres of developed land on P/QP Lands located within Criteria Cell 1612 would be permanently impacted. Permanent impacts to P/QP Lands located within Criteria Cell 1612 would primarily effect non-native grassland and developed lands and would not constrain the function and values associated with the P/QP Lands in this area. Although Alternative 1 would permanently impact approximately 0.01 acres of non-native grassland vegetation located on P/QP Lands within Criteria Cell 1612, impacts would be limited relative to the amount of non-native grassland habitat that would remain in the immediate vicinity. Further, all temporarily impacted P/QP Lands would be restored by hydroseeding with a native seed mix which would support the establishment of higher value habitat than that which would be impacted (i.e., non-native grassland).

### 5.3 VEGETATION MAPPING

As stated in Section 6.3.1 of the MSHCP, project-level vegetation mapping may be required for projects that meet certain criteria to assess whether conservation is required. Michael Baker conducted a review of the 2012 vegetation layer presented in the RCA's online MSHCP Information Application and aerial photography to understand existing site conditions and extent of any disturbances that have occurred on the survey area. In addition, the field surveys were conducted in order to document the extent and condition of the vegetation communities occurring within the boundaries of the survey area.

Vegetation communities occurring within the survey area were delineated on an aerial photograph during the field surveys and later digitized using the GIS ArcView software to quantify the area of each vegetation community in acres. Vegetation communities occurring within the survey area were classified in accordance with the vegetation descriptions provided in the *Manual of California Vegetation* (Sawyer *et al.*, 2009) and cross referenced with the vegetation communities described in the MSHCP and identified by the RCA's online MSHCP Information Application.

Based on the results of the field surveys, eight (8) natural vegetation communities were observed and mapped within the boundaries of the survey area: southern willow scrub, southern cottonwood willow riparian forest, mule fat scrub, disturbed mule fat scrub, elderberry savannah, CSS, restored CSS, and non-native grassland. In addition, the survey area contains four (4) land cover types that would be classified as open water, disturbed, ornamental, and developed. These vegetation communities and land cover types are

depicted on Figure 6, *Vegetation Communities, Land Uses, and Special-Status Species Observations*. Refer to Table 10 below for a summary of the vegetation communities and land cover types within the survey area and impacts that are expected to occur as a result of the proposed project.

**Table 10: Vegetation Communities/Land Cover Types and Proposed Impacts**

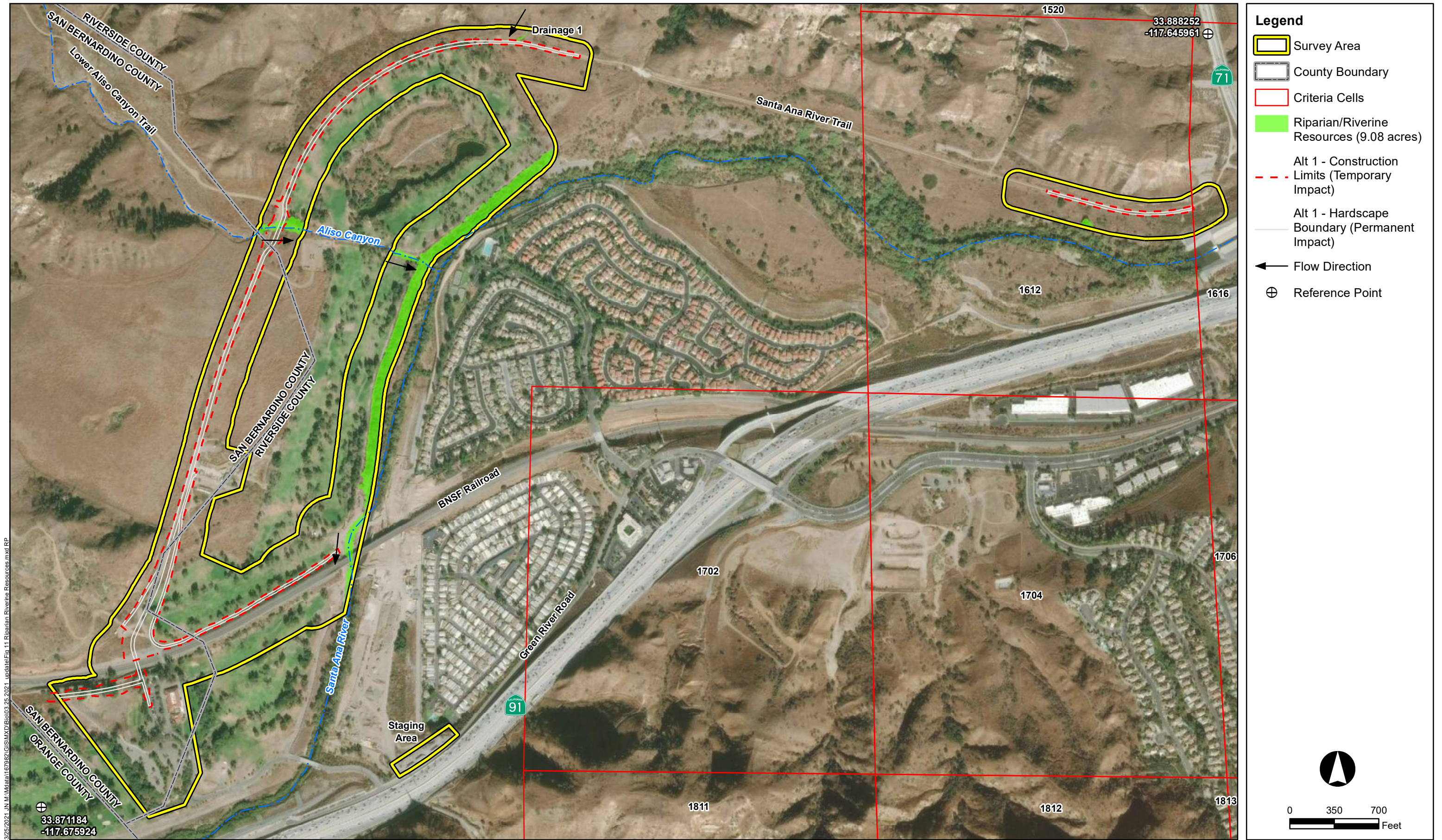
Vegetation Communities/Land Cover Types	Acreage						
	Total Within Survey Area	Total Within Criteria Cell 1612	Total Within Criteria Cell 1616	Proposed Impacts for Alternative 1			
				Temporary Impacts within Criteria Cell 1612	Permanent Impacts within Criteria Cell 1612	Temporary Impacts within Criteria Cell 1616	Permanent Impacts within Criteria Cell 1616
Southern Willow Scrub	2.91	0.00	0.00	0.00	0.00	0.00	0.00
Southern Cottonwood Willow Riparian Forest	3.25	0.16	0.00	0.00	0.00	0.00	0.00
Mule Fat Scrub	0.39	0.09	0.31	0.00	0.00	0.00	0.00
Disturbed Mule Fat Scrub	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Elderberry Savannah	1.20	0.00	0.00	0.00	0.00	0.00	0.00
Coastal Sage Scrub	2.77	1.36	0.92	0.12	0.03	0.005	0.00
Restored Coastal Sage Scrub	0.34	0.00	0.00	0.00	0.00	0.00	0.00
Non-Native Grassland	48.35	8.25	0.47	0.32	0.15	0.00	0.00
Developed	79.35	0.52	0.06	0.011	0.30	0.004	0.00
Disturbed	5.31	0.00	0.00	0.00	0.00	0.00	0.00
Ornamental	4.82	0.00	0.00	0.00	0.00	0.00	0.00
Open Water	0.45	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL*</b>	<b>149.37</b>	<b>10.38</b>	<b>1.76</b>	<b>0.55</b>	<b>0.48</b>	<b>0.009</b>	<b>0.00</b>

\*Total may not equal to sum due to rounding.

## 5.4 PROTECTION OF SPECIES ASSOICATED WITH RIPARIAN/RIVERINE RESOURCES AND VERNAL POOLS

### 5.4.1 RIPARIAN/RIVERINE

As defined under Section 6.1.2 of the MSHCP, riparian/riverine resources are areas dominated by trees, shrubs, persistent emergent plants, or emergent mosses and lichens which occur close to or are dependent upon nearby freshwater, or areas with freshwater flowing during all or a portion of the year. Conservation of these areas is intended to protect habitat that is essential to a wide variety of listed or special-status water-dependent fish, amphibian, avian, and plant species. The Santa Ana River, Aliso Canyon, and Drainage 1, including associated riparian vegetation communities, would qualify as riparian/riverine resources pursuant to Section 6.1.2 of the MSHCP; a total of approximately 9.08 acres occurs within the survey area (refer to Figure 11, *Riparian/Riverine Resources*). Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acres of permanent impacts and approximately 0.17 acres



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33.871184  
-117.675924

33.888252  
-117.645961

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HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

### Riparian/Riverine Resources

of temporary impacts would occur to riparian/riverine resources. Refer to Table 11 below for a summary of the riparian/riverine resources within the survey area, Criteria Cells, and impacts that are expected to occur as a result of the proposed project.

**Table 11: Riparian/Riverine Resources and Proposed Impacts**

Riparian/Riverine Resources	Acreage						
	Total Within Survey Area	Total Within Criteria Cell 1612	Total Within Criteria Cell 1616	Proposed Impacts for Alternative 1			
				Temporary Impacts within Criteria Cell 1612	Permanent Impacts within Criteria Cell 1612	Temporary Impacts within Criteria Cell 1616	Permanent Impacts within Criteria Cell 1616
Riparian	1.17	0.16	0.00	0.00	0.00	0.00	0.00
Riverine	7.91	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL*</b>	<b>9.08</b>	<b>0.16</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

\*Total may not equal to sum due to rounding.

Approximately 0.16 acres of riparian vegetation consisting of southern cottonwood willow riparian forest occurs within Criteria Cell 1612. Based on a review of the construction limits and hardscape boundaries for Alternative 1, the approximate 0.16 acres of riparian vegetation located within Criteria Cell 1612 would not be impacted by the proposed project. In accordance with the MSHCP requirements, a Determination of Biologically Equivalent or Superior Preservation (DBESP) report was prepared and analyzes the effects/benefits of the proposed project and identifies specific mitigation and compensation measures that will be implemented to offset the loss of riparian/riverine resources. The DBESP report will be submitted to the RCA and Wildlife Agencies for review and approval prior to implementation of the proposed project.

#### 5.4.2 VERNAL POOLS

One of the factors for determining the presence of vernal pools would be demonstrable evidence of seasonal ponding in an area of topographic depression that is not subject to flowing waters. Prior to conducting the habitat assessment, a review of historical aerial photographs using Google Earth was conducted. In addition, a review of the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California*, was also conducted to determine the soil associations within the survey area. The MSHCP lists two general classes of soils known to be associated with special-status plant species and presence of vernal pool habitat; clay soils and Traver-Domino Willow association soils. The specific clay soils known to be associated with special-status species/vernal pool habitat within the MSHCP Plan Area include Bosanko, Auld, Altamont, and Porterville series soils, whereas Traver-Domino Willows association includes saline-alkali soils largely located along floodplain areas of the San Jacinto River and Salt Creek.

A review of historic Google Earth aerials of the survey area did not provide visual evidence of astatic or vernal pool conditions within the survey area or surrounding vicinity. Additionally, no non-vernal pool features such as stock ponds, ephemeral pools, road ruts, and depressions were observed during the review

of Google Earth aerials and during the field surveys within the survey area. Further, based on a review of the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California*, none of the soil classes (e.g., Bosanko, Auld, Altamont, and Porterville series and Traver-Domino Willows association) known to be associated with vernal pool habitat occur within the survey area. The mapped soils throughout the survey area primarily consist of loamy sand/sandy loam textures and not the clay soil textures which are needed to form the impermeable restrictive duripan layer below the soils surface. Therefore, no direct or indirect impacts are expected to occur, and no further discussion related to the proposed project and vernal pools is warranted.

### 5.4.3 FAIRY SHRIMP

One species of fairy shrimp has been recorded in the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles: San Diego fairy shrimp (*Branchinecta sandiegonensis*). San Diego fairy shrimp are restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, stock ponds, and other human modified depressions that are typically dry a portion of the year, but usually are filled by late fall, winter or spring rains, and may persist through May. In Riverside County, San Diego fairy shrimp have been found in pools formed over the following soil: Terrace escarpments. Based on the results of the vernal pool habitat assessment in the previous section 5.4.2, no vernal pools are expected to occur within the survey area. Further, there are no occurrences records for San Diego fairy shrimp within five (5) miles of the survey area (CNDDDB, 2020). Based on this information and the results of the vernal pool habitat assessment in the previous section 5.4.2 it was determined that there is no suitable habitat for San Diego fairy shrimp within or adjacent to the survey area. Therefore, no direct or indirect impacts are expected to occur to San Diego fairy shrimp.

Riverside fairy shrimp (*Streptocephalus woottoni*) are restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, stock ponds, and other human modified depressions that are typically dry a portion of the year, but usually are filled by late fall, winter or spring rains, and may persist through May. In Riverside County, the species been found in pools formed over the following soils: Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils. According to the CNDDDB, there are no occurrence records for Riverside fairy shrimp within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles or within 5 miles of the survey area. Based on this information and the results of the vernal pool habitat assessment in the previous section 5.4.2, it was determined that there is no suitable habitat for Riverside fairy shrimp within or adjacent to the survey area. Therefore, no direct or indirect impacts are expected to occur to Riverside fairy shrimp.

Vernal pool fairy shrimp (*Branchinecta lynchi*) are only found in vernal pool habitats and do not occur in riverine, marine, or other permanent bodies of water. Riverside fairy shrimp are restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds and other human modified depressions that are typically dry a portion of the year, but usually are filled by late fall, winter or spring rains, and may persist through May. In Riverside County, vernal pool fairy shrimp have been found in pools formed over the following soils: Murrieta stony clay loams, Las Posas series, Wyman clay loam, and Willows soils.

According to the CNDDDB, there are no occurrence records for vernal pool fairy shrimp within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles or within 5 miles of the survey area. Based on this information and the results of the vernal pool habitat assessment in the previous section 5.4.2, it was determined that there is no suitable habitat for vernal pool fairy shrimp within or adjacent to the survey area. Therefore, no direct or indirect impacts are expected to occur to vernal pool fairy shrimp.

Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*) are restricted to cool-water vernal pools which are formed on seasonal southern basalt flows. In Riverside County, Santa Rosa Plateau shrimp are only known from vernal pools on the Santa Rosa Plateau. According to the CNDDDB, there are no occurrence records for vernal pool fairy shrimp within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles or within 5 miles of the survey area. Based on this information and the results of the vernal pool habitat assessment in the previous section 5.4.2, it was determined that there is no suitable habitat for Santa Rosa Plateau fairy shrimp within or adjacent to the survey area. Therefore, no direct or indirect impacts are expected to occur to Santa Rosa Plateau fairy shrimp.

#### **5.4.4 RIPARIAN BIRDS**

Due to the presence of riparian/riverine resources within the survey area, the potential occurrence of the following riparian bird species was evaluated: YBCU, SWFL, and LBVI.

#### **Literature Review and Habitat Assessment Results**

##### *Western Yellow-billed Cuckoo*

In California, the YBCU breeding distribution is restricted to isolated sites in the Sacramento, Armargosa, Kern, Santa Ana, and Colorado River valleys (Laymon and Halterman, 1985). The species require large patches of multi-layered riparian forest, with cottonwoods and willows (ideally both) most preferred. YBCUs may use patches of forest as small as 25 to 50 acres (10 to 20 hectares) in area and 330 feet (100 meters) wide, but ideal habitat patches are typically greater than 200 acres (80 hectares) or more than 2,000 feet (600 meters) wide and contain open water within 330 feet (100 meters) of the bird's nesting area. The closest and most recent extant YBCU occurrence record (Occurrence Number 36) was recorded in 2011, approximately 3.0 miles northeast of the survey area; one (1) individual was observed 2011 within Prado Basin, about 0.5 to 3.0 miles northeast of Prado Dam (CNDDDB, 2011).

Vegetation communities within the survey area that could potentially provide suitable habitat for YBCU include: southern cottonwood willow riparian forest, and southern willow scrub. Based on the information above and results of habitat assessment, approximately 6.16 acres of suitable habitat for YBCU occurs within the survey area, specifically within the Santa Ana River. Of that, approximately 0.16 acres of suitable habitat occurs within Criteria Cell 1612 and would be avoided.



*Southwestern Willow Flycatcher*

The SWFL usually arrives in southern California in early May, but rarely as early as the last two or three days of April, and breeds only in riparian habitats, typically along a dynamic river or lakeside. Surface water or saturated soil is usually present in or adjacent to nesting sites during at least the initial portion of the nesting period (Muiznieks *et al.*, 1994; Tibbits *et al.*, 1994). Riparian habitats used by SWFL typically consist of dense thickets of trees and shrubs that can range in height from about 6 to 90 feet (2 to 30 meters). Preferred nesting sites usually contain riparian foliage from the ground level up to a dense (about 50 to 100 percent) tree or shrub canopy. The closest and most recent SWFL extant occurrence record (Occurrence Number 76) was recorded in 2005, approximately 2 miles northeast of the survey area; two (2) individuals were observed on three survey dates between May and July at the west end of Prado Basin just north of Prado Dam (CNDDB, 2005).

Vegetation communities within the survey area that could potentially provide suitable habitat for SWFL include: southern cottonwood willow riparian forest, and southern willow scrub. Based on the information above and results of habitat assessment, approximately 6.16 acres of suitable habitat for SWFL occurs within the survey area, specifically within the Santa Ana River. Of that, approximately 0.16 acres of suitable habitat occurs within Criteria Cell 1612 and would be avoided.

*Least Bell's Vireo*

LBVIs begin to arrive at their breeding grounds in southern California riparian areas from mid-March to early April. Upon arrival, males establish breeding territories that range in size from 0.5 to 7.4 acres (0.5 to 3.0 hectares), with an average size of approximately 2 acres (0.8 hectares). In California, females begin laying eggs in April, fledging birds until the end of July (Kus *et al.*, 2010). The fledglings remain in the parental territory for up to a month. LBVIs leave the breeding grounds and migrate south mid- to late September. LBVI populations are evenly distributed throughout southern California with 54 percent of the total population occurring in San Diego County and 30 percent of the population occurring in Riverside County (USFWS, 1998). Preferred nesting habitat typically consists of a well-developed over- story and understory, along with low densities of aquatic and herbaceous plant cover. The understory frequently contains dense sub-shrub or shrub thickets that are often dominated by plants such as willow, mule fat, and one or more herbaceous species.

The closest extant LBVI occurrence (Occurrence Number 135) was recorded in 2011, adjacent to the survey area; nineteen (19) pairs and twenty-four (24) fledglings were observed within the Green River Golf Course (CNDDB, 2011). Breeding pairs have been observed at this site since 2001. It should also be noted that the Santa Ana Watershed Association (SAWA) conducts yearly monitoring surveys to document LBVI territories within Riverside and Orange Counties, including portions the Santa Ana River and Chino Hills State Park that occur within the survey area. Based on a review of survey data provided by SAWA for the 2018 and 2019 breeding seasons, a total of twelve (12) LBVI territories were recorded/monitored within the survey area during the 2018 breeding season and a total of thirteen (13) LBVI territories were recorded/monitored within the survey area during the 2019 breeding season. Further, LBVI were detected

at four (4) locations within/adjacent to the survey area during field surveys conducted by Michael Baker (refer to Figure 6, *Vegetation Communities, Land Uses, and Special-Status Species Observations*). One of the four LBVI observations occurred within Criteria Cell 1612, approximately 175 feet south of the proposed construction limits.

Vegetation communities within the survey area that provide suitable habitat for LBVI include: southern cottonwood willow riparian forest, southern willow scrub, elderberry savannah, mule fat scrub, and disturbed mule fat scrub. Based on the information above and results of habitat assessment, approximately 7.98 acres of suitable habitat for LBVI occurs within the survey area. Of that, approximately 0.16 acres of suitable habitat occurs within Criteria Cell 1612 and would be avoided.

### **Additional Survey and Mitigation Requirements**

Based on a review of the construction limits and hardscape boundaries, Alternative 1 would temporarily impact approximately 0.10 acres and permanently impact approximately 0.01 acres of suitable habitat for LBVI within Riverside County; no impacts to suitable habitat for YBCU or SWFL would occur. Temporary impacts to LBVI occurring outside of the project footprint include elevated noise levels. Project related construction noise is not expected to exceed normal ambient noise levels within the survey area. Wildlife species present within adjacent habitats are routinely exposed to above average noise levels associated with the BNSF railroad and State Route 91. However, construction-related activities would incorporate measures pursuant to County of Riverside rules, regulations, and guidelines related to land use noise standards. No suitable habitat for YBCU, SWFL, or LBVI occurs within portions of the survey area that are located within San Bernardino County. Based on the 2018 and 2019 survey data provided by SAWA and a review of the construction limits and hardscape boundaries, Alternative 1 would not result in any permanent impacts to any LBVI nest locations documented during the surveys. Further, breeding activity for SWFL within the Santa Ana River watershed has not been documented since 2014 and YBCU was not detected during the 2019 surveys (SAWA, 2019). A DBESP report will be submitted to the RCA, CDFW, and the USFWS for review and approval prior to implementation of the proposed project. In addition, due to the presence of LBVI within the vicinity of the proposed project, pre-construction clearance surveys would need to be conducted prior to initiating project activities (e.g., vegetation clearing, grubbing, grading, etc.) during the recognized LBVI breeding season (March 15 to September 30) to determine the presence/absence of LBVI within the project's vicinity. If LBVI are not present, then construction may occur. In the event LBVI are observed during the pre-construction clearance survey, a "no-disturbance" buffer would need to be established around the location and construction would need to avoid work in that area until the end of the nesting cycle. No project-related construction would occur within the "no-disturbance" buffer until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). The distance of the "no-disturbance" buffer would be determined by the qualified biologist based on ambient noise levels, topography, visual/noise shielding, nest progress, and the type of construction and associated disturbance. Any proposed "no disturbance" buffers, including any subsequent reductions in the "no disturbance" buffers, would need to be reviewed and approved by the RCA and the Wildlife Agencies. In addition, all

work during the LBVI breeding season would occur during daylight hours and would not exceed ambient noise levels. Ambient noise measurements would be taken by a qualified biological monitor during a full daylight period (sunrise to sunset) and subsequently, the median average noise level shall be used as the baseline on which to determine when and where work would occur. The qualified biological monitor must be present to measure noise levels at the edge of all suitable habitat and work shall cease if, at any time, noise levels exceed the median ambient levels.

## 5.5 PROTECTION OF NARROW ENDEMIC PLANT SPECIES

According to the RCA's online MSHCP Information Application and Figure 6-1 of the MSHCP, the proposed project is located within the designated survey area for the following Narrow Endemic Plant Species (NEPS): San Diego Ambrosia (*Ambrosia pumila*), Brand's phacelia (*Phacelia stellaris*), and San Miguel savory (*Clinopodium chandleri*).

### Literature Review and Habitat Assessment Results

#### *San Diego Ambrosia*

San Diego ambrosia is a member of the genus *Ambrosia*, in the family Asteraceae. According to Volume 2 of the MSHCP, San Diego ambrosia occurs in open floodplain terraces or in the watershed margins of vernal pools (Dudek & Associates, Inc. 2003). In addition, San Diego ambrosia occurs in a variety of associations that are dominated by sparse, non-native grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas (Dudek & Associates, Inc. 2003). Within Riverside County, extant populations of San Diego ambrosia are found on Garretson gravelly fine sandy loams in association with floodplains and on Las Posas loam in close proximity to silty, alkaline soils of the Willows series at Skunk Hollow (Dudek & Associates, Inc. 2003). San Diego ambrosia is generally found at low elevations that are less than 1,600 feet in Riverside County and at elevations less than 600 feet in San Diego County (Dudek & Associates, Inc. 2003). According to Table 6-1 of the MSHCP, the blooming period for San Diego ambrosia is April through October.

The majority of the populations of San Diego ambrosia in California occur in San Diego County and there are three known extant populations for this species in the Plan Area: Alberhill near Nichols Road, east of Lake Street in the City of Lake Elsinore, and Skunk Hollow (Dudek & Associates, Inc. 2003). In terms of seed dispersal of San Diego ambrosia, dispersal mechanisms are unknown, however, the lack of armed involucre bracts makes it less likely that the species disperses by attaching to animals (Dudek & Associates, Inc. 2003). San Diego ambrosia has a natural tendency to reproduce asexually which suggests that the most common form of dispersal may be through movement of rhizome-like structures either by short distances by growth or longer distance by flood disturbance (Dudek & Associates, Inc. 2003).

According to the CNDDDB, there are no occurrence records for San Diego ambrosia within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. In addition, there are no occurrence records of this species within 5 miles of the survey area and according to

Calflora records, most of the occurrence records in Riverside County occur to the east and west of Interstate 15 in Lake Elsinore and Murrieta (Calflora, 2021). As such, dispersal of this species to the survey area through growth and/or flood disturbance from occurrence records in Lake Elsinore and Murrieta is unlikely due to the presence of surrounding development (i.e., Interstate 15, State Route 91, State Route 71, residential land uses, Green River Golf Course). Based on the habitat description provided in Volume 2 of the MSHCP document, this species is unlikely to occur within the proposed project due to the lack of open floodplain terraces and vernal pools. Although Garretson gravelly very fine sandy loam soils are present within the survey area, they are limited to the proposed staging area which is currently being used as a staging area for the BNSF railroad bridge project. Las Posas loam soils are not present within the survey area and specifically within the boundaries of the proposed project. Focused surveys for this species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the survey area during above average rainfall years in 2019 and 2020; specifically Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming period of San Diego ambrosia which is April through October and this species was not incidentally observed. Based on the information above and due to the lack of specific habitat associations (i.e., floodplain terraces, vernal pools, and alkali playas) within the boundaries of the proposed project, soils this species typically occur on, and occurrence records within the surrounding areas, San Diego ambrosia is not expected to occur.

#### *Brand's Phacelia*

Brand's phacelia is a member of the genus *Phacelia*, in the family Boraginaceae. This annual herb produces a spreading, branching stem up to about 25 centimeters in length and is lightly hairy in texture. According to Volume 2 of the MSHCP, Brand's phacelia is primarily associated with coastal dunes and/or coastal scrub between 16 and 1,312 feet amsl and typically occurs in sandy openings, sandy benches, dunes, sandy washes, or flood plains of rivers (Dudek & Associates, Inc. 2003). Table 6-1 of the MSHCP states that the blooming period for Brand's phacelia is March through June. No seed dispersal mechanism is known for Brand's phacelia (Dudek & Associates, Inc. 2003). Volume 2 of the MSHCP states that there are only two known occurrences of this species within the Plan Area; one at Fairmont Park in 1925 and a 2002 observation in the Santa Ana Wilderness Area near County Parks headquarters (Dudek & Associates, Inc. 2003). In addition, according to Volume 2 of the MSHCP this species is extremely rare and is restricted to sandy washes and/or benches on alluvial flood plains within the Plan Area (Dudek & Associates, Inc. 2003).

According to the CNDDDB, there are no occurrence records for Brand's phacelia within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. In addition, there are no occurrence records of this species within 5 miles of the survey area and according to Calflora records, most of the occurrence records in Riverside County occur adjacent to the portion of the Santa Ana River located south of State Route 60 (Calflora, 2021). Based on the habitat description provided in Volume 2 of the MSHCP document, this species is unlikely to occur within the boundaries of the proposed project due to the lack of coastal dunes and/or coastal scrub with sandy openings, sandy benches, dunes, sandy washes and river flood plains. Although sandy loam soils occur within the proposed project,

the soils within these areas are heavily disturbed and compacted as a result of anthropogenic activities. Focused surveys for this species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the survey area during above average rainfall years in 2019 and 2020; specifically Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming period of Brand's phacelia which is March through June and this species was not incidentally observed. Based on the information above, and due to the lack of specific habitat associations (i.e., coastal dunes and/or coastal scrub with sandy openings, sandy benches, dunes, sandy washes and river flood plains) within the proposed project, undisturbed soils this species typically occur on, and occurrence records within the surrounding areas, Brand's phacelia is not expected to occur.

### *San Miguel Savory*

San Miguel savory is a member of the genus *Clinopodium*, in the family Lamiaceae. This species is a low-growing, fragrant, spreading perennial herb that prefers regular water and some shade. This species has white flowers with small, toothed or wavy-edged leaves. According to Volume 2 of the MSHCP, San Miguel savory is associated with rocky, gabbroic and metavolcanic substrates in CSS, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands (Dudek & Associates, Inc. 2003). Information regarding dispersal of San Miguel savory has not been reviewed (Dudek & Associates, Inc. 2003). According to Table 6-1 of the MSHCP, the blooming period for San Miguel savory is March through July. In addition, this species occurs at elevations ranging from 394 to 3,297 feet amsl (Dudek & Associates, Inc. 2003). Volume 2 of the MSHCP states the majority of the populations/individuals of San Miguel savory are associated with the Santa Rosa Plateau and the Santa Ana Mountains (Dudek & Associates, Inc. 2003). Specifically, known populations within western Riverside County occur one mile west of Murrieta on Tenaja Road, ten miles west of Murrieta (vicinity of Tenaja guard station), three miles south of Murrieta near De Luz Road, and three miles southwest of Murrieta near Warner's Ranch (Dudek & Associates, Inc. 2003).

According to the CNDDDB, there are no occurrence records for San Miguel savory within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California 7.5-minute* quadrangles. In addition, there are no occurrence records of this species within 5 miles of the survey area and according to Calflora records, most of the occurrence records in Riverside County occur to the east and west of Interstate 15 in Lake Elsinore, Murrieta, Temecula, and the Santa Rose Plateau (Calflora, 2021). Based on the habitat description provided in Volume 2 of the MSHCP document, this species is unlikely to occur within the proposed project due to the lack of rocky, gabbroic and metavolcanic substrates located in CSS, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands. Focused surveys for this species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the survey area during above average rainfall years in 2019 and 2020; specifically Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming period of San Miguel savory which is March through July and this species was not incidentally observed. Based on the

information above, and due to the lack of specific habitat associations (i.e., rocky, gabbroic and metavolcanic substrates located in CSS, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands) within the boundaries of the proposed project, soils this species typically occur on, and occurrence records within the surrounding areas,, San Miguel savory is not expected to occur.

### **Additional Survey and Mitigation Requirements**

Based on the information above, San Diego ambrosia, Brand's phacelia, and San Miguel savory are not expected to occur within the survey area. Therefore, no direct or indirect impacts are expected to occur, and no further discussion related to the proposed project and NEPS is warranted.

## **5.6 ADDITIONAL SURVEY NEEDS AND PROCEDURES**

### **5.6.1 CRITERIA AREA PLANT SPECIES**

Based on a desktop review of the RCA's online MSHCP Information Application and Figure 6-2 of the MSHCP, the proposed project is not located within a mapped survey area for Criteria Area plant species. Therefore, a discussion related to the proposed project and any associated Criteria Area plant species is not warranted.

### **5.6.2 AMPHIBIANS**

Based on a desktop review of the RCA's online MSHCP Information Application and Figure 6-3 of the MSHCP, the proposed project is not located within a mapped survey area for amphibians. Therefore, a discussion related to the proposed project and MSHCP amphibian species is not warranted.

### **5.6.3 BURROWING OWL**

According to the RCA's online MSHCP Information Application and Figure 6-4 of the MSHCP, the proposed project is located within a mapped survey area for BUOW.

### **Literature Review and Habitat Assessment Results**

The BUOW is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. BUOWs use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk, 1993; Dechant *et al.*, 1999). BUOWs are dependent upon the presence of burrowing mammals (e.g., California ground squirrels, coyotes, American badger [*Taxidea taxus*]) whose burrows are used for roosting and nesting. The presence or absence of mammal burrows is often a major factor that limits the presence or absence of BUOW. Where mammal burrows are scarce, BUOWs have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. BUOWs may also burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. They also require

open vegetation allowing open line-of-sight of the surrounding habitat to forage as well as watch for predators.

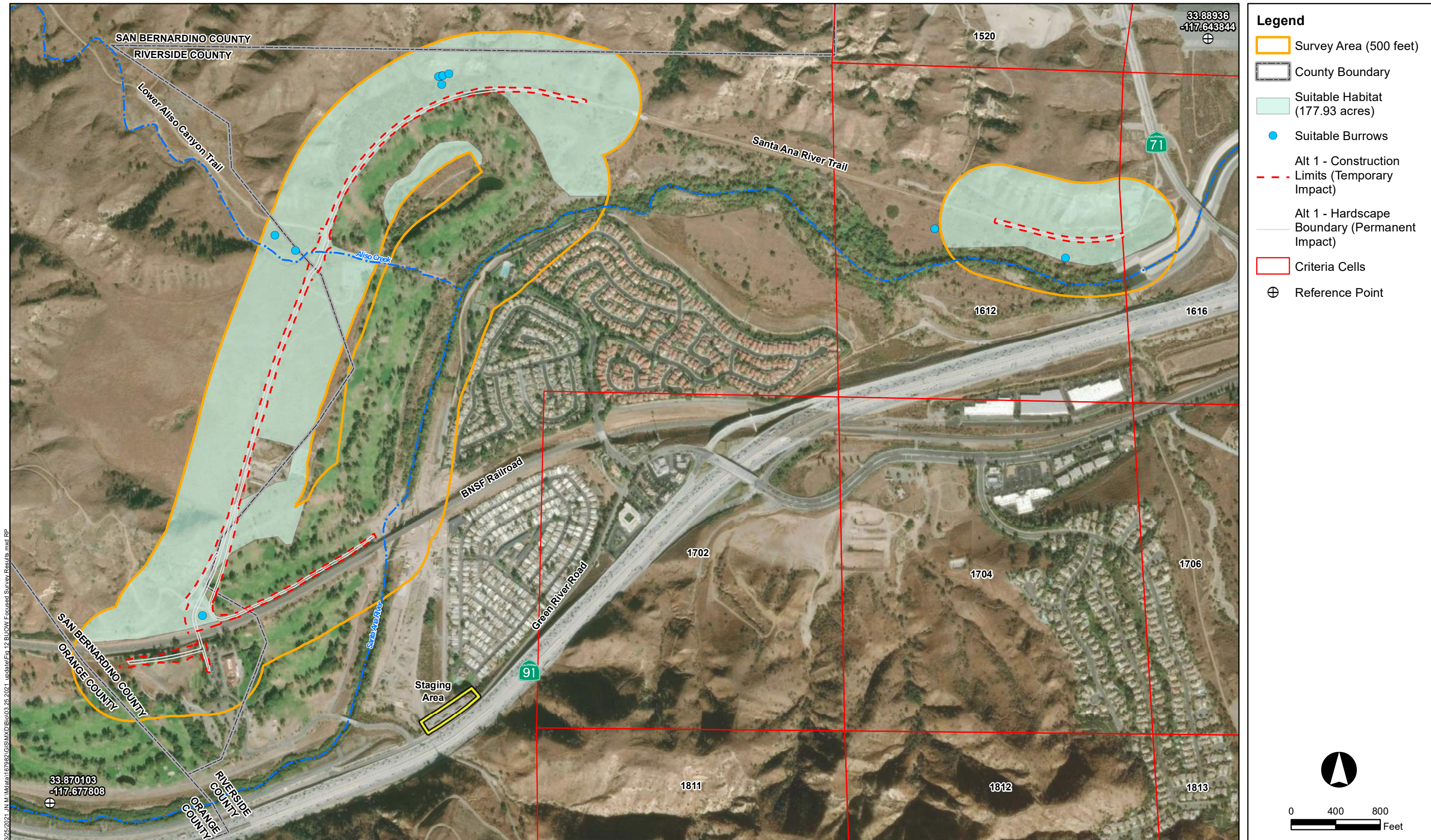
According to the CNDDDB, there are twenty-five (25) occurrence records for BUOW within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. The most recent extant occurrence (Occurrence Number 1993) was recorded in 2016, approximately 5 miles north of the survey area; two (2) adults and seven (7) juveniles were observed sitting outside the burrow and flying from the burrow to the top of a nearby fence (CNDDDB, 2017). The non-native grassland vegetation community within the survey area provides suitable foraging habitat preferred by BUOW. In addition, suitable burrows for roosting and nesting (> 4 inches in diameter) occur within the survey area. Therefore, a BUOW focused survey was conducted during the 2019 breeding season.

### **Focused Burrow Survey and Focused Burrowing Owl Survey Results**

Focused surveys were conducted by a qualified biologist during the 2019 breeding season (March 1 to August 31) in accordance with the survey guidelines and protocols provided in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) and the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (Western Riverside County Regional Conservation Authority, 2006). Please refer to Table 12 below for a summary of the dates, times, surveyors, and weather conditions for each of the surveys. Based on the results of the focused surveys, no BUOWs or sign (i.e., pellets, white wash, feathers, or prey remains) were observed. In addition, no manmade features (e.g., debris piles, non-functioning drain pipes, stand-pipes, and dry culverts) were observed within the survey area located within Criteria Cells 1612 and 1616. Suitable habitat and burrows capable of providing roosting and nesting opportunities for BUOWs were observed within the non-native grassland vegetation community (refer to Figure 12, *BUOW Focused Survey Results*); however, these areas were overgrown with vegetation at the time of the surveys and did not provide the favorable line-of-site opportunities preferred by BUOWs. It appears that access to the suitable burrows and line-of-site opportunities favored by BUOWs only exists within these areas when the vegetation is routinely maintained. It is likely that these conditions and lack of nearby populations have precluded BUOWs from occurring within the survey area. In addition, the existing telephone poles, light posts, fencing, and tall trees that occur throughout a majority of the survey area further decrease the likelihood that BUOWs would occur as these features provide perching opportunities for larger raptor species (i.e., red-tailed hawk) that prey on BUOWs. As such, BUOW was determined to be absent from the survey area.

### **Additional Survey and Mitigation Requirements**

Although no BUOWs or sign were observed during the 2019 focused surveys, the survey area does contain suitable burrows and habitat that may become occupied prior to construction. Due to the presence of potentially suitable habitat, a 30-day pre-construction survey for BUOWs is required prior to initial ground-disturbing activities (e.g., vegetation clearing, clearing and grubbing, grading, tree removal, site watering, equipment staging) to ensure that no BUOWs have colonized the site in the days or weeks preceding the ground-disturbing activities. If BUOWs have colonized the project site prior to the initiation of ground-



SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS

**BUOW Focused Survey Results**

Figure 12



**Table 12: Survey Dates, Times, Surveyors, and Weather Conditions**

Date (2019)	Time (start / finish)	Surveyors	Weather Conditions	
			Temperature (°F) (start / finish)	Average Wind Speed (mph)
June 11	0600 / 1100	Ashley Spencer, Stephen Anderson	61 / 88	1 - 5
July 3	0530 / 1030	Ashley Spencer, Stephen Anderson	62 / 70	1 - 5
July 23	0530 / 1030	Ashley Spencer, Stephen Anderson	72 / 84	1 - 5
August 13	0530 / 1100	Ashley Spencer, Stephen Anderson	64 / 80	1 - 5
August 27	0530 / 0730	Stephen Anderson, Frances Yau	66 / 70	1 - 2
August 28	0600 / 0800	Ashley Spencer, Frances Yau	64 / 68	1 - 3
August 28	1730 / 1930	Ashley Spencer, Stephen Anderson	85 / 81	11 - 12
August 29	0530 / 0730	Stephen Anderson, Josephine Lim	64 / 68	1 - 2

disturbing activities, the project proponent will immediately inform the RCA and the Wildlife Agencies and will need to coordinate further with RCA and the Wildlife Agencies, including the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If ground-disturbing activities occur, but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure that BUOW have not colonized the site since it was last disturbed. If BUOW is found, the same coordination described above will be necessary.

#### 5.6.4 MAMMALS

The proposed project is not located within a mapped survey area for mammal species according to the RCA's online MSHCP Information Application and Figure 6-5 of the MSHCP. Therefore, a discussion related to the proposed project and MSHCP mammal species is not warranted.

### 5.7 INFORMATION ON OTHER SPECIES

#### 5.7.1 DELHI SANDS FLOWER-LOVING FLY

According to the RCA's online MSHCP Information Application and the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2020), the survey area is not underlain by or fall within an area containing Delhi Sand soils. Therefore, no direct or indirect impacts are expected to occur, and no further discussion related to the proposed project and the Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) is warranted.

### 5.7.2 SPECIES NOT ADEQUATELY CONSERVED

As described in Section 2.1.4 of the MSHCP, of the one hundred and forty-six (146) Covered Species addressed in the MSHCP, one-hundred and eighteen (118) species are considered to be adequately conserved. The remaining twenty-eight (28) Covered Species will be considered to be adequately conserved when certain conservation requirements are met as identified in the species-specific conservation objectives listed in Table 9-3 of the MSHCP.

None of the species listed in Table 9-3 of the MSHCP were observed within the survey area during field surveys conducted by Michael Baker between January 23 and August 29, 2019 and 2020 CAGN field surveys. The CSS and non-native grassland vegetation communities within the survey area could potentially provide marginal habitat for grasshopper sparrow (*Ammodramus savannarum*), Coulter's matilija poppy (*Romneya coulteri*), and Plummer's mariposa lily (*Calochortus plummerae*). However, these species were determined to have a low potential to occur due to the lack of occurrence records within the vicinity of the survey area and the high level of anthropogenic disturbances (i.e., noise, grazing, weed abatement) associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Course. All remaining species listed in Table 9-3 of the MSHCP are not expected to occur within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions.

### 5.7.3 COASTAL CALIFORNIA GNATCATCHER

Approximately 2.28 acres of CSS habitat is located adjacent to the proposed additional trail segment near the State Route 91 and State Route 71 interchange in Riverside County, specifically within Criteria Cells 1612 and 1616 in the eastern portion of the survey area. In addition, CAGN was incidentally observed within this area during the 2019 focused BUOW surveys. Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.12 acres of temporary impacts and approximately 0.03 acres of permanent impacts to CSS habitat within Criteria Cell 1612, would occur. Within Criteria Cell 1616, approximately 0.005 acres of temporary impacts to CSS habitat would occur. No permanent impacts to CSS habitat within Criteria Cell 1616 would occur. Although any potential impacts to CAGN and its habitat within Riverside County are fully covered under the MSHCP, Permittees are required by the Migratory Bird Treaty Act Special-Purpose Take Permit (issued by USFWS) to avoid clearing CAGN occupied habitat in the Criteria Area and in P/QP Lands between March 1 and August 15. As such, all habitat clearing, grubbing, grading, and other associated project activities located within Criteria Area and P/QP Lands would occur outside of the active breeding season for CAGN which is March 1 to August 15. If it is not possible to construct the proposed project outside of the CAGN breeding season, then protocol-level focused surveys for CAGN would need to be conducted to fully prove absence. If CAGN is determined to be absent during the protocol-level focused surveys, then construction activities (i.e., vegetation clearing, grubbing, grading) may commence

## **5.8 GUIDELINES PERTAINING TO THE URBAN/WILDLANDS INTERFACE**

The urban/wildlands interface guidelines presented in Section 6.1.4 of the MSHCP are intended to address indirect effects associated with new development in proximity to MSHCP Conservation Areas and wildlife with the potential to occur in adjacent riparian habitat (i.e., LBVI). The guidelines discussed below would be incorporated into the proposed project to ensure that indirect impacts to MSHCP Conservation Areas and wildlife, specifically LBVI, related to drainage, toxics, lighting, noise, invasive plant species, barriers, and grading/land development are avoided or minimized.

### **5.8.1 DRAINAGE**

The proposed project would incorporate measures, including measures to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. Further, any stormwater systems would be designed to prevent the release of untreated surface runoff, toxins, chemicals, petroleum products, exotic plant materials or other elements.

### **5.8.2 TOXICS**

The proposed project has the potential to cause the release of toxic chemicals or materials related to the use of pesticides and herbicides during landscaping and/or leaks from construction equipment. To ensure that the proposed project does not result in the discharge of toxics chemicals or materials to the MSHCP Conservation Area, all equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities would occur in developed or previously disturbed upland areas and as far away, to the maximum extent feasible, from the MSHCP Conservation Area. Further, appropriate erosion control measures would be implemented to minimize erosion and eliminate or control potential point and non-point pollution sources during and following the project's construction phase.

### **5.8.3 LIGHTING**

Any light sources associated with the proposed project would be designed to have a zero-side angle cut off to the horizon. In addition, light sources would utilize internal baffles to shield/direct lighting away from the MSHCP Conservation Area and towards the ground or developed areas.

### **5.8.4 NOISE**

Project related construction noise is not expected to exceed normal ambient noise levels within the survey area. Wildlife species present within adjacent habitats are routinely exposed to above average noise levels associated with the BNSF railroad and State Route 91. However, construction-related activities would incorporate measures pursuant to County of Riverside rules, regulations, and guidelines related to land use noise standards. In addition, due to the presence of LBVI within the vicinity of the proposed project, pre-

construction clearance surveys would need to be conducted prior to initiating project activities (e.g., vegetation clearing, grubbing, grading, etc.) during the recognized LBVI breeding season (March 15 to September 30) to determine the presence/absence of LBVI within the project's vicinity. If LBVI are not present, then construction may occur. In the event LBVI are observed during the pre-construction clearance survey, a "no-disturbance" buffer would need to be established around the location and construction would need to avoid work in that area until the end of the nesting cycle. No project-related construction would occur within the "no-disturbance" buffer until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). The distance of the "no-disturbance" buffer would be determined by the qualified biologist based on ambient noise levels, topography, visual/noise shielding, nest progress, and the type of construction and associated disturbance. Any proposed "no disturbance" buffers, including any subsequent reductions in the "no disturbance" buffers, would need to be reviewed and approved by the RCA and the Wildlife Agencies. In addition, all work during the LBVI breeding season would occur during daylight hours and would not exceed ambient noise levels. Ambient noise measurements would be taken by a qualified biological monitor during a full daylight period (sunrise to sunset) and subsequently, the median average noise level shall be used as the baseline on which to determine when and where work would occur. The qualified biological monitor must be present to measure noise levels at the edge of all suitable habitat and work shall cease if, at any time, noise levels exceed the median ambient levels.

#### **5.8.5 INVASIVE PLANT SPECIES**

If the proposed project will include landscaping, all landscape plans would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP. To ensure this, the final landscape plans would need to be reviewed and verified by the County of Riverside.

#### **5.8.6 BARRIERS**

The proposed project would incorporate barriers, where feasible, to minimize unauthorized public access, domestic animals, illegal trespassing, and dumping in the MSHCP Conservation Area. Pursuant to the MSHCP, suitable barriers may include native landscaping, rocks/boulders, fencing, walls, signage, and/or other appropriate mechanisms. As such, it is recommended that highly visible barriers (e.g., orange construction fencing or flagging) be installed around the perimeter of the project impact area and access routes prior to construction and remain in place for the duration of the project.

#### **5.8.7 GRADING/LAND DEVELOPMENT**

The limits of disturbance would be minimized to the maximum extent feasible and access to the project work area would be limited to developed or previously disturbed upland areas. Further, any manufactured slopes associated with the proposed project would be contained within the boundaries of the impact footprint and would not extend into the MSHCP Conservation Area or otherwise into the area targeted for conservation within Criteria Cell 1612 or 1616.

## 5.9 STANDARD BEST MANAGEMENT PRACTICES

In accordance with Appendix C of the MSHCP, the following standard BMPs would be implemented to reduce project-related impacts to the MSHCP Conservation Area:

- A qualified biologist would present to project personnel (including temporary, contractors, and subcontractors) a worker environmental awareness program prior to the initiation of grading activities. Project personnel would be advised on any special-status wildlife species of concern, the steps to avoid impacts to the species and the potential penalties for taking such species. At a minimum, the program would include the following topics: occurrence of the listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, legal protection afforded to these species, penalties for violations of federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area. Color photographs of the listed species would be included in the program and be shown to personnel. Following the program, the photographs would be posted in the contractor and resident engineer office and remain through the duration of the project. The contractor, resident engineer, and the qualified biologist would be responsible for ensuring that personnel are aware of the listed species. If additional personnel are added to the project after initiation, they would receive instruction prior to working on the project.
- In order to avoid or minimize impacts to water quality, a construction Storm Water Pollution Prevention Plan and Soil Erosion and Sedimentation Plan would be developed to minimize erosion and identify specific pollution prevention measures that would eliminate or control potential point and non-point pollution sources on-site during and following the project's construction phase. The project design would incorporate permanent erosion control elements to ensure that storm water runoff does not cause soil erosion. In addition, erosion control measures would be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts include hydromulching and limiting the amount and length of exposure of graded soil.
- Disturbance related to the project would be minimized to the maximum extent possible. Project site access would also be limited to existing disturbed roads and access routes.
- Prior to construction, highly visible barriers (e.g., orange construction fencing) would be clearly defined and installed around the perimeter of the project impact area and access routes.
- Use of heavy equipment, including motor vehicles, or construction personnel within riparian and riverine communities would be reduced to the maximum extent practicable.
- In order to avoid impacts to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities would occur outside of the nesting bird season (February 1 – August 31). If avoidance of the nesting bird season is not feasible, a pre-construction nesting bird clearance survey

would be conducted by a qualified biologist no more than three days prior to the start of any vegetation removal or ground disturbing activities to maintain compliance with the MBTA and CFGC and ensure that impacts to nesting birds do not occur. The qualified biologist would survey all suitable nesting habitat within the project impact area, including areas within a biologically defensible buffer distance surrounding the project impact area, for the presence of nesting birds and would provide documentation of the surveys and findings to the Riverside County Transportation Commission for review prior to initiating project activities. If no active bird nests are detected, project-related activities may begin. If an active nest is found, the bird would be identified to species and the approximate distance from the closest work site to the active nest would be estimated and the qualified biologist would establish a “no-disturbance” buffer around the active nest. The distance of the “no-disturbance” buffer may be increased or decreased according to the judgement of the qualified biologist depending on the level of activity and species (i.e., listed, sensitive). In addition, the qualified biologist would periodically monitor any active bird nests to determine if project-related activities occurring outside the ‘no disturbance’ buffer disturb the birds and if the buffer would be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, project-related activities within the ‘no disturbance’ buffer may occur.

- If stream flows must be diverted during project construction activities, methods requiring minimal instream impacts (e.g., sandbags) would be utilized. Silt fence barriers would also be installed to prevent sediments from moving off-site.
- All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities would occur in developed or previously disturbed upland areas so as to prevent the runoff from any spills from entering waters of the U.S., waters of the State, or riparian/riverine resources. All construction equipment would be operated in a manner to prevent accidental damage to nearby preserved areas and any project-related spills of hazardous materials would be immediately reported to appropriate entities.
- Silt fence barriers would be installed around water courses to prevent accidental deposition of fill material in these areas. And brush, loose soils, or other similar debris materials would be stockpiled in developed or disturbed upland areas.
- A qualified biologist would monitor construction for the duration of the project to ensure that BMPs and other avoidance and minimization measures are properly implemented.
- Removal of native vegetation would be minimized to the maximum extent possible.
- Removal of exotic species that prey upon or displace target species of concern would be removed from the project work area, if possible.
- Trash, construction refuse (e.g., broken equipment parts, cables, etc.), and food items would be contained in closed containers and removed daily.

## Section 6 Conclusion

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The survey area is approximately 149.38 acres in size, spans across both Riverside and San Bernardino Counties, and is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the BNSF railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River. Eight (8) natural vegetation communities were observed and mapped within the boundaries of the survey area: southern willow scrub, southern cottonwood willow riparian forest, mule fat scrub, disturbed mule fat scrub, elderberry savannah, CSS, restored CSS, and non-native grassland. In addition, the survey area contains four (4) land cover types that would be classified as open water, disturbed, ornamental, and developed.

Three (3) drainage features (Santa Ana River, Aliso Canyon, and Drainage 1) occur within the survey area and would fall under regulatory authority of the Corps, Regional Board, and CDFW. Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.005 acres of permanent impacts and approximately 0.10 acres of temporary impacts would occur to Corps/Regional Board jurisdiction (non-wetland WoUS). In addition, Alternative 1 would result in approximately 0.003 acres of permanent impacts and approximately 0.17 acres of temporary impacts to CDFW jurisdiction (streambed/associated riparian vegetation). Therefore, the following regulatory approvals would be required: 1) Corps CWA Section 404 NWP No. 14: *Linear Transportation Projects*, 2) Regional Board CWA Section 401 WQC, and 3) CDFW Section 1602 SAA.

No special-status plant species were observed during the field surveys. Based on the results of the literature review and the field surveys, Michael Baker determined that all special-status plant species either have a low potential to occur or are not expected within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions.

Special-status wildlife species that were observed within or adjacent to the survey area during the field surveys included: Cooper’s hawk, sharp-shinned hawk, tricolored blackbird, southern California rufous-crowned sparrow, coastal whiptail, Vaux’s swift, northern harrier, merlin, yellow-breasted chat, loggerhead shrike, California gull, double-crested cormorant, CAGN, vermilion flycatcher, yellow warbler, and LBVI. Based on the results of the literature review and the field surveys, Michael Baker determined that California horned lark, Santa Ana sucker, and arroyo chub have a moderate to high potential to occur within the survey area. All other special-status wildlife species identified during the literature review either have a low potential to occur or are not expected within the survey area based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions. Impacts to Cooper’s hawk, sharp-shinned hawk, tricolored blackbird, southern California rufous-crowned sparrow, coastal whiptail, northern harrier, merlin, yellow-breasted chat, loggerhead shrike, double-crested cormorant, CAGN, yellow warbler, Santa Ana sucker, arroyo chub, and California horned lark are all fully covered under the MSHCP. Vaux’s swift, California gull, and vermilion flycatcher are not covered under the MSHCP. However, with

incorporation of the guidelines and standard BMPs summarized in Sections 5.8 and 5.9 above, the proposed project is not expected to result in significant impacts to this species or its habitat.

Approximately 2.28 acres of CSS habitat is located adjacent to the proposed additional trail segment near the State Route 91 and State Route 71 interchange in Riverside County, specifically within Criteria Cells 1612 and 1616 in the eastern portion of the survey area. In addition, CAGN was incidentally observed within this area during the 2019 focused BUOW surveys. Based on a review of the proposed construction limits and hardscape boundaries for Alternative 1, approximately 0.12 acre of temporary impacts and approximately 0.03 acre of permanent impacts to CSS habitat within Criteria Cell 1612, would occur. Within Criteria Cell 1616, approximately 0.005 acre of temporary impacts to CSS habitat would occur. No permanent impacts to CSS habitat within Criteria Cell 1616 would occur. Although any potential impacts to CAGN and its habitat within Riverside County are fully covered under the MSHCP, Permittees are required by the Migratory Bird Treaty Act Special-Purpose Take Permit (issued by USFWS) to avoid clearing CAGN occupied habitat in the Criteria Area and in P/QP Lands between March 1 and August 15. As such, all habitat clearing, grubbing, grading, and other associated project activities located within Criteria Area and P/QP Lands would occur outside of the active breeding season for CAGN which is March 1 to August 15. If it is not possible to construct the proposed project outside of the CAGN breeding season, then protocol-level focused surveys for CAGN would need to be conducted to fully prove absence. If CAGN is determined to be absent during the protocol-level focused surveys, then construction activities (i.e., vegetation clearing, grubbing, grading) may commence.

Although potential impacts to CAGN within Riverside County would be fully covered under the MSHCP, take authorization may still be required if the proposed project (Alternative 1) would result in impacts to CAGN within San Bernardino County. Based on direction provided by USFWS staff (Karin Cleary-Rose and Jim Thiede) on October 8, 2019, Michael Baker conducted focused “spatial use” (non-protocol) surveys during the 2020 breeding season to confirm if and how CAGN are using the existing habitats within and adjacent to Alternative 1 in San Bernardino County and to analyze potential impacts that would occur as a result of the proposed project. Based on the results of the CAGN focused surveys, three (3) CAGN pairs were found to be present within the 500-foot survey area. At least two (2) of the pairs were confirmed to make nesting attempts in 2020, with only one (1) nest known to have been successful. Although territories were located in proximity to the proposed Alternative 1 alignment in 2020, all territories and suitable CAGN habitat is located to the west of the alignment, ultimately resulting in a low chance of CAGN moving across the alignment to the area to the east. Since Alternative 1 would not result in the removal of CSS habitat or other habitat being used by CAGN in 2020, direct project impacts during construction other than routine nesting bird risks due to territory proximity are not expected to occur.

To avoid indirect impacts and take of CAGN in San Bernardino County, it is recommended that all project-related construction occur outside of the recognized CAGN breeding season (March 1 to August 15). Although the proposed project would not result in the loss of CSS habitat, timing the construction to be outside of this window of time would avoid impacts to CAGN that may be nesting in the CSS habitat adjacent to the proposed project. If it is not possible to construct the proposed project outside of the CAGN



breeding season, a nesting bird survey would need to be conducted within seven (7) days prior to the start of construction in a 500-foot buffer from the proposed limits of construction. The survey would need to be conducted by a qualified biologist with demonstrable experience identifying CAGN nesting behavior and finding CAGN nests, and who has been approved by the USFWS to conduct the survey. If an active CAGN nest is found during the survey, no project-related construction will be allowed within 500 feet of the nest, or within an alternative safe distance as determined by the qualified biologist based on topography, visual shielding, nest progress, and the type of construction and associated disturbance, until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). Results of the nesting bird/nesting CAGN survey shall be compiled in a memorandum and submitted to the RCTC and USFWS for the project record.

Although no BUOWs or sign (i.e., pellets, white wash, feathers, or prey remains) were observed during the 2019 focused surveys, the survey area does contain suitable burrows and habitat that may become occupied prior to construction. Due to the presence of potentially suitable habitat, a 30-day pre-construction survey for BUOWs is required prior to initial ground-disturbing activities (e.g., vegetation clearing, clearing and grubbing, grading, tree removal, site watering, equipment staging) to ensure that no BUOWs have colonized the site in the days or weeks preceding the ground-disturbing activities. If BUOWs have colonized the project site prior to the initiation of ground-disturbing activities, the project proponent will immediately inform the RCA and the Wildlife Agencies, and will need to coordinate further with RCA and the Wildlife Agencies, including the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If ground-disturbing activities occur, but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure that BUOW have not colonized the site since it was last disturbed. If BUOW is found, the same coordination described above will be necessary.

According to the RCA's online MSHCP Information Application, portions of the proposed project are located within Subunit 2: Prado Basin of the Temescal Canyon Area Plan. In addition, portions of the survey area are located within Criteria Cells 1612 and 1616, Existing Core A, and P/QP Lands. However, the proposed project is considered a Covered Activity under Section 7.4.2 MSHCP and therefore is not subject to any Reserve Assembly conservation requirements and not subject to the HANS review process.

The Santa Ana River, Aliso Canyon, and Drainage 1, including associated riparian vegetation communities, would qualify as riparian/riverine resources pursuant to Section 6.1.2 of the MSHCP; a total of approximately 9.08 acres occurs within the survey area. Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acre of permanent impacts and approximately 0.17 acre of temporary impacts would occur to riparian/riverine resources. In accordance with the MSHCP requirements, the DBESP report was prepared and analyzes the effects/benefits of the proposed project and identifies specific mitigation and compensation measures that will be implemented to offset the loss of riparian/riverine resources. The DBESP report will be submitted to the RCA and Wildlife Agencies for review and approval prior to implementation of the proposed project.

## Section 7      References

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- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Editors. 2012. *The Jepson Manual: Vascular Plants of California, Second Edition*. University of California Press, Berkeley, CA.
- Bradley, D.R., Ammerman, L.K., Baker, R.J., Bradley, L.C., Cook, J.A., Dowler, R.C., Jones, C., Schmidly, D.J., Stangl Jr., F.B., Van Den Bussche, R.A., and B. Würsig. 2014. Revised Checklist of North American Mammals North of Mexico, 2014. Occasional Papers of the Museum of Texas Tech University. 327. 1-27.
- Calflora: Information on California plants for education, research and conservation. [web application]. 2021. Berkeley, California: The Calflora Database [a non-profit organization]. Accessed online at: <https://www.calflora.org/>.
- California Department of Fish and Game (CDFG). 1994. *Amphibian and Reptile Species of Special Concern in California*.
- California Department of Fish and Game (CDFG). 2012. *Staff Report on Burrowing Owl Mitigation*. State of California Natural Resources Agency. 34 pp.
- California Department of Fish and Wildlife (CDFW). 2020a. RareFind 5, California Natural Diversity Data Base, California. Data base report on threatened, endangered, rare or otherwise sensitive species and communities for the *Black Star Canyon, Corona North, Corona South and Prado Dam, California* USGS 7.5-minute quadrangles.
- California Department of Fish and Wildlife (CDFW). 2020b. Biogeographic Information and Observation System, California Natural Diversity Data Base, California. Database report on threatened, endangered, rare or otherwise sensitive species and communities for the USGS *Black Star Canyon, Corona North, Corona South and Prado Dam, California* 7.5-minute quadrangles.
- California Natural Diversity Database (CNDDDB). July 2020c. *Special Animals List*. California Department of Fish and Wildlife. Sacramento, CA.
- California Natural Diversity Database (CNDDDB). July 2020d. *State and Federally Listed Endangered and Threatened Animals of California*. California Department of Fish and Wildlife. Sacramento, CA.
- California Department of Fish and Wildlife, Natural Diversity Database. January 2020e. *Special Vascular Plants, Bryophytes, and Lichens List*. Quarterly publication. 140 pp.

- California Natural Diversity Database (CNDDDB). July 2020f. *State and Federally Listed Endangered, Threatened, and Rare Plants of California*. California Department of Fish and Wildlife. Sacramento, CA.
- California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Accessed online at: <http://www.rareplants.cnps.org/>.
- Chesser, R. T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., D. F. Stotz, and K. Winker. 2019. Check-list of North American Birds (online). American Ornithological Society. <http://checklist.aou.org/taxa>.
- Crother, B. I. (ed.). 2017. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* pp. 1–102. SSAR Herpetological Circular 43.
- Dechant, J.A., M.L. Sondreal, D.H. Johnson, L.D. Igl, C.M. Goldade, P.A. Rabie, and B.R. Euliss. 1999 (revised 2002). *Effects of management practices on grassland birds: Burrowing Owl*. Northern Prairie Wildlife Research Center. Jamestown, ND.
- Dudek & Associates, Inc. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Final MSHCP, Volumes I and II. Prepared for County of Riverside Transportation and Lands Management Agency. Approved June 17, 2003.
- Google, Inc. 2020. Google Earth Pro version 7.3.2.5491, build date 07/21/2020. Historical aerial imagery from 1994 to 2020.
- Halterman, M., M.J. Johnson, J.A. Holmes, and S.A. Laymon. 2015. *A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-Billed Cuckoo*. USFWS. April 2015.
- Harvey, M. J., J. S. Altenbach, and T.L. Best. 2011. *Bats of the United States and Canada*. John Hopkins University Press, Baltimore, Maryland.
- Haug, E. A. and Didiuk, B. A. 1993. *Use of Recorded Calls to Detect Burrowing Owls*.
- Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, Sacramento, CA.
- Intellicast. 2019. Historical Weather Averages for Chino Hills and Corona, California. Accessed online at: <http://www.intellicast.com>.
- Jennings, M.R. and M.P. Hayes. 1994. *Amphibian and reptile species of special concern in California*. Final report submitted to the California Department of Fish and Game, Rancho Cordova, CA. Contract 8023.

- Jepson Flora Project. 2020. Jepson eFlora. Accessed online at: <http://ucjeps.berkeley.edu/eflora/>.
- Kus B, Hopp SL, Johnson RR, Brown BT. 2010. Bell's Vireo (*Vireo bellii*). In: Rodewald PG, editor. *The Birds of North America Online*. Cornell Lab of Ornithology, Ithaca, NY. doi: <http://dx.doi.org/10.2173/bna.35>.
- Laymon, S.A. and M.D. Halterman. 1985. *Yellow-billed Cuckoos in the Kern River Valley: 1985 population, habitat use, and management recommendations*. California Department of Fish and Game, Nongame Bird and Mammal Section Rep. 85.06.
- Michael Baker. 2020. *Delineation of Jurisdictional Waters for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project*. November 2020.
- Michael Baker. 2019. *Focused Burrowing Owl Survey Report for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project*. December 2019.
- Michael Baker. 2020. *Results of Coastal California Gnatcatcher Focused Surveys for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project*. July 2020.
- Muiznieks, B.D., T.E. Corman, S.J. Sferra, M.K. Sogge, and T.J. Tibbitts. 1994. *Arizona Partners In Flight 1993 southwestern willow flycatcher survey*. Technical Report 52. Arizona Game and Fish Department, Nongame and Endangered Wildlife Program, Phoenix, Arizona. 25 p.
- Reid, F.A. 2006. *A Field Guide to Mammals of North America, Fourth Edition*. Houghton Mifflin Company, New York, New York.
- Regional Conservation Authority (RCA). 1996. *Implementation Agreement, Riverside County, Long Term Habitat Conservation Plan*. Accessed online at: [http://www.skrplan.org/docs/implementation\\_agreement.pdf](http://www.skrplan.org/docs/implementation_agreement.pdf).
- Regional Conservation Authority (RCA). 2018. RCA MSHCP Information Map. Accessed online at: <http://wrcrca.maps.arcgis.com/apps/webappviewer/index.html?id=a73e69d2a64d41c29ebd3acd67467abd>.
- Santa Ana Watershed Association (SAWA). 2018. *Monitoring Results of Least Bell's Vireo Territories along the Santa Ana River within Riverside and Orange Counties, California*. Data provided via e-mail by the Santa Ana Watershed Association on May 23, 2019.
- Santa Ana Watershed Association (SAWA). 2019. *Status and Management of the Least Bell's Vireo and Southwestern Willow Flycatcher in the Santa Ana River Watershed, 2019 and Summary Data by Site and Watershed-wide, 2000-2019*. December 2019.
- Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation (Second Edition)*. California Native Plant Society, Sacramento, California, USA.

- Shuford, W. D., and Gardali, T., editors. 2008. *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
- Sibley, D.A. 2014. *The Sibley Guide to Birds, Second Edition*. Alfred A. Knopf, Inc., New York, New York.
- Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians, Third Edition*. Houghton Mifflin Company, New York, New York.
- Tibbitts, T.J., M.K. Sogge, and S.J. Sferra. 1994. *A Survey Protocol for the Southwestern Willow Flycatcher (Empidonax traillii extimus)*. National Park Service Technical Report NPS/NAUCPRS/ NRTR-94/04.
- U.S. Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Department of Agriculture (USDA). 2020. *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California*. Accessed online at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- U.S. Geological Survey (USGS). 1967 (photo revised 1988). *Black Star Canyon, California 7.5-minute Series Topographic Map*.
- U.S. Geological Survey (USGS). 1967 (photo revised 1981). *Prado Dam, California 7.5-minute Series Topographic Map*.
- U.S. Fish and Wildlife Service (USFWS). 1997. *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines*. February 28, 1997.
- U.S. Fish and Wildlife Service (USFWS). 1998. *Draft Recovery Plan for the Least Bell's Vireo*. Fish and Wildlife Service, Portland, Oregon. 139 pp.
- U.S. Fish and Wildlife Service (USFWS). 2002. *Southwestern Willow Flycatcher Recovery Plan*. Albuquerque, New Mexico. i-ix + 210 pp., Appendices A-O.

## **Appendix A Site Photographs**

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**Photograph 1:** View of ornamental vegetation and access road separating the BNSF railroad and Green River Golf Course parking lot, facing southwest.



**Photograph 2:** View of the Santa Ana River diversion channel located immediately upstream of the BNSF railroad, facing northeast.



**Photograph 3:** View of the Green River Golf Course fairway located to the north of the BNSF railroad, facing west.



**Photograph 4:** View of coastal sage scrub restoration area within the Chino Hills State Park and west of the Alternative 1 alignment, facing southwest.





**Photograph 5:** View of existing access road and Alternative 1 alignment located to the west of the Green River Golf Course, facing north.



**Photograph 6:** View of coastal sage scrub and non-native grassland within the Chino Hills State Park and west of the Alternative 1 alignment, facing west.



**Photograph 7:** View of Aliso Canyon and sparse mule fat scrub located upstream of the Alternative 1 alignment, facing southwest (upstream).



**Photograph 8:** View of non-native grassland and black elderberry stands located adjacent to the Alternative 1 alignment, facing northwest.



**Photograph 9:** View of southern cottonwood willow riparian forest located east of the Alternative 2 alignment within the Santa Ana River, facing northeast.



**Photograph 10:** View of southern willow scrub located east of the Alternative 2 alignment within the Santa Ana River, facing south.



**Photograph 11:** View of southern willow scrub located east of the Alternative 2 alignment within the Santa Ana River, facing northeast.



**Photograph 12:** View of existing cart path and Alternative 2 alignment located to the west of the Santa Ana River, facing north.



**Photograph 13:** View of mule fat scrub located on a terrace above the Santa Ana River, facing northwest.



**Photograph 14:** View of non-native grassland and southern cottonwood willow riparian forest located to the north of the Santa Ana River, facing southeast.



**Photograph 15:** View of non-native grassland and coastal sage scrub along the Santa Ana River Trail, facing southwest.



**Photograph 16:** View of dense non-native grassland along the Santa Ana River Trail, facing east.



**Photograph 17:** View of existing structures, parking lot, and staging area located along Green River Road, facing southwest.

# **Appendix B Plant and Wildlife Species Observed List**

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Table B-1: Plant Species Observed

Scientific Name*	Common Name	Cal-IPC Rating**	Special-Status Rank***
<b>Plantae (Plants)</b>			
<i>Ambrosia psilostachya</i>	western ragweed		
<i>Artemisia californica</i>	California sage brush		
<i>Arundo donax</i> *	giant reed	High	
<i>Avena fatua</i> *	wild oat	Moderate	
<i>Baccharis pilularis</i>	coyote brush		
<i>Baccharis salicifolia</i>	mule fat		
<i>Baccharis sarothroides</i>	desertbroom baccharis		
<i>Brassica nigra</i> *	black mustard	Moderate	
<i>Bromus diandrus</i> *	ripgut brome	Moderate	
<i>Carpobrotus edulis</i> *	iceplant	High	
<i>Chenopodium murale</i> *	nettle leaf goosefoot		
<i>Cirsium occidentale</i>	cobweb thistle		
<i>Conium maculatum</i> *	poison hemlock	Moderate	
<i>Croton californicus</i>	California croton		
<i>Cupaniopsis anacardioides</i> *	carrotwood		
<i>Cupressus sempervirens</i> *	Italian cypress		
<i>Cynodon dactylon</i> *	Bermuda grass	Moderate	
<i>Deinandra fasciculata</i>	clustered tarweed		
<i>Encelia californica</i>	California encelia		
<i>Eriogonum fasciculatum</i>	California buckwheat		
<i>Eschscholzia californica</i>	California poppy		
<i>Eucalyptus globulus</i> *	blue gum	Limited	
<i>Eucalyptus sideroxylon</i> *	red iron bark		
<i>Foeniculum vulgare</i> *	fennel	High	
<i>Hedera helix</i> *	English ivy	High	
<i>Heteromeles arbutifolia</i>	toyon		
<i>Heterotheca grandiflora</i>	telegraph weed		
<i>Hirschfeldia incana</i> *	short podded mustard	Moderate	
<i>Hordeum murinum</i> *	foxtail barley	Moderate	
<i>Isocoma menziesii</i>	Menzies' goldenbush		
<i>Jacaranda mimosifolia</i> *	black poui		
<i>Malacothamnus fasciculatus</i>	chaparral bush mallow		
<i>Malosma laurina</i>	laurel sumac		
<i>Malva parviflora</i> *	cheeseweed		
<i>Marrubium vulgare</i> *	white horehound	Limited	
<i>Nerium oleander</i> *	oleander		
<i>Nicotiana glauca</i> *	tree tobacco	Moderate	
<i>Olea europaea</i> *	olive	Limited	
<i>Opuntia littoralis</i>	prickly pear cactus		
<i>Phoradendron leucarpum</i>	American mistletoe		
<i>Pinus canariensis</i> *	Canary island pine		
<i>Pinus eldarica</i> *	Afghan pine		
<i>Platanus racemosa</i>	California sycamore		
<i>Polypogon monspeliensis</i> *	annual beard grass	Limited	
<i>Populus fremontii</i>	Fremont cottonwood		

**Table B-1: Plant Species Observed**

<i>Scientific Name*</i>	<b>Common Name</b>	<b>Cal-IPC Rating**</b>	<b>Special-Status Rank***</b>
<b>Plantae (Plants)</b>			
<i>Quercus agrifolia</i>	coast live oak		
<i>Rhus integrifolia</i>	lemonade berry		
<i>Ricinus communis*</i>	castor bean	Limited	
<i>Rumex crispus*</i>	curly dock	Limited	
<i>Salix gooddingii</i>	Goodding's black willow		
<i>Salix laevigata</i>	red willow		
<i>Salix lasiolepis</i>	arroyo willow		
<i>Salsola tragus*</i>	Russian thistle	Limited	
<i>Salvia apiana</i>	white sage		
<i>Sambucus nigra</i>	elderberry		
<i>Schinus molle*</i>	Peruvian pepper tree	Limited	
<i>Schinus terebinthifolius*</i>	Brazilian pepper tree	Limited	
<i>Silybum murinum*</i>	milk thistle	Limited	
<i>Sisymbrium irio*</i>	London rocket	Moderate	
<i>Sonchus asper*</i>	prickly sowthistle		
<i>Sonchus oleraceus*</i>	common sowthistle		
<i>Stipa miliacea*</i>	smilo grass		
<i>Syagrus romanzoffiana*</i>	queen palm		
<i>Tamarix ramosissima*</i>	tamarisk	High	
<i>Toxicodendron diversilobum</i>	poison oak		
<i>Urtica urens*</i>	dwarf nettle		
<i>Washingtonia robusta*</i>	Mexican fan palm	Moderate	

**Table B-2: Wildlife Species Observed**

<i>Scientific Name*</i>	<b>Common Name</b>	<b>Special-Status Rank***</b>
<b>Reptilia (Reptiles)</b>		
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	SSC
<i>Crotalus oreganus helleri</i>	southern pacific rattlesnake	
<i>Pituophis catenifer annectens</i>	San Diego gopher snake	
<i>Sceloporus occidentalis longipes</i>	Great Basin fence lizard	
<i>Uta stansburiana elegans</i>	western side-blotched lizard	
<b>Aves (Birds)</b>		
<i>Accipiter cooperii</i>	Cooper's hawk	WL
<i>Accipiter striatus</i>	sharp-shinned hawk	WL
<i>Aeronautes saxatalis</i>	white-throated swift	
<i>Agelaius tricolor</i>	tricolored blackbird	ST/SSC
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	WL
<i>Amazona viridigenalis</i>	red-crowned Amazon	
<i>Anas platyrhynchos</i>	mallard	
<i>Ardea alba</i>	great egret	
<i>Ardea herodias</i>	great blue heron	
<i>Branta canadensis</i>	Canada goose	
<i>Bubo virginianus</i>	great horned owl	
<i>Buteo jamaicensis</i>	red-tailed hawk	
<i>Buteo lineatus</i>	red-shouldered hawk	

Table B-2: Wildlife Species Observed

Scientific Name*	Common Name	Special-Status Rank***
<i>Callipepla californica</i>	California quail	
<i>Calypte anna</i>	Anna's hummingbird	
<i>Calypte costae</i>	Costa's hummingbird	
<i>Cathartes aura</i>	turkey vulture	
<i>Catharus guttatus</i>	hermit thrush	
<i>Chaetura vauxi</i>	Vaux's swift	SSC
<i>Chamaea fasciata</i>	wrenit	
<i>Chondestes grammacus</i>	lark sparrow	
<i>Circus hudsonius</i>	northern harrier	SSC
<i>Colaptes auratus</i>	northern flicker	
<i>Contopus sordidulus</i>	western wood-pewee	
<i>Corvus brachyrhynchos</i>	American crow	
<i>Egretta thula</i>	snowy egret	
<i>Falco columbarius</i>	merlin	WL
<i>Falco sparverius</i>	American kestrel	
<i>Geococcyx californianus</i>	greater roadrunner	
<i>Geothlypis trichas</i>	common yellowthroat	
<i>Haemorhous mexicanus</i>	house finch	
<i>Hirundo rustica</i>	barn swallow	
<i>Icteria virens</i>	yellow-breasted chat	SSC
<i>Icterus bullockii</i>	Bullock's oriole	
<i>Icterus cucullatus</i>	hooded oriole	
<i>Junco hyemalis</i>	dark-eyed junco	
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC
<i>Larus californicus</i>	California gull	WL
<i>Leiothlypis celata</i>	orange-crowned warbler	
<i>Lonchura punctulata*</i>	scaly-breasted munia	
<i>Melanerpes formicivorus</i>	acorn woodpecker	
<i>Melospiza lincolni</i>	Lincoln's sparrow	
<i>Melospiza melodia</i>	song sparrow	
<i>Melospiza crissalis</i>	California towhee	
<i>Mimus polyglottos</i>	northern mockingbird	
<i>Myiarchus cinerascens</i>	ash-throated flycatcher	
<i>Molothrus ater</i>	brown-headed cowbird	
<i>Myiarchus cinerascens</i>	ash-throated flycatcher	
<i>Passerculus sandwichensis</i>	savannah sparrow	
<i>Passerina amoena</i>	lazuli bunting	
<i>Passerina caerulea</i>	blue grosbeak	
<i>Petrochelidon pyrrhonota</i>	cliff swallow	
<i>Phainopepla nitens</i>	phainopepla	
<i>Phalacrocorax auritus</i>	double-crested cormorant	WL
<i>Pheucticus melanocephalus</i>	black-headed grosbeak	
<i>Picoides nuttallii</i>	Nuttall's woodpecker	
<i>Pipilo maculatus</i>	spotted towhee	
<i>Polioptila caerulea</i>	blue-gray gnatcatcher	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	FT/SSC

**Table B-2: Wildlife Species Observed**

<b>Scientific Name*</b>	<b>Common Name</b>	<b>Special-Status Rank***</b>
<i>Psaltriparus minimus</i>	American bushtit	
<i>Pyrocephalus rubinus</i>	vermilion flycatcher	SSC
<i>Sayornis nigricans</i>	black phoebe	
<i>Sayornis saya</i>	Say's phoebe	
<i>Selasphorus rufus</i>	rufous hummingbird	
<i>Selasphorus sasin</i>	Allen's hummingbird	
<i>Setophaga coronata</i>	yellow-rumped warbler	
<i>Setophaga petechia</i>	yellow warbler	SSC
<i>Sialia mexicana</i>	western bluebird	
<i>Spinus lawrencei</i>	Lawrence's goldfinch	
<i>Spinus psaltria</i>	lesser goldfinch	
<i>Spinus tristis</i>	American goldfinch	
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	
<i>Streptopelia decaocto</i>	Eurasian collard dove	
<i>Sturnella neglecta</i>	western meadowlark	
<i>Sturnus vulgaris*</i>	European starling	
<i>Tachycineta bicolor</i>	tree swallow	
<i>Tachycineta thalassina</i>	violet-green swallow	
<i>Thryomanes bewickii</i>	Bewick's wren	
<i>Toxostoma redivivum</i>	California thrasher	
<i>Troglodytes aedon</i>	house wren	
<i>Turdus migratorius</i>	American robin	
<i>Tyrannus verticalis</i>	western kingbird	
<i>Tyrannus vociferans</i>	Cassin's kingbird	
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE/SE
<i>Vireo cassinii</i>	Cassin's vireo	
<i>Vireo gilvus</i>	warbling vireo	
<i>Zenaida macroura</i>	mourning dove	
<i>Zonotrichia atricapilla</i>	golden-crowned sparrow	
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	
<b>Mammalia (Mammals)</b>		
<i>Lynx rufus</i>	bobcat	
<i>Neotoma</i> sp.	woodrat	
<i>Otospermophilus beecheyi</i>	California ground squirrel	
<i>Sylvilagus audubonii</i>	desert cottontail	
<i>Thomomys bottae</i>	Botta's pocket gopher	

\* Non-native species

\*\* **California Invasive Plant Council (Cal-IPC) Ratings**

High	These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate	These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited	These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

\*\*\* **Special-Status Rank**

FE	Federally Endangered - any species which is in danger of extinction throughout all or a significant portion of its range.
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- FT Federally Threatened - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
- SE State Endangered - any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
- SSC Species of Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria: is extirpated from California or, in the case of birds, in its primary seasonal or breeding role; is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- WL Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

# **Appendix C Potentially Occurring Special-Status Biological Resources**

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Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special- Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<b>SPECIAL-STATUS WILDLIFE SPECIES</b>					
<i>Accipiter cooperii</i> Cooper's hawk	WL G5 S4	Yearlong resident of California. Generally, found in forested areas up to 3,000 feet above mean sea level (amsl) in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	Yes	Yes	<b>Present:</b> One (1) individual was observed foraging within the northern portion of the survey area during the 2019 field survey. In addition, this species was observed during focused CAGN surveys conducted in spring 2020. Further, suitable nesting habitat is present within the survey area.
<i>Accipiter striatus</i> sharp-shinned hawk	WL G5 S4	Winter resident of southern California. Found in pine ( <i>Pinus</i> spp.), fir ( <i>Abies</i> spp.), and aspen ( <i>Populus tremuloides</i> ) forests. They can be found hunting in forest interior and edges from sea level to near alpine areas. Can also be found in rural, suburban and agricultural areas, where they often hunt at bird feeders.	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.
<i>Agelaius tricolor</i> tricolored blackbird	ST SSC G2G3 S1S2	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate freshwater marsh dominated by tall, dense cattails ( <i>Typha</i> spp.), willow ( <i>Salix</i> spp.) thickets, and bulrushes ( <i>Schoenoplectus</i> spp.), and either flooded or thorny/spiny vegetation and suitable foraging space providing adequate insect prey.	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	WL G5T3 S3	Yearlong resident that is typically found between 3,000 and 6,000 feet amsl. Breed in sparsely vegetated scrubland on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush ( <i>Artemisia californica</i> ), but they can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Ammodramus savannarum</i> grasshopper sparrow	SSC G5 S3	Yearlong resident along the coast of southern California. Occurs in grassland, upland meadow, pasture, hayfield, and old field habitats. Optimal habitat contains short- to medium-height bunch grasses interspersed with patches of bare ground, a shallow litter layer, scattered forbs, and few shrubs. May inhabit thickets, weedy lawns, vegetated landfills, fence rows, open fields, or grasslands.	Yes	No	<b>Low (Foraging):</b> The non-native grassland vegetation community provides marginal foraging habitat for this species. However, the high level of anthropogenic disturbance associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Course likely precludes this species from nesting within the survey area.
<i>Anaxyrus californicus</i> arroyo toad	FE SSC G2G3 S2S3	Occurs in semi-arid regions near washes or intermittent streams, including valley-foothill grasslands, desert riparian, desert washes, and oak woodlands. Breeding habitat consists of shallow streams with a mixture of sandy and gravelly substrate and sandy terraces. Generally, requires mule fat ( <i>Baccharis salicifolia</i> ) and willow in the streambed for vegetative canopy for breeding areas and forages for insects primarily under oak ( <i>Quercus</i> spp.), Fremont cottonwood ( <i>Populus fremontii</i> ), and California sycamore ( <i>Platanus racemosa</i> ) trees. Occurs at elevations from near sea level to about 4,600 feet amsl.	Yes (a/c)	No	<b>Not Expected:</b> This species is not expected to occur within the survey area. The channelization of the upstream reaches of the Santa Ana River likely precludes this species from occurring. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Anniella stebbinsi</i> southern California legless lizard	SSC G3 S3	Locally abundant specimens are found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. A large protected population persists in the remnant of the once extensive El Segundo Dunes at Los Angeles International Airport.	No	No	<b>Not Expected:</b> This species is not expected to occur within the survey area due to the lack of suitable coastal sand dune and sandy wash habitat. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Antigone canadensis canadensis</i> lesser sandhill crane	SSC G5T4 S3S4	Typically found in prairies, fields, marshes, and tundra. Habitats vary depending on region, but usually nests around marshes or bogs, either in open grassland or surrounded by forest. Northernmost birds' nest on marshy tundra. This species does not breed in California.	No	No	<b>Not Expected:</b> This species is not expected to occur within the survey area due to the lack of suitable habitat. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).



**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Antrozous pallidus</i> pallid bat	SSC G5 S3	Locally common species locally common in the Great Basin, Mojave, and Sonoran deserts (specifically Sonoran life zone) and grasslands throughout the western U.S. Also occurs in shrublands, woodlands, and forests from sea level to 8,000 ft amsl. Prefers rocky outcrops, cliffs, and crevices for roosting with access to open habitats for foraging. May also roost in caves, mines, bridges, barns, porches, and bat boxes, and even on the ground under burlap sacks, stone piles, rags, baseboards, and rocks.	No	No	<b>Low (Foraging):</b> The non-native grassland vegetation community provides marginal foraging habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, this species is not expected to roost within the survey area due to the lack of rocky outcrops, cliffs, and crevices.
<i>Aquila chrysaetos</i> golden eagle	FP WL G5 S3	Yearlong resident of California. Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	Yes	No	<b>Low (Foraging):</b> The hilly areas surrounding the survey area provide foraging habitat for this species. This species is not expected to nest within the survey area due to the lack of secluded cliffs with overhanging ledges.
<i>Artemisospiza belli belli</i> Bell's sage sparrow	WL G5T2T3 S3	This species has a wide, but sparse distribution in western Riverside County, specifically within the "Riverside lowlands, San Jacinto Foothills, Santa Ana Mountains, and Desert Transition Bioregions. Yearlong resident on the coastal side of southern California mountains. Breeds in coastal sage scrub and chaparral habitats from February to August. They require semi-open habitats with evenly spaced shrubs one to two meters high. Occurs in chaparral dominated by fairly dense stands of chamise ( <i>Adenostoma fasciculatum</i> ).	Yes	No	<b>Low (Foraging):</b> The CSS vegetation community provides marginal foraging habitat for this species. However, the high level of anthropogenic disturbance associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Course likely precludes this species from nesting within the survey area. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Asio otus</i> long-eared owl	SSC G5 S3?	Uncommon yearlong resident throughout the state except the Central Valley and southern California deserts where it is an uncommon winter visitor. Requires riparian habitat and uses live oak thickets and other dense stands of trees.	No	No	<b>Not Expected:</b> The survey area is outside of the known wintering range of this species.
<i>Aspidoscelis hyperythra</i> orange-throated whiptail	WL G5 S2S3	Uncommon to fairly common over much of its range in Orange, Riverside, and San Diego counties. Also occurs in southwestern San Bernardino County near Colton. Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral.	Yes	No	<b>Low:</b> The survey area provides marginal habitat for this species.

Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Aspidoscelis tigris stejnegeri</i> coastal whiptail	SSC G5T5 S3	This subspecies is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California. Found in a variety of ecosystems, primarily hot and dry open areas with sparse vegetation in chaparral, woodland, and riparian areas. Associated with rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations.	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.
<i>Athene cucularia</i> burrowing owl	SSC G4 S3	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	Yes (c)	No	<b>Not Expected:</b> Although suitable foraging/nesting habitat is present within the survey area, no BUOWs or sign (i.e., pellets, white wash, feathers, or prey remains) were observed during focused surveys conducted during the 2019 breeding season. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Bombus crotchii</i> Crotch bumble bee	CSE G3G4 S1S2	Primarily occurs in California, including the Mediterranean region, Pacific coast, western desert, great valley, and adjacent foothills through most of southwestern California. Has also been recorded in Baja California, Baja California Sur, and in southwest Nevada. Inhabits open grassland and scrub habitats. Primarily nests underground. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	No	No	<b>Low:</b> Food plants ( <i>Eriogonum</i> ) are marginally present within the survey area. However, the nearest documented extant occurrence is from 1933 approximately 3.6 miles southeast of the survey area (Occurrence Number 197).
<i>Branchinecta sandiegonensis</i> San Diego fairy shrimp	FE G2 S2	Crustaceans endemic to San Diego and Orange County mesas and found in vernal pools.	No	No	<b>Not Expected:</b> There is no suitable vernal pool habitat within or adjacent to the survey area. The mapped soils within the survey area primarily consist of sandy loam textures which do not support the formation of vernal pools or ponds. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDB, 2020).

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Branta bernicla</i> brant	SSC G5 S2	Occurs in California primarily as a spring and fall migrant and winter visitor; passes mainly far offshore in the fall and close inshore in spring when staging birds are numerous in isolated coastal estuaries. During the nonbreeding season, brants require well-protected, shallow marine waters with intertidal eel-grass beds, primarily within bays and estuaries. This species does not breed in California.	No	No	<b>Not Expected:</b> This species is not expected to occur within the survey area due to the lack of suitable habitat. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Buteo regalis</i> ferruginous hawk	WL G4 S3S4	Common winter resident of grasslands and agricultural areas in southwestern California. Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. This species does not breed in California.	Yes	No	<b>Low (Foraging):</b> The survey area provides marginal foraging habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020)
<i>Buteo swainsoni</i> Swainson's hawk	ST G5 S3	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	Yes	No	<b>Not Expected:</b> Although the non-native grassland vegetation community provides marginal foraging habitat, this species is possibly extirpated from the area (CNDDDB, 2020).
<i>Campylorhynchus brunneicapillus sandiegensis</i> coastal cactus wren	SSC G5T3Q S3	The yearlong resident coastal population ( <i>C.b. sandiegensis</i> ) has a very limited range, extending from extreme northwestern Baja California north through the coastal lowlands of San Diego County and apparently into southern Orange County. Restricted to thickets of cholla ( <i>Cylindropuntia prolifera</i> ) or prickly-pear cacti ( <i>Opuntia littoralis</i> , <i>O. oricola</i> ) tall enough to support and protect the birds' nests. Typically, habitat consists of coastal sage scrub at elevations below 1,500 feet amsl.	Yes	No	<b>Low (Foraging):</b> The CSS vegetation community provides marginal foraging habitat for this species. However, this species is not expected to nest within the survey area due to the lack of cholla and prickly-pear cacti thickets.
<i>Catostomus santaanae</i> Santa Ana sucker	FT G1 S1	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Streams that Santa Ana sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	Yes (a)	No	<b>High:</b> This species has been documented within the upstream and downstream segments of the Santa Ana River which runs adjacent to the eastern boundary of the survey area (CNDDDB, 2020).

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	SSC G5T3T4 S3S4	Found terrestrially in a wide variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Open habitat on the Pacific slope from southwestern San Bernardino County to northwestern Baja California. Habitat types include coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities. Major habitat requirement is the presence of low growing vegetation or rocky outcroppings, as well as sandy soil to dig burrows.	Yes	No	<b>Low:</b> The CSS and non-native grassland vegetation communities provide marginal habitat for this species
<i>Chaetura vauxi</i> Vaux's swift	SSC G5 S2S3	Summer resident of northern California. Hollow trees are its favored nesting and roosting sites (chimneys are used on occasion), making this swift vulnerable to loss of old-growth forest. Breeds from southwestern Canada through the western United States to Mexico, Central America, and northern Venezuela. In winter, northern migrant populations of this species overlap southern residents.	No	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.
<i>Charadrius montanus</i> mountain plover	SSC G3 S2S3	Uncommon winter resident in southern California, primarily from September to mid-March, with peak numbers from December through February. At all seasons, mountain plovers are strongly associated with short-grass prairie habitats, or their equivalents, that are flat and nearly devoid of vegetation. Overall, it avoids high and dense cover. Within southern California, the largest numbers occur in grasslands and agricultural areas in the interior. Does not nest in California.	Yes	No	<b>Not Expected:</b> This species is not expected to occur within the project site due to the lack of suitable habitat. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Circus hudsonius</i> northern harrier	SSC G5 S3	Yearlong resident of California. Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded area. In general, it prefers saltwater marshes, wet meadows, sloughs, and bogs for nesting and foraging. Nests on the ground in shrubby vegetation or patches of dense vegetation, usually at the marsh edge.	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.
<i>Cistothorus palustris clarkae</i> Clark's marsh wren	SSC G5 S3	Clark's marsh wren has a narrow distribution along the coast of southern California from the Los Angeles basin south to the Mexican border. Restricted to freshwater and brackish marshes dominated by bulrushes or cattails.	No	No	<b>Not Expected:</b> This species is not expected to occur within the project site due to the lack of suitable habitat. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	FT SE G5T2T3 S1	In California, the breeding distribution is now thought to be restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys. Obligate riparian species with a primary habitat association of willow-cottonwood riparian forest.	Yes (a)	No	<b>Not Expected:</b> Although the southern cottonwood willow riparian forest and southern willow scrub vegetation communities provide marginal foraging habitat for this species, the high level of anthropogenic disturbance associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Course likely precludes this species from occurring within the survey area. Additionally, this species is possible extirpated from the surrounding areas along the Santa Ana River and Prado Dam (CNDDDB, 2020).
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	SSC G5T3T4 S1S2	Prefers rocky areas in coastal sage and chaparral within granite or rocky outcrops. Occurs in coastal and cismontane southern California from interior Ventura Co. south.	Yes	No	<b>Not Expected:</b> The CSS vegetation community within the survey area does not support the granite and rocky outcrops preferred by this species.
<i>Contopus cooperi</i> olive-sided flycatcher	SSC G4 S4	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 9,000 feet amsl throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas fir ( <i>Pseudotsuga menziesii</i> ), redwood ( <i>Sequoiadendron giganteum</i> ), red fir ( <i>Abies magnifica</i> ), and lodgepole pine ( <i>Pinus contorta</i> ).	No	No	<b>Not Expected:</b> This species is not expected to occur within the project site due to the lack of suitable habitat. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Coturnicops noveboracensis</i> yellow rail	SSC G4 S1S2	Precise breeding and wintering ranges and relative abundances difficult to discern fully because of the species' secretive behavior within its marsh habitat. This species occurs year-round in California as a very local breeder in northeastern interior and as a winter visitor (early October to mid-April). Require sedge marshes/meadows with moist soil or shallow standing water.	No	No	<b>Not Expected:</b> There are no suitable marshes/meadows with standing water habitats present within the survey area.

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Crotalus ruber</i> red-diamond rattlesnake	SSC G4 S3	Found in southwestern California, from the Morongo Valley west to the coast and south along the peninsular ranges to mid Baja California. It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet amsl), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, boulders associated coastal sage scrub, oak/pine woodlands, and desert slope scrub associations; however, chamise and red shank ( <i>Adenostoma sparsifolium</i> ) associations may offer better structural habitat for refuges and food resources for this species than other habitats.	Yes	No	<b>Not Expected:</b> The CSS vegetation community does not support the large rocks or boulders preferred by this species.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	FT ST G2 S2	Occur in arid and semi-arid habitats with some grass or brush. Prefer open habitats with less than 50% protective cover. Require soft, well-drained substrate for building burrows and are typically found in areas with sandy soil.	Yes	No	<b>Not Expected:</b> There are no open habitats with less than 50% cover present within the survey area. Additionally, the survey area has been cut off from known populations that occur more than 5 miles to the southeast by State Route 91 and surrounding development.
<i>Elanus leucurus</i> white-tailed kite	FP G5 S3S4	Yearlong resident along the coastal ranges and valleys of California. Occurs in low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Uses trees with dense canopies for cover. Important prey item is the California vole ( <i>Microtus californicus</i> ). Nests in tall (20 to 50 feet) coast live oaks ( <i>Quercus agrifolia</i> ).	Yes	No	<b>Low (Foraging):</b> The non-native grassland and elderberry savannah vegetation communities provide marginal foraging habitat for this species. However, the lack of coast live oaks and high level of anthropogenic disturbance associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Course likely precludes this species from nesting within the survey area.

**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Empidonax traillii</i> willow flycatcher	SE G5 S1S2	A rare summer resident of California with currently known breeding locations restricted primarily to the Sierra Nevada/Cascade region, near Buelton in Santa Barbara County; Prado Basin in Riverside County; and several locations in San Diego County. In California, the species is restricted to thickets of willows, whether along streams in broad valleys, in canyon bottoms, around mountain-side seepages, or at the margins of ponds and lakes.	No	No	<b>Low (Foraging/Nesting):</b> The southern cottonwood willow riparian forest, southern willow scrub, and mule fat scrub vegetation communities provide marginal foraging and nesting habitat for this species. However, the high level of anthropogenic disturbance associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Club likely precludes this species from nesting within the survey area. Additionally, the survey area has been cut off from known populations that have been recorded behind Prado Dam by State Route 71, State Route 91, and surrounding development (CNDDDB, 2020).
<i>Empidonax traillii brewsteri</i> little willow flycatcher	SE G5T3T4 S1S2	Breeds in the Pacific northwest and south in the Sierra Nevada in central California. Breeds only in riparian woodland, typically adjacent to or even over water.	No	No	<b>Not Expected:</b> The southern cottonwood willow riparian forest, southern willow scrub, and mule fat scrub vegetation communities provide marginal foraging and nesting habitat for this species, however; the survey area is located outside of areas with known populations in the Pacific northwest and central California.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE SE G5T2 S1	Uncommon summer resident in southern California primarily found in lower elevation riparian habitats occurring along streams or in meadows. The structure of suitable breeding habitat typically consists of a dense mid-story and understory and can also include a dense canopy. Nest sites are generally located near surface water or saturated soils. The presence of surface water, swampy conditions, standing or flowing water under the riparian canopy are preferred.	Yes (a)	No	<b>Low (Foraging/Nesting):</b> The southern cottonwood willow riparian forest, southern willow scrub, and mule fat scrub vegetation communities provide marginal foraging and nesting habitat for this species. However, the high level of anthropogenic disturbance associated with State Route 71, State Route 91, the BNSF railroad, and the Green River Golf Club likely precludes this species from nesting within the survey area. Additionally, the survey area has been cut off from known populations that have been recorded behind Prado Dam by State Route 71, State Route 91, and surrounding development (CNDDDB, 2020).

Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Emys marmorata</i> western pond turtle	SSC G3G4 S3	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 feet amsl.	Yes	No	<b>Low:</b> This species was recorded in 1992 (Occurrence Number 1072) in Aliso Canyon from Bane Canyon to the confluence with the Santa Ana River (CNDDDB, 1992). The section of Aliso Canyon within the survey was dry during the 2019 and 2020 field surveys and this species was not observed.
<i>Eremophila alpestris actia</i> California horned lark	WL G5T4Q S4	Yearlong resident of California. This subspecies is typically found in coastal regions. Breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. Within southern California, California horned larks breed primarily in open fields, (short) grasslands, and rangelands. Nests on the open ground.	Yes	No	<b>Moderate (Foraging/Nesting):</b> The non-native grassland vegetation community provides marginal foraging and nesting habitat for this species.
<i>Eumops perotis californicus</i> western mastiff bat	SSC G5T4 S3S4	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least 3 meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	No	<b>Low (Foraging):</b> The non-native grassland vegetation community provides marginal foraging habitat for this species. However, this species is not expected to roost within the survey area due to the lack of high cliff roosts.
<i>Euphydryas editha quino</i> quino checkerspot butterfly	FE G5T1T2 S1S2	Occupies a variety of habitat types that support California plantain ( <i>Plantago erecta</i> ), the species primary larval host plant, including grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodland, and semi-desert scrub. Can also be found in desert canyons and washes at the lower edge of chaparral habitats.	Yes	No	<b>Not Expected:</b> The species primary larval host plant California plantain was not observed within the survey area during the 2019 and 2020 field surveys. Additionally, this species is considered extirpated from the area (CNDDDB, 2020). Further, the survey area is not located within the recommended survey area for this species (USFWS, 2014).
<i>Falco columbarius</i> merlin	WL G5 S3S4	Winter resident of southern California. Nest in forested openings, edges, and along rivers across northern North America. Found in open forests, grasslands, and especially coastal areas with flocks of small songbirds or shorebirds. This species does not breed in California.	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.



**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Falco mexicanus</i> prairie falcon	WL G5 S4	The prairie falcon is associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields during the winter season, and desert scrub areas, all typically dry environments of western North American where there are cliffs or bluffs for nest sites. The species requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of 30 feet to vertical, 400 feet high (or more) cliffs and typically overlook some treeless country for hunting. Open terrain is used for foraging.	Yes	No	<b>Low (Foraging):</b> The survey area provides marginal foraging habitat for this species. This species is not expected to nest within the project site due to the lack of vertical cliffs.
<i>Falco peregrinus anatum</i> American peregrine falcon	FP G4T4 S3S4	This species breeds and winters throughout California, with the exception of desert areas. Use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. Sites are often located near rivers or lakes. Riparian areas, as well as coastal and inland wetlands, are also important habitats year-round for this species. The species breeds mostly in woodland, forest, and coastal habitats. The nest is typically a scrape or depression dug in gravel on a cliff ledge or on manmade structures, including skyscraper ledges, tall towers, and bridges. Within southern California, peregrine falcons are primarily found at coastal estuaries and inland oases where ever a food source is located.	Yes	No	<b>Low (Foraging):</b> The survey area provides marginal foraging habitat for this species. This species is not expected to nest within the project site due to the lack of cliff ledges or tall manmade structures.
<i>Gila orcuttii</i> arroyo chub	SSC G2 S2	Native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers and to Malibu and San Juan creeks. This species has been introduced and have successfully established populations in the Santa Ynez, Santa Maria, Cuyama and Mojave river systems as well as smaller coastal streams such as Arroyo Grande Creek and Chorro Creek in San Luis Obispo County. Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 16 inches.	Yes	No	<b>High:</b> This species has been documented within the upstream and downstream segments of the Santa Ana River which runs along the eastern boundary of the survey area (CNDDDB, 2020).

**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Gopherus agassizii</i> desert tortoise	FT CSE G3 S2S3	Can be found in a wide variety of habitats, such as alluvial fans, desert washes, canyons, and saltbush plains; most tortoises in the Mojave Desert are usually associated with creosote bush scrub on alluvial fans and bajadas. Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by the tortoise include desert dandelion ( <i>Malacothrix glabrata</i> ), primrose ( <i>Camissonia</i> spp. and <i>Oenothera</i> spp.) desert plantain ( <i>Plantago ovata</i> ), milkvetches ( <i>Astragalus</i> spp.), gilia ( <i>Gilia</i> spp.), desert marigold ( <i>Baileya multiradiata</i> ), Mojave lupine ( <i>Lupinus odoratus</i> ), phacelia ( <i>Phacelia</i> spp.), desert wishbone-bush ( <i>Mirabilis laevis</i> ), lotus ( <i>Lotus</i> spp.), forget-me-knots ( <i>Cryptantha</i> spp.), goldfields ( <i>Lasthenia californica</i> ), California coreopsis ( <i>Leptosyne californica</i> ), white-margin sandmat ( <i>Euphorbia albomarginata</i> ), and the introduced red stemmed filaree ( <i>Erodium cicutarium</i> ).	No	No	<b>Not Expected:</b> Suitable habitat preferred by this species is not present within the project site.
<i>Haliaeetus leucocephalus</i> bald eagle	SE FP G5 S3	Locally common yearlong resident of southern California. Typically prefer areas near large water bodies such as sea coasts, coastal estuaries and inland lakes and rivers, in many areas, these birds are found within two miles of a water source. Most populations, specifically those in northern regions, migrate to southern, milder climates annually. Generally, these birds' nest in the canopy of tall, coniferous trees, surrounded by smaller trees. They have been reported nesting on the ground, on cliffs, on cellular phone towers, on electrical poles and in artificial nesting towers.	Yes (a)	No	<b>Low (Foraging):</b> This species is known to forage along the Santa Ana River and could potentially forage within the segment of the river that occurs within the survey area. However, this species is not expected to nest within the survey area due to the lack tall coniferous trees.

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Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Icteria virens</i> yellow-breasted chat	SSC G5 S3	Summer resident of California. Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Breeding habitat within southern California primarily consists of dense, wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. It winters south the Central America. Found at elevations ranging from 820 to 2,625 feet amsl.	Yes	Yes	<b>Present:</b> This species was observed/detected within the non-native grassland vegetation community in the southern portion of the survey area during the 2019 burrowing owl focused surveys. In addition, this species was observed during focused CAGN surveys conducted in spring 2020.
<i>Lanius ludovicianus</i> loggerhead shrike	SSC G4 S4	Yearlong resident of California. Prefers open habitats with bare ground, scattered shrubs, and areas with low or sparse herbaceous cover including open-canopied valley foothill hardwood, riparian, pinyon-juniper desert riparian, creosote bush scrub, and Joshua tree woodland. Requires suitable perches including trees, posts, fences, utility lines, or other perches. Nests in branches up to 14 feet above the ground frequently in a shrub with thorns or with tangled branching habitats.	Yes	Yes	<b>Present:</b> This species was observed during the 2019 field survey.
<i>Larus californicus</i> California gull	WL G5 S4	Require isolated islands in rivers, reservoirs and natural lakes for nesting, where predations pressures from terrestrial mammals are diminished. Uses both fresh and saline aquatic habitats at variable elevations and degrees of aridity for nesting and for opportunistic foraging.	No	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.
<i>Lasiurus blossevillii</i> western red bat	SSC G5 S3	Winter range includes western lowlands and coastal regions south of San Francisco Bay. There is migration between summer and winter ranges. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. Roosts primarily in trees, less often in shrubs. Roost sites are often found adjacent to streams, fields, or urban areas. Forages over grasslands, shrublands, open woodlands and forests, and croplands. Not found in desert areas.	No	No	<b>Low (Foraging and Roosting):</b> The survey area provides marginal foraging and roosting habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).

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Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Lasiurus xanthinus</i> western yellow bat	SSC G5 S3	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	No	<b>Low (Foraging):</b> The vegetation communities located adjacent to the eastern boundary of the survey area provide marginal foraging habitat for this species. Although palm trees are present within the survey area, they are regularly maintained and therefore do not provide suitable roosting opportunities.
<i>Laterallus jamaicensis coturniculus</i> California black rail	ST FP G3G4T1 S1	Suitable habitat generally includes salt marshes, freshwater marshes, and wet meadows. Typical associated vegetation includes pickle weed ( <i>Salicornia virginica</i> ), in salt marshes and bulrush ( <i>Scirpus</i> spp.) in less saline habitats.	No	No	<b>Not Expected:</b> There are no suitable salt marsh, freshwater marsh or wet meadow habitats present within the survey area.
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	SSC G5T3T4 S3S4	Occupies many diverse habitats, but primarily is found in arid regions supporting short-grass habitats, agricultural fields, or sparse coastal scrub.	Yes	No	<b>Low:</b> The survey area provides marginal habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	SSC G5T3T4 S3S4	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Found in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth. Woodrats often are associated with cholla cactus which they use for water and dens or boulders and boulder piles. The most common natural habitats for records are chaparral, coastal sage scrub (including RSS and Diegan coastal sage scrub) and grassland.	Yes	No	<b>Low:</b> The survey area provides marginal habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	SSC G4 S3	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree ( <i>Yucca brevifolia</i> ) woodland, and palm oasis habitats. Prefers rocky desert areas with high cliffs or rock outcrops, which are used as roosting sites.	No	No	<b>Not Expected:</b> There are no suitable desert type habitats preferred by this species located within the survey area.
<i>Oncorhynchus mykiss irideus</i> pop. 10 steelhead - southern California DPS	FE G5T1Q S1	Steelhead can survive in a wide range of temperature conditions. Species is found where dissolved oxygen concentration is at least 7 parts per million. In streams, deep low-velocity pools are important wintering habitats. Spawning habitat consists of gravel substrates free of excessive silt.	No	No	<b>Not Expected:</b> This species is possibly extirpated from the area (CNDDDB, 2020).

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<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Pandion haliaetus</i> osprey	WL G5 S4	Winter resident of southern California. Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats. Uses large trees, snags, and dead-topped trees in open forest habitats for cover and nesting. Requires open, clear waters for foraging and uses rivers, lakes, reservoirs, bays, estuaries, and surf zones.	Yes	No	<b>Low (Foraging and Nesting):</b> The survey area provides marginal foraging and nesting habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Pelecanus erythrorhynchos</i> American white pelican	SSC G4 S1S2	Limited by the availability of remote nesting sites and rich foraging habitats. Nesting in California has been confined mainly to the Klamath Basin (Sheepy Lake and Clear Lake). In California, nesting occurs on the ground on earthen, sandy, and rocky islands or (rarely) peninsulas and (locally) on floating tule mat islands, particularly in the Klamath Basin. Nests may be in the open in the sand or interspersed with or adjacent to tall weeds and open, low-stature shrubs. Primary food source is fish and they are diurnal and nocturnal foragers.	No	No	<b>Not Expected:</b> Suitable foraging and nesting habitat preferred by this species is not present within the project site. Further, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Phalacrocorax auritus</i> double-crested cormorant	WL G5 S4	Yearlong resident of California. Prefers water less than 30 feet deep with rocky or gravel bottom. Rests in daytime and roosts overnight beside water on offshore rocks, islands, cliffs, dead branches of trees, wharfs, jetties, or even transmission lines. Occupies diverse aquatic habitats in all seasons. In California, most individuals are found nesting in coastal regions. Requires suitable places for daytime resting (e.g., rocks, sandbars, pilings). Forage in shallow water (< 30 feet deep).	Yes	Yes	<b>Present:</b> This species was observed during focused CAGN surveys conducted in spring 2020.

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Phrynosoma blainvillii</i> coast horned lizard	SSC G3G4 S4	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. Its elevational range extends up to 4,000 feet in the Sierra Nevada foothills and up to 6,000 feet in the mountains of southern California. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (e.g. fire, floods, unimproved roads, grazing lands, and fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	Yes	No	<b>Low:</b> The CSS and non-native annual grassland vegetation communities provide marginal habitat for this species.
<i>Piranga rubra</i> summer tanager	SSC G5 S1	Summer resident in southern California where it breeds in low-elevation willow and Fremont cottonwood woodlands, and in higher-elevation mesquite and saltcedar ( <i>Tamarix</i> spp.) stands. Winters in the tropics, mainly in lowlands but also up to middle elevations in mountains, both in solid forest and in edges and clearings with scattered trees. Nests close to creeks, favoring broad riparian zones (196 feet [60 meters]).	No	No	<b>Low (Foraging and Nesting):</b> The survey area provides marginal foraging and nesting habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Plegadis chihi</i> white-faced ibis	WL G5 S3S4	Locally rare resident/migrant in southern California. Prefers to feed in fresh emergent wetland, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland.	Yes	No	<b>Not Expected:</b> Suitable foraging and nesting habitats preferred by this species are not present within the survey area.
<i>Polioptila californica californica</i> coastal California gnatcatcher	FT SSC G4G5T2Q S2	Yearlong resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet amsl in coastal regions and below 1,500 feet amsl inland. Ranges from the Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	Yes	Yes	<b>Present:</b> Several individuals were observed/detected within and adjacent to the survey area during the 2019 field surveys. Specifically, the individuals were observed foraging within the habitats on the hillsides located adjacent to the western boundary of the survey area, within Chino Hills State Park. In addition, at least three (3) CAGN pairs were found to be present during the 2020 focused surveys. At least two (2) of the pairs were confirmed to make nesting attempts in 2020, with only one (1) nest known to have been successful.

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Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Pyrocephalus rubinus</i> vermillion flycatcher	SSC G5 S2S3	Occurs in a variety of open habitats including open woodland, clearings, desert scrub, savannah, agricultural land, golf courses, and recreational parks. The species tends to stay near water, often occurring in riparian vegetation characterized by Fremont cottonwoods, mesquite ( <i>Prosopis</i> spp.), willows, and California sycamores.	No	Yes	<b>Present:</b> This species was observed during the 2019 field survey.
<i>Salvadora hexalepis virgulata</i> coast patch-nosed snake	SSC G5T4 S2S3	Occurs in brushy vegetation including coastal scrub and chaparral from the coast to the mountains. Takes refuge in existing small mammal burrows.	No	No	<b>Low:</b> The CSS vegetation community provides marginal habitat for this species.
<i>Setophaga petechia</i> yellow warbler	SSC G5 S3S4	Yearlong resident along the southern coast of California with the remainder of the State being occupied during the summer. The species also winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, California sycamores, or alders ( <i>Alnus</i> spp.) or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	Yes	Yes	<b>Present:</b> This species was observed/detected within the survey area during the 2019 field surveys. In addition, this species was observed during focused CAGN surveys conducted in spring 2020.
<i>Spea hammondi</i> western spadefoot	SSC G3 S3	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools which do not contain American bullfrogs ( <i>Lithobates catesbeianus</i> ), predatory fish, or crayfish are necessary for breeding. Estivates in upland habitats adjacent to potential breeding sites in burrows approximating 3 feet in depth.	Yes	No	<b>Low:</b> The non-native grassland vegetation community and sandy wash of Aliso Canyon provides marginal habitat for this species.
<i>Taricha torosa</i> Coast Range newt	SSC G4 S4	Found in wet forests, oak forests, chaparral, and rolling grasslands. In southern California, it is found in drier chaparral, oak woodland, and grasslands.	Yes	No	<b>Low:</b> The non-native grassland vegetation community provides marginal habitat for this species.
<i>Taxidea taxus</i> American badger	SSC G5 S3	Occupies a wide variety of habitats including dry, open grassland, sagebrush, and woodland habitats. Require dry, friable, often sandy soil to dig burrows for cover, food storage, and giving birth. Occasionally found in riparian zones and open chaparral with less than 50% plant cover.	No	No	<b>Low:</b> The survey area provides marginal habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Thamnophis hammondi</i> two-striped garter snake	SSC G4 S3S4	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet amsl.	No	No	<b>Low:</b> The riparian vegetation communities along the eastern boundary of the survey area, adjacent to the Santa Ana River provide marginal habitat for this species.
<i>Thamnophis sirtalis</i> pop. 1 south coast gartersnake	SSC G5T1T2 S1S2	Utilizes a wide variety of habitats - forests, mixed woodlands, grassland, chaparral, farmlands, often near ponds, marshes, or streams.	No	No	<b>Low:</b> The survey area provides marginal habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Vireo bellii pusillus</i> least Bell's vireo	FE SE SSC G5T2 S2	Summer resident in southern California. Breeding habitat generally consists of dense, low, shrubby vegetation in riparian areas, and mesquite brushlands, often near water in arid regions. Early successional cottonwood-willow riparian groves are preferred for nesting. The most critical structural component of nesting habitat in California is a dense shrub layer that is 2 to 10 feet (0.6 to 3.0 meters) above ground. The presence of water, including ponded surface water or moist soil conditions, may also be a key component for nesting habitat.	Yes (a)	Yes	<b>Present:</b> Several individuals were observed within and adjacent to the survey area during the 2019 field survey. In addition, this species was observed during focused CAGN surveys conducted in spring 2020.
<b>SPECIAL-STATUS PLANT SPECIES</b>					
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	1B.1 G5T2? S2	Annual herb. Occurs on sandy soils within chaparral, coastal scrub, and desert dunes habitat. Found at elevations ranging from 246 to 5,249 feet amsl. Blooming period is (January) March through September.	No	No	<b>Low:</b> The CSS vegetation community could provide marginal habitat for this species. However, project activities would be limited to previously disturbed and developed areas and the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Allium munzii</i> Munz's onion	FE ST 1B.1 G1 S1	Perennial bulbiferous herb. Grows in mesic, clay soils within chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland habitats. Found at elevations ranging from 974 to 3,510 feet amsl. Blooming period is March through May.	Yes (b)	No	<b>Not Expected:</b> Although the CSS and non-native grassland vegetation communities could provide marginal habitat for this species, the clay soils preferred by this species are not present within the survey area. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020) and the survey area is outside of the known elevation range for this species.



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Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Astragalus brauntonii</i> Braunton's milk-vetch	FE 1B.1 G2 S2	Perennial herb. Found in recently burned or disturbed areas, usually sandstone with carbonate layers in coastal scrub, chaparral, and valley and foothill grassland habitats. Found at elevations ranging from 13 to 2,100 feet amsl. Blooming period is January through August.	No	No	<b>Not Expected:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, project activities would be limited to previously disturbed and developed areas and the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Atriplex couleri</i> Coulter's saltbush	1B.2 G3 S1S2	Perennial herb. Blooms March through October. Generally associated with alkaline or clay soils that occur in grasslands and coastal bluff habitats. Known elevations range from 30 to 1,440 feet amsl.	No	No	<b>Not Expected:</b> Although the non-native grassland vegetation community could provide marginal habitat, the clay soils preferred by this species are not present within the survey area. Additionally, this species is possibly extirpated from the area (CNDDDB, 2020).
<i>Baccharis malibuensis</i> Malibu baccharis	1B.1 G1 S1	Annual/perennial herb. Found on sandy, sometimes gravelly soils, flats, washes, and roadsides. Occurs within desert dunes, Mojavean desert scrub, and Sonoran Desert scrub habitats. Found at elevations ranging from -197 to 3,051 feet amsl. Blooming period is February through June.	No	No	<b>Not Expected:</b> Desert dune, Mojavean desert scrub, and Sonoran Desert scrub habitats preferred by this species are not present within the survey area. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Calandrinia breweri</i> Brewer's calandrinia	4.2 G4 S4	Annual herb. Grows on sandy or loamy soils within chaparral and coastal scrub habitats. Found at elevations ranging from 33 to 4,003 feet amsl. Blooming period is (January) March through June.	No	No	<b>Low:</b> The CSS vegetation community could provide marginal habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Calochortus catalinae</i> Catalina mariposa-lily	4.2 G3G4 S3S4	Perennial herb (bulb). Habitats include chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Found at elevations ranging from 49 to 2,297 feet amsl. Blooming period is February through June.	No	No	<b>Low:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.

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<i>Calochortus plummerae</i> Plummer's mariposa-lily	4.2 G4 S4	Perennial bulbiferous herb. Occurs on granitic and rocky soils within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley/foothill grassland. Grows in elevations ranging from 328 to 5,577 feet amsl. Blooming period is from May to July.	Yes	No	<b>Low:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Calochortus weedii</i> var. <i>intermedius</i> intermediate mariposa-lily	1B.2 G3G4T2 S2	Perennial bulbiferous herb. Found in chaparral, coastal scrub, and valley and foothill grasslands in rocky or calcareous soils. Found at elevations ranging from 344 to 2,805 feet amsl. Blooming period is May through July.	Yes	No	<b>Low:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Calystegia felix</i> lucky morning-glory	1B.1 G1Q S1	Annual herb (rhizomatous). Blooms March through September. Found on silty loam and alkaline soils in meadows and seeps and alluvial soils in riparian scrub. Historically associated with wetland and marshy places, but possibly in drier situations as well. Known elevations range from 25 to 710 feet amsl.	No	No	<b>Low:</b> Marginal riparian scrub habitat is present within the survey area. However, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Calystegia sepium</i> ssp. <i>binghamiae</i> Santa Barbara morning-glory	1A G5TXQ SX	Perennial rhizomatous herb. Occurs in coastal marshes and swamps. Blooming period is August. This species does not have an elevation range.	No	No	<b>Not Expected:</b> This species is not expected to occur due to the lack of suitable habitat within the survey area. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Camissoniopsis lewisii</i> Lewis' evening-primrose	3 G4 S4	Annual herb. Occurs on sandy or clay soils coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrubland, and valley/foothill grassland habitats. Grows in elevations ranging from 0 to 984 feet amsl. Blooming period is March through May (June).	No	No	<b>Not Expected:</b> Although the non-native grassland vegetation community could provide marginal habitat, it undergoes routine weed abatement which likely precludes the species from occurring. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Centromadia pungens</i> ssp. <i>laevis</i> smooth tarplant	1B.1 G3G4T2 S2	Annual herb. Occurs in alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley/foothill grassland habitats. Grows in elevation from 0 to 2,100 feet amsl. Blooming period is April through September.	Yes (a/c)	No	<b>Not Expected:</b> The alkaline soils preferred by the species are not present within the survey area. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).

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Scientific Name Common Name	Special- Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Chorizanthe leptotheca</i> Peninsular spineflower	4.2 G3 S3	Annual herb. Occurs on alluvial, granitic soils within chaparral, coastal scrub, and lower montane coniferous forest habitats. Found at elevations ranging from 984 to 6,233 feet amsl. Blooming period is May through August.	Yes	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Chorizanthe parryi</i> var. <i>fernandina</i> San Fernando Valley spineflower	SE 1B.1 G2T1 S1	Annual herb. Found in sandy soils within coastal scrub habitat and valley and foothill grassland habitats. Found at elevations ranging from 492 to 4,003 feet amsl. Blooming period is April through July.	No	No	<b>Not Expected:</b> This species is possibly extirpated from the area (CNDDDB, 2020) and the survey area is outside of the known elevation range for this species.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i> long-spined spineflower	1B.2 G5T3 S3	Annual herb. Occurs on clay soils within chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Found at elevations ranging from 98 to 5,020 feet amsl. Blooming period is April through July.	Yes	No	<b>Not Expected:</b> Although the CSS and non-native grassland vegetation communities could provide marginal habitat, the clay soils preferred by this species are not present. Further, no vernal pools, meadows, or seeps occur within the survey area.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	1B.2 G4T3 S3	Annual herb. Occurs on sandy or gravelly soils in coastal sage scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet amsl. Blooming period is April through June.	No	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Convolvulus simulans</i> small-flowered morning-glory	4.2 G4 S4	Annual herb. Found on wet clay and serpentine ridges within chaparral, coastal scrub, and valley and foothill grassland. Found at elevations ranging from 100 to 2820 feet amsl. Blooming period is March through July.	Yes	No	<b>Not Expected:</b> Although the CSS and non-native grassland vegetation communities could provide marginal habitat, they lack the clay and serpentine soils preferred by this species.
<i>Deinandra paniculata</i> paniculate tarplant	4.2 G4 S4	Annual herb. Occurs in coastal scrub, vernal pools, and valley/foothill grassland habitats. Found at elevations ranging from 82 to 3,084 feet amsl. Blooming period is April through November.	No	No	<b>Low:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Dudleya multicaulis</i> many-stemmed dudleya	1B.2 G2 S2	Perennial herb. Often occurs on clay soils and around granitic outcrops in chaparral, coastal sage scrub, and grasslands. Found at elevations ranging from 0 to 2,592 feet amsl. Blooming period is April through July.	Yes (b)	No	<b>Not Expected:</b> Although the CSS vegetation community could provide marginal habitat, it lacks the granitic outcrops and clay soils preferred by this species.

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Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woollystar	FE SE 1B.1 G4T1 S1	Perennial herb. Grows on sandy or gravelly soils within chaparral and coastal scrub (alluvial fan) habitats. Found at elevations ranging from 298 to 2,001 feet amsl. Blooming period is April through September.	Yes (a)	No	<b>Not Expected:</b> The alluvial fan habitats preferred by this species are not present within the survey area. Additionally, this closest occurrence record is possibly extirpated (CNDDDB, 2009) and the survey area has been isolated from known populations that occur to the east and northeast by State Route 71 and State Route 91.
<i>Erythranthe diffusa</i> Palomar monkeyflower	4.3 G4 S3	Annual herb. Grows on sandy or gravelly soils within chaparral and lower montane coniferous forest. Found at elevations ranging from 4,003 to 6,004 feet amsl. Blooming period is April through June.	Yes	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Harpagonella palmeri</i> Palmer's grapplinghook	4.2 G4 S3	Annual herb. Occurs on clay soils within open grassy areas within chaparral, coastal scrub, and valley and foothill grassland habitats. Found at elevations ranging from 66 to 3,133 feet amsl. Blooming period is March through May.	Yes	No	<b>Not Expected:</b> Although the CSS and non-native grassland vegetation communities could provide marginal habitat, they lack the clay soils preferred by this species. Additionally, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Hesperocyparis forbesii</i> Tecate cypress	1B.1 G2 S2	Perennial evergreen tree. Occurs on clay, gabbroic or metavolcanic soils within closed-cone coniferous forest and chaparral habitats. Found at elevations ranging from 262 to 4,921 feet amsl. This species does not have a blooming period.	No	No	<b>Not Expected:</b> Suitable chaparral and closed-cone coniferous forest habitats with clay, gabbroic, or metavolcanic soils preferred by this species are not present within the survey area.
<i>Hesperocyparis goveniana</i> Gowen cypress	FT 1B.2 G1 S1	Perennial evergreen tree. Occurs in closed-cone coniferous forest and chaparral (maritime) habitats. Found at elevations ranging from 98 to 984 feet amsl. This species does not have a blooming period.	No	No	<b>Not Expected:</b> Suitable habitats preferred by this species are not present within the project site. In addition, this species was not observed in the survey area.
<i>Hordeum intercedens</i> vernal barley	3.2 G3G4 S3S4	Annual herb. Habitat includes coastal dunes, coastal scrub, vernal pools, and valley/foothill grassland. Grows in elevations ranging from 16 to 3,281 feet amsl. Blooming period is March through June.	Yes (a)	No	<b>Not Expected:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, there are no vernal pools within the survey area.

Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Horkelia cuneata</i> var. <i>puberula</i> mesa horkelia	1B.1 G4T1 S1	Perennial herb. Found in sandy or gravelly soils within chaparral, cismontane woodland, and coastal scrub habitats. Found at elevations ranging from 230 to 2,657 feet amsl. Blooming period is February through September.	No	No	<b>Low:</b> The CSS vegetation community could provide marginal habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Juglans californica</i> southern California black walnut	4.2 G4 S4	Perennial deciduous tree. Found in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 164 to 2,953 feet amsl. Blooming period is March through August.	Yes (a)	No	<b>Not Expected:</b> This species was not observed during the 2019 and 2020 field surveys.
<i>Lepechinia cardiophylla</i> heart-leaved pitcher sage	1B.2 G3 S2S3	Perennial shrub. Found in openings within closed-cone coniferous forest, chaparral, and cismontane woodland habitats. Found at elevations ranging from 1,706 to 4,495 feet amsl. Blooming period is April through July.	Yes (c)	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	4.3 G5T3 S3	Annual herb. Dry soils on chaparral and coastal sage scrub. Found at elevations ranging from 66 to 4,396 feet amsl. Blooming period is January through July.	No	No	<b>Low:</b> The CSS vegetation community provides marginal habitat for this species.
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> ocellated Humboldt lily	4.2 G4T4? S4?	Perennial bulbiferous herb. Found in openings within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats. Found at elevations ranging from 98 to 5,906 feet amsl. Blooming period is March through August.	Yes (a)	No	<b>Not Expected:</b> There is no suitable habitat within the survey area. Further, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Microseris douglasii</i> ssp. <i>platycarpa</i> small-flowered microseris	4.2 G4T4 S4	Annual herb. Occurs in alkaline soil in river bottoms in cismontane woodland, valley and foothill grassland, coastal scrub, and vernal pools. Found at elevations ranging from 50 to 3510 feet amsl. Blooming period is from March to May.	Yes	No	<b>Low:</b> The survey area provides marginal habitat for this species, however; there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020).
<i>Monardella australis</i> ssp. <i>jokerstii</i> Jokerst's monardella	1B.1 G4T1? S1?	Perennial rhizomatous herb. Grows on steep scree or talus slopes between breccia and secondary alluvial benches along drainages and washes. Found in chaparral and lower montane coniferous forest habitat. Blooming period is July through September. Found at elevations ranging from 4,429 to 5,741 feet amsl.	No	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.

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Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Monardella hypoleuca</i> ssp. <i>intermedia</i> intermediate monardella	1B.3 G4T2? S2?	Perennial rhizomatous herb. Usually found in the understory, within chaparral, cismontane woodland, and sometimes lower montane coniferous forest habitats. Grows in elevation ranging from 1,312 to 4,101 feet amsl. Blooming period is from April to September.	Yes	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Nolina cismontana</i> chaparral nolina	1B.2 G3 S3	Perennial evergreen shrub. Occurs on sandstone or gabbro soils within chaparral and coastal scrub habitats. Found at elevations ranging from 459 to 4,183 feet amsl. Blooming period is (March) May through July.	No	No	<b>Not Expected:</b> Although the CSS vegetation community could provide marginal habitat, it lacks the sandstone and gabbro soils preferred by this species.
<i>Penstemon californicus</i> California beardtongue	1B.2 G3 S2	Perennial herb. Occurs on sandy soils within chaparral, lower montane coniferous forest, and pinyon and juniper woodland habitats. Found at elevations ranging from 3,839 to 7,546 feet amsl. Blooming period is May through June (August).	Yes	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Pentachaeta aurea</i> ssp. <i>allenii</i> Allen's pentachaeta	1B.1 G4T1 S1	Annual herb. Found in coastal scrub (openings) and valley and foothill grassland habitats. Found at elevations ranging from 246 to 1,706 feet amsl. Blooming period is March through June.	No	No	<b>Low:</b> The CSS and non-native grassland vegetation communities could provide marginal habitat for this species. However, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Phacelia keckii</i> Santiago Peak phacelia	1B.3 G1 S1	Annual herb. Grows in closed-cone coniferous forest and chaparral habitats. Found at elevations ranging from 1,788 to 5,249 feet amsl. Blooming period is May through June.	No	No	<b>Not Expected:</b> The survey area is outside of the known elevation range for this species.
<i>Pickeringia montana</i> var. <i>tomentosa</i> woolly chaparral-pea	4.3 G5T3T4 S3S4	Evergreen shrub. Occurs on gabbroic, granitic, clay soils within chaparral habitats. Found at elevations ranging from 0 to 5,577 feet amsl. Blooming period is from May to August.	No	No	<b>Not Expected:</b> Chaparral habitats with gabbroic, granitic, and clay soils are not present within the survey area.
<i>Polygala cornuta</i> var. <i>fishiae</i> Fish's milkwort	4.3 G5T4 S4	Perennial deciduous shrub. Occurs in chaparral, cismontane woodland, and riparian woodland habitats. Found at elevations ranging from 328 to 3,281 feet amsl. Blooming period is May through August.	Yes (a)	No	<b>Not Expected:</b> There is no suitable habitat within the survey area.

Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special- Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	2B.2 G4 S2	Perennial herb. Found on sandy and gravelly soils within chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 0 to 6,890 feet amsl. Blooming period is July through December.	No	No	<b>Low:</b> The riparian and CSS vegetation communities could provide marginal habitat for this species. However, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Romneya coulteri</i> Coulter's matilija poppy	4.2 G4 S4	Perennial rhizomatous herb. Habitats include chaparral and coastal scrub. Grows at elevations ranging from 66 to 3,937 feet amsl. Blooming period is from March to July.	Yes (a)	No	<b>Low:</b> The CSS vegetation community could provide marginal habitat for this species. However, there are no occurrence records for this species within 5 miles of the survey area (CNDDDB, 2020). Further, the species was not observed during any of the surveys conducted by Michael Baker between January 23 and August 29, 2019. In addition, this species was not observed during focused CAGN surveys conducted in spring 2020.
<i>Sidalcea neomexicana</i> salt spring checkerbloom	2B.2 G4 S2	Perennial herb. Found on alkaline and mesic soils within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Found at elevations ranging from 49 to 5,020 feet amsl. Blooming period is from March to June.	No	No	<b>Not Expected:</b> Although the CSS vegetation community could provide marginal habitat, it lacks the alkaline and mesic soils preferred by this species.
<i>Symphyotrichum defoliatum</i> San Bernardino aster	1B.2 G2 S2	Perennial rhizomatous herb. Occurs near ditches, streams, and springs within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, seeps, marshes, and valley/foothill grassland. Grows in elevations ranging from 0 to 6,700 feet amsl. Blooming period is from July to November.	No	No	<b>Not Expected:</b> This species has been possibly extirpated from the area (CNDDDB, 2020).

**Table C-1: Potentially Occurring Special-Status Biological Resources**

Scientific Name Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<b>SPECIAL-STATUS VEGETATION COMMUNITIES</b>					
<u>CNDDDB/Holland (1986)</u> California Walnut Woodland <u>MCV (1995)</u> California Walnut Series <u>NVCS (2009)</u> <i>Juglans californica</i> Woodland Alliance	G3 S3.2	Found at elevations ranging from 490 to 2,952 feet amsl in riparian corridors, but most stands cover all hillslopes. Southern California black walnut is dominant or co-dominant in the tree canopy with white alder ( <i>Alnus rhombifolia</i> ), two petaled ash ( <i>Fraxinus dipetala</i> ), toyon ( <i>Heteromeles arbutifolia</i> ), coast live oak, valley oak ( <i>Quercus lobata</i> ), polished willow ( <i>Salix laevigata</i> ), arroyo willow ( <i>Salix lasiolepis</i> ), black elderberry ( <i>Sambucus nigra</i> ), and California bay ( <i>Umbellularia californica</i> ). Trees are less than 50 feet tall; canopy is open to continuous. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy.	-	No	<b>Absent:</b> This vegetation community does not occur within the survey area.
<u>CNDDDB/Holland (1986)</u> Riversidian Alluvial Fan Sage Scrub <u>MCV (1995)</u> Scalebroom Series <u>NVCS (2009)</u> <i>Lepidospartum squamatum</i> intermittently flooded Shrubland Alliance	G3 S3	Found at elevations ranging from 164 to 4,922 feet amsl on intermittently or rarely flooded, low-gradient alluvial deposits along streams, washes, and fans. Scalebroom ( <i>Lepidospartum squamatum</i> ) is dominant, co-dominant, or conspicuous in the shrub canopy with burrobrush ( <i>Ambrosia salsola</i> ), California sagebrush, mulefat, bladderpod ( <i>Cleome isomeris</i> ), California cholla ( <i>Cylindropuntia californica</i> ), brittlebush ( <i>Encelia farinosa</i> ), thick leaved yerba santa ( <i>Eriodictyon crassifolium</i> ), hairy yerba santa ( <i>Eriodictyon trichocalyx</i> ), California buckwheat ( <i>Eriogonum fasciculatum</i> ), chaparral yucca ( <i>Hesperoyucca whipplei</i> ), deerweed ( <i>Acmispon glaber</i> ), laurel sumac ( <i>Malosma laurina</i> ), prickly-pear cactus, lemonade berry ( <i>Rhus integrifolia</i> ), sugar bush ( <i>Rhus ovata</i> ), skunkbrush ( <i>Rhus aromatica</i> ), and poison oak ( <i>Toxicodendron diversilobum</i> ). Emergent trees or tall shrubs may be present at low cover, including mountain mahogany ( <i>Cercocarpus betuloides</i> ), southern California black walnut, California juniper ( <i>Juniperus californica</i> ), California sycamore, Fremont cottonwood, or black elderberry. Shrubs are less than 7 feet tall; canopy is open to continuous, and two tiered. Herbaceous is layer variable and may be grassy.	-	No	<b>Absent:</b> This vegetation community does not occur within the survey area.



**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<p><b>CNDDB/Holland (1986)</b> Southern California Arroyo Chub/Santa Ana Sucker Stream</p> <p><b>MCV (1995)</b> Not Identified</p> <p><b>NVCS (2009)</b> Not Identified</p>	<p>N/A</p> <p>N/A</p>	<p>Characterized by a functioning hydrological system that experiences peaks and ebbs in water volume throughout the year; a mosaic of loose sand, gravel, cobble, and boulder substrates in a series of riffles, runs, pools and shallow sandy stream margins with water depths greater than 1.2 inches and water bottom velocities of more than 0.01 feet per second; non-turbid conditions or only seasonally turbid water; water temperatures less than 86° Fahrenheit; and stream habitat that includes algae, emergent aquatic vegetation, macroinvertebrates, and riparian vegetation.</p>	-	Yes	<p><b>Present:</b> Approximately 0.45 acres of open water associated with the Santa Ana River occurs within the survey area.</p>
<p><b>CNDDB/Holland (1986)</b> Southern Coast Live Oak Riparian Forest</p> <p><b>MCV (1995)</b> Coast Live Oak Series</p> <p><b>NVCS (2009)</b> <i>Quercus agrifolia</i> Woodland Alliance</p>	<p>G5</p> <p>S4</p>	<p>Found at elevations ranging from sea level to 3,937 feet amsl in alluvial terraces, canyon bottoms, stream banks, slopes, and flats. Soils are deep, sandy or loamy with high organic matter. Coast live oak is a dominant or co-dominant in the tree canopy with bigleaf maple (<i>Acer macrophyllum</i>), box elder (<i>Acer negundo</i>), madrono (<i>Arbutus menziesii</i>), southern California black walnut, California sycamore, Fremont cottonwood, blue oak (<i>Quercus douglasii</i>), Engelmann oak (<i>Quercus engelmannii</i>), California black oak (<i>Quercus kelloggii</i>), valley oak, arroyo willow, and California bay. Trees are less than 98 feet tall; canopy is open to continuous. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy.</p>	-	No	<p><b>Absent:</b> This vegetation community does not occur within the survey area.</p>

**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<p><b>CNDDB/Holland (1986)</b> Southern Cottonwood Willow Riparian Forest</p> <p><b>MCV (1995)</b> Fremont Cottonwood Series</p> <p><b>NVCS (2009)</b> <i>Populus fremontii</i> Forest Alliance</p>	G4 S3.2	<p>Found at elevations ranging from sea level to 7,874 feet amsl on floodplains, along low-gradient rivers, perennial or seasonally intermittent streams, springs, in lower canyons in desert mountains, in alluvial fans, and in valleys with a dependable subsurface water supply that varies considerably during the year. Fremont cottonwood is a dominant or co-dominant in the tree canopy with box elder, desert baccharis (<i>Baccharis sergiloides</i>), Oregon ash (<i>Fraxinus latifolia</i>), northern California black walnut (<i>Juglans hindsii</i>), California sycamore, coast live oak, narrowleaf willow (<i>Salix exigua</i>), Goodding’s willow (<i>Salix goodingii</i>), polished willow (<i>Salix laevigata</i>), arroyo willow, pacific willow (<i>Salix lasiandra</i> ssp. <i>lasiandra</i>), and yellow willow (<i>Salix lutea</i>). Trees and less than 25 meters tall; canopy is continuous to open. Shrub layer is intermittent to open. Herbaceous layer is variable.</p>	-	Yes	<p><b>Present:</b> Approximately 3.25 acres of this vegetation community occurs along the Santa Ana River within the survey area.</p>
<p><b>CNDDB/Holland (1986)</b> Southern Interior Cypress Forest</p> <p><b>MCV (1995)</b> Tecate cypress stands</p> <p><b>NVCS (2009)</b> <i>Hesperocyparis forbesii</i> Woodland Alliance</p>	G2 S2.2	<p>Occurs at elevations ranging from 984 to 4,757 feet amsl on dry, exposed hillsides and ridgetops, stream banks, and arroyos. Tecate cypress is dominant in the tree canopy or emergent above a shrub canopy with chamise, Eastwood manzanita (<i>Arctostaphylos glandulosa</i>), big berry manzanita (<i>Arctostaphylos glauca</i>), Otay manzanita (<i>Arctostaphylos otayensis</i>), hoary leaved ceanothus (<i>Ceanothus crassifolius</i>), buckbrush (<i>Ceanothus cuneatus</i>), desert ceanothus (<i>Ceanothus greggii</i>), Otay mountain ceanothus (<i>Ceanothus otayensis</i>), southern bearclover (<i>Chamaebatia australis</i>), bush poppy (<i>Dendromecon rigida</i>), Bisbee peak rushrose (<i>Helianthemum scoparium</i>), laurel sumac, Montana chaparral pea (<i>Pickeringia montana</i>), scrub oak, Munz’s sage (<i>Salvia munzii</i>) and Mission manzanita (<i>Xylococcus bicolor</i>).</p>	-	No	<p><b>Absent:</b> This vegetation community does not occur within the survey area.</p>

**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<u>CNDDDB/Holland (1986)</u> Southern Riparian Forest <u>MCV (1995)</u> N/A <u>NVCS (2009)</u> N/A	N/A N/A	Southern riparian forests are comprised of winter-deciduous trees that require water near the soil surface. Willows, cottonwoods, and sycamores form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat, stinging nettle ( <i>Urtica dioica ssp. holosericea</i> ), and wild grape ( <i>Vitis girdiana</i> ). In forests, the canopies of individual tree species do overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.	-	No	<b>Absent:</b> This vegetation community does not occur within the survey area.
<u>CNDDDB/Holland (1986)</u> Southern Riparian Scrub <u>MCV (1995)</u> N/A <u>NVCS (2009)</u> N/A	N/A N/A	Southern riparian scrub includes several plant communities, including mulefat scrub, southern willow scrub, and baccharis/tamarisk scrub. Riparian scrub is typically dominated by willows and cottonwood trees, by mulefat, or by broom baccharis or tamarisk, an introduced species. The understory is variable depending on canopy coverage, disturbance history and water availability, and usually includes poison oak, wild grape, western ragweed, rushes, and a variety of other water-loving plants.	-	No	<b>Absent:</b> This vegetation community does not occur within the survey area.
<u>CNDDDB/Holland (1986)</u> Southern Sycamore Alder Riparian Woodland <u>MCV (1995)</u> California Sycamore Series <u>NVCS (2009)</u> <i>Platanus racemosa</i> Woodland Alliance	G3 S3	Found at elevations ranging from sea level to 7,874 feet amsl in gullies, intermittent streams, springs, seeps, stream banks, and terraces adjacent to floodplains that are subject to high-intensity flooding. Soils are rocky or cobbly alluvium with permanent moisture at depth. California sycamore is a dominant or co-dominant in the tree canopy with white alder, southern California black walnut, Fremont cottonwood, coast live oak, valley oak, narrowleaf willow, Gooding's willow, polished willow, arroyo willow, yellow willow, Peruvian pepper tree ( <i>Schinus mole</i> ), and California bay.	-	No	<b>Absent:</b> This vegetation community does not occur within the survey area.

**Table C-1: Potentially Occurring Special-Status Biological Resources**

<i>Scientific Name</i> Common Name	Special-Status Rank*	Habitat Preferences and Distribution Affinities	Covered by MSHCP**	Observed On-site	Potential to Occur
<u>CNDDDB/Holland (1986)</u> Southern Willow Scrub <u>MCV (1995)</u> N/A <u>NVCS (2009)</u> N/A	N/A N/A	Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat and scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine, gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland, 1986). In the absence of periodic flooding, this early seral type would be succeeded by southern cottonwood or western sycamore riparian forest.	-	Yes	<b>Present:</b> Approximately 2.91 acres of this vegetation community occurs along the Santa Ana River within the survey area.

\* **U.S. Fish and Wildlife Service (USFWS)**

- FE Endangered – any species which is in danger of extinction throughout all or a significant portion of its range.
- FT Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
- FPT Federally Proposed Threatened – The classification provided to an animal or plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.

**California Department of Fish and Wildlife (CDFW)**

- SE Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
- ST Threatened – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required under the California Endangered Species Act.
- CSE Candidate State Endangered – The classification provided to a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered species.
- FP Fully Protected – any native species or subspecies of bird, mammal, fish, amphibian, or reptile that were determined by the State of California to be rare or face possible extinction.
- SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria: is extirpated from California or, in the case of birds, in its primary seasonal or breeding role; is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- WL Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

**California Native Plant Society (CNPS) California Rare Plant Rank**

- 1A Presumed extirpated in California and either rare or extinct elsewhere.
- 1B Plants rare, threatened, or endangered in California and elsewhere.
- 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- 3 Plant that lack the necessary information to assign them to one of the other ranks or to reject them.
- 4 Plants of limited distribution – Watch List.

**Threat Ranks**

- .1 Seriously threatened in California (over 80% of occurrences threatened/high degree any immediacy of threat).
- .2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).
- .3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

**NatureServe Conservation Status Rank**

The Global Rank (G#) reflects the overall condition and imperilment of a species throughout its global range. The Intraspecific Taxon Rank (T#) reflects the global situation of just the subspecies or variety. The State Rank (S#) reflects the condition and imperilment of an element throughout its range within California. (G#Q) reflects that the element is very rare but there are taxonomic questions associated with it; the calculated G rank is qualified by adding a Q after the G#. Adding a ? to a rank expresses uncertainty about the rank.

- G1/T1 Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2/T2 Imperiled— At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3/T3 Vulnerable— At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- G4/T4 Apparently Secure— Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5/T5 Secure – Common; widespread and abundant.
- S1 Critically Imperiled – Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.
- S2 Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or State.
- S3 Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

**\*\* Western Riverside County Multiple Species Habitat Conservation Plan**

Yes – Fully Covered.

No – Not Covered.

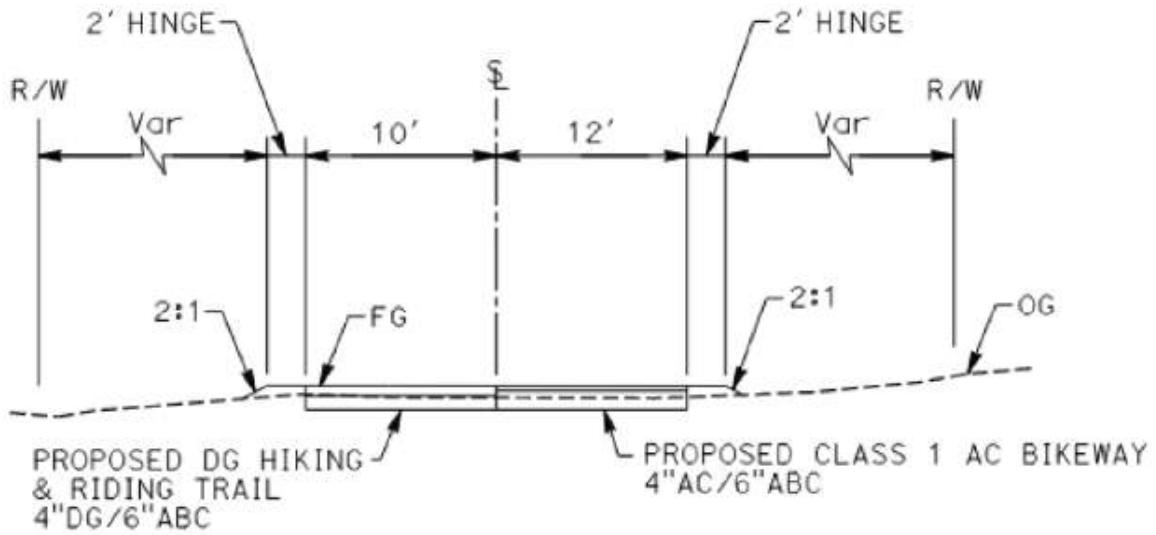
Yes (a) – May require additional surveys pursuant to Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*.

Yes (b) – May require additional surveys pursuant to Section 6.1.3, *Protection of Narrow Endemic Plant Species*.

Yes (c) – May require additional surveys pursuant to Section 6.3.2, *Additional Survey Needs and Procedures*.

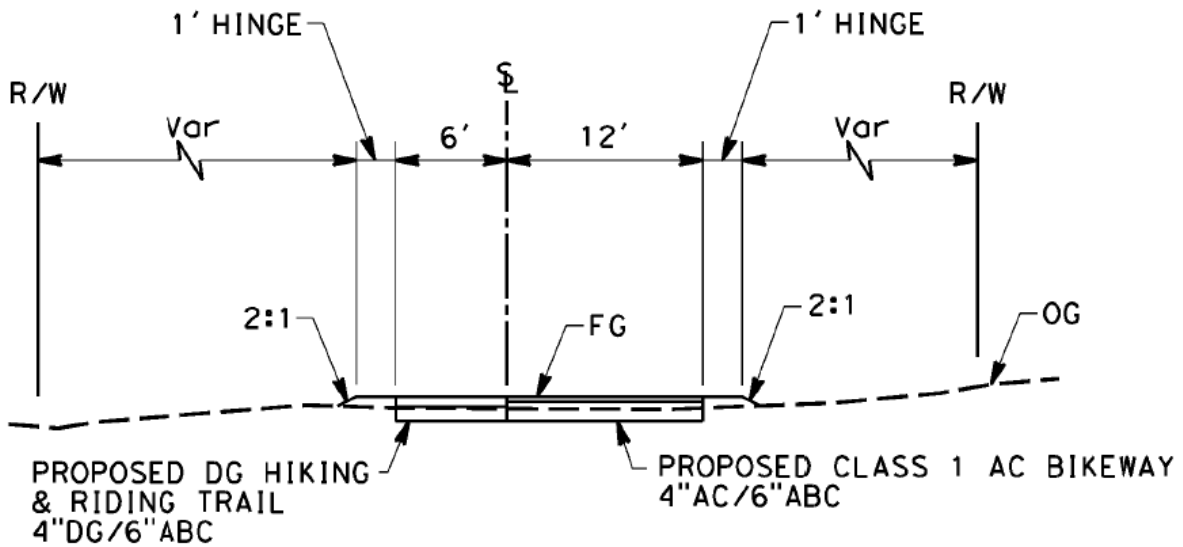
## **Appendix D Proposed Trail Cross Sections**

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**TYPICAL TRAIL SECTION**

NTS



**TYPICAL TRAIL SECTION**

NTS

# **SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT**

CITIES OF CHINO HILLS AND CORONA, RIVERSIDE AND SAN BERNARDINO COUNTIES,  
CALIFORNIA

## **Delineation of State and Federal Jurisdictional Waters**

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November 2020

JN 167982



# **SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT**

CITIES OF CHINO HILLS AND CORONA, RIVERSIDE AND SAN BERNARDINO COUNTIES,  
CALIFORNIA

## **Delineation of State and Federal Jurisdictional Waters**

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The undersigned certify that this report is a complete and accurate account of the findings and conclusions of jurisdictional wetland and non-wetland “waters of the U.S.,” “waters of the State,” and streambed/banks and associated riparian vegetation delineation for the above-referenced project.



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Tim Tidwell  
Regulatory Specialist  
Natural Resources and Regulatory Permitting



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Josephine Lim  
Regulatory Specialist  
Natural Resources and Regulatory Permitting

November 2020  
JN 167982

# Executive Summary

On behalf of the Riverside County Transportation Commission (RCTC), Michael Baker International (Michael Baker) has prepared this Delineation of State and Federal Jurisdictional Waters Report for the proposed Santa Ana River Trail - Phase 6 (SART - Phase 6) through Green River Golf Course Project (project or project site), located in the Cities of Corona and Chino Hills, Counties of Riverside and San Bernardino, California. The project proposes two alternatives to create an approximate 1.5-mile segment recreational parkway as part of the of the larger 110-mile Santa Ana River (SART) project. The project would include a dual-track Class I multi-use path/natural surface trail.

This report was prepared to document all aquatic and other hydrological features identified by Michael Baker within the project site that are potentially subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Federal Clean Water Act (CWA), the Regional Water Quality Control Board (Regional Board) pursuant to Section 401 of the CWA and/or Section 13263 of the California Porter-Cologne Water Quality Control Act, and the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 *et seq.* of the California Fish and Game Code (CFGC).

State and Federal jurisdictional features observed within the project site consisted of a portion of the Santa Ana River, portions of Aliso Canyon, and an unnamed drainage (Drainage 1) totaling approximately 1.17 acre Corps jurisdiction (non-wetland waters of the U.S. [WoUS]), 1.17 acre Regional Board jurisdiction (non-wetland WoUS), and 8.71 acres CDFW jurisdiction (jurisdictional streambed/associated riparian vegetation). Table ES-1 below provides a breakdown of total acreages of jurisdictional features within the project site as they relate to each regulatory agency. Delineation methods followed the most recent, acceptable guidelines for conducting a jurisdictional delineation in this region. However, only the regulatory agencies can make a final determination of jurisdictional limits.

**ES-1: State and Federal Jurisdictional Areas and Impact Summary**

Jurisdictional Feature	Jurisdictional Areas		Impact Acreage (Linear Feet)							
	Corps & Regional Board	CDFW	Alternative 1				Alternative 2			
	Acreage (Linear Feet)	Acreage (Linear Feet)	Corps/Regional Board (Non-wetland WoUS)		CDFW (Streambed/Riparian)		Corps/Regional Board (Non-wetland WoUS)		CDFW (Streambed/Riparian)	
			Temporary Impacts	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impact	Permanent Impacts	Temporary Impacts	Permanent Impacts
Santa Ana River	0.73 (1,126)	7.81 (4,453)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aliso Canyon	0.42 (735)	0.88 (738)	0.10 (116)	0.00	0.17 (119)	0.00	0.00	0.03 (66)	0.00	0.03 (66)
Drainage 1	0.02 (139)	0.02 (139)	0.00	0.005 (15)	0.00	0.005 (15)	0.00	0.006 (16)	0.00	0.006 (16)
<b>TOTAL</b>	<b>1.17 (2,000)</b>	<b>8.71 (5,330)</b>	<b>0.10 (116)</b>	<b>0.005 (15)</b>	<b>0.17 (119)</b>	<b>0.005 (15)</b>	<b>0.00</b>	<b>0.036 (82)</b>	<b>0.00</b>	<b>0.036 (82)</b>

Based on a detailed review of current site conditions and project design plans, the following regulatory permits/authorizations would be required prior to construction within the identified jurisdictional areas:

1. Corps CWA Section 404 Nationwide Permit No. 14: *Linear Transportation Projects* for impacts associated with the placement of dredge and/or fill material into WoUS;
2. Regional Board CWA Section 401 Water Quality Certification for impacts associated with the placement of dredge and/or fill material into WoUS; and
3. CDFW Section 1602 Lake or Streambed Alteration Agreement (or other approval in-lieu of a formal agreement such as an Operation-by-Law letter) for alteration to streambed/banks and/or associated riparian vegetation.

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**ACRONYMS AND ABBREVIATIONS**

amsl	above mean sea level
BNSF	Burlington Northern Santa Fe
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGF	California Fish and Game Code
Corps	U.S. Army Corps of Engineers
Corps Manual	<i>1987 Corps Wetland Delineation Manual</i>
CWA	Federal Clean Water Act
DBH	diameter at breast height
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
LSAA	Lake or Streambed Alteration Agreement
Michael Baker	Michael Baker International
NHD	National Hydrography Dataset
NWP	Nationwide Permit
OAL	Office of Administrative Law
OBL	Obligate Wetland
OHWM	ordinary high-water mark
Porter-Cologne Act	California Porter-Cologne Water Quality Control Act
Procedures	State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State
project	Santa Ana River Trail – Phase 6 (SART – Phase 6) Project
Rapanos	<i>Rapanos v. United States</i>
RCTC	Riverside County Transportation Commission
Regional Board	Regional Water Quality Control Board
Regional Supplement	<i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0</i>
SWANCC	<i>Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers</i>
TNW	Traditional Navigable Waters
UPL	Upland
USDA	U.S. Department of Agriculture, Natural Resources Conservation Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
WoUS	waters of the U.S.
WQC	Water Quality Certification

# Section 1 Introduction

---

On behalf of the Riverside County Transportation Commission (RCTC), Michael Baker International (Michael Baker) has prepared this Delineation of State and Federal Jurisdictional Waters Report to describe, map, and quantify aquatic and other hydrological features located within the project site for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project (project or project site).

This report describes the regulatory setting, methodologies, and results of the jurisdictional delineation, including recommendations for any proposed impacts to previously documented or potential jurisdictional resources. This report presents Michael Baker’s best professional effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional limits.

## 1.1 PROJECT LOCATION

The project site is located north of California State Route 91 (SR-91) and west of California State Route 71 (SR-71) and the Prado Dam Flood Control Basin in the northwestern portion of the City of Corona, and the southern portion of the City of Chino Hills, within San Bernardino and Riverside Counties, California (Figure 1, *Regional Vicinity*). Specifically, the project site is depicted within Sections 25, 30, and 36, Township 3 South, Range 7 and 8 West, of the U.S. Geological Survey’s (USGS) *Prado Dam and Black Star Canyon, California* 7.5-minute topographic quadrangles (Figure 2, *Project Vicinity*) as well as unsectioned areas. The project site is located at the Green River Golf Course and extends into the southerly portion of Chino Hills State Park (refer to Figure 3, *Project Site*).

## 1.2 PROJECT DESCRIPTION

The proposed project (SART – Phase 6) consists of a 1.5-mile segment through the Green River Golf Course and a 0.2-mile segment between Phase 5 and Phase 3 of the larger 110-mile SART project. More specifically, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the Santa Ana River Parkway Extension (currently in final design) located west of the proposed project in Orange County, with the existing SART – Phase 5 (completed March 2019) in Chino Hills State Park on the east within Riverside County. Additionally, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the eastern terminus of the SART – Phase 5 and the western terminus of SART – Phase 3 (currently under environmental review), near the State Route 91 and State Route 71 interchange in Riverside County.

The proposed project consists of two build alternatives: Alternative 1 – West of Golf Course, and Alternative 2 – East of Golf Course. Both build alternatives would have similar trail characteristics and would close the gap between the Santa Ana River Parkway Extension and SART – Phase 5 as well as between SART – Phase 5 and SART – Phase 3. Implementation of the proposed project would serve the

needs of recreational users, including pedestrians, hikers, bicyclists, and equestrians, as well as provide commuters an opportunity for alternative means and routes of transportation in the project area.

The main difference between the build alternatives is the trail alignment. Alternative 1 would generally extend along the western boundary of the Green River Golf Course and Alternative 2 would generally extend along the eastern boundary of the golf course, adjacent to the Santa Ana. The designated staging area for the proposed project is situated along Green River Road, adjacent to State Route 91.

### **Alternative 1 – West of Golf Course**

The southwesterly end of the proposed project alignment would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line, south of the existing BNSF railroad. Alternative 1 generally extends east-west (within the existing golf course) south of, and parallel to, the BNSF railroad until it reaches the golf course parking lot.

From the parking lot, Alternative 1 would extend north, spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge ranging in width from 20 feet to 37 feet. Once across the railroad line, the trail would continue north along the existing maintenance road. A bridge would be installed to cross Aliso Canyon. The trail would then continue north/northeast and connect with the SART – Phase 5 in Chino Hills State Park.

### **Alternative 2 – East of Golf Course**

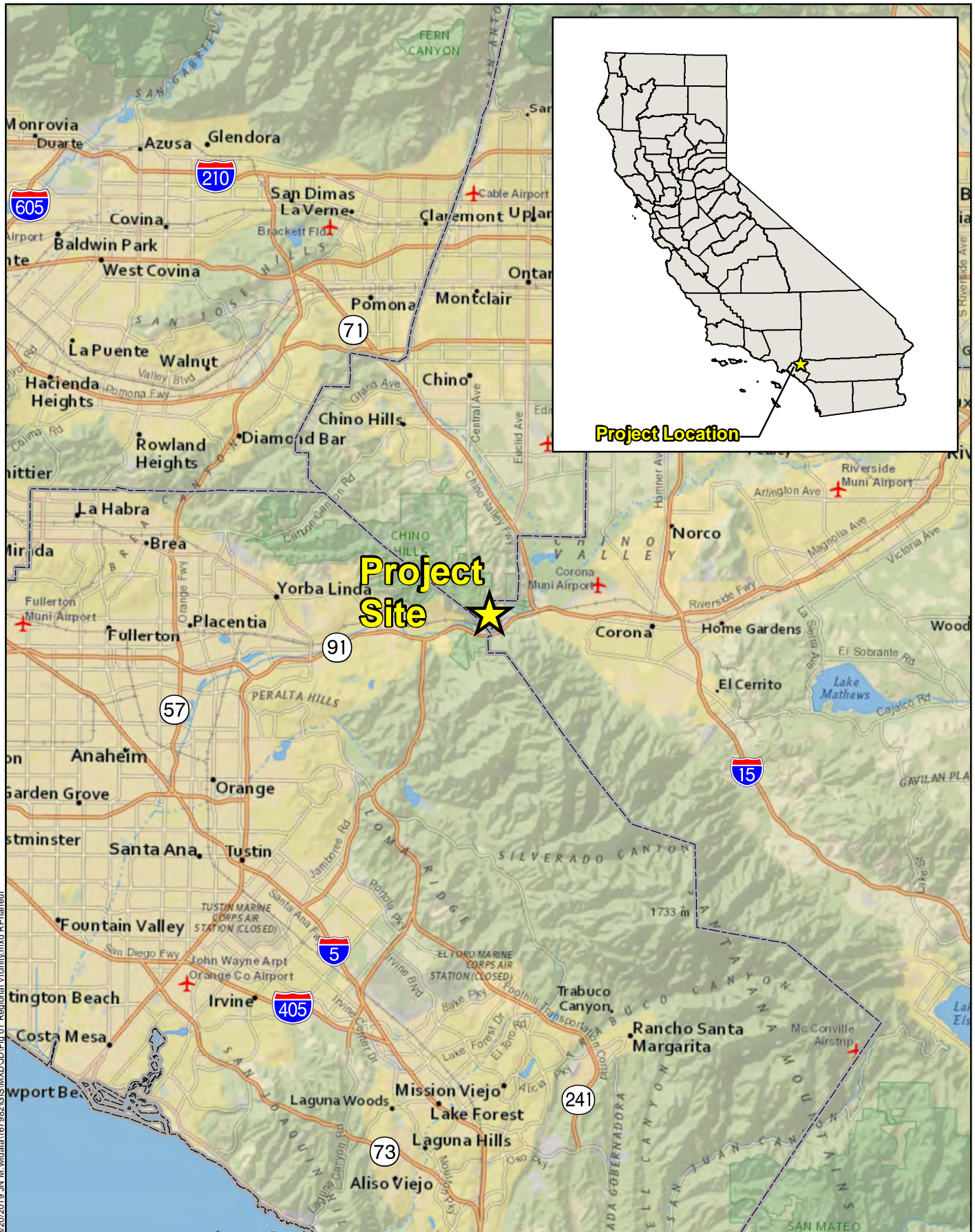
Similar to Alternative 1, Alternative 2 would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line south of the BNSF railroad. Alternative 2 proposes spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge, at or just west of the golf course parking lot, similar to Alternative 1.

After crossing the BNSF railroad, the trail would extend east, parallel to the BNSF right-of-way (ROW) before heading north along an existing dirt maintenance road and extending north/northeast, parallel to the Santa Ana River. A bridge or low water crossing would be installed to cross Aliso Canyon. Alternative 2 would continue in a northeast direction before extending northwest along the northern boundary of the golf course to intersect with an existing dirt maintenance road (Alternative 1) and connect with SART – Phase 5 in Chino Hills State Park.

### **Additional Trail Alignment**

Both build alternatives would include construction of the approximate 1,000-foot segment of the SART located east of the golf course. This portion of the SART would connect the eastern terminus of the SART – Phase 5 with the western terminus of SART – Phase 3, near the State Route 91 and State Route 71 interchange.

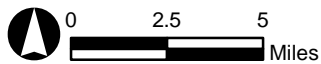




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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

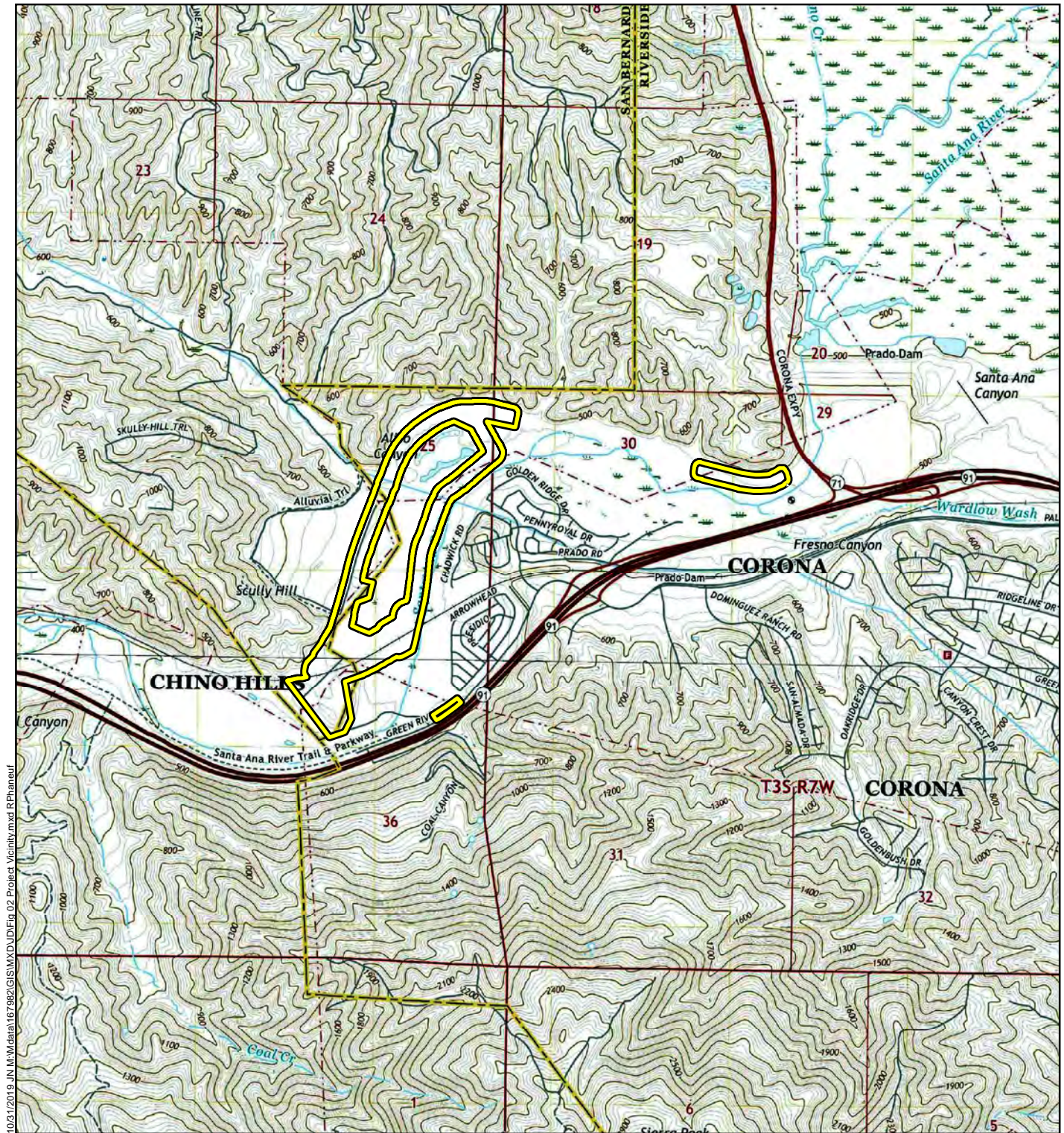
**Michael Baker**  
INTERNATIONAL



Source: ArcGIS Online, 2018

**Regional Vicinity**

Figure 1

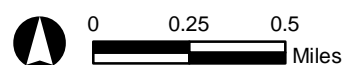


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**Legend**

 Project Site

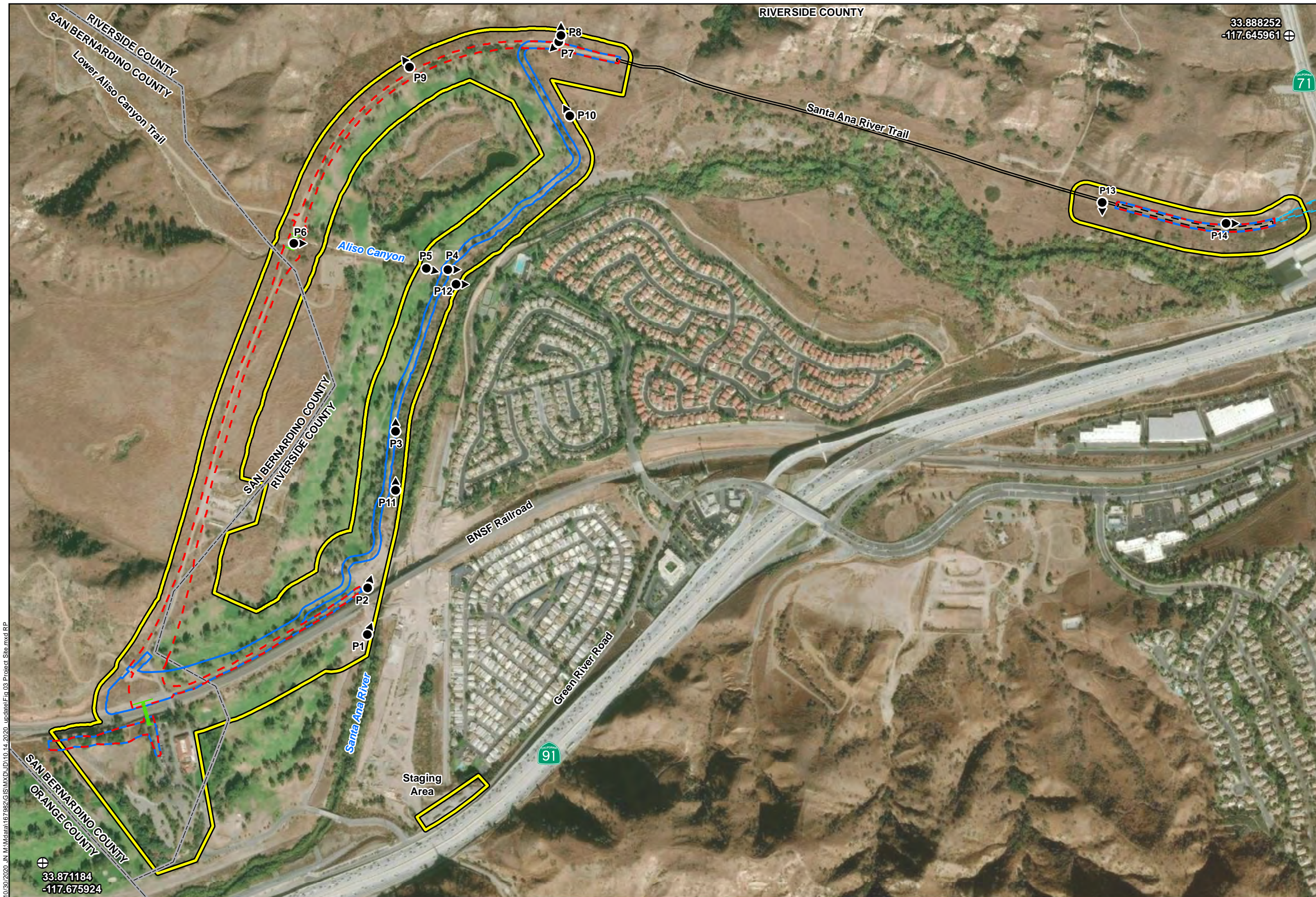
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS



# Project Vicinity

Source: ArcGIS Online, 2018, USGS 7.5-Minute topographic quadrangle maps: Prado Dam, Black Star Canyon, California (2018)

Figure 2



**Legend**

- Project Site
- County Boundary
- Alt 1 - Construction Limits
- Alt 1 - Bridge
- Alt 2 - Construction Limits
- SART - Phase 3
- SART - Phase 5
- Photograph Point and Direction
- Reference Point

0 350 700  
Feet

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33.871184  
-117.675924

33.888252  
-117.645961

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

## Section 2                      Regulations

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Three agencies regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (Corps) Regulatory Division regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA). Of the State agencies, the California Department of Fish and Wildlife (CDFW) regulates activities under Sections 1600 *et seq.* of the California Fish and Game Code (CFGC), and the Regional Water Quality Control Board (Regional Board) regulates activities pursuant to Section 401 of the CWA and/or Section 13263 of the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

### 2.1      U.S. ARMY CORPS OF ENGINEERS

#### Navigable Waters Protection Rule

On January 23, 2020, the EPA and the Corps finalized the Navigable Waters Protection Rule to define WoUS. On April 21, 2020, the EPA and the Corps published the Navigable Waters Protection Rule in the Federal Register. On June 22, 2020, 60 days after publication in the Federal Register, the Navigable Waters Protection Rule became effective across the nation including the state of California.

Under the Navigable Waters Protection Rule, waters considered jurisdictional WoUS are outlined in four categories as follows:

1.    Territorial Seas and TNWs

- Under the final rule, the territorial seas and traditional navigable waters include large rivers and lakes as well as tidally-influenced waterbodies used in interstate or foreign commerce.

2.    Tributaries

- Under the final rule, tributaries include perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year.
- These naturally occurring surface water channels must flow more often than just after a single precipitation event – that is, tributaries must be perennial or intermittent.
- Tributaries can connect to a traditional navigable water or territorial sea in a typical year either directly or through other WoUS, through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Ditches are to be considered tributaries only where they satisfy the flow conditions of the perennial and intermittent tributary definition and either were constructed in or relocate a tributary or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water in a typical year.

### 3. Lakes, Ponds, and Impoundments of Jurisdictional Waters

- Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a TNW or territorial sea in a typical year either directly or through other WOUS, through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Lakes, ponds, and impoundments of jurisdictional waters are also jurisdictional where they are flooded by a “water of the United States” in a typical year.

### 4. Adjacent Wetlands

- Wetlands that physically touch other jurisdictional waters are “adjacent wetlands.”
- Wetlands separated from a WoUS by only a natural berm, bank or dune are also “adjacent.”
- Wetlands inundated by flooding from a WoUS in a typical year are “adjacent.”
- Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier, or similar artificial structure are “adjacent” so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.
- An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

The final rule also outlines what are not WoUS. The following waters/features are not jurisdictional under the Navigable Waters Protection Rule:

- Waterbodies that are not included in the four categories of WoUS.
- Groundwater, including groundwater drained through subsurface drainage systems, such as drains in agricultural lands.
- Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.
- Diffuse stormwater run-off and directional sheet flow over upland.
- Many farm and roadside ditches.
- Prior converted cropland.
- Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease.
- Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters.

- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.
- Stormwater control features excavated or constructed in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.
- Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention and infiltration basins and ponds, that are constructed in upland or in non-jurisdictional waters.
- Waste treatment systems.

## 2.2 REGIONAL WATER QUALITY CONTROL BOARD

Applicants for a Federal license or permit for activities that may discharge to WoUS must seek a Water Quality Certification (WQC) from the State or Indian tribe with jurisdiction<sup>1</sup>. In California, there are nine (9) Regional Boards that issue or deny Certification for discharges within their geographical jurisdiction. Such Certification is based on a finding that the discharge will meet water quality standards, which are defined as numeric and narrative objectives in each Regional Board’s Basin Plan, and other applicable requirements. The State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board’s jurisdiction extends to all WoUS, including wetlands, and to waters of the State (described below).

The Porter-Cologne Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool for the regulatory environment following the SWANCC<sup>2</sup> and Rapanos<sup>3</sup> court cases, with respect to the state’s authority over isolated and otherwise insignificant waters. Generally, in the event that there is no nexus to a Traditionally Navigable Water (TNW), any person proposing to discharge waste into waters of the State that could affect its water quality must file a Report of Waste Discharge. Although “waste” is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

On April 2, 2019 the State Water Resources Control Board adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Procedures were

<sup>1</sup> Title 33, United States Code, Section 1341; Clean Water Act Section.

<sup>2</sup> *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001).

<sup>3</sup> *Rapanos v. United States*, 547 U.S. 715 (2006).

approved by the Office of Administrative Law (OAL) on August 28, 2019 and became effective May 28, 2020.

### **2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE**

Sections 1600 *et seq.* of the CFGC establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely affect fish and wildlife resources, or when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Section 1602 of the CFGC requires any person, State, or local governmental agency or public utility to notify CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake;  
or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

This applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, including the maintenance of existing drain culverts, outfalls, and other structures. To avoid the need for a Lake or Streambed Alteration Agreement (LSAA) from CDFW, all proposed impacts should remain outside of the top of active banks and the canopy/dripline of any associated riparian vegetation, whichever is greater.

## Section 3 Methodology

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The analysis presented in this report is supported by a site reconnaissance and verification of site conditions conducted on January 23, 2019 and subsequent site visits on June 11, 2019, August 7, 2019, October 22, 2019, and October 13, 2020 by certified wetland delineators Josephine Lim and Tim Tidwell. A field delineation was conducted to determine the jurisdictional limits of WoUS and waters of the State (including potential wetlands), located within the boundaries of the project site. While in the field, jurisdictional features were recorded on an aerial base map at a scale of 1" = 150' using topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin Map62 Global Positioning System to record and identify specific widths for OHWM indicators and the locations of photographs, soil points, and other pertinent jurisdictional features, if present. These data were then transferred as a .shp file and added to the report's jurisdictional figures. The jurisdictional figures were prepared using ESRI ArcMap Version 10 software and comply with the Corps Minimum Standards for Acceptance of Aquatic Resource Delineations, dated January 2016.

### 3.1 WATERS OF THE U.S. AND WATERS OF THE STATE

The limits of the Corps' jurisdiction in non-tidal waters extend to the OHWM, which is defined as "...*that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*"<sup>4</sup> An OHWM can be determined by the observation of a natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; presence of litter and debris; wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and/or change in plant community. The Regional Board generally shares the Corps jurisdictional methodology, unless the waterbody is not jurisdictional under the Navigable Waters Protection Rule. In the case the waterbody is not a WoUS, the Regional Board considers such waterbodies to be jurisdictional waters of the State. The CDFW's jurisdiction extends to the top of bank of the streambed or to the limit (outer dripline) of the adjacent riparian vegetation.

### 3.2 WETLANDS

For this project location, jurisdictional wetlands were delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Regional Supplement; Corps, 2008). This document is part of a series of regional supplements to the *1987 Corps Wetland Delineation Manual* (Corps Manual). According to the Corps Manual, identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal

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<sup>4</sup> CWA regulations 33 CFR §328.3(e).



characteristics within these three (3) parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology have been examined using the methodology listed below and documented on Corps wetland determination data forms, when applicable.

The Procedures adopted by the State Water Resources Control Board on April 2, 2019, contain a wetland definition and wetland delineation procedures. The State wetland definition and delineation procedures are largely consistent with the three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology implemented by the Corps and outlined in the 2010 Regional supplement to the Corps Manual. However, one exception is that an area can lack vegetation and still qualify as a wetland water of the State if it satisfies both the hydric soil and wetland hydrology parameters.

### 3.2.1 VEGETATION

Nearly 5,000 plant types in the United States may occur in wetlands. These plants, often referred to as hydrophytic vegetation, are listed in regional publications by the U.S. Fish and Wildlife Service (USFWS). In general, hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during growing season. Hydrophytic vegetation decisions are based on the assemblage of plant species growing on a site, rather than the presence or absence of particular indicator species. Vegetation strata are sampled separately when evaluating indicators of hydrophytic vegetation. A stratum for sampling purposes is defined as having 5 percent or more total plant cover. The following vegetation strata are recommended for use across the Arid West Region:

- *Tree Stratum*: Consists of woody plants 3 inches or more in diameter at breast height (DBH);
- *Sapling/shrub Stratum*: Consists of woody plants less than 3 inches in DBH, regardless of height;
- *Herb Stratum*: Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size; and
- *Woody Vines*: Consists of all woody vines, regardless of size.

The following indicator is applied per the test method below<sup>5</sup>. Hydrophytic vegetation is present if any of the indicators are satisfied.

#### **Indicator 1 – Dominance Test**

Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50 percent of the total dominant coverage, plus any species that comprise at least 20 percent (also known as the “50/20 rule”) of the total dominant coverage, are recorded on a wetland

<sup>5</sup> Although the Dominance Test is utilized in most wetland delineations, other indicator tests may be employed. If one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present, then the Prevalence Test (Indicator 2) may be performed. If the plant community satisfies the Prevalence Test, then the vegetation is hydrophytic. If the Prevalence Test fails, then the Morphological Adaptation Test may be performed, where the delineator analyzes the vegetation for potential morphological features.

determination data form. Wetland indicator status is assigned to each species using *The National Wetland Plant List The List, version 3.4* (U.S. Army Corps of Engineers, 2018). If greater than 50 percent of the dominant species from all strata were Obligate Wetland, Facultative Wetland, or Facultative species, the criteria for wetland vegetation is considered to be met. Plant indicator status categories are described below:

- *Obligate Wetland (OBL)*: Plants that occur almost always in wetlands under natural conditions, but which may also occur rarely in non-wetlands;
- *Facultative Wetland (FACW)*: Plants that occur usually in wetlands, but also occur in non-wetlands;
- *Facultative (FAC)*: Plants with similar likelihood of occurring in both wetlands and non-wetlands;
- *Facultative Upland (FACU)*: Plants that occur sometimes in wetlands, but occur more often in non-wetlands; and
- *Obligate Upland (UPL)*: Plants that occur rarely in wetlands but occur almost always in non-wetlands under natural conditions.

### 3.2.2 HYDROLOGY

Wetland hydrology indicators are presented in four (4) groups, which include:

#### **Group A – Observation of Surface Water or Saturated Soils**

Group A is based on the direct observation of surface water or groundwater during the site visit.

#### **Group B – Evidence of Recent Inundation**

Group B consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently. These indicators include water marks, drift deposits, sediment deposits, and similar features.

#### **Group C – Evidence of Recent Soil Saturation**

Group C consists of indirect evidence that the soil was saturated recently. Some of these indicators, such as oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur in the soil profile, indicate that the soil has been saturated for an extended period.

#### **Group D – Evidence from Other Site Conditions or Data**

Group D consists of vegetation and soil features that indicate contemporary rather than historical wet conditions and include shallow aquitard and the FAC-neutral test.

If wetland vegetation criteria are met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. The lateral extent of the hydrology indicators is used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is

divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

### 3.2.3 SOILS

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 16-20 inches<sup>6</sup>. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 20 inches of the soil profile.

Once in the field, soil characteristics are verified by digging soil pits along each transect to an excavation depth of 20 inches; in areas of high sediment deposition, soil pit depth may be increased. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (2012). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables – hue, value, and chroma. Any indicators of hydric soils, such as organic accumulation, iron reduction, translocation, and accumulation, and sulfate reduction, are also recorded. Hydric soil indicators are present in three groups, which include:

#### All Soils

“All soils” refers to soils with any U.S. Department of Agriculture, Natural Resources Conservation Service (USDA) soil texture. Hydric soil indicators within this group include histosol, histic epipedon, black histic, hydrogen sulfide, stratified layers, 1-centimeter muck, depleted below dark surface, and thick dark surface.

#### Sandy Soils

“Sandy soils” refers to soil materials with a USDA soil texture of loamy fine sand and coarser. Hydric soil indicators within this group include sandy mucky mineral, sandy gleyed matrix, sandy redox, and stripped matrix.

<sup>6</sup> According to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps 2008), growing season dates are determined through on-site observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature.

**Loamy and Clayey Soils**

“Loamy and clayey soils” refers to soil materials with a USDA soil texture of loamy very fine sand and finer. Hydric soil indicators within this group include loamy mucky mineral, loamy gleyed matrix, depleted matrix, redox dark surface, depleted dark surface, redox depressions, and vernal pools.

## Section 4 Literature Review

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A thorough review of relevant literature and materials was conducted to preliminarily identify areas that may fall under the jurisdiction of the regulatory agencies. A summary of materials utilized during the literature review is provided below and in Appendix A, *Documentation*. In addition, refer to Section 8 for a complete list of references used throughout the course of this delineation.

### 4.1 WATERSHED REVIEW

The project site is located within the Santa Ana River Watershed (Hydrologic Unit Code 18070203). The watershed includes much of Orange County, the northwestern corner of Riverside County, the southwestern corner of San Bernardino County, and a small portion of Los Angeles County. The watershed is bound to the south by the Santa Margarita watershed, on the east by the Salton Sea and Southern Mojave watersheds, and on the north/west by the Mojave and San Gabriel watersheds. The watershed is approximately 2,800 square miles in area and substantially urbanized with approximately 32 percent of the land being residential, commercial, or industrial.

The watershed is located in the Peninsular Ranges and Transverse Ranges Geomorphic Provinces of Southern California (California Geological Survey Note 36). The highest elevations (upper reaches) of the watershed occur in the San Bernardino (San Gorgonio Peak – 11,485 feet above mean sea level [amsl]) and eastern San Gabriel Mountains (Transverse Ranges Province; Mt. Baldy – 10,080 feet amsl) and in the San Jacinto Mountains (Peninsular Ranges Province, Mt. San Jacinto – 10,804 feet amsl). Further downstream, the Santa Ana Mountains and the Chino Hills form a topographic high before the river flows into the Coastal Plain (in Orange County) and into the Pacific Ocean. Primary slope direction is northeast to southwest, with secondary slopes controlled by local topography.

The headwaters of the Santa Ana River are located in the San Bernardino Mountains and include Bear Creek and Mill Creek. Other tributaries include Lytle Creek, originating in the San Gabriel Mountains, and the San Jacinto River, originating in the San Jacinto Mountains. These main tributaries come together to form the Santa Ana River in the San Bernardino Valley, located at the southern base of the Transverse Ranges of the San Bernardino Mountains. The Santa Ana River flows through the San Bernardino Valley before traversing through the Santa Ana Mountains and flowing to the Orange Coastal Plain. The Santa Ana River eventually discharges to the Pacific Ocean in the City of Huntington Beach.

### 4.2 LOCAL CLIMATE

The Santa Ana River Watershed, similar to the region, is characterized by a year-round Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Average annual precipitation ranges from 10 – 13 inches per year in the inland alluvial valleys, reaching 36 inches or more in the San Bernardino and San Jacinto Mountains. Most of the precipitation occurs between November and March in the form of rain with variable amounts of snow in the higher elevations. The climatological cycle

of the region results in higher surface water flows in the spring and early summer and lower flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years and generally occur during the period of December to March. Similarly, during the dry season, infrequent summer storms can cause torrential floods in local streams and usually occur during the period from July through September.

### **4.3 USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE**

The project site is located within Sections 25, 30, and 36 Township 3 South, Range 7 and 8 West, San Bernardino Meridian of the USGS *Prado Dam and Black Star Canyon, California* 7.5-minute topographic quadrangles. On-site topography ranges from approximately 420 to 520 feet amsl and generally slopes to the south. According to the topographic map the project site consists of a golf course facility and a perennial feature, identified as Santa Ana River, which flows from the northeast to southwest direction within the project site. An intermittent stream, identified as Aliso Canyon, generally flows west to east bisecting the northern portion of the project site. Surrounding areas appear to consist of vacant undeveloped land with recreational hiking trails to the north and west, golf course uses including pond features are located between Alternatives 1 and 2 near the northern portion of the project site, residential homes are located to the east of the project site across the Santa Ana River, SR-91 is noted to the east, west, and south of the project site, and a railroad which bisects the southern portion of the project site extends further east and west.

### **4.4 AERIAL PHOTOGRAPH**

Prior to the field visits, Michael Baker reviewed a current aerial photograph dated June 8, 2018 from Google Earth Imaging for the project site. Aerial photographs can be useful during the delineation process, as the photographs often indicate the presence of drainages and riparian vegetation within the boundaries of the project site (if any). According to the aerial photograph the project site appears to consist the Green River Golf Course and associated facilities including a portion of the driving range, club house, a maintenance yard, four small structures within the golf course, parking facilities, improved/unimproved roadways, and vacant, undeveloped land. Green River Drive enters the southern portion of the project site from the south and is the primary access point to the club house and golf course. Railroad right-of-way consisting of three separate railroad tracks generally extends in a northeast to southwest fashion bisecting the southern portion of the project site. The eastern boundary of the project site borders the northern bank of the Santa Ana River. Aliso Canyon enters the project site from the west and bisects the central portion of the project site before its confluence with the Santa Ana River in the eastern portion of the project site. The project site encompasses a separate rectangular area adjoining Green River Road which appears to be an existing staging area consisting of construction trailers and parking facilities. In addition, the separate eastern portion of the project site between SART Phase – 3 and SART Phase – 5 appears to consist primarily of vacant, undeveloped land and a dirt road. Areas to the north and south of the project site consist of vacant, undeveloped land while areas to the east consist of single-family residential developments. Transportation uses including SR-91 and SR-71 are noted to the east, west, and south of the project site and the Prado Dam Flood Control Basin is noted to the northeast.

## 4.5 SOIL SURVEY

Soils within the project site were researched prior to the field delineation using the *Custom Soil Resource Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2019). The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color). The following soil series have been reported on-site:

### **Soper gravelly loam, 30 to 50 percent slopes MLRA 20 (202)**

Soper gravelly loam, 30 to 50 percent slopes MLRA 20 soils, located in Orange County and Part of Riverside County, range in elevation from 10 to 2,010 feet with mean annual precipitation of 13 to 18 inches. These soils occur in hills and contain parent material consisting of residuum weathered from sandstone. The typical profile of this soil consists of A (0 to 8 inches) gravelly loam, Bt (8 to 29 inches) gravelly clay loam, and CR (29 to 79 inches) bedrock. This soil is well drained, runoff class is high, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

### **Garretson very fine sandy loam, 2 to 9 percent slopes (GaC)**

Garretson very fine sandy loam, 2 to 9 percent slopes soils, located in San Bernardino County Southwestern Part, range in elevation from 440 to 1,000 feet with a mean annual precipitation of 12 to 165 inches. These soils occur in fan aprons and contain parent material consisting of alluvium derived from sandstone. The typical profile of this soil consists of Ap (0 to 7 inches) very fine sandy loam, A (7 to 28 inches) loam, C1 (28 to 34 inches) fine sandy loam, C2 (34 to 42 inches) gravelly sandy loam, and C3 (42 to 60 inches) loam. This soil is well drained, runoff class is medium, and has a depth to water table of more than 80 inches. This soil is listed as hydric.

### **Monserate sandy loam, 2 to 9 percent slopes (MoC)**

Monserate sandy loam, 2 to 9 percent slopes soils, located in San Bernardino County Southwestern Part, range in elevation from 700 to 2,500 feet with mean precipitation of 10 to 18 inches. These soils occur in alluvial fans and contain parent material consisting of alluvium derived from granite. The typical profile of this soil consists of H1 (0 to 10 inches) sandy loam, H2 (10 to 30 inches) clay loam, H3 (30 to 45 inches) indurated, and H4 (45 to 60 inches) coarse sandy loam. This soil is moderately well drained, runoff class is medium, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

### **San Emigdio fine sandy loam, 0 to 2 percent slopes (ScA)**

San Emigdio fine sandy loam, 0 to 2 percent slopes soils, located in San Bernardino County Southwestern Part, range in elevation from 30 to 1,190 feet with mean annual precipitation of 11 to 14 inches. These soils

occur in alluvial fans and contain parent material consisting of alluvium derived from sedimentary rock. The typical profile of this soil consists of A (0 to 7 inches) fine sandy loam and C (7 to 61 inches) stratified gravelly loamy coarse sand to fine sandy loam. This soil is well drained, runoff class is very low, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**San Emigdio fine sandy loam, 2 to 9 percent slopes (ScC)**

San Emigdio fine sandy loam, 2 to 9 percent slopes soils, located in San Bernardino County Southwestern Part, range in elevation from 60 to 2,180 feet with mean annual precipitation of 11 to 17 inches. These soils occur in alluvial fans and contain parent material consisting of mixed alluvium derived from igneous, metamorphic and sedimentary rock. The typical profile of this soil consists of A (0 to 7 inches) fine sandy loam and C (7 to 61 inches) stratified gravelly loamy coarse sand to fine sandy loam. This soil is well drained, runoff class is low, and a depth to water table of more than 80 inches. This soil is not listed as hydric.

**Soper gravelly loam, 30 to 50 percent slopes MLRA 20 (SrF)**

Soper gravelly loam, 30 to 50 percent slopes MLRA 20 soils, located in San Bernardino County Southwestern Part, range in elevation from 10 to 2,010 feet with mean annual precipitation of 13 to 18 inches. These soils occur in hills and contain parent material consisting of residuum weathered from sandstone. The typical profile of this soil consists of A (0 to 8 inches) gravelly loam, Bt (8 to 29 inches) gravelly clay loam, and Cr (29 to 79 inches) bedrock. This soil is well drained, runoff class is high, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**Metz loamy sand (163)**

Metz loamy sand soils, located in the Western Riverside area, range in elevation from 30 to 2,500 feet with mean annual precipitation of 20 inches. These soils occur on alluvial fans and contain parent material consisting of mixed alluvium. The typical profile of this soil consists of H1 (0 to 17 inches) loamy sand and H2 (17 to 63 inches) stratified sand to fine sandy loam. This soil is somewhat excessively drained, runoff class is low, and has a depth to water table of more than 80 inches. This soil is listed as hydric.

**Garretson very fine sandy loam, 2 to 8 percent slopes (GaC)**

Garretson very fine sandy loam, 2 to 8 percent slopes soils located in the Western Riverside area, have a mean annual precipitation of 12 to 25 inches. These soils occur on alluvial fans and contain parent material consisting of alluvium derived from metasedimentary rock. The typical profile of this soil consists of H1 (0 to 10 inches) very fine sandy loam and H2 (10 to 60 inches) loam. This soil is well drained, runoff class is medium, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded (GdD2)**

Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded soils, located in the Western Riverside area, range in elevation from 50 to 3,000 feet and have a mean annual precipitation of 12 to 25



inches. These soils occur on alluvial fans and contains parent material consisting of alluvium derived from metasedimentary rock. The typical profile for this soil consists of H1 (0 to 8 inches) gravelly very fine sandy loam, H2 (8 to 50 inches) gravelly loam, and H3 (50 to 72 inches) loam. This soil is well drained, runoff class is medium, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**Gaviota very fine sandy loam, 15 to 20 percent slopes, eroded (GfF2)**

Gaviota very fine sandy loam, 15 to 50 percent slopes eroded soils, located in the Western Riverside area, range in elevation from 100 to 4,000 feet and have a mean annual precipitation of 20 inches. These soils occur in hills and contain parent material consisting of residuum weathered from sandstone. The typical profile of this soil consists of H1 (0 to 15 inches) very fine sandy loam and H2 (15 to 19 inches) unweathered bedrock. This soil is well drained, runoff class is medium, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**Gaviota rocky very fine sandy loam, 25 to 50 percent slopes, eroded (GgF2)**

Gaviota rocky very fine sandy loam, 25 to 30 percent slopes, eroded soils located in the Western Riverside area, range in elevation from 100 to 4,000 feet and have a mean annual precipitation of 20 inches. These soils occur in hills and contain parent material consisting of residuum weathered from sandstone. The typical profile of this soil consists of H1 (0 to 15 inches) very fine sandy loam and H2 (15 to 19 inches) unweathered bedrock. This soil is well drained, runoff class is medium, and has a depth to water table of 80 inches. This soil is not listed as hydric.

**Metz loamy sand, channeled, 0 to 15 percent slopes (MeD)**

Metz loamy sand, channeled, 0 to 15 percent slopes soils, located in the Western Riverside area, range in elevation from 30 to 2,900 feet and have a mean annual precipitation of 8 to 20 inches. These soils occur in alluvial fans and contain parent material consisting of alluvium derived from sedimentary rock. The typical profile of this soil consists of H1 (0 to 28 inches) loamy sand and H2 (28 to 60 inches) stratified sand to loamy sand. This soil is somewhat excessively drained, runoff class is low, and has a depth to water table of more than 80 inches. This soil is listed as hydric.

**Riverwash (RsC)**

Riverwash soils located in the Western Riverside area, range in elevation from 700 to 2,900 feet and have a mean annual precipitation of 8 to 15 inches. These soils occur in channels and contain parent material consisting of sandy and gravelly alluvium derived from mixed sources. The typical profile of this soil consists of H1 (0 to 6 inches) gravelly coarse sand and H2 (6 to 60 inches) stratified extremely gravelly coarse sand to gravelly sand. This soil is excessively drained, runoff class is very low, and has a depth to water table of about 0 inches. This soil is listed as hydric.

**San Emigdio fine sandy loam, deep, 0 to 2 percent slopes (SfA)**

San Emigdio fine sandy loam, deep, 0 to 2 percent slopes soils, located in the Western Riverside area, range in elevation from 10 to 700 feet and have a mean annual precipitation of 12 to 18 inches. These soils occur in alluvial fans and contain parent material consisting of residuum weathered from sedimentary rock. The typical profile of this soil consists of H1 (0 to 8 inches) fine sandy loam, H2 (8 to 40 inches) fine sandy loam, and H3 (40 to 60 inches) loamy sand. This soil is well drained, runoff class is very low, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**San Emigdio loam, 0 to 2 percent slopes (SgA)**

San Emigdio loam, 0 to 2 percent slopes soils located, in the Western Riverside area, range in elevation from 430 to 2,340 feet and have a mean annual precipitation of 10 to 13 inches. These soils occur in alluvial fans and contain parent material consisting of alluvium derived from sedimentary rock. The typical profile of this soil consists of A (0 to 18 inches) loam, C1 (8 to 40 inches) fine sandy loam, and C2 (40 to 60 inches) stratified sandy loam to silt loam. This soil is well drained, runoff class is very low, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**Soper gravelly loam, 30 to 50 percent slopes, MLRA 20 (SrF)**

Soper gravelly loam, 30 to 50 percent slopes, MLRA 20 soils, located in the Western Riverside area, range from 10 to 2,010 feet and have a mean annual precipitation of 13 to 18 inches. These soils occur in hills and contain parent material consisting of residuum weathered from sandstone. The typical profile of this soil consists of A (0 to 8 inches) gravelly loam, Bt (8 to 29 inches) gravelly clay loam, and Cr (29 to 79 inches) bedrock. This soil is well drained, runoff class is high, and has a depth to water table of more than 80 inches. This soil is not listed as hydric.

**4.6 HYDRIC SOILS LIST OF CALIFORNIA**

The Hydric Soils List of California (USDA, 2019) was reviewed in an effort to verify whether on-site soils are considered to be hydric<sup>7</sup>. It should be noted that lists of hydric soils along with soil survey maps provide off-site ancillary tools to assist in wetland determinations, but they are not a substitute for field investigations. According to the soils list, Garretson very fine sandy loam, 2 to 9 percent slopes (GaC), Metz loamy sand (163), Metz loamy sand, channeled, 0 to 15 percent slopes (MeD), and Riverwash (RsC) are listed as hydric.

**4.7 NATIONAL WETLANDS INVENTORY**

The USFWS National Wetlands Inventory maps were reviewed. Multiple wetland features were noted within the project site and consisted of riverine, freshwater emergent, freshwater pond and freshwater forested/shrub wetlands. The riverine wetland features are reported to be of the riverine system, intermittent

<sup>7</sup> A hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions.

and lower perennial subsystem, streambed class, temporarily flooded (R4SBA), seasonally flooded (R4SBC, R4SBCr), permanently flooded (R2UBHr, R2UBH). The freshwater emergent wetland features are reported to be of the palustrine system, emergent class, persistent subclass, seasonally flooded, and has been excavated (PEM1Cx). The freshwater forested/shrub wetland features are reported to be of the palustrine system, forested class, seasonally flooded (PFOC), of the palustrine system, scrub-shrub class and temporarily flooded (PSSA) and of the palustrine system, forested class, temporarily flooded, and excavated (PFOAx). Refer to Appendix A, *Documentation*.

## **4.8 FLOOD ZONE**

The Federal Emergency Management Agency's (FEMA) National Flood Insurance Program was reviewed for available flood data within the project site. According to *Flood Insurance Rate Map (FIRM) No. 06071C9400H, 06071C9345H, and 06065C0668G, 06065C0669G* (FEMA, 2008), portions of the project site are located within Zone A, which are areas that are subject to 0.1 percent annual chance of flood hazard. Refer to Appendix A, *Documentation*.

## **4.9 NATIONAL HYDROGRAPHY DATASET**

The National Hydrography Dataset was reviewed for available hydrology data within the project site using the USGS The National Map Advanced Viewer. According to the National Hydrography Dataset, multiple ephemeral streams are noted throughout the project site. In addition, an intermittent river (Santa Ana River) traverses the eastern boundary of the project site and two ponds are located within the northern portion of the project site. Refer to Appendix A, *Documentation*.

# Section 5      Site Conditions

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Certified wetland delineators and regulatory specialists Josephine Lim and Tim Tidwell conducted a site reconnaissance on January 23, 2019, June 11, 2019, August 7, 2019, October 22, 2019, and October 13, 2020 to verify existing site conditions as well as document the extent of jurisdictional areas within the boundaries of the project site. Field staff encountered no limitations during the site visits except portions of the Santa Ana River were inaccessible due to active construction and vegetative barriers of poison oak (*Toxicodendron diversilobum*). The following sections provide a description of site conditions documented during the site visit. Refer to Appendix B, *Site Photographs* taken throughout the project site.

## 5.1      JURISDICTIONAL FEATURES

### 5.1.1      DRAINAGE FEATURES

#### *Santa Ana River*

The Santa Ana River borders the eastern boundary of the project site and is a perennial watercourse. Flows within the Santa Ana River are regulated by the Prado Dam and the discharge outlet is located approximately 1.50 miles to the east. In the vicinity of the project site, the Santa Ana River generally conveys flow in a northeast to southwest direction and is an earthen drainage feature characterized by a substrate of sediment, cobble and boulders although the main channel was not visible due to flowing water. The Santa Ana River, along the eastern boundary of the project site, measures approximately 4,214 linear feet in length. Surface water was present within the Santa Ana River during each site visit.

Within the project site, the northern bank of the Santa Ana River contains areas of dense riparian forest with canopy intermixed with areas of sparse riparian vegetation without canopy. Vegetation along the Santa Ana River is primarily comprised of Fremont cottonwood (*Populus fremontii*), black elderberry (*Sambucus nigra sp.*), arroyo willow (*Salix lasiolepis*), mulefat (*Baccharis salicifolia*), poison oak, giant reed (*Arundo donax*), castorbean (*Ricinus communis*), Peruvian peppertree (*Schinus mole*), and western sycamore (*Platanus racemosa*). Due to the presence of dominant hydrophytic vegetation, two soil pits were performed within the riparian corridor of the Santa Ana River below the toe of the levee slope.

#### *Aliso Canyon*

Aliso Canyon is an ephemeral drainage feature which enters the project site from the west and bisects the northern portion of the project site prior to its confluence with the Santa Ana River. Within the boundaries of the project site Aliso Canyon measures approximately 738 linear feet in length and 12 to 40 feet in width. During significant storm events, surface water runoff from surrounding hillsides is collected within Aliso Canyon and conveyed east across the project site before being discharged into the Santa Ana River. Aliso Canyon is an earthen drainage feature characterized by a loose substrate composed of sediment, cobble, and boulders. No surface water was present within Aliso Canyon during the January 23, 2019, June 11, 2019, August 7, 2019, October 22, 2019, and October 13, 2020 site visits; however, evidence of a Corps OHWM and surface hydrology was observed via the following indicators: scour; wrack; and drift/debris.

Vegetation associated with Aliso Canyon primarily consists of sparse riparian vegetation within the channel consisting of mulefat, Russianthistle (*Salsola tragus*), black elderberry, Fremont cottonwood, Peruvian peppertree, tree tobacco (*Nicotiana glauca*), castorbean, and non-native grasses. Due to the lack of dominant hydrophytic vegetation within the channel of Aliso Canyon and an abundance of cobble within the channel invert, no soil pits were performed.

#### *Drainage 1*

Drainage 1 is an ephemeral drainage feature which enters the project site from the north. Drainage 1 measures approximately 139 linear feet in length and 1 to 16 feet in width. During significant storm events, surface water runoff from surrounding hillsides is collected within Drainage 1 and conveyed south across the project site. Flows within Drainage 1 are conveyed across a dirt road in the northeastern portion of the project site and eventually fan out and infiltrate into the surrounding soils. Drainage 1 is an earthen drainage feature characterized by a loose substrate composed of sediment, gravel, and cobble. No surface water was present within Drainage 1 during the January 23, 2019, June 11, 2019, August 7, 2019, October 22, 2019, and October 13, 2020 site visits; however, evidence of a Corps OHW and surface hydrology was observed via the following indicators: scour; drift/debris; changes in particle size distribution; and changes in terrestrial vegetation. Vegetation associated with Drainage 1 primarily consists of non-native species including russianthistle, tree tobacco, and black mustard (*Brassica nigra*). Due to the lack of dominant hydrophytic vegetation within the channel and the area surrounding Drainage 1, no soil pits were performed.

### **5.1.2 WETLAND FEATURES**

One soil pit (SP1) was dug at the eastern boundary of the project site in the northeastern portion of the project site where dominant hydrophytic vegetation was observed within a topographical low point. SP1 was dug to a depth of approximately 16 inches and consisted of two layers. The top layer of SP1 extended to a depth of 0 to 8 inches and exhibited a texture of clay loam and displayed a matrix of 10YR 4/2 when moist. The bottom layer of SP1 extended from 8 to 16 inches and exhibited a texture of sandy loam and displayed a matrix color of 10YR 4/4 when moist. No redoximorphic features were identified within the matrix of SP1. Vegetation surrounding SP1 consisted primarily of arroyo willow (FACW). Leaf litter covered a significant portion of bare ground surrounding SP1. Based on the results of the field delineation, it was determined that SP1 only met one (vegetation) of the required wetland parameters and thus did not qualify as a wetland.

Two soil pits (SP2 and SP3) were dug on terraces within the riparian corridor of the Santa Ana River within the eastern portion of the project site where dominant hydrophytic vegetation was observed. SP2 was dug to a depth of approximately 16 inches and consisted of a single layer. SP2 exhibited a texture of loamy sand and displayed a matrix of 2.5Y 4/3 when moist. No redoximorphic features were identified within the matrix of SP2. Dominant vegetation surrounding SP2 consisted of arroyo willow (FACW), Fremont cottonwood (FACW), and mulefat (FAC). Leaf litter covered a significant portion of bare ground surrounding SP2. Based on the results of the field delineation, it was determined that SP2 only met one (vegetation) of the required wetland parameters and thus did not qualify as a wetland.

SP3 was dug to a depth of approximately 16 inches and consisted of a single layer. SP3 exhibited a loam texture with significant organic matter including roots and displayed a matrix of 2.5Y 4/3 when moist. No redoximorphic features were identified within the matrix of SP3. Dominant vegetation surrounding SP3 consisted of arroyo willow (FACW), Fremont cottonwood (FACW), black elderberry (FACU), and mulefat (FAC). Leaf litter covered a significant portion of bare ground surrounding SP3. Indicators of wetland hydrology including drift deposits were noted around SP3 and vegetation surrounding SP3 met the FAC-Neutral Test thus meeting the wetland hydrology parameter. Based on the results of the field delineation, it was determined that SP3 only met two (vegetation; hydrology) of the required wetland parameters and thus did not qualify as a wetland. Refer to Appendix C for a copy of the wetland determination data forms.

# Section 6 Findings

This delineation has been prepared in order to document the jurisdictional authority of the Corps, Regional Board, and CDFW within the project site. This report presents our best effort at determining the extent of jurisdictional features using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdictional boundaries.

## 6.1 U.S. ARMY CORPS OF ENGINEERS

### 6.1.1 WATERS OF THE U.S. DETERMINATION

Evidence of an OHWM was noted within the boundaries of the project site and totaled approximately 1.17 acre (2,000 linear feet) of Corps non-wetland WoUS (refer to Figure 4, *Corps/Regional Board Jurisdictional Map*). Based on project design plans, Alternative 1 would permanently impact approximately 0.005 acre (15 linear feet) and temporarily impact approximately 0.10 acre (116 linear feet) of Corps jurisdiction (non-wetland WoUS). Alternative 2 would permanently impact approximately 0.036 acre (82 linear feet) of Corps jurisdiction (non-wetland WoUS). Refer to Table 1 below for a summary of the jurisdictional areas on-site and to Figures 5A through 5D, *Impacts to Corps/Regional Board Jurisdiction*, for a depiction of impacts to Corps jurisdiction for each alternative.


**Table 1: State and Federal Jurisdictional Areas and Impact Summary**

Jurisdictional Feature	Jurisdictional Areas		Impact Acreage (Linear Feet)							
	Corps & Regional Board	CDFW	Alternative 1				Alternative 2			
	Acreage (Linear Feet)	Acreage (Linear Feet)	Corps/Regional Board (Non-wetland WoUS)		CDFW (Streambed/Riparian)		Corps/Regional Board (Non-wetland WoUS)		CDFW (Streambed/Riparian)	
			Temporary Impacts	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impact	Permanent Impacts	Temporary Impacts	Permanent Impacts
Santa Ana River	0.73 (1,126)	7.81 (4,453)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aliso Canyon	0.42 (735)	0.88 (738)	0.10 (116)	0.00	0.17 (119)	0.00	0.00	0.03 (66)	0.00	0.03 (66)
Drainage 1	0.02 (139)	0.02 (139)	0.00	0.005 (15)	0.00	0.005 (15)	0.00	0.006 (16)	0.00	0.006 (16)
<b>TOTAL</b>	<b>1.17 (2,000)</b>	<b>8.71 (5,330)</b>	<b>0.10 (116)</b>	<b>0.005 (15)</b>	<b>0.17 (119)</b>	<b>0.005 (15)</b>	<b>0.00</b>	<b>0.036 (82)</b>	<b>0.00</b>	<b>0.036 (82)</b>



**Legend**

- Project Site
- County Boundary
- Corps/Regional Board Non-Wetland Waters (1.17 acres)
- Flow Direction
- Soil Pit
- × Culvert
- ⊕ Reference Point



0 350 700  
Feet

10/30/2020\_JN\_M:\Data\167982\GIS\MapXDoc\10.14.2020\_update\Fig 04 Corps\_Jurisdictional Map.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

## Corps/Regional Board Jurisdictional Map

Source: ArcGIS Online, 2015


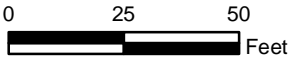
Figure 4





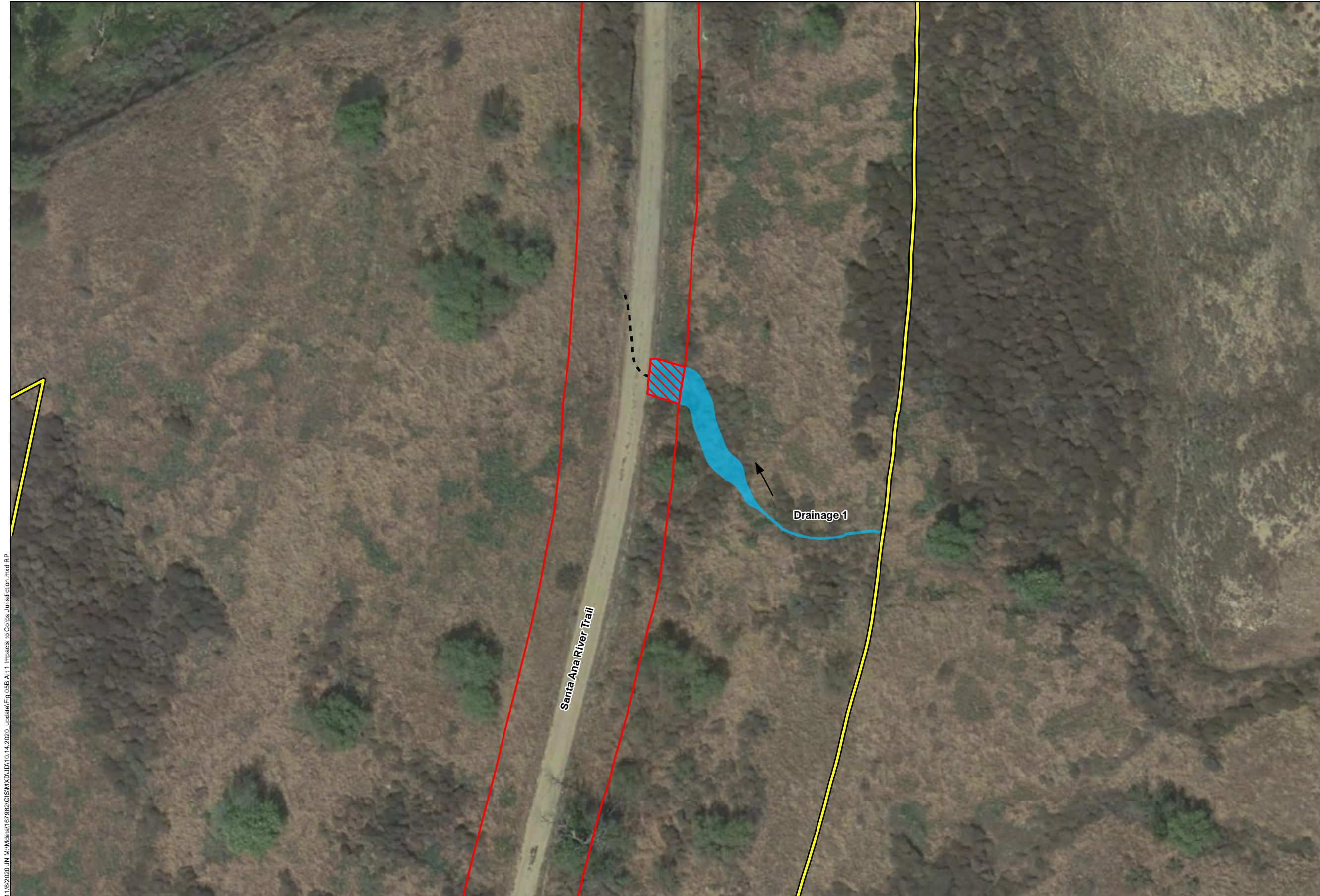
**Legend**

- Project Site
- Corps/Regional Board  
Non Wetland Waters  
(Aliso Canyon:  
0.28 acre)
- Alternative 1  
Construction Limits
- Alternative 1 Bridge  
(No Impact to  
Jurisdictional  
Resources)
- Temporary Impact  
Area (Aliso Canyon:  
0.10 acre)
- Permanent Impact  
Area (Aliso Canyon:  
0.00 acre)
- - - - Discontinuous OHWM
- ← Flow Direction


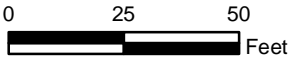
11/4/2020 J:\M:\data\167982\GIS\MXD\10\_14\_2020\_update\Fig 05A Alt 1 Impacts to Corps Jurisdiction.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS



**Legend**

- Project Site
- Corps/Regional Board Non Wetland Waters (Drainage 1: 0.02 acre)
- Alternative 1 Construction Limits
- Permanent Impact Area (Drainage 1: 0.005 acre)
- Discontinuous OHWM
- ← Flow Direction








  



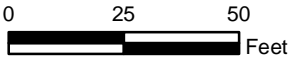
11/6/2020 JN.M:\data\167982\GIS\MXD\10.14.2020\_update\Fig 05B Alt 1 Impacts to Corps Jurisdiction.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS



**Legend**

-  Project Site
-  Corps/Regional Board Non Wetland Waters (Drainage 1: 0.02 acre)
-  Alternative 2 Construction Limits
-  Permanent Impact Area (Drainage 1: 0.006 acre)
-  Discontinuous OHWM
-  Flow Direction

11/6/2020 JN.M:\data\167982\GIS\MXD\10.14.2020\_update\Fig 05C Alt 2 Impacts to Corps Jurisdiction.mxd RP







SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS


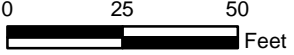
## Alternative 2 Impacts to Corps/Regional Board Jurisdiction

Figure 5C



**Legend**

-  Project Site
-  Corps/Regional Board Non-Wetland Waters (Aliso Canyon: 0.15 acre)
-  Alternative 2 Construction Limits
-  Permanent Impact Area (Aliso Canyon: 0.03 acre)
-  Flow Direction
-  Soil Pit

11/4/2020 JN.M:\data\167982\GIS\MXD\JD.10.14.2020\_update\Fig OSD Alt 2 Impacts to Corps Jurisdiction.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

## Alternative 2 Impacts to Corps/Regional Board Jurisdiction

Figure 5D

### **6.1.2 WETLAND DETERMINATION**

As previously noted, an area must exhibit all three wetland parameters described in the Regional Supplement to be considered a jurisdictional wetland. Three soil pits (SP1 – SP3) were dug where evidence of hydrophytic vegetation was observed. Although dominant hydrophytic vegetation was present in the vicinity of SP1 and SP2, hydric soils and wetland hydrology were not encountered. Dominant hydrophytic vegetation and wetland hydrology was present at SP3. However, hydric soils were not encountered. Based on the results of the field delineation, it was determined that no area within the project site met all three wetland parameters and therefore does not qualify as Corps jurisdictional wetland features (refer to Appendix C, *Wetland Determination Data Forms*).

## **6.2 REGIONAL WATER QUALITY CONTROL BOARD**

The Regional Board regulates discharges to surface waters pursuant to Section 401 of the CWA and the Porter Cologne Act. Therefore, the Regional Board follows that of Corps jurisdiction and totals approximately 1.17 acre (2,000 linear feet) of non-wetland WoUS (refer to Table 1 above and to Figure 4, *Corps/Regional Board Jurisdictional Map*). Based on project design plans, Alternative 1 would permanently impact approximately 0.005 acre (15 linear feet) and temporarily impact approximately 0.10 acre (116 linear feet) of Regional Board jurisdiction (non-wetland WoUS). Alternative 2 would permanently impact approximately 0.036 acre (82 linear feet) of Regional Board jurisdiction (non-wetland WoUS). Refer to Table 1 and to Figures 5A through 5D above.


## **6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE**

The on-site drainage features exhibited a clear bed and bank and qualify as CDFW jurisdictional streambed. Based on the results of the field investigation, a total of approximately 8.71 acres (5,330 linear feet) of CDFW jurisdictional streambed and associated riparian vegetation occurs within the boundaries of the project site (refer to Figure 6, *CDFW Jurisdictional Map*). Based on project design plans, Alternative 1 would permanently impact approximately 0.005 acre (15 linear feet) and temporarily impact approximately 0.17 acre (119 linear feet) of CDFW jurisdiction. Alternative 2 would permanently impact approximately 0.036 acre (82 linear feet) of CDFW jurisdiction. Refer to Table 1 above and to figures 7A through 7D, *Impacts to CDFW Jurisdiction*, for a depiction of impacts to CDFW jurisdiction for each alternative.



**Legend**

- Project Site
- County Boundary
- Vegetated Streambed (7.50 acres)
- Associated Riparian Vegetation (0.25 acre)
- Non Vegetated Streambed (0.96 acre)
- Flow Direction
- X Culvert
- Reference Point



0 350 700  
Feet

10/30/2020, J:\M\MapData\167982\GIS\MapX\JD10.14.2020\_update\Fig\_06\_CDFW\_Jurisdictional\_Map.mxd, RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS



11/4/2020 JN: M:\data\167982\GIS\MXD\10\_14\_2020\_update\Fig 07A Alt 1 Impacts to CDFW Jurisdiction.mxd RP







SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

### Alternative 1 Impacts to CDFW Jurisdiction

Figure 7A



**Legend**

-  Project Site
-  Non-Vegetated Streambed (Drainage 1: 0.02 acre)
-  Alternative 1 Construction Limits
-  Permanent Impact Area (Drainage 1: 0.005 acre)
-  Sheetflow
-  Flow Direction

0 25 50  
Feet







11/6/2020 JN.M:\data\167982\GISMXD\10.14.2020\_update\Fig.07B AI.1 Impacts to CDFW Jurisdiction.mxd RP


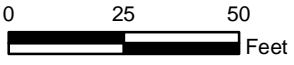
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS





**Legend**

-  Project Site
-  Non-Vegetated Streambed (Drainage 1: 0.02 acre)
-  Alternative 2 Construction Limits
-  Permanent Impact Area (Drainage 1: 0.006 acre)
-  Sheetflow
-  Flow Direction







  



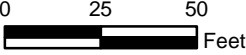
11/6/2020 JN.M:\data\167982\GIS\MXD\10.14.2020\_update\Fig 07C Alt 2 Impacts to CDFW Jurisdiction.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS



**Legend**

-  Project Site
-  Vegetated Streambed  
(Aliso Canyon: 0.20 acre, Santa Ana River: 6.72 acre)
-  Alternative 2 Construction Limits
-  Permanent Impact Area (Aliso Canyon: 0.03 acre)
-  Flow Direction

11/4/2020 JN.M:\data\167982\GIS\MXD\JD\10.14.2020\_update\Fig 07D Alt 2 Impacts to CDFW Jurisdiction.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

### Alternative 2 Impacts to CDFW Jurisdiction

Figure 7D

## **Section 7                      Regulatory Approval Process**

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This report has been prepared for Riverside County Transportation Commission to delineate the Corps, Regional Board, and CDFW jurisdictional authority within the project site. Below is a summary of the various permits/authorizations that would be required prior to temporarily or permanently impacting on-site jurisdictional features.

### **7.1      U.S. ARMY CORPS OF ENGINEERS**

The Corps regulates discharges of dredged or fill materials into WoUS and wetlands pursuant to Section 404 of the CWA. Based on a review of the proposed project, it would be necessary for Riverside County Transportation Commission to acquire a Section 404 permit from the Corps for impacts occurring with Corps jurisdictional areas. Since the proposed project would result in the permanent loss of less than a ½-acre of Corps jurisdiction, it is anticipated that the proposed project can be authorized via a Nationwide Permit (NWP), specifically NWP No. 14: *Linear Transportation Projects*.

### **7.2      REGIONAL WATER QUALITY CONTROL BOARD**

The Regional Board regulates discharges to surface waters under Section 401 of the CWA and Section 13263 of the Porter-Cologne Act. Therefore, a CWA Section 401 WQC issued from the Regional Board would be required prior to commencement of any construction activities within Regional Board jurisdictional areas. The Regional Board also requires that California Environmental Quality Act (CEQA) compliance be obtained prior to issuance of the final WQC. Further, an application fee is required, which is calculated based on both the total temporary and permanent impact acreages (as applicable), as well as linear feet of jurisdictional impacts.

### **7.3      CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE**

The CDFW regulates alterations to streambed under Section 1602 of the CFGC. Therefore, formal notification to, and subsequent authorization from CDFW, would be required prior to commencement of any construction activities within the CDFW jurisdictional areas. The CDFW also requires that CEQA compliance be obtained prior to issuing the final LSAA. Further, a notification fee is required, which is calculated based on project costs.

### **7.4      RECOMMENDATIONS**

As part of the regulatory permitting process, this delineation will be forwarded to each of the regulatory agencies for their concurrence. The concurrence/receipt would be valid up to five years and would solidify findings noted within this report.

## Section 8           References

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- California Department of Fish and Wildlife. *Lake and Streambed Alteration Program*. Accessed online at: <https://www.wildlife.ca.gov/Conservation/LSA>.
- Calflora, *What Grows Here?*, Accessed online at: <https://www.calflora.org/entry/wgh.html>.
- Corps. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, ed. J.S. Wakeley, R. W. Lichvar, and C. V. Nobel. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.
- Federal Register. 2020. The Navigable Waters Protection Rule: Definition of “Waters of the United States”, 85 F.R. 22250 (April 21, 2020) (to be codified at 33 C.F.R. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 120, 122, 230, 232, 300, 302, & 401).
- Google, Inc. 2019. Google Earth Pro Imagery Version 7.3.2.5776, build date March 5, 2019. Aerial Image dated May 2, 2019.
- Lichvar, R.W., D.C. Finnegan, M.P. Ericsson, and W. Ochs. 2006. *Distribution of Ordinary High Water Mark Indicators and their Reliability in Identifying the Limits of “Waters of the United States” in the Arid Southwestern Channels*. ERDC/CRREL TR-06-5. Hanover, New Hampshire: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.
- Lichvar, R.W., and S.M. McColley. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual*. ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.
- Munsell Color. 2012. *Munsell Soil Color Charts*. X-rite. Grand Rapids, Michigan.
- State Water Resources Control Board. April 2019. *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. Effective May 28, 2020. Accessed online at: [https://www.waterboards.ca.gov/water\\_issues/programs/cwa401/wrapp.html](https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html).
- U.S. Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2016. *Special Public Notice: Updated Map and Drawing Standards for the South Pacific Regulatory Division Regulatory Program*. Issued on February 10, 2016.

- USACE. 2017. *Special Public Notice: Minimum Standards for Acceptance of Aquatic Resources Delineation Reports*. Issued on March 16, 2017.
- USACE. 2017. *Special Public Notice: Reissuance of the Nationwide Permits and Issuance of Final Regional Conditions for the Los Angeles District*. Issued on March 22, 2017.
- USACE. 2018. National Wetland Plant List, Version 3.4. U.S. Army Corps of Engineers, Engineer Research and Development Center Cold Regions Research and Engineering Laboratory. Accessed online at: <http://wetland-plants.usace.army.mil/>.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California*. Accessed online at: <https://websoilsurvey.sc.egov.usda.gov/>.
- USDA, NRCS. 2020. *Hydric Soils List of California*. Accessed online at: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>.
- U.S. Department of Homeland Security (USDHS), Federal Emergency Management Agency (FEMA), National Flood Hazard Layer Viewer. 2009. *Flood Insurance Rate Map Nos. 06071C9400H, 06071C9345H, 06065C0668G, and 06065C0669G*. Accessed online at: <https://msc.fema.gov/portal/home>.
- U.S. Environmental Protection Agency (EPA), October 22, 2019. *EPA, Definition of “Waters of the United States” – Recodification of Pre-Existing Rules*, Accessed online at: <https://www.epa.gov/wotus-rule/definition-waters-united-states-recodification-pre-existing-rules>.
- U.S. Fish and Wildlife Service (USFWS). *National Wetlands Inventory Mapper*. 2020. Accessed online at: <http://www.fws.gov/wetlands/Data/Mapper.html>.
- U.S. Geological Survey (USGS). 7.5-Minute Topographic Quadrangle, *Prado Dam, California*, 2018.
- USGS. 7.5-Minute Topographic Quadrangle, *Black Star Canyon, California*, 2018.
- USGS. National Hydrography Dataset. April 2020. Accessed online at: <https://viewer.nationalmap.gov/advanced-viewer/>.

# **Appendix A   Documentation**

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United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California

## Santa Ana River Trail (SART) – Phase 6 through Green River Golf Course Project



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San Bernardino County Southwestern Part, California.....	17
GaC—Garretson very fine sandy loam, 2 to 9 percent slopes.....	17
MoC—Monserate sandy loam, 2 to 9 percent slopes.....	18
ScA—San Emigdio fine sandy loam, 0 to 2 percent slopes.....	19
ScC—San Emigdio fine sandy loam, 2 to 9 percent slopes.....	21
SrF—Soper gravelly loam, 30 to 50 percent slopes, MLRA 20.....	23
Western Riverside Area, California.....	26
163—Metz loamy sand.....	26
GaC—Garretson very fine sandy loam, 2 to 8 percent slopes.....	27
GdD2—Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded.....	28
GfF2—Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded.....	29
GgF2—Gaviota rocky very fine sandy loam, 25 to 50 percent slopes, eroded.....	31
MeD—Metz loamy sand, channeled, 0 to 15 percent slopes.....	32
RsC—Riverwash.....	33
SfA—San Emigdio fine sandy loam, deep, 0 to 2 percent slopes.....	34
SgA—San Emigdio loam, 0 to 2 percent slopes.....	35
SrF—Soper gravelly loam, 30 to 50 percent slopes, MLRA 20.....	36
W—Water.....	38
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# Custom Soil Resource Report Soil Map



Map Scale: 1:11,200 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,800 to 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County and Part of Riverside County, California  
 Survey Area Data: Version 12, Sep 12, 2018

Soil Survey Area: San Bernardino County Southwestern Part, California  
 Survey Area Data: Version 10, Sep 12, 2018

Soil Survey Area: Western Riverside Area, California  
 Survey Area Data: Version 11, Sep 12, 2018

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

**MAP LEGEND**

**MAP INFORMATION**

Date(s) aerial images were photographed: May 10, 2018—Jun 5, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
202	Soper gravelly loam, 30 to 50 percent slopes, MLRA 20	0.1	0.1%
<b>Subtotals for Soil Survey Area</b>		<b>0.1</b>	<b>0.1%</b>
<b>Totals for Area of Interest</b>		<b>137.3</b>	<b>100.0%</b>

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GaC	Garretson very fine sandy loam, 2 to 9 percent slopes	1.5	1.1%
MoC	Monserate sandy loam, 2 to 9 percent slopes	18.3	13.3%
ScA	San Emigdio fine sandy loam, 0 to 2 percent slopes	1.8	1.3%
ScC	San Emigdio fine sandy loam, 2 to 9 percent slopes	9.8	7.1%
SrF	Soper gravelly loam, 30 to 50 percent slopes, MLRA 20	16.9	12.3%
<b>Subtotals for Soil Survey Area</b>		<b>48.3</b>	<b>35.2%</b>
<b>Totals for Area of Interest</b>		<b>137.3</b>	<b>100.0%</b>

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
163	Metz loamy sand	0.3	0.2%
GaC	Garretson very fine sandy loam, 2 to 8 percent slopes	15.5	11.3%
GdD2	Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded	1.3	0.9%
GfF2	Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded	1.0	0.8%
GgF2	Gaviota rocky very fine sandy loam, 25 to 50 percent slopes, eroded	0.7	0.5%
MeD	Metz loamy sand, channeled, 0 to 15 percent slopes	23.2	16.9%
RsC	Riverwash	2.7	2.0%
SfA	San Emigdio fine sandy loam, deep, 0 to 2 percent slopes	21.5	15.6%
SgA	San Emigdio loam, 0 to 2 percent slopes	0.1	0.1%
SrF	Soper gravelly loam, 30 to 50 percent slopes, MLRA 20	22.6	16.4%
W	Water	0.1	0.1%

## Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area		88.9	64.7%
Totals for Area of Interest		137.3	100.0%

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

## Custom Soil Resource Report

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Orange County and Part of Riverside County, California

### 202—Soper gravelly loam, 30 to 50 percent slopes, MLRA 20

#### Map Unit Setting

*National map unit symbol:* 2wv8f  
*Elevation:* 10 to 2,010 feet  
*Mean annual precipitation:* 13 to 18 inches  
*Mean annual air temperature:* 63 to 65 degrees F  
*Frost-free period:* 271 to 365 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Soper and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Soper

##### Setting

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sandstone

##### Typical profile

*A - 0 to 8 inches:* gravelly loam  
*Bt - 8 to 29 inches:* gravelly clay loam  
*Cr - 29 to 79 inches:* bedrock

##### Properties and qualities

*Slope:* 30 to 50 percent  
*Depth to restrictive feature:* 22 to 36 inches to paralithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* C  
*Ecological site:* LOAMY (1975) (R019XD029CA)  
*Hydric soil rating:* No

#### Minor Components

##### Cieneba

*Percent of map unit:* 5 percent  
*Landform:* Hills

Custom Soil Resource Report

*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Yorba**

*Percent of map unit:* 3 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Gabino**

*Percent of map unit:* 3 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Gaviota**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Fontana**

*Percent of map unit:* 1 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Rock outcrop**

*Percent of map unit:* 1 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No



## San Bernardino County Southwestern Part, California

### GaC—Garretson very fine sandy loam, 2 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* hcjw  
*Elevation:* 440 to 1,000 feet  
*Mean annual precipitation:* 12 to 165 inches  
*Mean annual air temperature:* 63 to 65 degrees F  
*Frost-free period:* 320 to 365 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Garretson and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Garretson

##### Setting

*Landform:* Fan aprons  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from sandstone

##### Typical profile

*Ap - 0 to 7 inches:* very fine sandy loam  
*A - 7 to 28 inches:* loam  
*C1 - 28 to 34 inches:* fine sandy loam  
*C2 - 34 to 42 inches:* gravelly sandy loam  
*C3 - 42 to 60 inches:* loam

##### Properties and qualities

*Slope:* 2 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* High (about 9.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

**Minor Components**

**Aquents**

*Percent of map unit:* 5 percent  
*Landform:* Drainageways  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Garretson, cobbly**

*Percent of map unit:* 5 percent  
*Landform:* Fan aprons  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

**Garretson, gravelly loamy coarse sand**

*Percent of map unit:* 5 percent  
*Landform:* Fan aprons  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**MoC—Monserate sandy loam, 2 to 9 percent slopes**

**Map Unit Setting**

*National map unit symbol:* hck9  
*Elevation:* 700 to 2,500 feet  
*Mean annual precipitation:* 10 to 18 inches  
*Mean annual air temperature:* 63 to 64 degrees F  
*Frost-free period:* 230 to 280 days  
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Monserate and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Monserate**

**Setting**

*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

## Custom Soil Resource Report

*Parent material:* Alluvium derived from granite

### Typical profile

*H1 - 0 to 10 inches:* sandy loam

*H2 - 10 to 30 inches:* clay loam

*H3 - 30 to 45 inches:* indurated

*H4 - 45 to 60 inches:* coarse sandy loam

### Properties and qualities

*Slope:* 2 to 9 percent

*Depth to restrictive feature:* 30 to 45 inches to duripan

*Natural drainage class:* Moderately well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 4.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

### Minor Components

#### Greenfield, sandy loam

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Ramona, sandy loam

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Unnamed, gentler slopes

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## ScA—San Emigdio fine sandy loam, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* 2y8t6

*Elevation:* 30 to 1,190 feet

*Mean annual precipitation:* 11 to 14 inches

*Mean annual air temperature:* 64 to 65 degrees F

*Frost-free period:* 360 to 365 days

*Farmland classification:* Prime farmland if irrigated

## Custom Soil Resource Report

### Map Unit Composition

*San emigdio and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of San Emigdio

#### Setting

*Landform:* Alluvial fans

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium derived from sedimentary rock

#### Typical profile

*A - 0 to 7 inches:* fine sandy loam

*C - 7 to 61 inches:* stratified gravelly loamy coarse sand to fine sandy loam

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 5 percent

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 8.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 1

*Land capability classification (nonirrigated):* 3c

*Hydrologic Soil Group:* A

*Ecological site:* LOAMY (1975) (R019XD029CA)

*Hydric soil rating:* No

### Minor Components

#### Palmview

*Percent of map unit:* 4 percent

*Landform:* Alluvial fans

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Metz

*Percent of map unit:* 4 percent

*Landform:* Flood plains

*Landform position (three-dimensional):* Tread

## Custom Soil Resource Report

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Hueneme**

*Percent of map unit:* 4 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Mocho**

*Percent of map unit:* 2 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Soboba**

*Percent of map unit:* 1 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **ScC—San Emigdio fine sandy loam, 2 to 9 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2y8t9  
*Elevation:* 60 to 2,180 feet  
*Mean annual precipitation:* 11 to 17 inches  
*Mean annual air temperature:* 64 to 65 degrees F  
*Frost-free period:* 360 to 365 days  
*Farmland classification:* Prime farmland if irrigated

### **Map Unit Composition**

*San emigdio and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of San Emigdio**

#### **Setting**

*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium derived from igneous, metamorphic and sedimentary rock

### Typical profile

*A - 0 to 7 inches:* fine sandy loam  
*C - 7 to 61 inches:* stratified gravelly loamy coarse sand to fine sandy loam

### Properties and qualities

*Slope:* 2 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 5 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 8.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* A  
*Ecological site:* LOAMY (1975) (R019XD029CA)  
*Hydric soil rating:* No

### Minor Components

#### Sorrento

*Percent of map unit:* 4 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Mocho

*Percent of map unit:* 4 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Palmview

*Percent of map unit:* 4 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread

## Custom Soil Resource Report

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Capistrano

*Percent of map unit:* 3 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## SrF—Soper gravelly loam, 30 to 50 percent slopes, MLRA 20

### Map Unit Setting

*National map unit symbol:* 2wv8f  
*Elevation:* 10 to 2,010 feet  
*Mean annual precipitation:* 13 to 18 inches  
*Mean annual air temperature:* 63 to 65 degrees F  
*Frost-free period:* 271 to 365 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Soper and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Soper

#### Setting

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sandstone

#### Typical profile

*A - 0 to 8 inches:* gravelly loam  
*Bt - 8 to 29 inches:* gravelly clay loam  
*Cr - 29 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 30 to 50 percent  
*Depth to restrictive feature:* 22 to 36 inches to paralithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches

## Custom Soil Resource Report

*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* C  
*Ecological site:* LOAMY (1975) (R019XD029CA)  
*Hydric soil rating:* No

### Minor Components

#### Cieneba

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Yorba

*Percent of map unit:* 3 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Gabino

*Percent of map unit:* 3 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Gaviota

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Fontana

*Percent of map unit:* 1 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No



## Custom Soil Resource Report

### **Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

## Western Riverside Area, California

### 163—Metz loamy sand

#### Map Unit Setting

*National map unit symbol:* snp8  
*Elevation:* 30 to 2,500 feet  
*Mean annual precipitation:* 20 inches  
*Mean annual air temperature:* 57 to 61 degrees F  
*Frost-free period:* 200 to 340 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Metz and similar soils:* 80 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Metz

##### Setting

*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Parent material:* Alluvium derived from mixed

##### Typical profile

*H1 - 0 to 17 inches:* loamy sand  
*H2 - 17 to 63 inches:* stratified sand to fine sandy loam

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 5 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 5.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 2s  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* B  
*Ecological site:* SANDY (1975) (R019XD035CA)  
*Hydric soil rating:* No

**Minor Components**

**Riverwash**

*Percent of map unit:* 4 percent  
*Landform:* Fans  
*Hydric soil rating:* Yes

**San emigdio, fine sandy loam**

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

**Hueneme, fine sandy loam**

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

**Corralitos, loamy sand**

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

**Metz, mod fine substratum**

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

**GaC—Garretson very fine sandy loam, 2 to 8 percent slopes**

**Map Unit Setting**

*National map unit symbol:* hcv2  
*Mean annual precipitation:* 12 to 25 inches  
*Mean annual air temperature:* 61 to 64 degrees F  
*Frost-free period:* 220 to 280 days  
*Farmland classification:* Prime farmland if irrigated

**Map Unit Composition**

*Garretson and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Garretson**

**Setting**

*Landform:* Alluvial fans  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from metasedimentary rock

**Typical profile**

*H1 - 0 to 10 inches:* very fine sandy loam  
*H2 - 10 to 60 inches:* loam

**Properties and qualities**

*Slope:* 2 to 8 percent

## Custom Soil Resource Report

*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 9.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 2e  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* LOAMY (1975) (R019XD029CA)  
*Hydric soil rating:* No

### Minor Components

#### Arbuckle

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Cortina

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Perkins

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

## GdD2—Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* hcv6  
*Elevation:* 50 to 3,000 feet  
*Mean annual precipitation:* 12 to 25 inches  
*Mean annual air temperature:* 61 to 64 degrees F  
*Frost-free period:* 250 to 350 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Garretson and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Garretson

#### Setting

*Landform:* Alluvial fans

## Custom Soil Resource Report

*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Parent material:* Alluvium derived from metasedimentary rock

### Typical profile

*H1 - 0 to 8 inches:* gravelly very fine sandy loam  
*H2 - 8 to 50 inches:* gravelly loam  
*H3 - 50 to 72 inches:* loam

### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3e  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* LOAMY (1975) (R019XD029CA)  
*Hydric soil rating:* No

### Minor Components

#### Arbuckle

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Perkins

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Cortina

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

## GfF2—Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* hcv8  
*Elevation:* 100 to 4,000 feet  
*Mean annual precipitation:* 20 inches  
*Mean annual air temperature:* 61 degrees F  
*Frost-free period:* 250 to 300 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Gaviota and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Gaviota**

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Convex

*Parent material:* Residuum weathered from sandstone

**Typical profile**

*H1 - 0 to 15 inches:* very fine sandy loam

*H2 - 15 to 19 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 15 to 50 percent

*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Very low (about 2.1 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* D

*Ecological site:* SHALLOW LOAMY (1975) (R019XD060CA)

*Hydric soil rating:* No

**Minor Components**

**Altamont**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Gaviota**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Vallecitos**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**GgF2—Gaviota rocky very fine sandy loam, 25 to 50 percent slopes, eroded**

**Map Unit Setting**

*National map unit symbol:* hcv9  
*Elevation:* 100 to 4,000 feet  
*Mean annual precipitation:* 20 inches  
*Mean annual air temperature:* 61 degrees F  
*Frost-free period:* 250 to 300 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Gaviota and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Gaviota**

**Setting**

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sandstone

**Typical profile**

*H1 - 0 to 15 inches:* very fine sandy loam  
*H2 - 15 to 19 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 25 to 50 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Very low (about 2.1 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* SHALLOW LOAMY (1975) (R019XD060CA)  
*Hydric soil rating:* No

**Minor Components**

**Altamont**

*Percent of map unit:* 10 percent  
*Hydric soil rating:* No

**Vallecitos**

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

**MeD—Metz loamy sand, channeled, 0 to 15 percent slopes**

**Map Unit Setting**

*National map unit symbol:* hcwz  
*Elevation:* 30 to 2,900 feet  
*Mean annual precipitation:* 8 to 20 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 110 to 230 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Metz and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Metz**

**Setting**

*Landform:* Alluvial fans  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from sedimentary rock

**Typical profile**

*H1 - 0 to 28 inches:* loamy sand  
*H2 - 28 to 60 inches:* stratified sand to loamy sand

**Properties and qualities**

*Slope:* 0 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 1 percent



## Custom Soil Resource Report

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 4.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7w

*Hydrologic Soil Group:* A

*Ecological site:* SANDY ALLUVIAL (1975) (R019XD069CA)

*Hydric soil rating:* No

### Minor Components

#### Riverwash

*Percent of map unit:* 5 percent

*Landform:* Drainageways

*Hydric soil rating:* Yes

#### San emigdio

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## RsC—Riverwash

### Map Unit Setting

*National map unit symbol:* hcym

*Elevation:* 700 to 2,900 feet

*Mean annual precipitation:* 8 to 15 inches

*Mean annual air temperature:* 46 to 52 degrees F

*Frost-free period:* 110 to 180 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Riverwash:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Riverwash

#### Setting

*Landform:* Channels

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy and gravelly alluvium derived from mixed sources

#### Typical profile

*H1 - 0 to 6 inches:* gravelly coarse sand

*H2 - 6 to 60 inches:* stratified extremely gravelly coarse sand to gravelly sand

#### Properties and qualities

*Slope:* 0 to 8 percent

*Natural drainage class:* Excessively drained

*Runoff class:* Very low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* Frequent

*Available water storage in profile:* Very low (about 1.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydric soil rating:* Yes

## SfA—San Emigdio fine sandy loam, deep, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* hcyv

*Elevation:* 10 to 700 feet

*Mean annual precipitation:* 12 to 18 inches

*Mean annual air temperature:* 63 degrees F

*Frost-free period:* 270 to 350 days

*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*San emigdio and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of San Emigdio

#### Setting

*Landform:* Alluvial fans

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Residuum weathered from sedimentary rock

#### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam

*H2 - 8 to 40 inches:* fine sandy loam

*H3 - 40 to 60 inches:* loamy sand

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 5 percent

## Custom Soil Resource Report

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Moderate (about 6.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* 2s

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* A

*Ecological site:* LOAMY (1975) (R019XD029CA)

*Hydric soil rating:* No

### Minor Components

#### Metz

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

#### San timoteo

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## SgA—San Emigdio loam, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* 2y8t4

*Elevation:* 430 to 2,340 feet

*Mean annual precipitation:* 10 to 13 inches

*Mean annual air temperature:* 64 to 65 degrees F

*Frost-free period:* 305 to 345 days

*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*San emigdio and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of San Emigdio

#### Setting

*Landform:* Alluvial fans

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium derived from sedimentary rock

#### Typical profile

*A - 0 to 8 inches:* loam

*C1 - 8 to 40 inches:* fine sandy loam

*C2 - 40 to 60 inches:* stratified sandy loam to silt loam

#### Properties and qualities

*Slope:* 0 to 2 percent

## Custom Soil Resource Report

*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 5 percent  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Moderate (about 8.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* 1  
*Land capability classification (nonirrigated):* 3c  
*Hydrologic Soil Group:* A  
*Ecological site:* LOAMY (1975) (R019XD029CA)  
*Hydric soil rating:* No

### Minor Components

#### Metz

*Percent of map unit:* 10 percent  
*Landform:* Flood plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### San timoteo

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## SrF—Soper gravelly loam, 30 to 50 percent slopes, MLRA 20

### Map Unit Setting

*National map unit symbol:* 2wv8f  
*Elevation:* 10 to 2,010 feet  
*Mean annual precipitation:* 13 to 18 inches  
*Mean annual air temperature:* 63 to 65 degrees F  
*Frost-free period:* 271 to 365 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Soper and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Soper**

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Residuum weathered from sandstone

**Typical profile**

*A - 0 to 8 inches:* gravelly loam

*Bt - 8 to 29 inches:* gravelly clay loam

*Cr - 29 to 79 inches:* bedrock

**Properties and qualities**

*Slope:* 30 to 50 percent

*Depth to restrictive feature:* 22 to 36 inches to paralithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

*Ecological site:* LOAMY (1975) (R019XD029CA)

*Hydric soil rating:* No

**Minor Components**

**Cieneba**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Yorba**

*Percent of map unit:* 3 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

## Custom Soil Resource Report

*Across-slope shape:* Convex

*Hydric soil rating:* No

### **Gabino**

*Percent of map unit:* 3 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

### **Gaviota**

*Percent of map unit:* 2 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

### **Fontana**

*Percent of map unit:* 1 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

### **Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

## **W—Water**

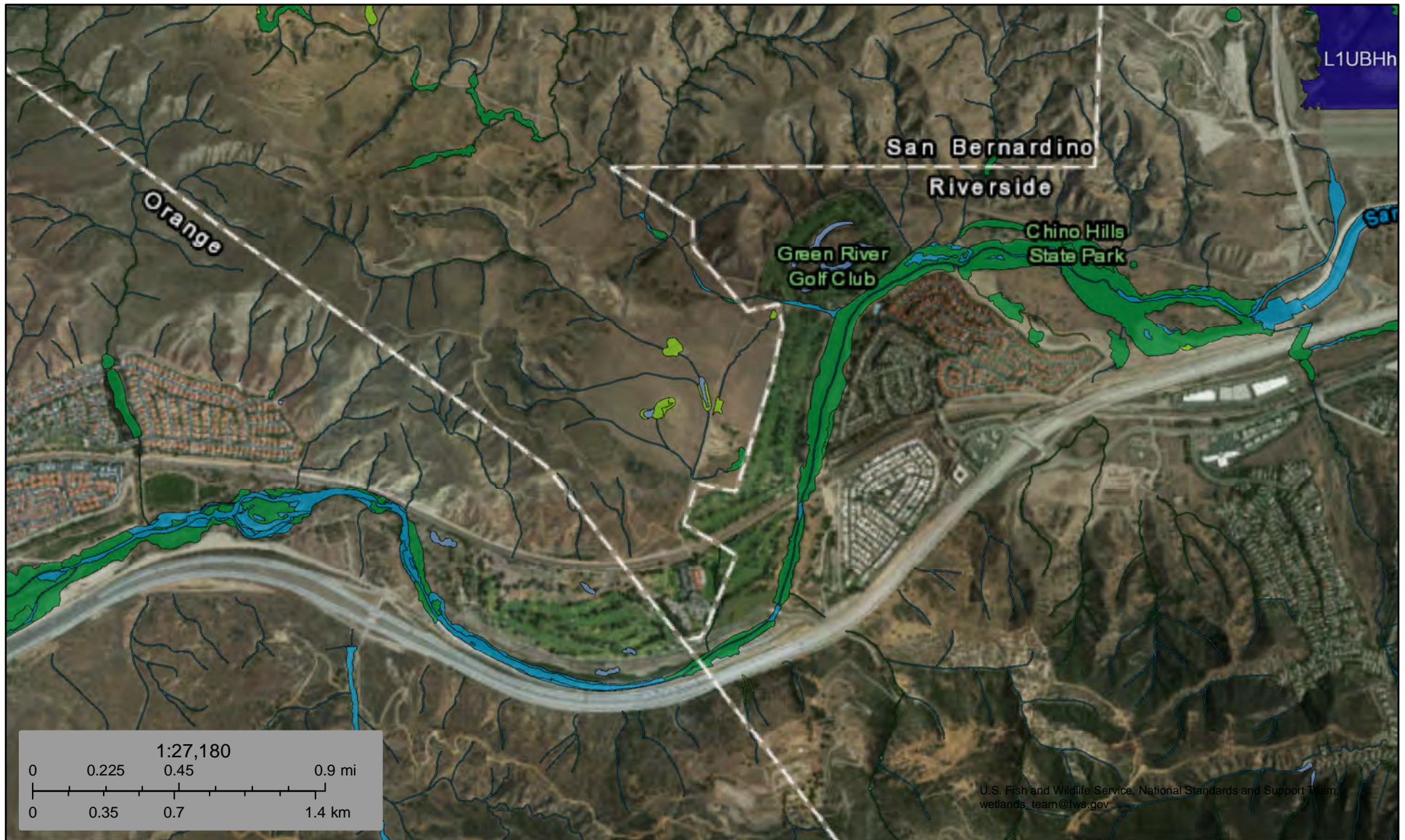
### **Map Unit Composition**

*Water:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*



# Santa Ana River Trail (SART 2) through Green River Golf Course Project



January 17, 2019

### Wetlands

- |                                |                                   |          |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland       | Lake     |
| Estuarine and Marine Wetland   | Freshwater Forested/Shrub Wetland | Other    |
|                                | Freshwater Pond                   | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/22/2019 at 2:05:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

33°52'44.99"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017.

33°52'15.12"N

117°39'42.99"W





# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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117°40'19.37"W  
33°53'10.00"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017.



1:6,000

33°52'40.13"N

117°39'41.91"W

# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

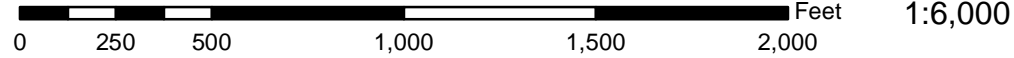
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/22/2019 at 3:44:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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33°53'17.44"N



117°40'1.75"W



USGS The National Map: Orthoimagery. Data refreshed October, 2017.

33°52'47.58"N

117°39'24.30"W

# National Flood Hazard Layer FIRMette



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- |                             |  |   |
|-----------------------------|--|---|
| SPECIAL FLOOD HAZARD AREAS  |  | Without Base Flood Elevation (BFE)<br>Zone A, V, A99  |
|                             |  | With BFE or Depth Zone AE, AO, AH, VE, AR   |
|                             |  | Regulatory Floodway   |
| OTHER AREAS OF FLOOD HAZARD |  | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X |
|                             |  | Future Conditions 1% Annual Chance Flood Hazard Zone X  |
|                             |  | Area with Reduced Flood Risk due to Levee. See Notes. Zone X  |
|                             |  | Area with Flood Risk due to Levee Zone D  |
| OTHER AREAS                 |  | NO SCREEN Area of Minimal Flood Hazard Zone X   |
|                             |  | Effective LOMRs   |
|                             |  | Area of Undetermined Flood Hazard Zone D  |
| GENERAL STRUCTURES          |  | Channel, Culvert, or Storm Sewer  |
|                             |  | Levee, Dike, or Floodwall   |
| OTHER FEATURES              |  | 20.2 Cross Sections with 1% Annual Chance   |
|                             |  | 17.5 Water Surface Elevation  |
|                             |  | Coastal Transect  |
|                             |  | Base Flood Elevation Line (BFE)   |
|                             |  | Limit of Study  |
|                             |  | Jurisdiction Boundary   |
| MAP PANELS                  |  | Digital Data Available  |
|                             |  | No Digital Data Available   |
|                             |  | Unmapped  |



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

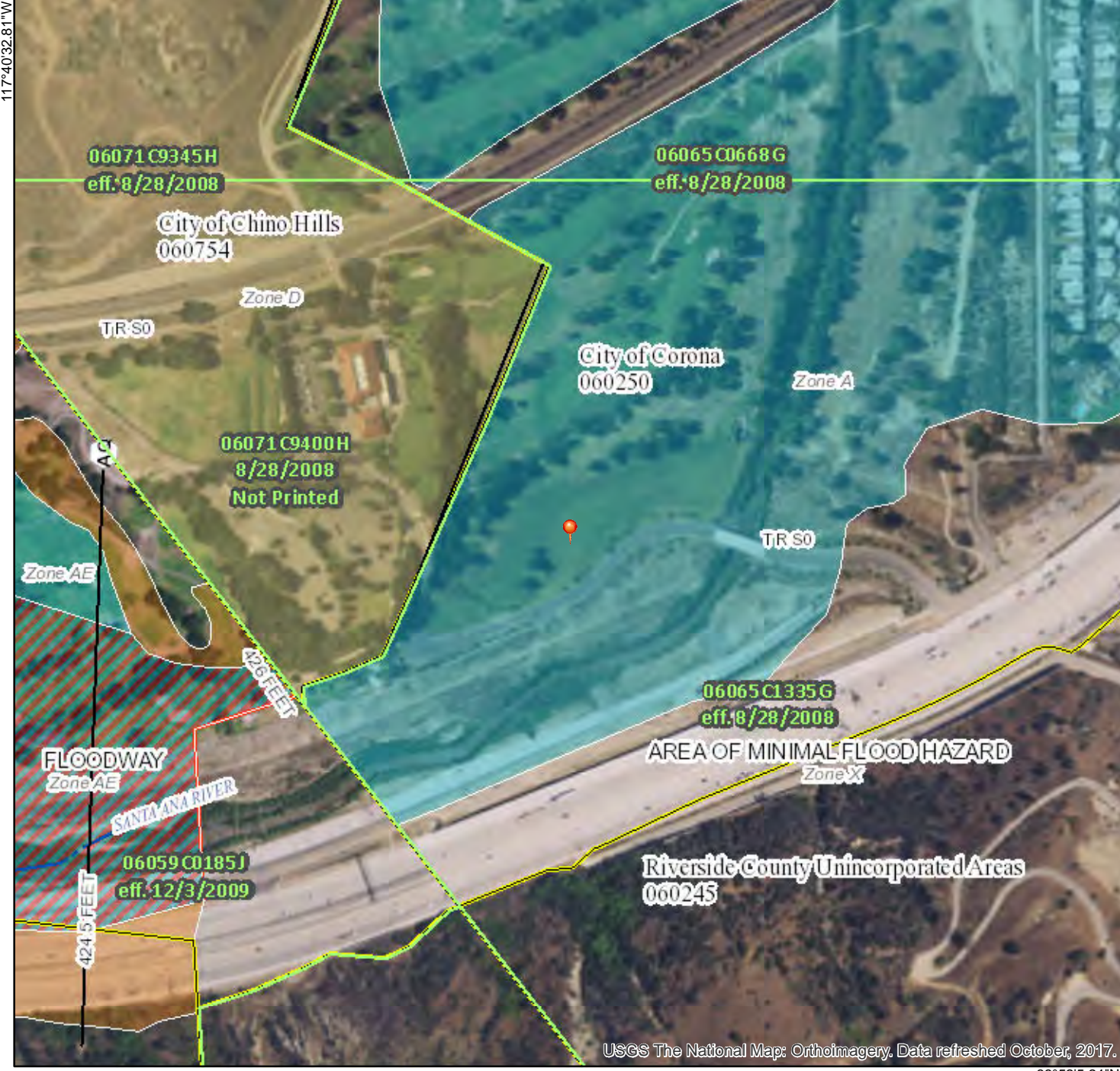
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **1/22/2019 at 3:47:46 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

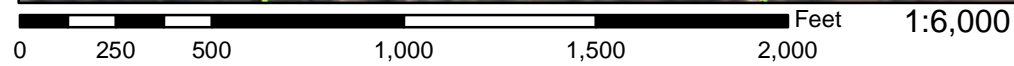
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

117°40'32.81"W

33°52'35.12"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017.



33°52'5.24"N

117°39'55.35"W

# The National Map Advanced Viewer



10/7/2020, 4:35:40 PM

Waterbody - Large Scale

- Estuary
- Ice Mass
- LakePond
- Playa
- Reservoir
- SwampMarsh
- Area - Large Scale
- Area of Complex Channels
- Area to be Submerged
- BayInlet
- Bridge
- CanalDitch
- DamWeir

- Flume
- Foreshore
- Hazard Zone
- Inundation Area
- Lock Chamber
- Rapids
- SeaOcean
- Special Use Zone
- Spillway
- StreamRiver
- Submerged Stream
- Wash
- Water IntakeOutflow

Flowline - Large Scale

- Perennial
- Intermittent
- Ephemeral
- Artificial Path
- Canal Ditch
- Coastline
- Connector
- Pipeline
- Underground Conduit
- Flow Direction
- Connector
- CanalDitch
- Underground Conduit

StreamRiver

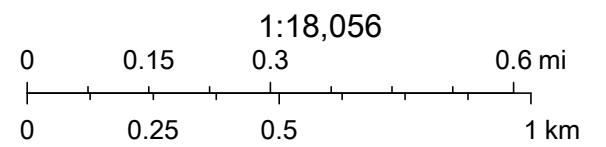
- StreamRiver
- StreamRiver - Perennial
- StreamRiver - Intermittent
- StreamRiver - Ephemeral
- Pipeline
- Artificial Path

Line - Large Scale

- Line
- Tunnel

Point Event

- Dam
- Gaging Station
- Divergence Structure
- Other



USGS TNM - National Hydrography Dataset. Data Refreshed October, 2020.  
USGS The National Map: Orthoimagery. Data refreshed April 2020

## **Appendix B Site Photographs**

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**Photograph 1:** View looking north of the Santa Ana River in the southeastern portion of the project site.



**Photograph 2:** View looking north of the Santa Ana River in the southeastern portion of the project site.



**Photograph 3:** View looking north of riparian vegetation within the Santa Ana River riparian corridor in the eastern portion of the project site.



**Photograph 4:** View looking east of the confluence of Aliso Creek and the Santa Ana River in the northern portion of the project site.



**Photograph 5:** View looking east of Aliso Creek and the Santa Ana River riparian corridor in the northern portion of the project site.



**Photograph 6:** View looking east of Aliso Creek in the northwestern portion of the project site.





**Photograph 7:** View looking north of Drainage 1 in the northern portion of the project site.



**Photograph 8:** View looking southeast of sheet flow from Drainage 1 south of the dirt maintenance road in the northern portion of the project site.



**Photograph 9:** View looking northwest of non-jurisdictional uplands in the northern portion of the project site.



**Photograph 10:** View looking northwest of Soil Pit 1 (SP1) located at the northeastern boundary of the project site.



**Photograph 11:** View looking north of Soil Pit 2 (SP2) in the southeastern portion of the project site, facing north.



**Photograph 12:** View looking east of Soil Pit 3 (SP3) at the eastern boundary of the project site.



**Photograph 13:** View looking south of the eastern portion of the project site between SART – Phase 3 and SART – Phase 5.



**Photograph 14:** View looking east of the eastern portion of the project site between SART – Phase 3 and SART – Phase 5.

## **Appendix C Wetland Determination Data Forms**

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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Santa Ana River Trail -Phase 6 Project City/County: Corona, Riverside, San Berna Sampling Date: 1/23/19  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 1  
 Investigator(s): Josephine Lim and Tim Tidwell Section, Township, Range: S25 T3S R8W  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): Mediterranean California Lat: 33.886467 Long: -117.663372 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Metz loamy sand, channeled, 0 to 15 percent slopes NWI classification: RS4SBA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>18</u>	<u>yes</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>18</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>N/A</u>	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>1</u> x 2 = <u>2</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = <u>2</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>non-native grass</u>	<u>1</u>	<u>yes</u>	<u>NI</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>1</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>2</u> % Cover of Biotic Crust _____				

Remarks:  
 90% leaf litter, dead grass, and dead Russian thistle.

**SOIL**

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 4/2	100	-	-	-	-	clay loam	
8-16	10YR 4/4	100	-	-	-	-	sandy loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
--	---

Remarks:  
moist soil

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
  
Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail -Phase 6 Project City/County: Riverside County Sampling Date: 8/7/19  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 2  
 Investigator(s): Josephine Lim and Tim Tidwell Section, Township, Range: S25 T3S R8W  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): Mediterranean California Lat: 33°52'44.21"N Long: 117°40'2.46"W Datum: WGS 84  
 Soil Map Unit Name: Metz loamy sand, channeled, 0 to 15 percent slopes NWI classification: RS4SBA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	40	yes	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Populus fremontii</u>	25	yes	FACW	
3. <u>Tamarix ramosissima</u>	1	no	NI	
4. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>2</u> x 2 = <u>4</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>1</u> x 4 = <u>4</u> UPL species _____ x 5 = _____ Column Totals: <u>4</u> (A) <u>11</u> (B)  Prevalence Index = B/A = <u>2.75</u>
_____ = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				
1. <u>Baccharis salicifolia</u>	50	yes	FAC	
2. <u>Toxicodendron diversilobum</u>	8	no	FACU	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. <u>Phacelia cicutaria</u>	2	yes	NI	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

Remarks:  
 Significant leaf litter on bare ground.



**SOIL**

Sampling Point: 2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5Y 4/3	100	-	-	-	-	loamy sand	loamy sand

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes \_\_\_\_\_ No

**Remarks:**

Soil pit was performed in a natural low point. Soil pit contained organic matter including bark and roots.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): - \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): - \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): - \_\_\_\_\_

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Santa Ana River Trail -Phase 6 Project City/County: Riverside County Sampling Date: 8/7/19  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 3  
 Investigator(s): Josephine Lim and Tim Tidwell Section, Township, Range: S25 T3S R8W  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 3  
 Subregion (LRR): Mediterranean California Lat: 33°52'58.87"N Long: 117°39'57.68"W Datum: WGS 84  
 Soil Map Unit Name: Metz loamy sand, channeled, 0 to 15 percent slopes NWI classification: RS4SBA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Soil pit location is elevated from flows in Santa Ana River.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. <u>Populus fremontii</u>	<u>35</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Ailanthus altissima</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>2</u> x 2 = <u>4</u> FAC species <u>2</u> x 3 = <u>6</u> FACU species <u>2</u> x 4 = <u>4</u> UPL species _____ x 5 = _____ Column Totals: <u>6</u> (A) <u>14</u> (B)  Prevalence Index = B/A = <u>2.3</u>
<u>75</u> = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				
1. <u>Baccharis salicifolia</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Sambucus nigra</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Xanthium strumarium</u>	<u>4</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
<u>49</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>0</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>12</u> % Cover of Biotic Crust _____				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

Remarks:  
 Significant leaf litter on ground.



# **SANTA ANA RIVER TRAIL - PHASE 6 (SART – PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT**

CITIES OF CORONA AND CHINO HILLS, COUNTIES OF RIVERSIDE AND  
SAN BERNARDINO, CALIFORNIA

## **Burrowing Owl Focused Survey Report**

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Prepared For:

**RIVERSIDE COUNTY TRANSPORTATION COMMISSION**

4080 Lemon Street, 3<sup>rd</sup> Floor

Riverside, California 92502

Contact: *David Lewis*

951.787.7970

Prepared By:

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949.855.5777

December 2019

JN 167982

# SANTA ANA RIVER TRAIL - PHASE 6 (SART – PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT

CITIES OF CORONA AND CHINO HILLS, COUNTIES OF RIVERSIDE AND  
SAN BERNARDINO, CALIFORNIA

## Burrowing Owl Focused Survey Report

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The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Ashley Spencer  
Biologist  
Natural Resources and Regulatory Permitting



Stephen Anderson  
Biologist  
Natural Resources and Regulatory Permitting



Tom Millington  
Senior Biologist  
Natural Resources and Regulatory Permitting

October 2019  
JN 167982

# Executive Summary

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This report contains the findings of a focused burrowing owl (*Athene cunicularia*) survey conducted by Michael Baker International (Michael Baker) for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project (project or project site) located in the cities of Corona and Chino Hills, counties of Riverside and San Bernardino, California. The focused survey was conducted in accordance with the survey guidelines and protocols provided in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) and the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (Western Riverside County Regional Conservation Authority, 2006).

Based on the results of a habitat assessment conducted by Michael Baker biologists on January 23 and June 11, 2019, it was determined that portions of the project are located within the designated survey area for burrowing owl under the Western Riverside County Multiple Species Habitat Conservation Plan and provide suitable habitat and foraging/nesting opportunities for burrowing owl. As such, a focused burrow survey and focused burrowing owl survey were conducted on seven (7) separate days during the 2019 breeding season: during the morning of June 11, July 3, July 23, August 13, August 27, the morning and evening of August 28, and the morning of August 29, 2019. The focused burrow survey was conducted concurrently with the first focused burrowing owl survey on June 11, 2019. Based on the results of the focused burrowing owl surveys, no burrowing owls or sign (i.e., pellets, white wash, feathers, or prey remains) were observed and burrowing owl was determined to be absent from the Biological Study Area (BSA)<sup>1</sup>.

Although burrowing owls were not observed during the focused survey, the BSA does contain suitable burrows and habitat. Therefore, one (1) pre-construction clearance survey would need to be conducted no more than thirty (30) days prior to initiating ground disturbance activities to avoid direct take of burrowing owls. If burrowing owls or occupied burrows are found during the pre-construction clearance survey, a burrowing owl avoidance and minimization plan would need to be prepared and submitted to the Western Riverside County Regional Conservation Authority and the California Department of Fish and Wildlife for approval prior to initiating project activities.

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<sup>1</sup> As used in this report, “Biological Study Area or BSA” refers to the proposed grading limits plus a 500-foot survey buffer.

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## **APPENDIX**

Appendix A	Site Photographs
Appendix B	CNDDDB Field Survey Forms

# Section 1 Introduction

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This report contains the findings of a focused burrowing owl (*Athene cunicularia*) survey conducted by Michael Baker International (Michael Baker) during the 2019 breeding season for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project (project or project site) located in the cities of Corona and Chino Hills, counties of Riverside and San Bernardino, California. Based on the results of a habitat assessment conducted by Michael Baker on January 23 and June 11, 2019, it was determined that portions of the project are located within the designated survey area for burrowing owl under the Western Riverside County Multiple Species Habitat Conservation Plan and provide suitable habitat and foraging/nesting opportunities for burrowing owl. As a result, a focused burrow survey and focused burrowing owl survey were conducted on seven (7) separate days during the 2019 breeding season to verify if burrowing owl currently occupies the Biological Study Area (BSA)<sup>2</sup>.

## 1.1 PROJECT LOCATION

The BSA is generally located within the west end of the City of Corona and the southeast corner of the City of Chino Hills, north of State Route 91 (refer to Figure 1, *Regional Vicinity*). The BSA is depicted in Sections 25 and 30, Township 3 South, Range 7 and 8 West, on the United States Geological Survey’s (USGS) *Prado Dam* and *Black Star Canyon, California* 7.5-minute quadrangles (refer to Figure 2, *Site Vicinity*). Specifically, the BSA is located on vacant and developed land within and adjacent to the Green River Golf Course, located north of State Route 91, south of Chino Hills State Park, and west of State Route 71 (refer to Figure 3, *Biological Study Area*).

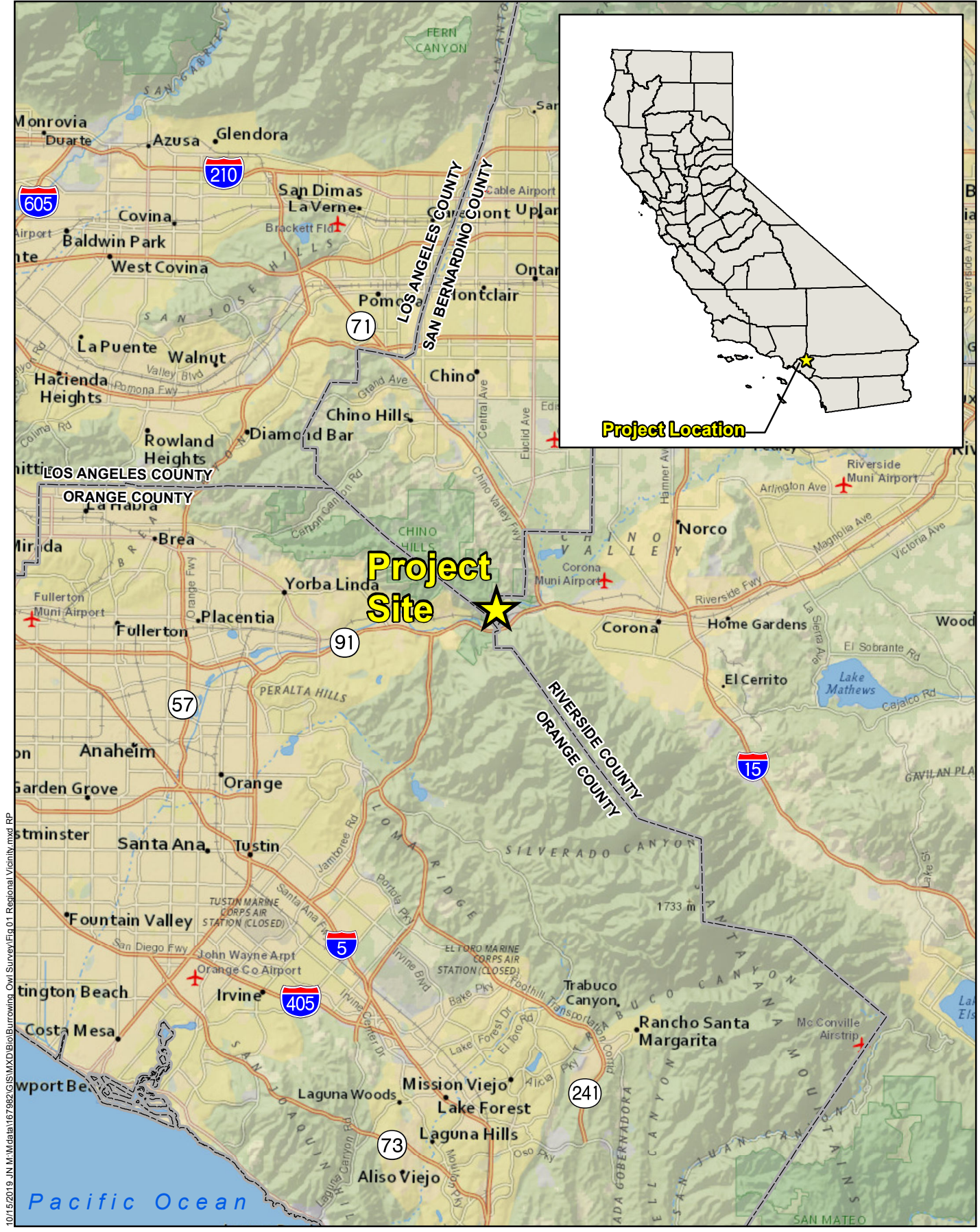
## 1.2 PROJECT ALTERNATIVES

The proposed project (SART–Phase 6) consists of a 1.5-mile segment through the Green River Golf Course and a 0.2-mile segment between Phase 5 and Phase 3 of the larger 110-mile SART project. More specifically, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the Santa Ana River Parkway Extension (currently in final design) located west of the project in Orange County, with the existing SART – Phase 5 (completed March 2019) in Chino Hills State Park on the east within Riverside County. Additionally, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the eastern terminus of the SART – Phase 5 and the western terminus of SART – Phase 3 (currently under environmental review), near the State Route 91 and State Route 71 interchange in Riverside County.

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<sup>2</sup> As used in this report, “Biological Study Area or BSA” refers to the proposed grading limits plus a 500-foot survey buffer.





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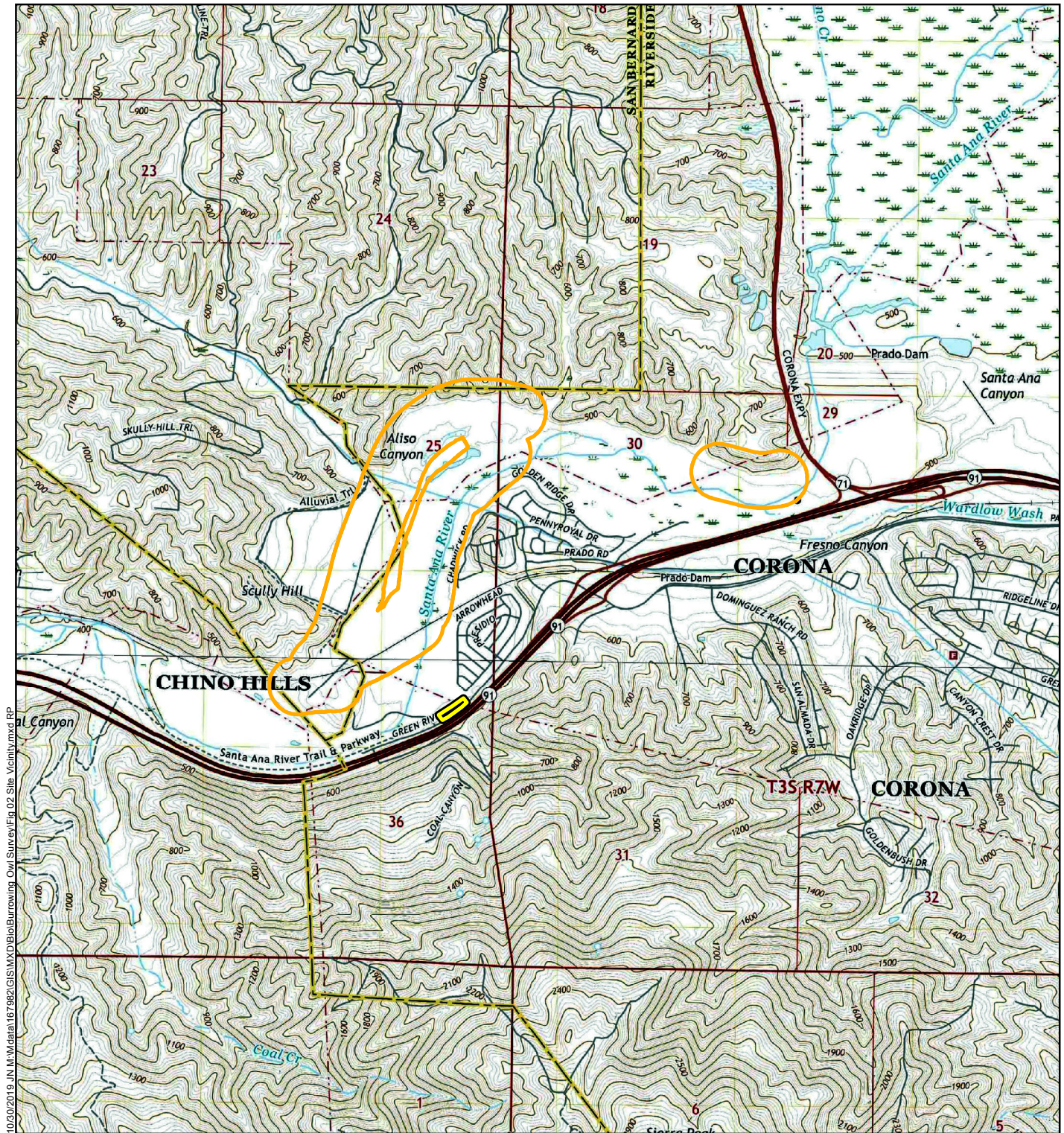
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 BURROWING OWL FOCUSED SURVEY REPORT

## Regional Vicinity



Source: ArcGIS Online, 2018

Figure 1

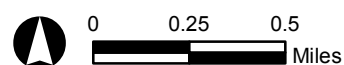


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**Legend**

- Biological Study Area
- Staging Area

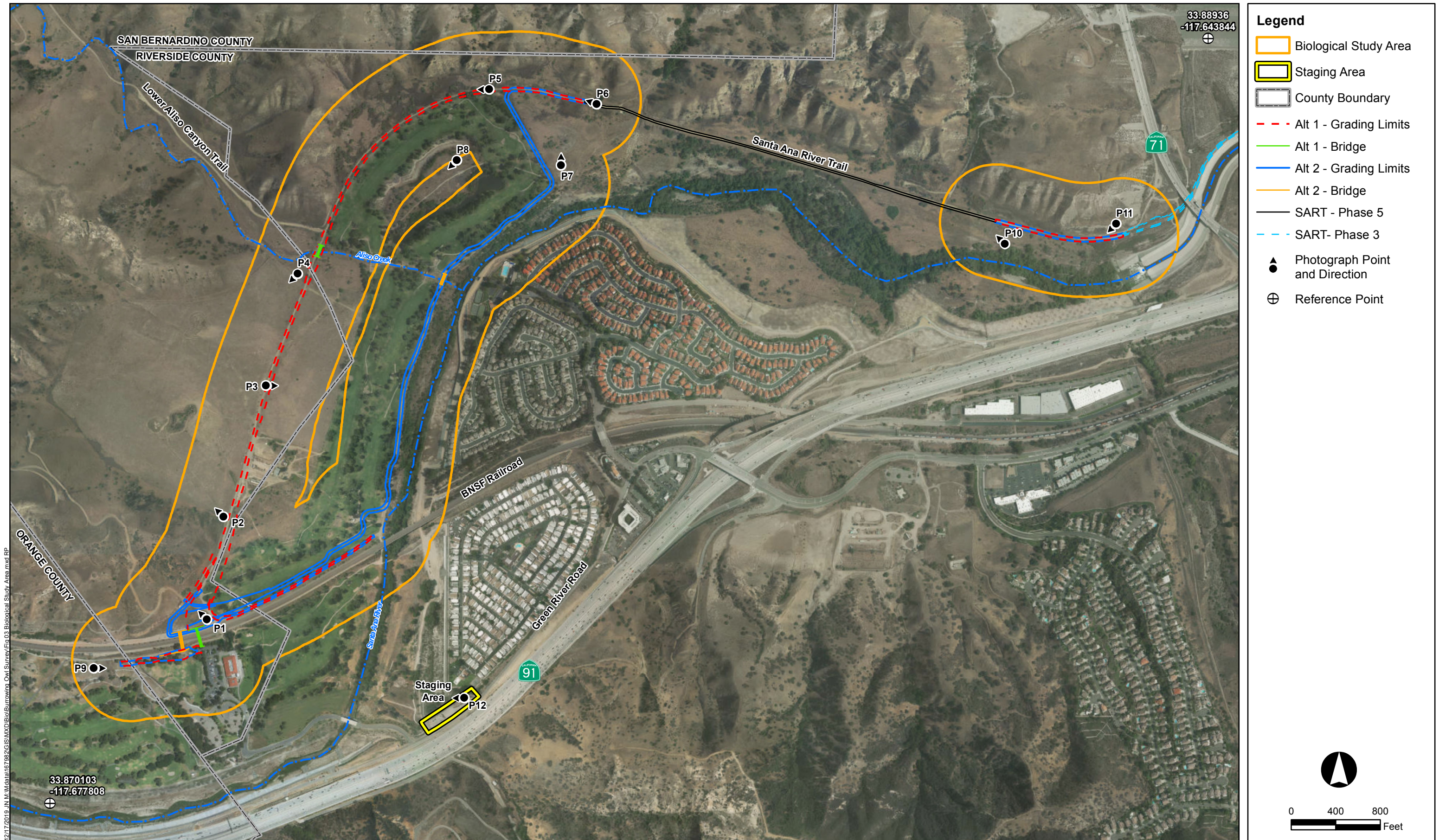
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 BURROWING OWL FOCUSED SURVEY REPORT



**Site Vicinity**

Source: ArcGIS Online, 2018, USGS 7.5-Minute topographic quadrangle maps: Prado Dam, Black Star Canyon, California (2018)

Figure 2



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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT BURROWING OWL FOCUSED SURVEY REPORT

The proposed project consists of two build alternatives: Alternative 1 – West of Golf Course, and Alternative 2 – East of Golf Course. Both build alternatives would have similar trail characteristics and would close the gap between the Santa Ana River Parkway Extension and SART – Phase 5 as well as between SART – Phase 5 and SART – Phase 3. Implementation of the proposed project would serve the needs of recreational users, including pedestrians, hikers, bicyclists, and equestrians, as well as provide commuters an opportunity for alternative means and routes of transportation in the project area.

The main difference between the build alternatives is the trail alignment. Alternative 1 would generally extend along the western boundary of the Green River Golf Course and Alternative 2 would generally extend along the eastern boundary of the golf course, adjacent to the Santa Ana River. The designated staging area for the proposed project is situated along Green River Road, adjacent to State Route 91. This area is currently being utilized as a staging area for construction of the Santa Ana River Mainstem Project: Reach 9 Burlington Northern and Santa Fe (BNSF) Railroad Bridge (refer to Figure 4, *Proposed Improvements*).

### **Alternative 1 – West of Golf Course**

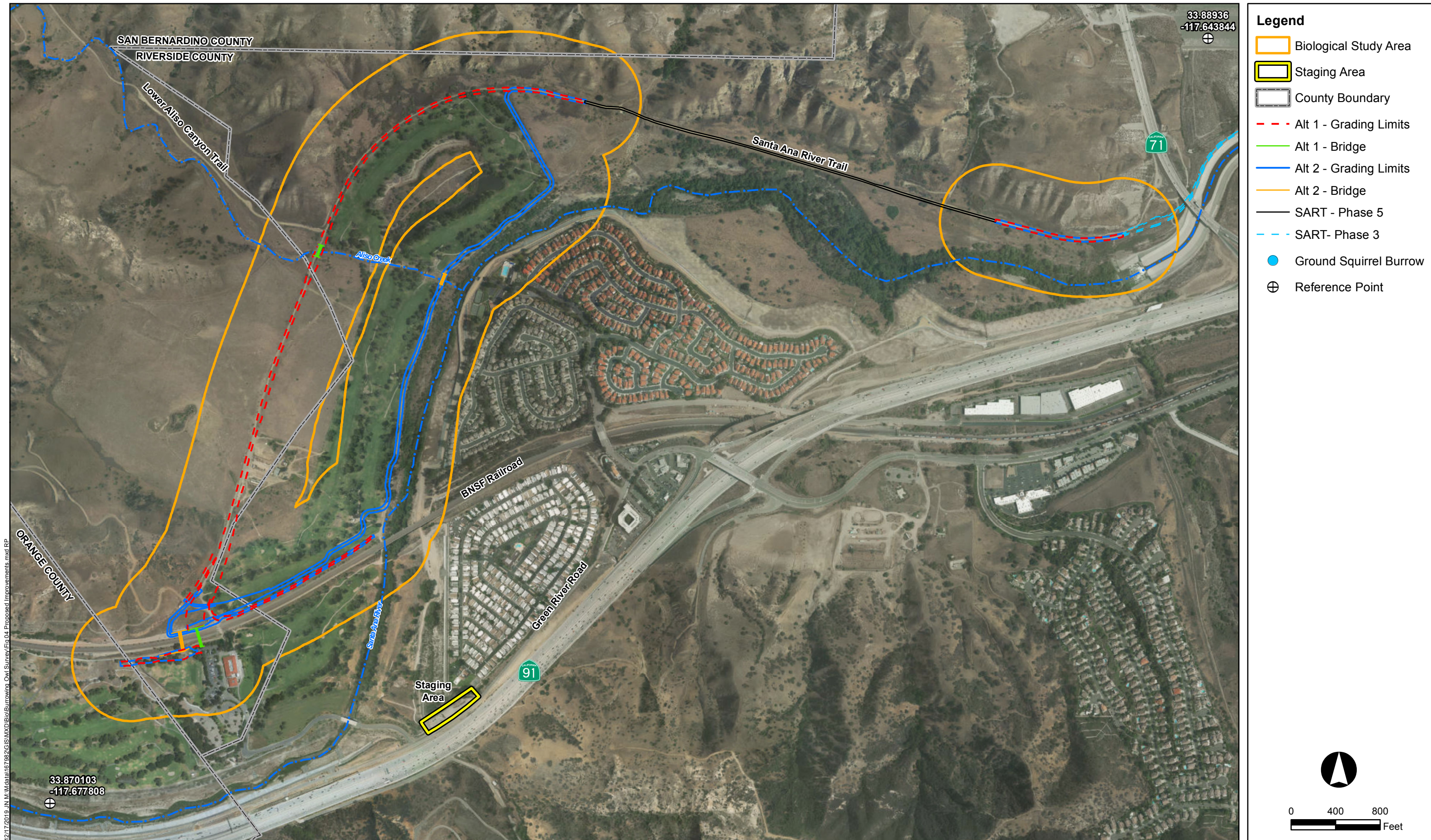
The southwesterly end of the proposed project alignment would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line, south of the existing BNSF railroad. Alternative 1 generally extends east-west (within the existing golf course) south of, and parallel to, the BNSF railroad until it reaches the golf course parking lot.

From the parking lot, Alternative 1 would extend north, spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge ranging in width from 20 feet to 37 feet. Once across the railroad line, the trail would continue north along the existing maintenance road. A bridge or low water crossing would be installed to cross Aliso Creek. The trail would then continue north/northeast and connect with the SART – Phase 5 in Chino Hills State Park.

### **Alternative 2 – East of Golf Course**

Similar to Alternative 1, Alternative 2 would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line south of the BNSF railroad. Alternative 2 proposes spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge ranging in width from 20 feet to 37 feet, at or just west of the golf course parking lot, similar to Alternative 1.

After crossing the BNSF railroad, the trail would extend east, parallel to the BNSF right-of-way before heading north along an existing dirt maintenance road and extending north/northeast, parallel to the Santa Ana River. A bridge or low water crossing would be installed to cross Aliso Creek. Alternative 2 would continue in a northeast direction before extending northwest along the northern boundary of the golf course to intersect with an existing dirt maintenance road (Alternative 1) and connect with SART – Phase 5 in Chino Hills State Park.



SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT BURROWING OWL FOCUSED SURVEY REPORT

Proposed Improvements

Figure 4

### **Additional Trail Alignment**

Both build alternatives would include construction of the approximate 1,000-foot segment of the SART located east of the golf course. This portion of the SART would connect the eastern terminus of the SART – Phase 5 with the western terminus of SART – Phase 3, near the State Route 91 and State Route 71 interchange.

## Section 2 Background

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### 2.1 BURROWING OWL

The burrowing owl is a grassland specialist distributed throughout western North America, where it is known to occupy a wide variety of arid and semi-arid open areas within shrub, desert, and grassland environments. The California Department of Fish and Wildlife (CDFW) currently lists the burrowing owl as a California Species of Special Concern. Burrowing owls require large open, sparsely vegetated areas, on rolling or level terrain with an abundance of fossorial mammal burrows (>4 inches in diameter). Burrowing owls are dependent upon the presence of fossorial mammals, such as California ground squirrels (*Otospermophilus beecheyi*), whose burrows are used for roosting and nesting (Haug, Millsap, and Martell, 1993). The presence or absence of fossorial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Burrowing owls have also been observed digging their own burrows in soft, friable soil and have been observed utilizing man-made cavities such as buried and non-functioning drain pipes, stand-pipes, and dry culverts where natural burrows are scarce. Additionally, burrowing owls may burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Adult burrowing owls are small owls (approximately 7.5 to 9.8 inches) with long legs and short tails that are speckled brown and white, with yellow eyes and yellow bill. A bold white throat and eyebrows are also typical distinguishing features for burrowing owls. Juvenile burrowing owls are usually less mottled than adults, with buffy-yellow underparts. Burrowing owls have crepuscular (dawn and dusk) hunting habits but are often observed perched in or near the burrow entrance during the day. One burrow is typically selected for use as the main nest burrow, however, burrowing owls also utilize satellite burrows that are often located within the immediate vicinity of the main nest burrow. Burrowing owl prey upon invertebrates and small vertebrates (Thomsen, 1971) through the low growing vegetation which allows for foraging visibility. They typically forage in short-grass, mowed, or overgrazed pasture, golf courses and airports (Thomsen, 1971). The nesting season occurs between February 1 and August 31. Burrowing owls in California may migrate southerly, but often remain in the breeding area during the non-breeding period. The burrowing owl was once abundant and widely distributed within southern California, but it has declined precipitously in counties such as Los Angeles, Orange, San Diego, Riverside, and San Bernardino. Within western Riverside County, the burrowing owl has a sparsely scattered distribution throughout the MSHCP Area Plan, primarily occurring within the central portion of open lowlands.

### 2.2 REGULATORY FRAMEWORK

The burrowing owl is a resident and migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA reflects agreements made between the U.S., England, Mexico, the former Soviet Union, and Japan to protect all of North America's migratory bird

populations. The MBTA protects migratory bird nests from possession, sale, purchase, barter, transport, import and export, and collection. The other prohibitions (i.e., capture, pursue, hunt, and kill) of the MBTA are inapplicable to nests. The regulatory definition of take, as defined in Title 50 Code of Federal Regulations (C.F.R.) Part 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Only the verb “collect” applies to nests. It is illegal to collect, possess, and by any means transfer possession of any migratory bird nest. The MBTA prohibits the destruction of a nest when it contains birds or eggs, and no possession shall occur during the destruction (United States Fish and Wildlife Service, 2017). Certain exceptions to this prohibition are included in Title 50 C.F.R. Section 21. Pursuant to Section 3513 of the California Fish and Game Code (CFGC), CDFW enforces the MBTA consistent with rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Additionally, burrowing owl is protected under Sections 3503, 3503.3, 3511, and 3513 of the CFGC which prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). Section 3503.5 of the CFGC protects birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls, including burrowing owls) which makes it unlawful to take, possess, or destroy their nest or eggs.

Burrowing owls have been included as one of the one hundred and forty-six (146) focal species covered by the MSHCP. The objectives for burrowing owls within the MSHCP are to maintain and ensure the conservation of occupied burrows on current conserved lands, decrease harmful effects to burrowing owls, and identify and implement monitoring and management to sustain the burrowing owl population within the MSHCP. Burrowing owls can be found in a variety of habitats within the MSHCP, predominantly open land, including grassland, agriculture (e.g., dry-land farming and grazing areas), playa, and sparse coastal sage scrub and desert scrub habitats. Within the MSHCP, burrowing owls are narrowly distributed at relatively few locations in suitable habitat.

The *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) offers long-term assurances for conservation of this species in exchange for biologically appropriate levels of incidental take and/or habitat loss as defined in the approved plan. California’s Natural Community Conservation Plan (NCCP) Act (CFGC §2800 *et seq.*) governs such plans at the state level, and was designed to conserve species, natural communities, ecosystems, and ecological processes across a jurisdiction or a collection of jurisdictions. Complementary Habitat Conservation Plans (HCPs) are governed by the Federal Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 *et seq.*). Regional conservation plans (and certain other landscape-level conservation and management plans), may provide conservation for unlisted as well as listed species. Because the geographic scope of NCCPs and HCPs may span many hundreds of thousands of acres, these planning tools have the potential to play a significant role in conservation of burrowing owls.

Guidelines for the implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as “endangered” or “rare” regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections [b] and [d]). The CEQA requires a mandatory



findings of significance if impacts to threatened or endangered species are likely to occur (Sections 21001[c], 21083, Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

## Section 3 Methodology

Based on the results of the habitat assessment conducted by Michael Baker biologists Frances Yau, Stephen Anderson, and Tom Millington on January 23 and Ashley Spencer and Stephen Anderson on June 11, 2019, it was determined that portions of the project are located within the designated survey area for burrowing owl under the Western Riverside County Multiple Species Habitat Conservation Plan and contain suitable habitat and potential foraging/nesting opportunities for burrowing owl. As a result, a focused burrow survey and focused burrowing owl survey were conducted by qualified biologists Ashley Spencer, Frances Yau, Josephine Lim, and Stephen Anderson on seven (7) separate days during the 2019 breeding season: during the morning of June 11, July 3, July 23, August 13, August 27, the morning and evening of August 28, and the morning of August 29, 2019. The focused burrow survey was conducted concurrently with the first focused burrowing owl survey on June 11, 2019. Please refer to Table 1 below for a summary of the dates, times, surveyors, and weather conditions for each of the surveys.

**Table 1: Survey Dates, Times, Surveyors, and Weather Conditions**

Date (2019)	Time (start/finish)	Surveyors	Weather Conditions	
			Temperature (° F) (start/finish)	Wind Speed (mph)
June 11	0600/1100	Ashley Spencer, Stephen Anderson	61 / 88	1 - 5
July 3	0530/1030	Ashley Spencer, Stephen Anderson	62 / 70	1 - 5
July 23	0530/1030	Ashley Spencer, Stephen Anderson	72 / 84	1 - 5
August 13	0530/1100	Ashley Spencer, Stephen Anderson	64 / 80	1 - 5
August 27	0530/0730	Stephen Anderson, Frances Yau	66 / 70	1 - 2
August 28	0600/0800	Ashley Spencer, Frances Yau	64 / 68	1 - 3
August 28	1730/1930	Ashley Spencer, Stephen Anderson	85 / 81	11 - 12
August 29	0530/0730	Stephen Anderson, Josephine Lim	64 / 68	1 - 2

The focused burrow survey and burrowing owl focused survey were conducted during the 2019 breeding season (February 1 to August 31) in accordance with the survey guidelines and protocols provided in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) and the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (RCA, 2006). Areas providing suitable habitat for burrowing owls were surveyed for suitable, occupied, and remnant burrows consisting of natural and non-natural substrates. The location of all suitable habitat, potential burrows, sign (i.e., pellets, white wash, feathers, or prey remains), and burrowing owls observed were recorded and mapped, with a hand-held Global Positioning System (GPS) unit.

### 3.1 FOCUSED BURROW SURVEY

Due to the project being located within the designated survey area for burrowing owl under the MSHCP and the presence of suitable habitat, a focused burrow survey was conducted to document natural burrows and man-made structures capable of providing suitable roosting/nesting opportunities. The focused burrow survey was conducted concurrent with the first focused burrowing owl survey on June 11, 2019 and consisted of a systematic search for suitable burrows (>4 inches in diameter) within all areas of the BSA that were determined to provide suitable habitat. Survey transects were conducted at 7 to 20 meters (approximately 22 to 65 feet) intervals to ensure 100% visual coverage of all areas within suitable habitat, as applicable based on topography and site access (refer to Figure 3, *Biological Study Area*). All suitable burrows/cavities, including rock piles and non-natural substrates, encountered were recorded using a hand-held GPS and thoroughly examined for sign (i.e., pellets, white-wash, feathers, tracks, and prey remains) that would indicate the presence of burrowing owl.

### 3.2 FOCUSED BURROWING OWL SURVEYS

Due to the presence of suitable burrows and suitable burrowing owl habitat, a focused burrowing owl survey was conducted during the 2019 breeding season. Survey guidelines provided in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) state that four (4) separate surveys should be conducted with at least one survey occurring between February 15 and April 15. The remaining three (3) surveys should be at least three weeks apart (between April 15 and July 15), with at least one survey occurring after June 15. The *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (RCA, 2006) requires that focused surveys for burrowing owl be conducted on four (4) separate days during the breeding season which is recognized as March 1 through August 31.

It is important to note that approval to access portions of the project site and initiate the focused survey was not granted until after April 15 which resulted in Michael Baker missing the initial survey window (February 15 and April 15) as identified in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012). However, this was not considered a limitation as a majority of the focused surveys were conducted during the peak of the breeding season (April 15 through July 15) and within the appropriate time frames as identified in both the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) and *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (RCA, 2006). In addition, due to a change in the project limits, an additional four (4) surveys were conducted to assess an additional trail alignment located in Riverside County, just west of State Route 71.

Survey transects were conducted at 7 to 20 meters (approximately 22 to 65 feet) intervals to ensure 100% visual coverage of all areas in suitable habitat, as applicable based on-site topography and access. Binoculars were used to scan areas that were inaccessible due to thick/impenetrable vegetation and lack of right-of-entry to observe and identify distant birds, identify any suitable, occupied, and remnant burrows

consisting of natural and non-natural substrates, and any activity around potential suitable habitat for burrowing owl. Methods to detect the presence of burrowing owls included direct observation, aural detection, and signs of presence (i.e., pellets, white wash, feathers, or prey remains). Surveys were not conducted during rain, high winds (>12 miles per hour), dense fog, or temperatures under 68 degrees Fahrenheit. All burrowing owl focused surveys were conducted during the recognized timeframe; between morning civil twilight and 1000 hours. Additionally, the evening survey on August 28, 2019 was conducted during the recognized timeframe; two hours before sunset until evening civil twilight.

# Section 4 Results

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## 4.1 EXISTING CONDITIONS

The BSA is located within the west end of the City of Corona and the southeast corner of the City of Chino Hills, north of State Route 91 in both Riverside and San Bernardino Counties. Additionally, a small section of the southwest portion of the BSA is located within Orange County. The BSA is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the BNSF railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River. Additionally, Aliso Creek runs through the survey area in a west to east direction and eventually flows into the Santa Ana River. The topography of the BSA consists of a nearly flat plateau surrounded by steep slopes to the north, south, and west and a relatively flat plateau to the east. The eastern portion of the survey area consists of moderately steep hillsides that slope down towards the Santa Ana River. Based on a review of Google Earth historical aerial imagery, the open, undeveloped areas of the BSA that would provide suitable habitat for burrowing owl have been routinely disturbed and maintained through weed abatement (i.e. disking) and goat/cattle grazing activities since 1994. Please refer to Appendix A for representative photographs taken throughout the BSA.

Eight (8) natural vegetation communities were observed within the BSA: southern willow scrub, southern cottonwood willow riparian forest, mule fat scrub, disturbed mule fat scrub, elderberry savannah, coastal sage scrub (CSS), restored CSS, and non-native grassland. In addition, the BSA contains four (4) land cover types that would be classified as open water, disturbed, ornamental, and developed. Ornamental vegetation can be found surrounding the existing Green River Golf Course clubhouse and parking lot. Open water occurs within the Santa Ana River diversion channel associated with the construction of the Santa Ana River Mainstem Project: Reach 9 BNSF Bridge. The disturbed and developed land cover types are generally composed of paved and disturbed areas devoid of vegetation and consist of heavily disturbed, compacted soils.

As previously stated, Google Earth historical aerial imagery indicates that the non-native grassland areas of the BSA undergo routine weed abatement (i.e. disking) and goat/cattle grazing resulting in these areas generally consisting of open, low-growing vegetation that provide clear line-of-site opportunities favored by burrowing owls. However, during the 2019 focused surveys, these areas were significantly overgrown and densely vegetated with short podded mustard (*Hirschfeldia incana*), black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), Russian thistle (*Salsola tragus*), poison hemlock (*Conium maculatum*), and various non-native grasses.

Bird species detected during the focused surveys included cliff swallow (*Petrochelidon pyrrhonota*), American robin (*Turdus migratorius*), Anna's hummingbird (*Calypte anna*), song sparrow (*Melospiza melodia*), Eurasian collared dove (*Streptopelia decaocto*), common starling (*Sturnus vulgaris*), black phoebe (*Sayornis nigricans*), lesser goldfinch (*Spinus psaltria*), house finch (*Haemorhous mexicanus*), California towhee (*Melospiza crissalis*), California quail (*Callipepla californica*), acorn woodpecker

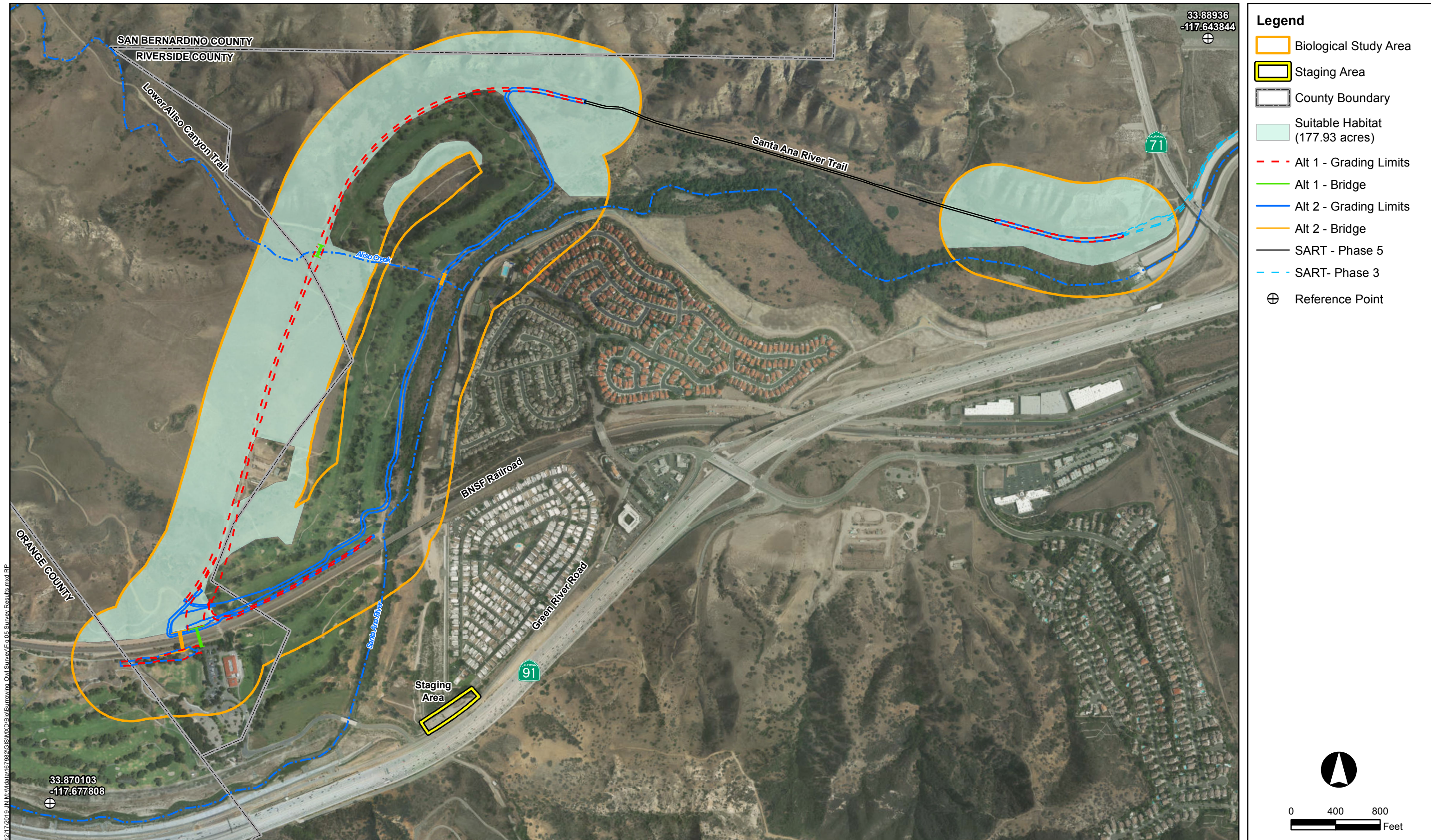
(*Melanerpes formicivorus*), Nuttall’s woodpecker (*Picoides nuttallii*), mallard (*Anas platyrhynchos*), great egret (*Ardea alba*), Bullock’s oriole (*Icterus bullockii*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), lark sparrow (*Chondestes grammacus*), American bushtit (*Psaltriparus minimus*), hooded oriole (*Icterus cucullatus*), blue grosbeak (*Passerina caerulea*), Cassin’s kingbird (*Tyrannus vociferans*), red-tailed hawk (*Buteo jamaicensis*), mourning dove (*Zenaida macroura*), Bewick’s wren (*Thryomanes bewickii*), black-headed grosbeak (*Pheucticus melanocephalus*), western bluebird (*Sialia mexicana*), ash-throated flycatcher (*Myiarchus cinerascens*), red-shouldered hawk (*Buteo lineatus*), spotted towhee (*Pipilo maculatus*), northern flicker (*Colaptes auratus*), American kestrel (*Falco sparverius*), northern mockingbird (*Mimus polyglottos*), red-crowned Amazon (*Amazona viridigenalis*), American crow (*Corvus brachyrhynchos*), and brown-headed cowbird (*Molothrus ater*). In addition, yellow warbler (*Setophaga petechia*; CDFW Species of Special Concern), least Bell’s vireo (*Vireo bellii pusillus*; Federally and State endangered), vermilion flycatcher (*Pyrocephalus rubinus*; CDFW Species of Special Concern), yellow-breasted chat (*Icteria virens*; CDFW Species of Special Concern), and coastal California gnatcatcher (*Polioptila californica californica*; Federally threatened/CDFW Species of Special Concern) were observed within the BSA during the focused survey.

According to the California Natural Diversity Database (CNDDDB), there are twenty-five (25) occurrence records for burrowing owl within the USGS *Prado Dam, Black Star Canyon, Corona North, and Corona South, California* 7.5-minute quadrangles (CNDDDB, 2019). The closest presumed extant occurrence (Occurrence Number 35) was recorded in 1986, approximately 2 miles northeast of the BSA; one (1) adult was observed near the Corona Municipal Airport in habitat classified as an agricultural field and roadside (CNDDDB, 1989). The most recent occurrence record (within ten years) for burrowing owl was recorded approximately 5 miles northeast of the BSA (Occurrence Number 1993) in 2016. A family group consisting of two (2) adults and seven (7) owlets were observed along Sultana Avenue, within a dairy farm located in a residential/agricultural area (CNDDDB, 2017). There are no occurrence records for burrowing owl within the BSA (CNDDDB, 2019).

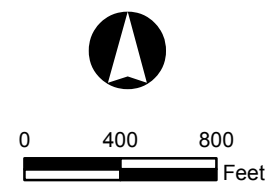
## 4.2 BURROWING OWL FOCUSED SURVEY RESULTS

### 4.2.1 Focused Burrow Survey

Within the western and northern portions of the BSA, the areas consisting of non-native grassland vegetation provide marginal suitable habitat for burrowing owl (refer to Figure 5, *Survey Results*). At the time of the focused surveys, these portions of the BSA were overgrown and densely vegetated with various non-native herbaceous plant species. The overgrown vegetation within these areas does not provide favorable line-of-site opportunities preferred by burrowing owls. Michael Baker biologists did observe/detect numerous California ground squirrels within these areas, signifying that burrows capable of providing roosting/nesting opportunities for burrowing owls are present. However, it appears that access to suitable burrows and line-of-site opportunities favored by burrowing owls only exists within these areas when the vegetation is routinely maintained.



- Legend**
- Biological Study Area
  - Staging Area
  - County Boundary
  - Suitable Habitat (177.93 acres)
  - Alt 1 - Grading Limits
  - Alt 1 - Bridge
  - Alt 2 - Grading Limits
  - Alt 2 - Bridge
  - SART - Phase 5
  - SART- Phase 3
  - Reference Point



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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT BURROWING OWL FOCUSED SURVEY REPORT

#### **4.2.2 Focused Burrowing Owl Surveys**

No burrowing owls or burrowing owl sign (i.e., pellets, white wash, feathers, or prey remains) were observed during any of the seven (7) focused burrowing owl surveys. As previously stated, suitable burrows capable of providing roosting and nesting opportunities for burrowing owls were detected within the non-native grassland vegetation community. However, the favorable conditions for burrowing owl only exist within these areas when the vegetation is maintained. It is likely that these conditions and lack of nearby populations have precluded burrowing owls from occurring within the BSA and surrounding areas. In addition, the existing telephone poles, light posts, fencing, and tall trees that occur throughout a majority of the BSA further decrease the likelihood that burrowing owls would occur as these features provide perching opportunities for larger raptor species (i.e., red-tailed hawk) that prey on burrowing owls.



## Section 5 Conclusion and Recommendations

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Based on the results of the burrowing owl focused survey, no burrowing owls, sign, occupied burrows, or remnant burrows were observed on or within the vicinity of the BSA. Therefore, project-related activities are not expected to result in any direct or indirect impacts to burrowing owls or occupied burrows on or within the vicinity of the BSA.

Although burrowing owls were not observed during the focused survey, the BSA does contain suitable burrows and habitat. Therefore, a pre-construction clearance survey would be required to reconfirm the absence of burrowing owls and maintain compliance with the MSHCP, MBTA, and CFGC. In accordance *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, 2012) and the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (RCA, 2006), one (1) pre-construction clearance survey would need to be conducted no more than thirty (30) days prior to initiating ground disturbance activities to avoid direct take of burrowing owls. If burrowing owls or occupied burrows are found during the pre-construction clearance survey, a burrowing owl avoidance and minimization plan would need to be prepared and submitted to the RCA and CDFW for approval prior to initiating project activities.

## Section 6      References

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- California Burrowing Owl Consortium. 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. Accessed online at: [www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf](http://www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf).
- California Department of Fish and Wildlife. 2012. *Staff Report on Burrowing Owl Mitigation*. State of California Natural Resources Agency: 34.
- California Department of Fish and Wildlife. 2019. RareFind 5, California Natural Diversity Data Base, California. Data base report on threatened, endangered, rare or otherwise sensitive species and communities for the *Prado Dam, Black Star Canyon, Corona North, and Corona South, California* USGS 7.5-minute quadrangles.
- Coulombe, H.N. 1971. *Behavior and population ecology of the burrowing owl (Speotyto cunicularia) in the Imperial Valley of California*. Condor 73: 162-176.
- Dudek & Associates, Inc. 2003. *Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)*. Final MSHCP, Volumes I and II. Prepared for County of Riverside Transportation and Lands Management Agency. Approved June 17, 2003.
- Google, Inc. 2019. Google Earth Pro version 7.3.2.5491, build date 3/5/2019. Historical aerial imagery from 1995 to 2018.
- Haug, E. A., and B.A. Didiuk. 1993. *Use of Recorded Calls to Detect Burrowing Owls*.
- Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. *Burrowing Owl (Speotyto cunicularia)*. In: A. Poole and F. Gill, editors, *Birds of North America*, No. 61. Philadelphia: The Academy of Natural Science; Washington DC: The American Ornithologists' Union.
- Martin, D.J. 1973. Selected aspects of burrowing owl ecology and behavior. Condor 75: 446-456.
- McDonald, D., N.M. Korfanta, and S.J. Lantz. 2004. *The Burrowing Owl: A Technical Conservation Assessment*, prepared for the USFS, Rocky Mountain Region, and Species Conservation Project. Accessed online at: [www.fs.fed.us/r2/projects/scp/assessments/burrowingowl.pdf](http://www.fs.fed.us/r2/projects/scp/assessments/burrowingowl.pdf).
- Ramsen, Jr., J.V. 1978. *Bird Species of Special Concern in California*. Non-game Wildlife Investigations. Wildlife Management Branch Administrative Report No78-1. Report prepared for California Department of Fish and Game.
- Thomsen, L. 1971. *Behavior and ecology of Burrowing Owls in the Oakland Municipal Airport*. Condor 73: 177-192.

United States Fish and Wildlife Service. 2017. *Migratory Bird Treaty Act of 1918*. Accessed online at: [www.fws.gov/lawsdigest/migtrea.html](http://www.fws.gov/lawsdigest/migtrea.html).

Western Riverside County Regional Conservation Authority. 2006. *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area*: 1-12.

Western Riverside County Regional Conservation Authority. RCA MSHCP Information Tool. Accessed online at: <http://www.wrc-rca.org/rcamaps/>.

## **Appendix A      Site Photographs**

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**Photograph 1:** View of the non-native grassland vegetation community located within the southern portion of the BSA, facing northwest.



**Photograph 2:** View of a field dominated by short podded mustard, located within the western portion of the BSA, facing northwest.



**Photograph 3:** View of a disturbed area located within the western portion of the BSA, facing east.



**Photograph 4:** View of a field dominated by short podded mustard located within the western portion of the BSA, facing southwest.



**Photograph 5:** View of the elderberry savannah vegetation community located within the northern portion of the BSA, facing west.



**Photograph 6:** View of the unpaved portion of the Santa Ana River Trail located within the northern portion of the BSA, facing west.



**Photograph 7:** View of the non-native grassland vegetation community located within the northern portion of the BSA, facing north.



**Photograph 8:** View of the non-native grassland vegetation community located within the northwestern portion of the BSA, facing southwest.





**Photograph 9:** View of a disturbed area located within the southern portion of the BSA, facing east.



**Photograph 10:** View of the non-native grassland vegetation community located within the northeastern portion of the BSA, facing northwest.



**Photograph 11:** Standing within the northeastern portion of the BSA, facing southwest.



**Photograph 12:** View of the proposed staging area, facing west.

## **Appendix B      CNDDDB Field Survey Forms**

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# CNDDDB Online Field Survey Form Report



California Natural Diversity Database  
Department of Fish and Wildlife  
1416 9th Street, Suite 1266  
Sacramento, CA 95814  
Fax: 916.324.0475  
[cnddb@wildlife.ca.gov](mailto:cnddb@wildlife.ca.gov)  
[www.dfg.ca.gov/biogeodata/cnddb/](http://www.dfg.ca.gov/biogeodata/cnddb/)



Source code SPE19F0003  
Quad code 3311786  
Occ. no. \_\_\_\_\_  
EO index no. \_\_\_\_\_  
Map index no. \_\_\_\_\_

This data has been reported to the CNDDDB, but may not have been evaluated by the CNDDDB staff

**Scientific name:** *Athene cucularia*

**Common name:** burrowing owl

**Date of field work (mm-dd-yyyy):** 08-29-2019

**Comment about field work date(s):** Also conducted surveys on 6/11/19, 7/3/19, 7/23/19, 8/13/19, 8/27/19, 8/28/19 (dawn and dusk).

## OBSERVER INFORMATION

**Observer:** Ashley M. Spencer

**Affiliation:** Michael Baker International

**Address:** 5 Hutton Centre Drive Suite 500, Santa Ana, CA 92707

**Email:** [ashley.spencer@mbakerintl.com](mailto:ashley.spencer@mbakerintl.com)

**Phone:** (949) 472-3454

**Other observers:** Frances Yau, Josephine Lim, Stephen Anderson

## DETERMINATION

**Keyed in:**

**Compared w/ specimen at:**

**Compared w/ image in:**

**By another person:**

**Other:**

**Identification explanation:**

**Identification confidence:**

**Species found:** No If not found, why not? Continual disturbance (weed abatement), perching opportunities for large raptors

**Level of survey effort:** Conducted a focused burrowing owl survey on seven (7) separate days during the 2019 breeding season. Survey protocol used was provided in the CDFW Staff Report on Burrowing Owl Mitigation and BUOW Survey Instructions for the Western Riverside MSHCP.

**Total number of individuals:**

**Collection?**                      **Collection number:**  
**Museum/Herbarium:**

## ANIMAL INFORMATION

**How was the detection made?**

**Number detected in each age class:**

adults

juveniles

larvae

egg mass

unknown

**Age class comment:**

**Bird site use:**

- Nesting     Rookery     Nesting colony     Burrow site     Lek  
 Non-breeding (over-wintering)     Communal roost     Other

**Site use description:**

**What was the observed behavior?**

**Describe any evidence of reproduction:**

---

**SITE INFORMATION**

**Habitat description:** Suitable habitat within the survey area is primarily comprised of non-native grassland and disturbed non-native grassland vegetation. At the time of the focused surveys, these areas were overgrown and heavily vegetated with various non-native herbaceous plant species (short podded mustard, black mustard) and non-native grasses. The overgrown vegetation does not provide favorable line-of-site opportunities preferred by burrowing owls. However, numerous ground squirrels were observed/detected within these areas, signifying the presence of suitable burrows capable of providing roosting and nesting opportunities for burrowing owls. It appears that the favorable conditions for burrowing owl within these areas only exist when the vegetation undergoes weed abatement.

**Slope:**

**Land owner/manager:**

**Aspect:**

**Site condition + population viability:** Fair

**Immediate & surrounding land use:** Green River Golf Club, Santa Ana River Trail

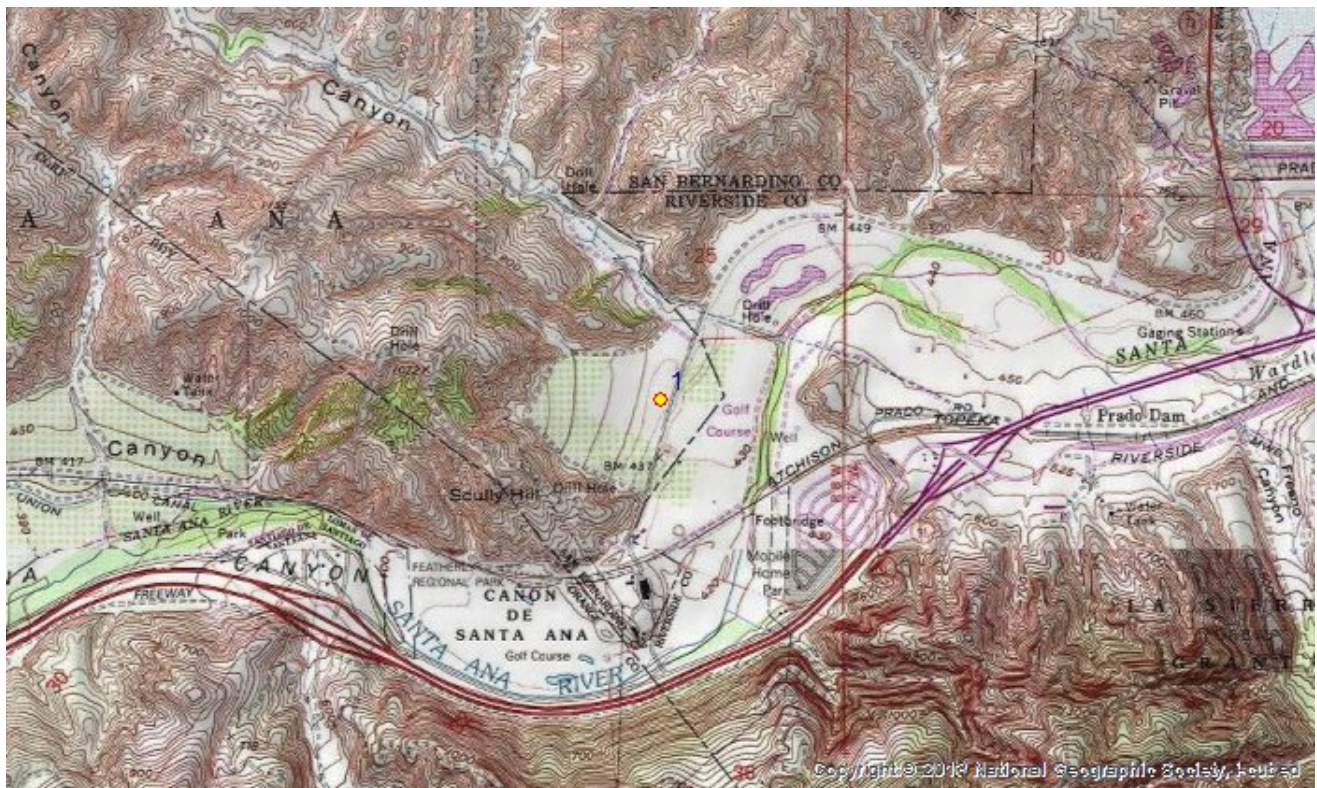
**Visible disturbances:**

**Threats:** Routine weed abatement

**General comments:**

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**MAP INFORMATION**



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Bernardino	Prado Dam	444	33.88066	-117.67174	437879	3749128	11
1	Public Land Survey	Feature Comment						
	S T03S R08W 25	Suitable habitat						

The mapped feature is accurate within: 5 m

Source of mapped feature: Suitable habitat

Mapping notes: Suitable habitat consists of non-native grassland and disturbed non-native grassland.

Location/directions comments:

---

Attachment(s):

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**Bird site use:**

- Nesting     Rookery     Nesting colony     Burrow site     Lek  
 Non-breeding (over-wintering)     Communal roost     Other

**Site use description:**

**What was the observed behavior?**

**Describe any evidence of reproduction:**

---

**SITE INFORMATION**

**Habitat description:** Suitable habitat within the survey area is primarily comprised of non-native grassland and disturbed non-native grassland vegetation. At the time of the focused surveys, these areas were overgrown and heavily vegetated with various non-native herbaceous plant species (short podded mustard, black mustard) and non-native grasses. The overgrown vegetation does not provide favorable line-of-site opportunities preferred by burrowing owls. However, numerous ground squirrels were observed/detected within these areas, signifying the presence of suitable burrows capable of providing roosting and nesting opportunities for burrowing owls. It appears that the favorable conditions for burrowing owl within these areas only exist when the vegetation undergoes weed abatement.

**Slope:** \_\_\_\_\_ **Land owner/manager:** \_\_\_\_\_

**Aspect:** \_\_\_\_\_

**Site condition + population viability:** Fair

**Immediate & surrounding land use:** Green River Golf Club, Santa Ana River Trail

**Visible disturbances:** \_\_\_\_\_

**Threats:** Routine weed abatement

**General comments:** \_\_\_\_\_

---

**MAP INFORMATION**





ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Riverside	Prado Dam	445	33.88705	-117.66312	438680	3749831	11
1	Public Land Survey	Feature Comment						
	S T03S R07W 30							

The mapped feature is accurate within: 5 m

Source of mapped feature: Suitable habitat

Mapping notes: Suitable habitat consists of non-native grassland

Location/directions comments:

Attachment(s):

July 20, 2020

167982

**Riverside County Transportation Commission**

Contact: David Lewis  
4080 Lemon Street, 3<sup>rd</sup> Floor  
Riverside, CA 92502

**SUBJECT: Results of Coastal California Gnatcatcher Focused Surveys for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project– Riverside and San Bernardino Counties, California**

Dear Mr. Lewis:

Michael Baker International (Michael Baker) is pleased to submit this report to the Riverside County Transportation Commission (RCTC) documenting the results of focused coastal California gnatcatcher (*Poliophtila californica californica*; CAGN) surveys conducted for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project (project or project site) located in the cities of Corona and Chino Hills in Riverside and San Bernardino Counties, California. Surveys occurred during the 2020 field season, when Michael Baker was contracted by RCTC to perform CAGN surveys on a discrete portion of the project located in San Bernardino County.

**Project Location**

The survey area, which encompasses a 500-foot buffer from the project site within suitable habitat, is generally located primarily within the southeast corner of the City of Chino Hills north of State Route 91 (SR-91) in San Bernardino County (refer to Figure 1, *Regional Vicinity*, in Attachment A). The survey area is depicted in an un-sectioned area of Township 3 South, Range 8 West, on the United States Geological Survey’s (USGS) *Prado Dam and Black Star Canyon, California* 7.5-minute quadrangles. Specifically, the survey area is approximately 27.69 acres in size and is mainly composed of two discrete areas bordering the Green River Golf Course and within Chino Hills State Park, on the west side of the existing maintenance road (Alternative 1 – West of Golf Course as described below), north of the Burlington Northern and Santa Fe (BNSF) railroad, and generally south of the Lower Aliso Canyon Trail (refer to Figure 2, *Survey Area*, in Attachment A).

**Project Description**

The proposed project consists of trail improvements that would complete a portion of the larger 110-mile regional SART system. Specifically, the project includes a 1.5-mile dual-track Class I multi-use path/natural surface trail, connecting the Santa Ana River Parkway Extension (currently in final design) located in Orange County with the existing SART-Phase 5 in Chino Hills State Park. The project also includes a 0.2-mile trail segment connecting the eastern terminus of the existing SART-Phase 5 and the western terminus of planned SART-Phase 3, near the SR-91/SR-71 interchange in Riverside County. The

project consists of two build alternatives: Alternative 1 – West of Golf Course (Alternative 1), and Alternative 2 – East of Golf Course. The project site encompasses a separate surface parking lot and staging area located to the south off Green River Road west of Green River Golf Course Drive.

## **Regulatory Framework**

### *Federal Endangered Species Act of 1973*

As defined within the Federal Endangered Species Act of 1973 (FESA), an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, Federal law prohibits the “take” of any individuals or habitat of Federally-listed species. Under Section 9 of the FESA, take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The term “harm” has been clarified to include “any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” Enforcement of FESA is administered by the U.S. Fish and Wildlife Service (USFWS).

Under the definition used by the FESA, “Critical Habitat” refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species’ conservation and if the occupied areas are inadequate to ensure the species’ recovery. If a project may result in take or adverse modification to a species’ designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Clean Water Act Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

## **Species Background**

CAGN is a Federally threatened species with restricted habitat requirements, being an obligate resident of sage scrub habitats, particularly—but not exclusively—those that are dominated by California sagebrush (*Artemisia californica*). This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It ranges from Ventura County south to San Diego County and northern Baja California and is less common in sage scrub with a high percentage of tall shrubs. CAGN is considered a short-distance disperser through contiguous, undisturbed habitat (USFWS 2010). However, juveniles are capable of dispersing long distances (up to 14 miles) across fragmented and highly disturbed sage scrub habitat (USFWS 2010). CAGN prefers habitat with more low-growing vegetation (< 3 feet high). CAGN breeds between mid-February and the end of August, with peak activity from mid-March to mid-May. Population estimates indicate that there are approximately 1,600 to 2,290 pairs of CAGN remaining. Declines are attributed to loss of sage scrub habitat due to development, as well as brown-headed cowbird (*Molothrus ater*) nest parasitism. Federally designated Critical Habitat for CAGN is not located within or directly

adjacent to the survey area. The primary constituent elements essential to support the biological needs of foraging, reproducing, rearing of young, intra-specific communication, dispersal, genetic exchange, or sheltering for CAGN are:

- 1) Dynamic and successional sage scrub habitats and associated vegetation (Riversidean alluvial fan sage scrub, coastal sage-chaparral scrub, etc.) that provide space for individual and population growth, normal behavior, breeding, reproduction, nesting, dispersal and foraging; and
- 2) Non- sage scrub habitats such as chaparral, grassland, and riparian areas in proximity to sage scrub habitats that provide linkages to help with dispersal, foraging, and nesting.

The survey area provides abundant suitable habitat for CAGN. According to information shown within CDFW's California Natural Diversity Database (CNDDDB; CDFW 2020) and in the eBird database (eBird 2020), CAGN is generally rare in San Bernardino County. Although it occurs locally in immediate foothill habitats or in areas associated with undeveloped hillsides, because the lowlands of the coastal slope of southwestern San Bernardino County are nearly entirely developed, suitable habitat for this species has become highly localized into small pockets of remaining open space. This species is relatively very common in Orange County on the west side of Chino Hills State Park and on the south side of SR-91 in the foothills of the Santa Ana Mountains, but on the east side of Chino Hills State Park and the general area bordering SR-71, this is a relatively rare species.

### **Environmental Setting**

The survey area for this effort encompasses suitable habitat within 500 feet of Alternative 1 and is located primarily within the southeast corner of the City of Chino Hills and partially in unincorporated San Bernardino County, north of SR-91 in San Bernardino County (refer to Figure 2, *Survey Area*, in Attachment A). The survey area is approximately 27.69 acres in size and is generally associated with relatively undisturbed or restored natural habitats within Chino Hills State Park. Aliso Canyon Creek runs through the northern section of the survey area in a west to east direction and eventually flows into the Santa Ana River.

#### *Topography and Soils*

The topography of the survey area is a combination of a nearly flat plateau and steep slopes. On-site surface elevation ranges from approximately 433 to 628 feet above mean sea level and generally slopes to the southwest, although with the topographic layout the highest point is still on the southern end. According to the *Custom Soil Resources Report for San Bernardino County Southwestern Part, California* (USDA 2020), the survey area is underlain by the following soil units: Garretson very fine sandy loam, 2 to 8% slopes (GaC); Garretson very fine sandy loam, 2 to 9% slopes (GaC); Gaviota-Rock outcrop complex (Go); Monserate sandy loam, 2 to 9% slopes (MoC); San Emigdio fine sandy loam, 0 to 2% slopes (ScA); San Emigdio fine sandy loam, 2 to 9% slopes (SrC); and Soper gravelly loam, 30 to 50% slopes MLRA 20 (Srf).

#### *Vegetation Communities*

Five (5) terrestrial vegetation communities were identified within the survey area: coastal sage scrub (CSS), restored CSS, coastal prickly pear scrub, disturbed mule fat scrub, and non-native grassland. In addition, one (1) land cover type, developed, was observed on-site. Refer to Figure 3, *Vegetation Communities and Other Land Uses*, in Attachment A.

### Coastal Sage Scrub

Approximately 3.34 acres of CSS occurs within the southern and northern portions of the survey area. This vegetation community is primarily dominated by California sagebrush, with California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*) spread throughout.

### Restored Coastal Sage Scrub

Approximately 5.20 acres of restored CSS occurs within the southern portion of the survey area. Specifically, this area occurs within the southern portion of Chino Hills State Park and has been planted with CSS vegetation by California State Parks. The plantings in this restoration area include California sagebrush, laurel sumac, white sage, black sage (*Salvia mellifera*), prickly pear cactus (*Opuntia littoralis*), and California sunflower (*Encelia californica*).

### Coastal Prickly Pear Scrub

Approximately 2.24 acres of coastal prickly pear scrub occurs within the southern portion of the survey area. This habitat type is generally surrounded by CSS and is mostly dominated by prickly pear cactus with short-podded mustard (*Hirschfeldia incana*) and low numbers of California sagebrush, California buckwheat, and black sage.

### Disturbed Mule Fat Scrub

Approximately 0.12 acre of disturbed mule fat scrub occurs along the banks of Aliso Canyon Creek at the northern end of the survey area. The mule fat (*Baccharis salicifolia*) is sparse and in poor condition and has a relatively high concentration of foxtail barley (*Hordeum murinum*), London rocket (*Sisymbrium irio*), and riggut brome (*Bromus diandrus*).

### Non-Native Grassland

Approximately 15.78 acres of non-native grassland occurs within the survey area. Certain portions of this vegetation community undergo routine weed abatement (i.e., disking) and one area on the northern end of the survey area was mowed during the survey effort. Dominant species observed within this vegetation community include short-podded mustard, Russian thistle (*Salsola tragus*), riggut brome, and wild oat (*Avena* sp.).

### Developed

Approximately 0.26 acre of developed land occurs within the survey area, consisting of existing maintenance roads/trails associated with the Green River Golf Course and Chino Hills State Park.

## **Methods**

### *Literature Review*

Prior to conducting the focused surveys, Michael Baker performed a detailed literature review and record search of the project site, vicinity, and region for CAGN records. The literature search included a review of any existing biological and focused CAGN survey reports from the project vicinity, as well as records reported in the CNDDDB (CDFW 2020), the USFWS online Critical Habitat Mapper (USFWS 2020), and the Cornell Lab of Ornithology's eBird database (eBird 2020).

*Focused Surveys*

Although potential project impacts to CAGN within Riverside County would be fully covered under the Western Riverside County Multiple Species Habitat Conservation Plan, take authorization may still be required if the proposed project would result in impacts to CAGN within San Bernardino County. Based on a meeting with USFWS staff (Karin Cleary-Rose and Jim Thiede) on October 8, 2019, it was determined that “spatial use” (non-protocol) surveys would need to be conducted by a qualified biologist to confirm if and how CAGN are using the existing habitats within and adjacent to Alternative 1 in San Bernardino County and to analyze potential impacts that would occur as a result of the proposed project. USFWS requested that surveys be initiated in February 2020 and continue throughout the breeding season to document any nesting locations and track the dispersal of young. The results of the surveys would then be used to analyze potential impacts and develop appropriate measures to avoid any potential impacts to CAGN that are identified.

As such, focused spatial use surveys were conducted along, and in areas of suitable habitat within 500 feet of, an approximately 0.7-mile segment of Alternative 1 in San Bernardino County. Focused CAGN surveys were conducted in spring 2020 and generally followed the guidelines described in the USFWS protocol *Coastal California Gnatcatcher (Poliophtila californica californica) Presence/Absence Survey Guidelines, February 28, 1997* (USFWS 1997). The notable difference between the survey protocol and Michael Baker’s surveys, however, is that Michael Baker’s surveys did not use any audio playback; surveys were instead conducted in a relatively non-intrusive and passive way. All surveys were conducted by Michael Baker biologists Ryan Winkleman (recovery permit TE-88331A-2), Stephen Anderson, and Ashley Spencer between February and June 2020 (refer to Table 1, *Survey Dates, Surveyors, Time, and Weather Conditions*).

**Table 1: Survey Dates, Surveyors, Time, and Weather Conditions**

Date	Surveyors	Time (start/finish)	Weather Conditions	
			Temperature (°F) (start/finish)	Wind Speed Range (miles per hour)
2/18/20	Ryan Winkleman, Ashley Spencer	0735 / 1123	57 / 73	0-3
3/5/20	Ryan Winkleman, Stephen Anderson	0710 / 0915	52 / 60	0-3
3/24/20	Ryan Winkleman, Ashley Spencer	0720 / 1020	47 / 58	0-3
4/14/20	Ryan Winkleman, Stephen Anderson	0710 / 1005	52 / 60	0-3
4/28/20	Ryan Winkleman, Stephen Anderson	0715 / 1013	60 / 77	0-1
5/19/20	Ryan Winkleman, Ashley Spencer	0705 / 0950	56 / 63	0-3
6/2/20	Ryan Winkleman, Ashley Spencer	0708 / 0950	63 / 74	0-5
6/23/20	Ryan Winkleman, Ashley Spencer	0710 / 1021	62 / 69	0-4

Because USFWS specifically requested that audio playback/harassment not occur during these surveys, the surveys were essentially conducted in the same manner as a standard CAGN presence/absence survey, but the biologists did not make any attempts to elicit reactions from the birds. Biologists would instead walk accessible areas of suitable habitat within the survey area and would station themselves at different locations to wait for any CAGN to vocalize or come into view. Biologists spent approximately 45 to 60 minutes watching for CAGN activity within each known territory as described below in Results. Playback was not used and all CAGN monitoring was conducted by passively waiting for the birds to arrive. If CAGN appeared, the biologists would watch them to see what areas they were using, what their general territory boundaries were, and what their behavior was. Territory boundaries were updated throughout the survey effort to match current information. If nesting behavior was observed, the biologists watched from a safe distance and, if found, plotted the nest location as accurately as possible on an aerial map and then watched for updates on subsequent surveys from a safe distance. If no CAGN were detected, the biologists would move on to the next area. Photographs were periodically taken during the surveys (refer to Figure 2, *Survey Area*, in Attachment A, as well as to Attachment B).

## **Results**

Based on information in the CNDDDB (CDFW 2020) and eBird (eBird 2020), CAGN is known to occur in Chino Hills State Park in a generally uncommon population spanning across the Chino and Puente Hills. It also occurs south of SR-91 opposite the Santa Ana River where it is reasonably common in the foothills of the Santa Ana Mountains in Orange County. The project site is located within designated Critical Habitat Unit 9, which spans Los Angeles, San Bernardino, and Orange Counties (USFWS 2007).

A total of eighty-two (82) wildlife species were observed within the CAGN survey area during the CAGN focused surveys including four (4) reptiles, seventy-six (76) birds, and two (2) mammals. A complete list of wildlife species observed within the CAGN survey area is included in Attachment C.

Within the survey area, a total of three (3) areas supporting CAGN were found during the focused surveys. Three (3) nests were found in two (2) of these territories, although only one (1) nest successfully led to chicks fledging. Territory boundaries are portrayed in Figure 4, *Results*, in Attachment A. It should be noted that although all three territories displayed in Figure 4 show approximate territorial boundaries, the boundaries for Territory 3 are tentative at best. CAGN were reliably found each time in Territories 1 and 2, allowing 2020 territory boundaries to be mapped with reasonably high accuracy. However, as shown in Table 2 the birds in Territory 3 were much more difficult to find from survey to survey, in part likely due to the passive survey effort that was required, and the boundaries for this territory could never be completely ascertained due to the inconsistency of the observations. The Territory 3 boundaries in Figure 4 are estimated as closely as possible based on the locations of the birds each time they were detected, but may exclude areas that were being used on days when the birds were not detected. A more detailed description of activity in each territory during each survey is provided in Table 2 below.

**Table 2: Survey Results**

Date	Territories		
	Territory #1	Territory #2	Territory #3
2/18/20	Adult male and female present and foraging. Activity was concentrated to the base of the Scully Ridge Trail and up the adjacent hillside.	Adult male and female present and foraging in CSS along the Alluvial Trail.	No activity observed.
3/5/20	Adult male and female present and foraging in the same area.	Adult male and female present and foraging in the same area.	No activity observed.
3/24/20	Adult male and female present in the same area. Female seen carrying nesting material.	Adult male and female present and foraging in the non-native grassland north of the fence line along the Alluvial Trail.	Two separate males and a female were present in the vicinity of the Alluvial Trail and Aliso Canyon Creek. The males were simultaneously seen apart from each other and then seen again at the same time together briefly interacting directly with each other. The female was only seen briefly.
4/14/20	Adult male and female present. No indication of nesting or urgency.	Adult male and female present and seen returning repeatedly to the same area. Visual confirmation was obtained that they were carrying nesting material to this area ( <b>Nest #1</b> ).	No activity observed.
4/28/20	CAGN heard-only closer to railroad tracks but never seen.	<b>Nest #1</b> failed. The adult male and female were found building a nest in an entirely different area with easy visibility from a safe distance ( <b>Nest #2</b> ).	Adult male was seen briefly on a mustard hillside and then came down to sage scrub. A second bird may have been heard. No indication of nesting or urgency.
5/19/20	No activity observed.	Adult male and female present. Male was seen incubating on the nest.	No activity observed.
6/2/20	Adult male and female seen building a nest in an area easily seen from a distance ( <b>Nest #1</b> ).	Adult male and female seen frequently bringing food to <b>Nest #2</b> .	Adult male seen out in the mustard where it sat for long periods of time vocalizing without moving. No indication of nesting or urgency.
6/23/20	<b>Nest #1</b> failed. Adult male and female found foraging together off to the west of their typical territory area.	Adult male and female found with two fledglings. The adult male mostly used the CSS in the southern portion of the territory and the adult female and young mostly used the non-native grassland in the northern portion of the territory.	Adult male and female found foraging in mulefat along Aliso Canyon Creek to the east of all previous observations. No indications of nesting or urgency.



## Conclusions and Recommendations

Based on the results of the CAGN focused surveys, at least three (3) CAGN pairs were found to be present within the 500-foot survey area. At least two (2) of the pairs were confirmed to make nesting attempts in 2020, with only one (1) nest known to have been successful. Although territories were located in proximity to Alternative 1 in 2020, all territories and all suitable CAGN habitat is located to the west of the alignment, ultimately resulting in a low chance of CAGN moving across the alignment to the area to the east. Because only one nest successfully fledged young just before the final survey, a limited opportunity was available to see areas that the young birds were using because they were still tied closely to their parents. The area that the birds used, including the fledglings during the final survey, is encompassed within the Territory 2 boundaries displayed in Figure 4 in Attachment A. Because the proposed project does not entail the removal of CSS habitat or other habitat being used by the birds in 2020, direct project impacts during construction other than routine nesting bird risks due to territory proximity are not expected to occur.

To avoid indirect impacts and take of CAGN, it is recommended that all project-related construction occur outside of the recognized CAGN breeding season (February 15 – August 30). Although the project would not result in the loss of CSS habitat, timing the construction to be outside of this window of time would avoid impacts to CAGN that may be nesting in the CSS habitat adjacent to the project. If it is not possible to construct the project outside of the CAGN breeding season, it is recommended that a nesting bird survey be conducted within seven (7) days prior to the start of construction in a 500-foot buffer from the project. The survey should be conducted by a qualified biologist with demonstrable experience identifying CAGN nesting behavior and finding CAGN nests, and who has been approved by the USFWS to conduct the survey. If an active CAGN nest is found during the survey, no project-related construction will be allowed within 500 feet of the nest, or within an alternative safe distance as determined by the qualified biologist based on topography, visual shielding, nest progress, and the type of construction and associated disturbance, until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). Results of the nesting bird/nesting CAGN survey shall be compiled in a memorandum and submitted to RCTC and to the USFWS for the project record.

Please do not hesitate to contact me at (949) 533-0918 or [ryan.winkleman@mbakerintl.com](mailto:ryan.winkleman@mbakerintl.com) should you have any questions or require further information regarding the information presented in this report.

Sincerely,



Ryan Winkleman  
Senior Biologist  
Natural Resources and Regulatory Permitting

### Attachments:

- A. *Figures*
- B. *Site Photographs*
- C. *Wildlife Species Observed List*
- D. *References*

## **Attachment A**

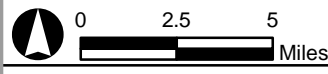
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Figures



7/8/2020 JN.M:\MapData\167982\GIS\MXD\BIO\CAGN\_072020\Fig\_01\_Regional\_Vicinity.mxd RP

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 COASTAL CALIFORNIA GNATCATCHER FOCUSED SURVEY RESULTS



Source: ArcGIS Online, 2018

## Regional Vicinity

Figure 1



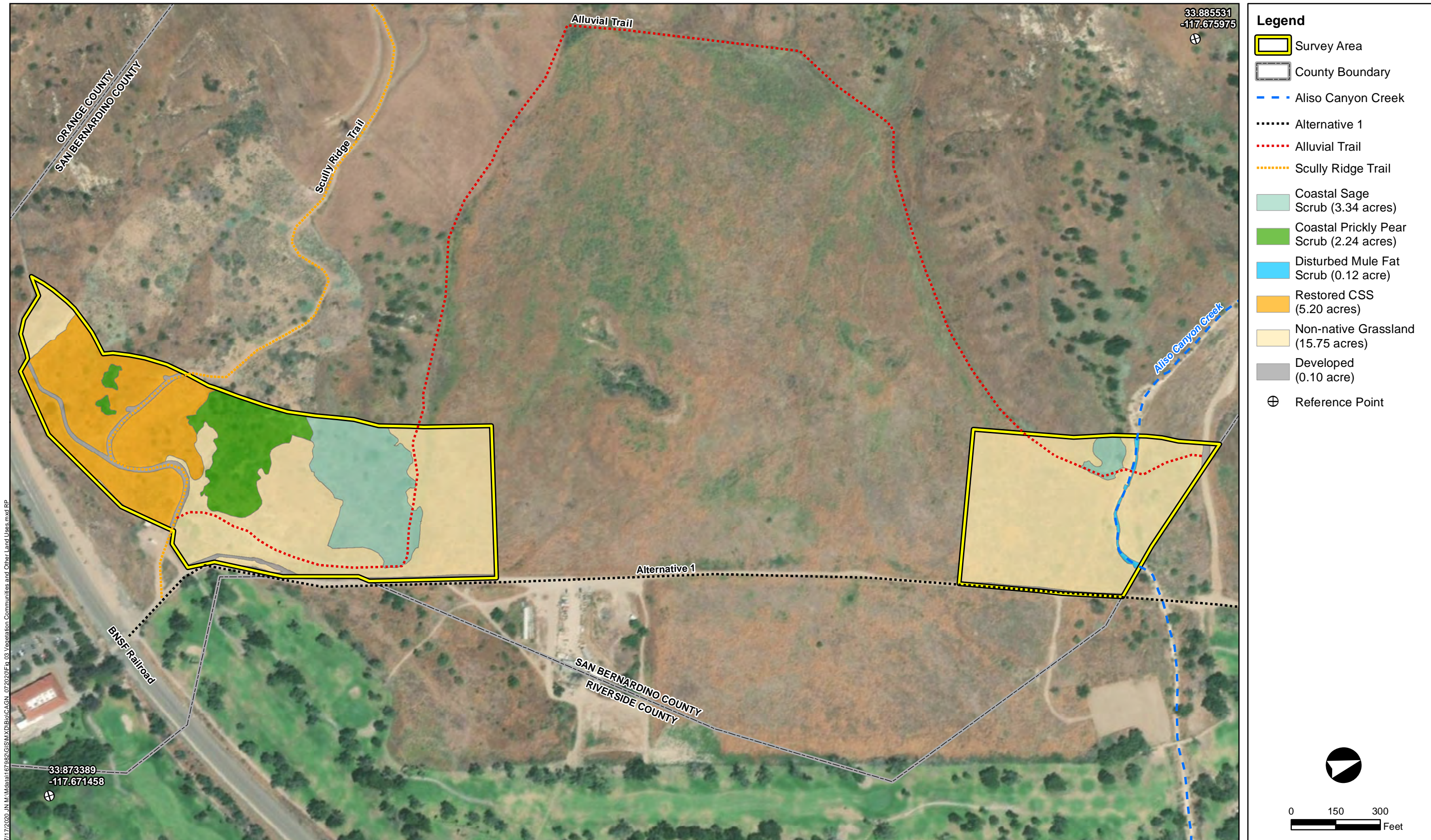
**Legend**

- Survey Area
- County Boundary
- Aliso Canyon Creek
- Alternative 1
- Alluvial Trail
- Scully Ridge Trail
- Photograph Point and Direction
- Reference Point

0 150 300  
Feet

7/17/2020 JN.M:\data\167982\GIS\MXD\BIO\CAGN\_072020\Fig\_02\_Survey\_Area.mxd RP

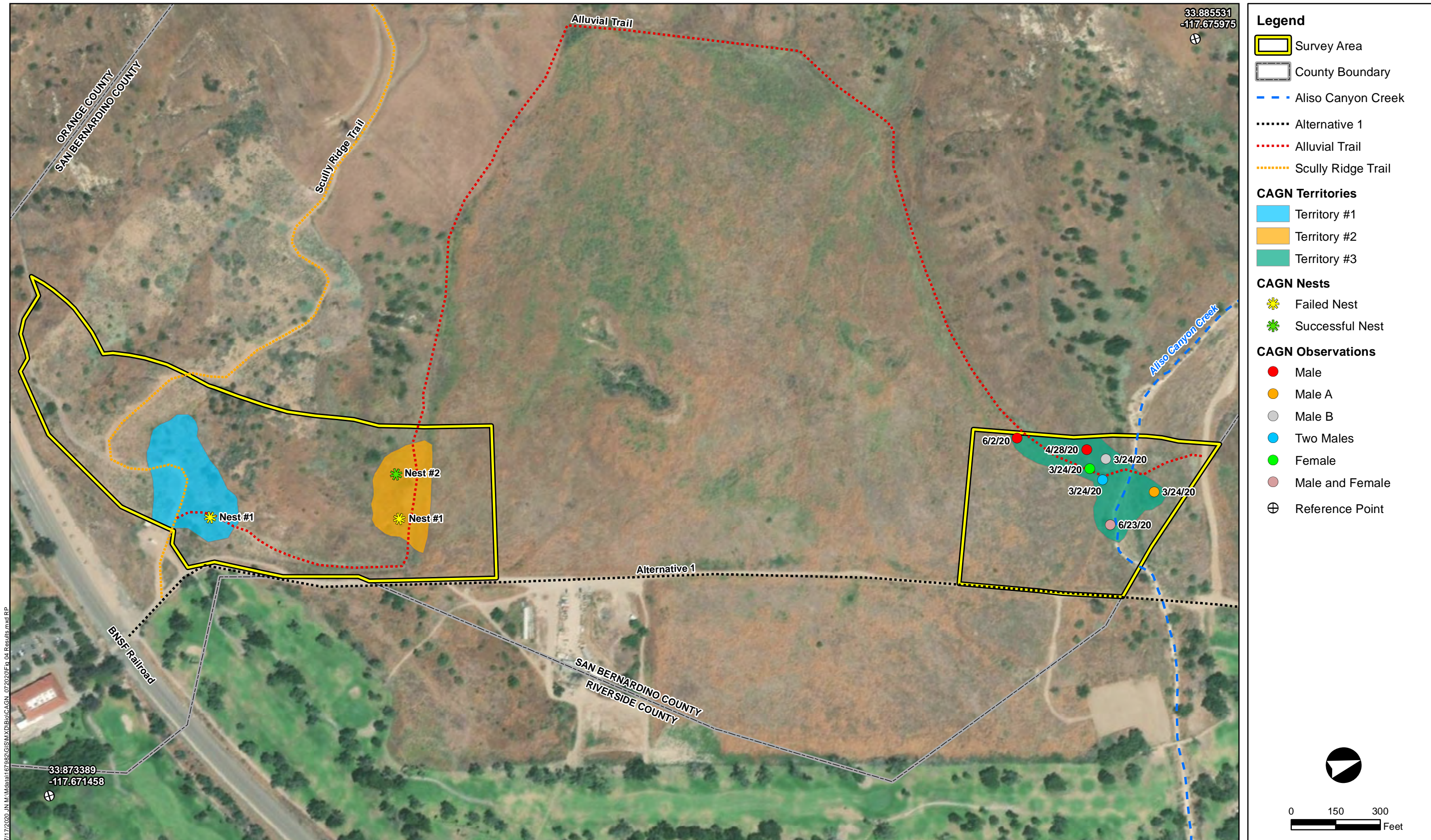
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
COASTAL CALIFORNIA GNATCATCHER FOCUSED SURVEY RESULTS



SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
COASTAL CALIFORNIA GNATCATCHER FOCUSED SURVEY RESULTS

### Vegetation Communities and Other Land Uses

Figure 3



SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 COASTAL CALIFORNIA GNATCATCHER FOCUSED SURVEY RESULTS

**Attachment B**

---

Site Photographs



**Photograph 1:** View of coastal California gnatcatcher (CAGN) Territory 1, facing northeast. This is a restored coastal sage scrub (CSS) area with disturbed CSS along the slopes.



**Photograph 2:** View of Territory 1, facing southwest.





**Photograph 3:** View of Territory 2, facing west. Two nests were built in this territory.



**Photograph 4:** View of Territory 2, facing west/northwest. The CAGN in this territory could often be found either in the CSS in Photograph 3 or in the mustard and non-native grasses along the fence line in this photo.



**Photograph 5:** View of Territory 3 from a distance, facing southwest. Remnant CSS is growing on the hillside to the left of the coast live oaks.



**Photograph 6:** View of Territory 3, facing southeast. Remnant CSS is present in this area overlooking Aliso Canyon Creek.



**Photograph 7:** View of the proposed location of Alternative 1 running adjacent to Territory 2, facing southwest.



**Photograph 8:** View of the CAGN pair in Territory 1 building a nest together (the base of which can be seen below them) on 6/2/20. This nest ultimately failed.



**Photograph 9:** A fledgling CAGN in Territory 2 on 6/23/20. The first nest in this territory failed, but the second nest fledged at least two (2) young.

**Attachment C**

---

Wildlife Species Observed List

**Table C-1: Wildlife Species Observed**

<i>Scientific Name*</i>	<b>Common Name</b>	<b>Special-Status Rank***</b>
<b>Reptilia (Reptiles)</b>		
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	SSC
<i>Crotalus oreganus helleri</i>	southern pacific rattlesnake	
<i>Sceloporus occidentalis longipes</i>	Great Basin fence lizard	
<i>Uta stansburiana elegans</i>	western side-blotched lizard	
<b>Aves (Birds)</b>		
<i>Accipiter cooperii</i>	Cooper's hawk	WL
<i>Accipiter striatus</i>	sharp-shinned hawk	WL
<i>Aeronautes saxatalis</i>	white-throated swift	
<i>Agelaius tricolor</i>	tricolored blackbird	SE
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	WL
<i>Anas platyrhynchos</i>	mallard	
<i>Ardea alba</i>	great egret	
<i>Ardea herodias</i>	great blue heron	
<i>Branta canadensis</i>	Canada goose	
<i>Bubo virginianus</i>	great horned owl	
<i>Buteo jamaicensis</i>	red-tailed hawk	
<i>Callipepla californica</i>	California quail	
<i>Calypte anna</i>	Anna's hummingbird	
<i>Calypte costae</i>	Costa's hummingbird	
<i>Cathartes aura</i>	turkey vulture	
<i>Catharus guttatus</i>	hermit thrush	
<i>Chaetura vauxi</i>	Vaux's swift	SSC
<i>Chamaea fasciata</i>	wrentit	
<i>Chondestes grammacus</i>	lark sparrow	
<i>Circus hudsonius</i>	northern harrier	SSC
<i>Contopus sordidulus</i>	western wood-pewee	
<i>Corvus brachyrhynchos</i>	American crow	
<i>Egretta thula</i>	snowy egret	
<i>Falco columbarius</i>	merlin	WL
<i>Falco sparverius</i>	American kestrel	
<i>Geococcyx californianus</i>	greater roadrunner	
<i>Geothlypis trichas</i>	common yellowthroat	
<i>Haemorhous mexicanus</i>	house finch	
<i>Hirundo rustica</i>	barn swallow	
<i>Icteria virens</i>	yellow-breasted chat	SSC
<i>Icterus bullockii</i>	Bullock's oriole	
<i>Icterus cucullatus</i>	hooded oriole	
<i>Larus californicus</i>	California gull	WL
<i>Leiostyris celata</i>	orange-crowned warbler	
<i>Lonchura punctulata*</i>	scaly-breasted munia	
<i>Melospiza lincolni</i>	Lincoln's sparrow	
<i>Melospiza melodia</i>	song sparrow	
<i>Melospiza crissalis</i>	California towhee	
<i>Mimus polyglottos</i>	northern mockingbird	
<i>Myiarchus cinerascens</i>	ash-throated flycatcher	

**Table C-1: Wildlife Species Observed**

<i>Scientific Name*</i>	<b>Common Name</b>	<b>Special-Status Rank***</b>
<i>Passerculus sandwichensis</i>	savannah sparrow	
<i>Passerina amoena</i>	lazuli bunting	
<i>Passerina caerulea</i>	blue grosbeak	
<i>Petrochelidon pyrrhonota</i>	cliff swallow	
<i>Phainopepla nitens</i>	phainopepla	
<i>Phalacrocorax auritus</i>	double-crested cormorant	
<i>Pipilo maculatus</i>	spotted towhee	
<i>Polioptila caerulea</i>	blue-gray gnatcatcher	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	FT/SSC
<i>Psaltriparus minimus</i>	bushtit	
<i>Sayornis nigricans</i>	black phoebe	
<i>Sayornis saya</i>	Say's phoebe	
<i>Selasphorus rufus</i>	rufous hummingbird	
<i>Selasphorus sasin</i>	Allen's hummingbird	
<i>Spinus lawrencei</i>	Lawrence's goldfinch	
<i>Setophaga coronata</i>	yellow-rumped warbler	
<i>Setophaga petechia</i>	yellow warbler	SSC
<i>Spinus psaltria</i>	lesser goldfinch	
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	
<i>Streptopelia decaocto*</i>	Eurasian collared-dove	
<i>Sturnella neglecta</i>	western meadowlark	
<i>Sturnus vulgaris*</i>	European starling	
<i>Tachycineta bicolor</i>	tree swallow	
<i>Tachycineta thalassina</i>	violet-green swallow	
<i>Thryomanes bewickii</i>	Bewick's wren	
<i>Toxostoma redivivum</i>	California thrasher	
<i>Troglodytes aedon</i>	house wren	
<i>Turdus migratorius</i>	American robin	
<i>Tyrannus verticalis</i>	western kingbird	
<i>Tyrannus vociferans</i>	Cassin's kingbird	
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE/SE
<i>Vireo cassinii</i>	Cassin's vireo	
<i>Vireo gilvus</i>	warbling vireo	
<i>Zenaida macroura</i>	mourning dove	
<i>Zonotrichia atricapilla</i>	golden-crowned sparrow	
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	
<b>Mammalia (Mammals)</b>		
<i>Otospermophilus beecheyi</i>	California ground squirrel	
<i>Sylvilagus audubonii</i>	desert cottontail	

\* Non-native species

\*\* **California Invasive Plant Council (Cal-IPC) Ratings**

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

\*\*\* **Special-Status Rank**

FT Federally Threatened

FE Federally Endangered

SE State Endangered

SSC Species of Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria: is extirpated from California or, in the case of birds, in its primary seasonal or breeding role; is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.



## **Attachment D**

---

### References

- California Department of Fish and Wildlife (CDFW). 2020. California Natural Diversity Database RareFind 5. Data base report on threatened, endangered, rare or otherwise sensitive species and communities for the *Prado Dam and Black Star Canyon, California* USGS 7.5-minute quadrangles. Accessed online at: <https://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>.
- eBird. 2017. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Accessed online at: <http://www.ebird.org>.
- U.S. Department of Agriculture, Natural Resources Conservation Service (USDA). 2020. Web Soil Survey. *Custom Soil Resources Report for San Bernardino County Southwestern Part, California*. Accessed online at: <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- U.S. Fish and Wildlife Service (USFWS). 1997. *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines*. February 28, 1997.
- U.S. Fish and Wildlife Service (USFWS). 2007. *Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (Polioptila californica californica)*. Federal Register 72 (243): 72010-72213.
- U.S. Fish and Wildlife Service (USFWS). 2010. *Coastal California Gnatcatcher (Polioptila californica californica) 5-year Review: Summary and Evaluation*. September 29, 2010.
- U.S. Fish and Wildlife Service (USFWS). 2020. USFWS Critical Habitat for Threatened & Endangered Species mapper. Accessed online at: <http://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77>.

# **SANTA ANA RIVER TRAIL - PHASE 6 (SART – PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT**

CITIES OF CORONA AND CHINO HILLS, COUNTIES OF RIVERSIDE AND  
SAN BERNARDINO, CALIFORNIA

## **Determination of Biologically Equivalent or Superior Preservation**

---

Permittee:

**RIVERSIDE COUNTY TRANSPORTATION COMMISSION**

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Contact: *David Lewis*  
951.787.7970

Prepared By:

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September 2021  
JN 167982

# **SANTA ANA RIVER TRAIL - PHASE 6 (SART – PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT**

CITIES OF CORONA AND CHINO HILLS, COUNTIES OF RIVERSIDE AND  
SAN BERNARDINO, CALIFORNIA

## **Determination of Biologically Equivalent or Superior Preservation**

---

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Ashley Spencer  
Biologist  
Natural Resources and Regulatory Permitting



Tom Millington  
Senior Biologist  
Natural Resources and Regulatory Permitting

September 2021  
JN 167982

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Appendix B Conceptual Site Plan  
Appendix C Proposed Trail Cross Sections  
Appendix D Habitat Mitigation and Monitoring Plan for the San Timoteo Canyon Mitigation Site (LSA 2020)

**ACRONYMS AND ABBREVIATIONS**

ADA	Americans with Disabilities
APN	assessor parcel number's
BMP	Best Management Practices
BNSF	Burlington Northern Santa Fe
BUOW	burrowing owl
CAGN	coastal California gnatcatcher
CAL-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
Corps	United States Army Corps of Engineers
CSS	coastal sage scrub
DBESP	Determination of Biologically Equivalent or Superior Preservation
LBVI	least Bell's vireo
Michael Baker	Michael Baker International
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NEPS	Narrow Endemic Plant Species
P/QP	Public/Quasi-Public
project	Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project
RCA	Western Riverside County Regional Conservation Authority
Regional Board	Regional Water Quality Control Board
SART	Santa Ana River Trail
SAWA	Santa Ana Watershed Association
SWFL	southwestern willow flycatcher
USDA	United States Department of Agriculture, Natural Resource Conservation Service
USGS	United States Geological Survey
YBCU	western yellow-billed cuckoo

# Section 1 Executive Summary

---

This report provides an analysis by Michael Baker International (Michael Baker) in support of a Determination of Biologically Equivalent or Superior Preservation (DBESP) for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project (project) located in the cities of Corona and Chino Hills, counties of Riverside and San Bernardino, California. This DBESP report was prepared following template guidance provided by the Western Riverside County’s Regional Conservation Authority ([RCA], 2019) and the County of Riverside Environmental Programs Department DBESP Guidelines (County of Riverside Transportation and Land Management Agency, 2005). This report provides an analysis of temporary and permanent impacts to riparian/riverine resources that meet the definition of Multiple Species Habitat Conservation Program (MSCHP) Section 6.1.2, *Protection of Species Associated with Riparian and Riverine Areas and Vernal Pools*, and demonstrates that with the appropriate mitigation, the proposed project will represent a “biologically equivalent or superior alternative”. Although the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker, 2021) and *Delineation of State and Federal Jurisdictional Waters* (Michael Baker, 2020) for the proposed project analyzed two build alternatives (Alternatives 1 and 2), Alternative 2 has been eliminated from consideration. As such, only Alternative 1 is analyzed in this document.

A summary of onsite sensitive biological resources and vegetation mapping within the survey area described in the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker 2021) and a summary of the general and focused biological surveys conducted for the project are provided in this report. A more detailed analysis of the biological resources located within the survey area are provided in the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker 2021) prepared under a separate cover. Although the survey area described in the *Habitat Assessment and MSHCP Consistency Analysis Report* encompasses both San Bernardino and Riverside Counties, for the purpose of this DBESP analysis, the biological resources and Alternative 1 impacts only reflect the portion of the project that is located within Riverside County (i.e., project, project area). According to the RCA’s online MSHCP Information Application, the project is located within Subunit 2: Prado Basin of the Temescal Canyon Area Plan. In addition, portions of the proposed project are located within Criteria Cells 1612 and 1616, Existing Core A, and Public/Quasi-Public (P/QP) Lands. Further, the proposed project is located within a mapped survey area for burrowing owl (*Athene cunicularia* [BUOW]), however, no BUOW or BUOW sign (i.e., pellets, white wash, feathers, or prey remains) were observed during any of the focused surveys conducted in 2019.

Based on discussions during pre-application meetings on June 12, 2019 and April 8, 2020, Alternative 1 has been designed to minimize both direct and indirect effects to riparian/riverine resources and associated functions and values to the greatest extent possible. The project impacts that are unavoidable shall be mitigated such that the loss of functions and values as they are related to the riparian birds and MSHCP Covered Species are replaced. Alternative 1 would result in approximately 0.17 acre of temporary impacts and 0.003 acre of permanent impacts to riparian/riverine resources. Impacts to suitable riparian habitat for least Bell’s vireo (*Vireo bellii pusillus*; LBVI) include 0.10 acre of temporary impacts to disturbed mule fat



scrub and elderberry savannah vegetation and 0.01 acre of permanent impact to elderberry savannah vegetation.

To meet the criteria of a biologically equivalent or superior alternative, the Riverside County Transportation Commission proposes to mitigate permanent impacts to approximately 0.003 acre of riparian/riverine resources associated with Drainage 1 and temporary impacts to approximately 0.010 acre of occupied LBVI habitat through the off-site enhancement and preservation of 0.039 acre of MSHCP Riparian/Occupied LBVI habitat located within the San Timoteo Canyon Mitigation Site (Mitigation Site).

The Mitigation Site is comprised of two (2) parcels totaling approximately 32.63 acres within the San Timoteo Creek floodplain. Vegetation at the Mitigation Site consists primarily of riparian forest dominated by Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and mule fat (*Baccharis salicifolia*). Non-native species also occurring within the Mitigation Site include tamarisk (*Tamarix ramosissima*), giant reed (*Arundo donax*), tree tobacco (*Nicotiana glauca*), Mexican fan palm (*Washingtonia robusta*), poison hemlock (*Conium maculatum*), bull thistle (*Cirsium vulgare*), common sow thistle (*Sonchus oleraceus*), London rocket (*Sisymbrium irio*), short podded mustard (*Hirschfeldia incana*), Australian saltbush (*Atriplex semibaccata*), Mexican tea (*Dysphania ambrosioides*), Russian thistle (*Salsola tragus*), white sweetclover (*Melilotus albus*), horehound (*Marrubium vulgare*), Bermuda grass (*Cynodon dactylon*), smilo grass (*Stipa miliacea*), mouse barley (*Hordeum murinum*), foxtail chess (*Bromus madritensis*), and ripgut brome (*Bromus diandrus*).

The Mitigation Site was selected as it currently supports riparian vegetation occupied by LBVI and is located within the Santa Ana River Watershed, the same watershed the proposed impacts would occur. In addition, the Mitigation Site would provide biologically equivalent or superior functions and values of riparian/riverine resources when compared to those resources that would be impacted by the proposed project. The intent of the Mitigation Site would be to conserve and/or restore, enhance, or create habitats that are connected to less disturbed areas which provide a greater biological value. The Mitigation Site would provide superior hydrologic conditions and riparian habitat through the preservation of an area that is not as heavily disturbed as areas within the project footprint.

- Although the Mitigation Site provides higher quality riparian/riverine habitat compared to what would be permanently impacted within the project footprint, additional enhancement activities would also be implemented to further mitigate impacts to riparian/riverine habitat that would occur as a result of the proposed project. Enhancement of the Mitigation Site would include the removal of exotic, invasive vegetation (i.e., tamarisk, giant reed), follow-up weed treatment, and replacement with the appropriate native vegetation. Plant palettes would focus on site-appropriate LBVI habitat and would be tailored to provide favorable vegetation composition, structure, and density. Upon signoff of performance standards attainment by CDFW, protection of the entire Mitigation Site will be provided, and long-term management responsibility will be conveyed through transfer of fee title of the entire Mitigation Site to the RCA. The Mitigation Site will be owned and managed by RCA as part of the MSHCP Management and Adaptive Management

Programs. Please refer to the *Habitat Mitigation and Monitoring Plan for the San Timoteo Canyon Mitigation Site* (LSA 2020) provided in Appendix D for additional information.

In order to mitigate temporary impacts associated with Alternative 1, the project applicant would implement the following:

- Restore all temporarily impacted areas by hydroseeding with a native seed mix that would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP and listed by the California Invasive Plant Council (CAL-IPC). The native seed mix would be consistent with the native species located in the impact area’s surrounding. The final landscape plans would be reviewed and verified by the RCA.
- Implement Best Management Practices (BMPs) to mitigate impacts to riparian/riverine resources in accordance with Appendix C of the MSHCP.
- A qualified biologist would present to project personnel (including temporary, contractors, and subcontractors) a worker environmental awareness program prior to the initiation of grading activities. Project personnel should be advised on any special-status wildlife species of concern, the steps to avoid impacts to the species and the potential penalties for taking such species. At a minimum, the program should include the following topics: occurrence of the listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, legal protection afforded to these species, penalties for violations of federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area. Color photographs of the listed species should be included in the program and be shown to personnel. Following the program, the photographs should be posted in the contractor and resident engineer office and remain through the duration of the project. The contractor, resident engineer, and the qualified biologist should be responsible for ensuring that personnel are aware of the listed species. If additional personnel are added to the project after initiation, they should receive instruction prior to working on the project.
- In order to avoid or minimize impacts to water quality, a construction Storm Water Pollution Prevention Plan and Soil Erosion and Sedimentation Plan should be developed to minimize erosion and identify specific pollution prevention measures that would eliminate or control potential point and non-point pollution sources on-site during and following the project’s construction phase. The project design should incorporate permanent erosion control elements to ensure that storm water runoff does not cause soil erosion. In addition, erosion control measures should be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts include hydromulching and limiting the amount and length of exposure of graded soil.
- Disturbance related to the project should be minimized to the maximum extent possible. Project site access should also be limited to existing disturbed roads and access routes.

- Prior to construction, highly visible barriers (e.g., orange construction fencing) should be clearly defined and installed around the perimeter of the project impact area and access routes.
- Use of heavy equipment, including motor vehicles, or construction personnel within riparian and riverine communities should be reduced to the maximum extent practicable.
- Project related construction noise is not expected to exceed normal ambient noise levels within the project area. Wildlife species present within adjacent habitats are routinely exposed to above average noise levels associated with the BNSF railroad and State Route 91. However, construction-related activities should incorporate measures pursuant to County of Riverside rules, regulations, and guidelines related to land use noise standards. In addition, due to the presence of LBVI within the vicinity of the proposed project, pre-construction clearance surveys would need to be conducted prior to initiating project activities (e.g., vegetation clearing, grubbing, grading, etc.) during the recognized LBVI breeding season (March 15 to September 30) to determine the presence/absence of LBVI within the project’s vicinity. If LBVI are not present, then construction may occur. In the event LBVI are observed during the pre-construction clearance survey, a “no-disturbance” buffer would need to be established around the location and construction would need to avoid work in that area until the end of the nesting cycle. No project-related construction would occur within the “no-disturbance” buffer until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). The distance of the “no-disturbance” buffer would be determined by the qualified biologist based on ambient noise levels, topography, visual/noise shielding, nest progress, and the type of construction and associated disturbance. Any proposed “no disturbance” buffers, including any subsequent reductions in the “no disturbance” buffers, would need to be reviewed and approved by the RCA and the Wildlife Agencies. In addition, all work during the LBVI breeding season would occur during daylight hours and would not exceed ambient noise levels. Ambient noise measurements would be taken by a qualified biological monitor during a full daylight period (sunrise to sunset) and subsequently, the median average noise level shall be used as the baseline on which to determine when and where work would occur. The qualified biological monitor must be present to measure noise levels at the edge of all suitable habitat and work shall cease if, at any time, noise levels exceed the median ambient levels.
- Although any potential impacts to coastal California gnatcatcher (*Poliopitila californica californica*; CAGN) and its habitat within Riverside County are fully covered under the MSHCP, Permittees are required by the Migratory Bird Treaty Act Special-Purpose Take Permit (issued by USFWS) to avoid clearing CAGN occupied habitat in the Criteria Area and in P/QP Lands between March 1 and August 15. As such, all habitat clearing, grubbing, grading, and other associated project activities located within Criteria Area and P/QP Lands would occur outside of the active breeding season for CAGN which is March 1 to August 15. If it is not possible to construct the proposed project outside of the CAGN breeding season, then protocol-level focused surveys for CAGN would need to be conducted to fully prove absence. If CAGN is determined to be absent during the protocol-level focused surveys, then construction activities (i.e., vegetation clearing, grubbing, grading) may commence.

- In order to avoid impacts to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities should occur outside of the nesting bird season (February 1 – August 31). If avoidance of the nesting bird season is not feasible, a pre-construction nesting bird clearance survey should be conducted by a qualified biologist no more than three days prior to the start of any vegetation removal or ground disturbing activities to maintain compliance with the Migratory Bird Treaty Act and California Fish and Game Code and ensure that impacts to nesting birds do not occur. The qualified biologist should survey all suitable nesting habitat within the project impact area, including areas within a biologically defensible buffer distance surrounding the project impact area, for the presence of nesting birds and should provide documentation of the surveys and findings to the Riverside County Transportation Commission for review prior to initiating project activities. If no active bird nests are detected, project-related activities may begin. If an active nest is found, the bird should be identified to species and the approximate distance from the closest work site to the active nest should be estimated and the qualified biologist should establish a “no-disturbance” buffer around the active nest. The distance of the “no-disturbance” buffer may be increased or decreased according to the judgement of the qualified biologist depending on the level of activity and species (i.e., listed, sensitive). In addition, the qualified biologist should periodically monitor any active bird nests to determine if project-related activities occurring outside the ‘no disturbance’ buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, project-related activities within the ‘no disturbance’ buffer may occur.
- If stream flows must be diverted during project construction activities, methods requiring minimal instream impacts (e.g., sandbags) should be utilized. Silt fence barriers should also be installed to prevent sediments from moving off-site.
- All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities should occur in developed or previously disturbed upland areas so as to prevent the runoff from any spills from entering waters of the U.S., waters of the State, or riparian/riverine resources. All construction equipment should be operated in a manner to prevent accidental damage to nearby preserved areas and any project-related spills of hazardous materials should be immediately reported to appropriate entities.
- Silt fence barriers should be installed around water courses to prevent accidental deposition of fill material in these areas. And brush, loose soils, or other similar debris materials should be stockpiled in developed or disturbed upland areas.
- A qualified biologist should monitor construction for the duration of the project to ensure that BMPs and other avoidance and minimization measures are properly implemented.
- Removal of native vegetation should be minimized to the maximum extent possible.
- Removal of exotic species that prey upon or displace target species of concern should be removed from the project work area, if possible.
- Trash, construction refuse (e.g., broken equipment parts, cables, etc.), and food items should be contained in closed containers and removed daily.

## Section 2 Introduction

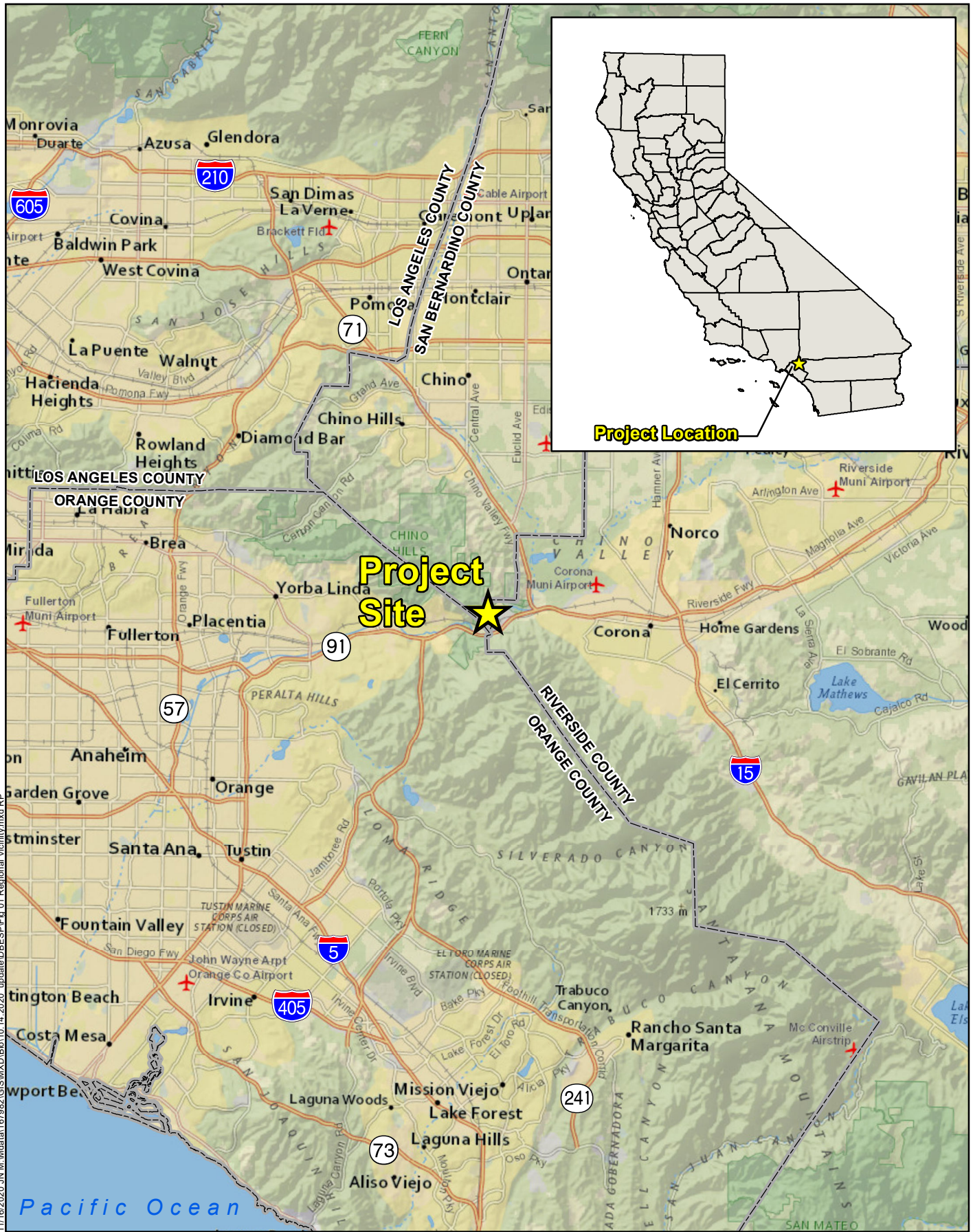
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This report provides an analysis by Michael Baker International (Michael Baker) in support of a Determination of Biologically Equivalent or Superior Preservation (DBESP) for the proposed Santa Ana River Trail – Phase 6 (SART – Phase 6) Through Green River Golf Course Project (project) located in the cities of Corona and Chino Hills, counties of Riverside and San Bernardino, California. This report was prepared following the DBESP template and guidelines provided by the Western Riverside County’s Regional Conservation Authority ([RCA], 2019) and the County of Riverside Environmental Programs Department DBESP Guidelines (County of Riverside Transportation and Land Management Agency, 2005). Specifically, this report provides an analysis of temporary and permanent impacts to riparian/riverine resources that meet the definition of Multiple Species Habitat Conservation Program (MSCHP) Section 6.1.2, *Protection of Species Associated with Riparian and Riverine Areas and Vernal Pools*, and demonstrates that with the appropriate mitigation, the proposed project will represent a “biologically equivalent or superior alternative”. Although the *Habitat Assessment and Western Riverside County’s Multiple Species Habitat Conservation Program (MSHCP) Consistency Analysis Report and Delineation of State and Federal Jurisdictional Waters* for the project analyzed two build alternatives (Alternatives 1 and 2), Alternative 2 has been eliminated from consideration. As such, only Alternative 1 is analyzed in this document.

Field surveys for the proposed project were conducted in 2019 and 2020 and a *Habitat Assessment and MSHCP Consistency Analysis Report* (Michael Baker, 2021) and a *Delineation of State and Federal Jurisdictional Waters* (Michael Baker, 2020) were prepared for the project under separate covers. The information in the reports were used to aid in preparation of the DBESP analysis. This DBESP analysis provides information necessary to determine if the project meets the MSHCP conservation objectives. In addition, Riverside County Transportation Commission will coordinate with the U.S. Army Corps of Engineers (Corps), the Regional Water Quality Control Board (Regional Board), the California Department of Fish and Wildlife (CDFW), the United States Fish and Wildlife Service (USFWS) and the Western Riverside County’s Regional Conservation Authority (RCA) to ensure compliance with applicable mitigation and permitting requirements.

### 2.1 PROJECT AREA

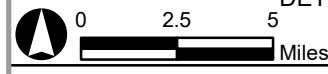
The survey area described in the *Habitat Assessment and MSHCP Consistency Analysis Report* is generally located within the west end of the City of Corona and the southeast corner of the City of Chino Hills, north of State Route 91 in both Riverside and San Bernardino Counties (refer to Figure 1, *Regional Vicinity*). The survey area is depicted in Sections 25 and 30, Township 3 South, Range 7 and 8 West, on the United States Geological Survey’s (USGS) *Black Star Canyon and Prado Dam, California* 7.5-minute quadrangles (refer to Figure 2, *Project Vicinity*). Specifically, the survey area is approximately 149.38 acres in size and is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the Burlington Northern and Santa Fe (BNSF) railroad, the unpaved segment between SART – Phase 3 and



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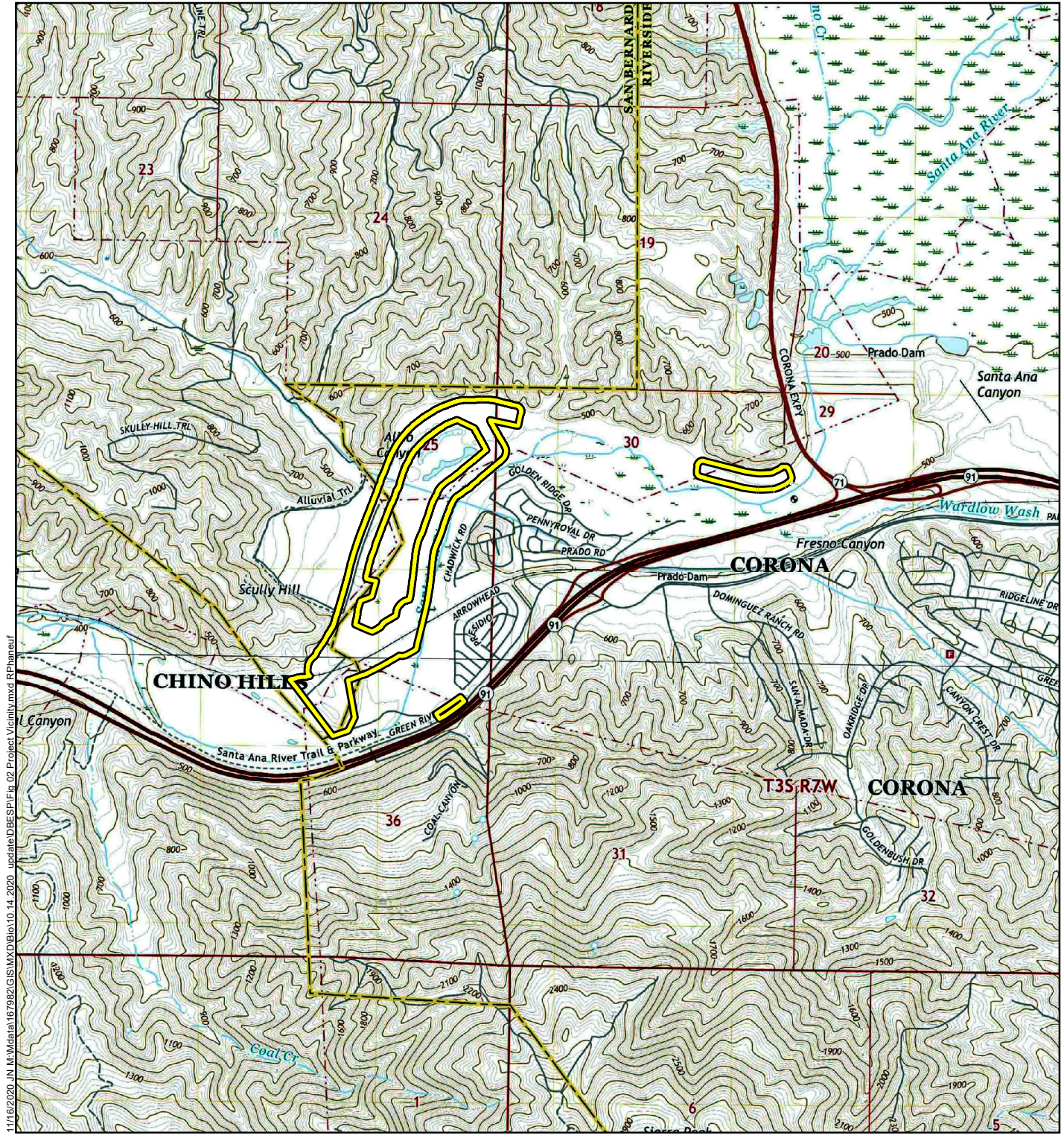
SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

## Regional Vicinity



Source: ArcGIS Online, 2018

Figure 1



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**Legend**

 Survey Area

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
 DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION



**Project Vicinity**

Source: ArcGIS Online, 2018, USGS 7.5-Minute topographic quadrangle maps: Prado Dam, Black Star Canyon, California (2018)

Figure 2

SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River (refer to Figure 3, *Survey Area*). In addition, refer to Appendix A for representative photographs taken throughout the survey area. Although the survey area described in the *Habitat Assessment and MSHCP Consistency Analysis Report* encompasses both San Bernardino and Riverside Counties, for the purpose of this DBESP analysis, the biological resources and Alternative 1 impacts described in the following sections only reflect the portion of the proposed project that is located within Riverside County (i.e., project or project area).

According to the RCA’s online MSHCP Information Application, portions of the proposed project are located within Subunit 2: Prado Basin of the Temescal Canyon Area Plan. In addition, portions of the project are located within Criteria Cells 1612 and 1616, Existing Core A, and Public/Quasi-Public (P/QP) Lands. The project encompasses assessor parcel number’s (APN): 101-120-002, 101-120-012, 101-120-018, 101-130-003, 101-130-016, 101-130-080, 101-140-005, 101-140-006.

## 2.2 PROJECT DESCRIPTION

The proposed project (SART – Phase 6) consists of a 1.5-mile segment through the Green River Golf Course and a 0.2-mile segment between Phase 5 and Phase 3 of the larger 110-mile SART project. More specifically, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the Santa Ana River Parkway Extension (currently in final design) located west of the proposed project in Orange County, with the existing SART – Phase 5 (completed March 2019) in Chino Hills State Park on the east within Riverside County. Additionally, the proposed project involves a dual-track Class I multi-use path/natural surface trail, connecting the eastern terminus of the SART – Phase 5 and the western terminus of SART – Phase 3 (currently under environmental review), near the State Route 91 and State Route 71 interchange in Riverside County. Please refer to Appendix B for the conceptual site plan.

Implementation of the proposed project would serve the needs of recreational users, including pedestrians, hikers, bicyclists, and equestrians, as well as provide commuters an opportunity for alternative means and routes of transportation in the project area. Alternative 1 would generally extend along the western boundary of the Green River Golf Course; construction access would occur entirely within the existing developed and disturbed areas and the existing dirt trail (refer to Figure 4, *Project Depiction/Alternatives*). The designated staging area for the proposed project is situated along Green River Road, adjacent to State Route 91. The designated staging area for the project consists of a disturbed area that is currently being used as a staging area for the BNSF railroad bridge project.

### Trail Characteristics


The proposed project would primarily consist of a parallel Class I multi-use path and natural surface trail. Based on Michael Baker’s mapping of the limits of the existing maintenance trail, the width of the existing trail ranges from a minimum of 7 feet to a maximum of 27 feet. In areas located outside of Public/Quasi-Public (P/QP) Lands and the Criteria Area, permanent impacts would typically be limited to a 22 foot trail width plus the 2 foot hinges (on either side of the trail) for a total trail width of 26 feet (i.e., the hardscape





**Legend**

- Survey Area
- County Boundary
- ⊕ Reference Point



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Feet

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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION



**Legend**

- Survey Area
- County Boundary
- Alt 1 - Construction Limits
- Alt 1 - Hardscape Boundary
- Alt 1 - Bridge
- SART - Phase 3
- SART- Phase 5
- Reference Point

0 350 700  
Feet

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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

boundary). Please refer to Appendix C for a cross section of the proposed trail within areas located outside of P/QP Lands and the Criteria Area. To accommodate the maximum allowable width of 20 feet (permanent impact footprint) for future proposed trails within the Criteria Area and P/QP Lands per MSHCP Section 7.4.2, the hardscape boundary of the proposed trail narrows to 20 feet just before the golf course limits end (refer to Appendix C). In addition, the hardscape boundary of the proposed trail would narrow to 20 feet east of the existing SART Phase 5 to SART Phase 3. Temporary impacts in these areas would be approximately 10 feet wider than the hardscape boundary. All temporary impacts would be associated with the outer areas of the proposed trail, within the construction limits. Temporarily impacted areas would be restored through hydroseeding with a native seed mix that would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP and listed by the California Invasive Plant Council (CAL-IPC). The native seed mix would be consistent with the native species located in the impact area's surrounding. The final landscape plans would need to be reviewed and verified by the RCA. In addition, the project applicant shall implement Best Management Practices (BMPs) to mitigate impacts to riparian/riverine resources in accordance with Appendix C of the MSHCP. At the proposed bridge locations, the trail would merge into a combined paved trail, as described below.

- **Class I Multi-Use Path.** Outside of the P/QP Lands and the Criteria Area, the Class 1 multi-use path would be an Americans with Disabilities (ADA) accessible 12-foot-wide paved bike path, consisting of asphalt concrete pavement with an additional two-feet of unpaved dirt shoulder, for a total of 14 feet. This Class 1 multi-use path is intended to be used by bicyclists and pedestrians. Within P/QP lands and the Criteria Area, the Class I Multi-Use Path would be 12 feet wide with a 1-foot unpaved shoulder, for a total of 13 feet.
- **Natural Surface Trail.** Outside of the P/QP Lands and the Criteria Area, the natural surface trail would be a 10-foot-wide trail consisting of decomposed granite (DG) or a similar permeable surface of compacted dirt with an additional two-foot shoulder, for a total of 12 feet. The natural surface trail is intended to be used by mountain bicyclists, equestrians, pedestrians, and hikers. Within P/QP lands and the Criteria Area, the natural surface trail would be 6 feet wide with a 1-foot unpaved shoulder, for a total of 7 feet.
- **Combined Paved Trail.** At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 20 feet wide on the bridges.

### **Alternative 1 – West of Golf Course**

The southwesterly end of the proposed project alignment would connect with the eastern terminus of the Santa Ana River Parkway Extension at the Orange County/San Bernardino County line, south of the existing BNSF railroad. Alternative 1 generally extends east-west (within the existing golf course) south of, and parallel to, the BNSF railroad until it reaches the golf course parking lot.

From the parking lot, Alternative 1 would extend north, spanning the BNSF railroad tracks via a pedestrian bridge or vehicular bridge ranging in width from 20 feet to 37 feet. Once across the railroad line, the trail would continue north along the existing maintenance road. A bridge would be installed to cross Aliso Canyon. The trail would then continue north/northeast and connect with the SART – Phase 5 in Chino Hills State Park.

### **Additional Trail Alignment**

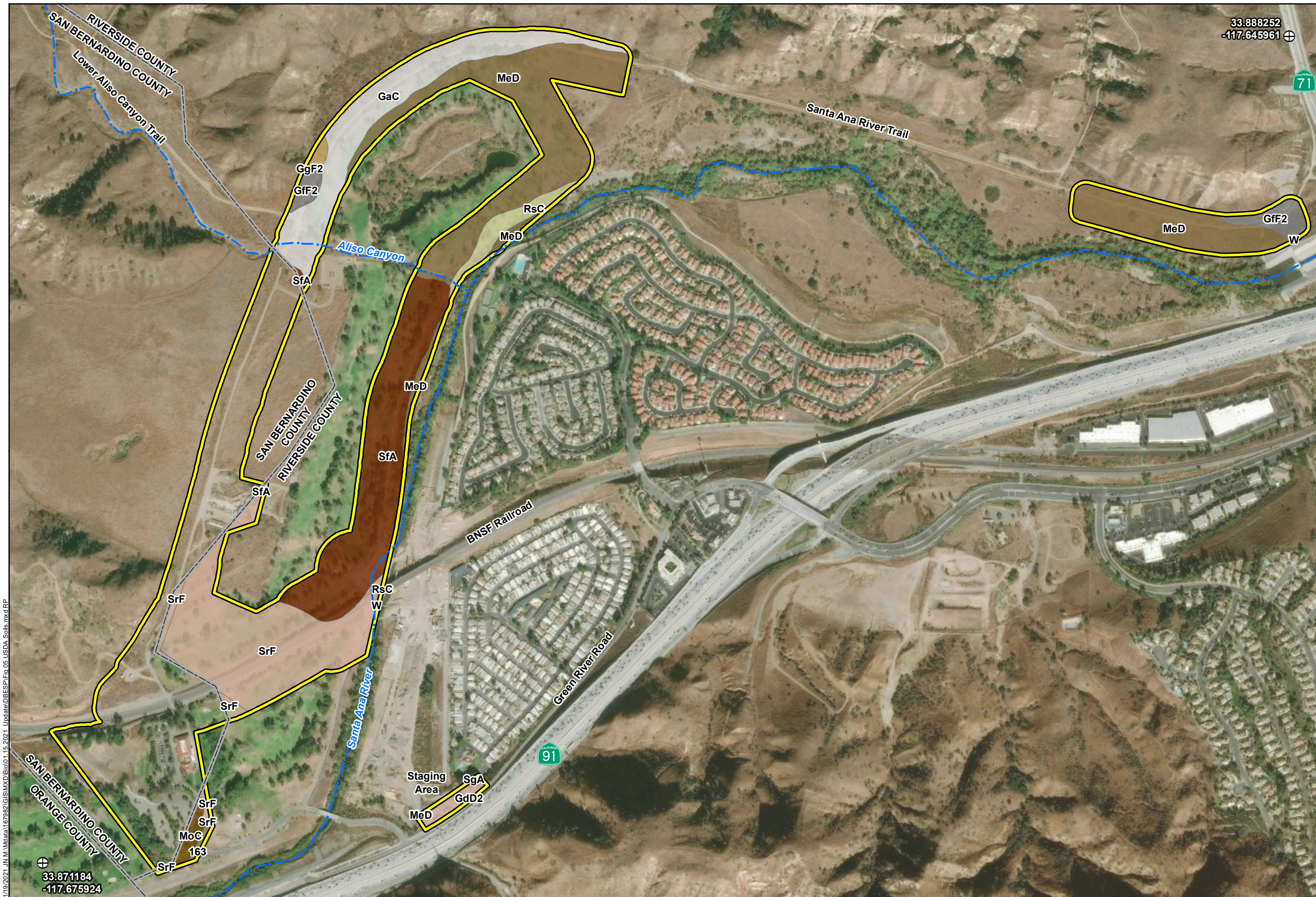
Both build alternatives would include construction of the approximate 1,000-foot segment of the SART located east of the golf course (refer to Figure 4, *Project Depiction/Alternatives*). This portion of the SART would connect the eastern terminus of the SART – Phase 5 with the western terminus of SART – Phase 3, near the State Route 91 and State Route 71 interchange.

## **2.3 EXISTING CONDITIONS**

Within Riverside County, the project is mainly comprised of the existing Green River Golf Course, disturbed maintenance roads, segments of the BNSF railroad, the unpaved segment between SART – Phase 3 and SART – Phase 5, an existing staging area along Green River Road, and relatively undisturbed, natural habitats within the Chino Hills State Park and the Santa Ana River. The topography consists of a nearly flat plateau surrounded by steep slopes to the north, south, and west and a relatively flat plateau to the east. The eastern portion of the project consists of moderately steep hillsides that slope down towards the Santa Ana River. Additionally, Aliso Canyon runs through the project area in a west to east direction and eventually flows into the Santa Ana River. Based on a review of Google Earth historical aerial imagery, several undeveloped portions of the project have been routinely disturbed and maintained through weed abatement (i.e. disking) and goat/cattle grazing activities since 1994.

Land uses surrounding the project consists mainly of high-density residential land uses, the Green River Golf Course, as well as some disturbed and vacant land. State Route 91 is located to the south of the project and runs in an east-west direction. Chino Hills State Park is located to the north and west of the project, whereas the Santa Ana River and residential land uses are located to the east. Additionally, the project is located approximately 1.5 miles to the southwest of Prado Dam and Prado Basin.

According to the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (U.S. Department of Agriculture [USDA], 2021), the project is underlain by the following soil units: Garretson gravelly very fine sandy loam, 8 to 15% slopes, eroded (GdD2); Garretson very fine sandy loam, 2 to 9% slopes (GaC); Gaviota rocky very fine sandy loam, 25 to 50% slopes, eroded (GgF2); Gaviota very fine sandy loam, 15 to 50% slopes, eroded (GfF2); Metz loamy sand (163); Metz loamy sand, 0 to 15% slopes (MeD); Monserate sandy loam, 2 to 9% slopes (MoC); Riverwash (RsC); San Emigdio fine sandy loam, deep, 0 to 2% slopes (SfA); San Emigdio loam, 0 to 2% slopes (SgA); Soper gravelly loam, 30 to 50% slopes MLRA 20 (SrF); and Water (W). Refer to Figure 5, *USDA Soils*, for a depiction of soil units within the project area.



**Legend**

- Survey Area
- County Boundary
- GdD2 Garretson gravelly very fine sandy loam, 8 to 15 percent slopes, eroded
- GaC Garretson very fine sandy loam, 2 to 9 percent slopes
- GgF2 Gaviota rocky very fine sandy loam, 25 to 50 percent slopes, eroded
- GfF2 Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded
- 163 Metz loamy sand
- MeD Metz loamy sand, channeled, 0 to 15 percent slopes
- MoC Monserate sandy loam, 2 to 9 percent slopes
- RsC Riverwash
- SfA San Emigdio fine sandy loam, deep, 0 to 2 percent slopes
- SgA San Emigdio loam, 0 to 2 percent slopes
- SrF Soper gravelly loam, 30 to 50 percent slopes, MLRA 20
- W Water
- Reference Point

0 350 700 Feet

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Seven (7) natural vegetation communities were observed and mapped within the boundaries of the project located within Riverside County: coastal sage scrub (CSS), southern cottonwood willow riparian forest, southern willow scrub, elderberry savannah, mule fat scrub, disturbed mule fat scrub, and non-native grassland. In addition, the project area contains four (4) land cover types that would be classified as open water, ornamental, disturbed, and developed. These vegetation communities and land cover types are depicted on Figure 6, *Vegetation Communities, Land Uses, and Special-Status Species Observations*. Refer to the sections below for a summary of the vegetation communities and other land uses that would be impacted by the proposed project. In addition, refer to Table 1 below for a summary of the acreages of the vegetation communities and other land uses and proposed impacts based on Alternative 1.

**Table 1: Vegetation Communities/Land Cover Types and Proposed Impacts**

Vegetation Communities/Land Cover Types	Acreage		
	Total Within Project Area	Proposed Impacts for Alternative 1	
		Temporary Impacts	Permanent Impacts
Coastal Sage Scrub	2.64	0.12	0.03
Southern Cottonwood Willow Riparian Forest	3.25	0.00	0.00
Southern Willow Scrub	2.91	0.00	0.00
Elderberry Savannah	1.20	0.03	0.01
Mule Fat Scrub	0.39	0.00	0.00
Disturbed Mule Fat Scrub	0.22	0.07	0.00
Non-Native Grassland	27.42	2.02	1.29
Open Water	0.45	0.00	0.00
Ornamental	0.91	0.00	0.00
Disturbed	4.99	0.28	0.23
Developed	59.12	1.72	1.80
<b>TOTAL*</b>	<b>103.50</b>	<b>4.24</b>	<b>3.36</b>

\*Total may not equal to sum due to rounding.

### **Coastal Sage Scrub**

Approximately 2.64 acres of CSS occurs within the southwest and eastern portion of the project area. This vegetation community is primarily dominated by California sagebrush (*Artemisia californica*), with California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*) spread throughout.

### **Elderberry Savannah**

Approximately 1.20 acres of elderberry savannah occurs immediately adjacent to the existing maintenance road located within the northern portion of the project area. This vegetation community is dominated by stands of black elderberry (*Sambucus nigra*) with short podded mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and other non-native grasses also occur within the understory.



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# Vegetation Communities, Land Uses, and Special-Status Species Observations

### **Disturbed Mule Fat Scrub**

Approximately 0.22 acres of disturbed mule fat scrub occur along the banks of Aliso Canyon at the west end of the project area. The characteristic plant species found within this vegetation community (e.g., mule fat [*Baccharis salicifolia*]) is sparse and in poor condition. This area of disturbed mule fat scrub is similar to the mule fat scrub vegetation community described above, but with a higher concentration of non-native vegetation, including foxtail barley (*Hordeum murinum*), London rocket (*Sisymbrium irio*), and ripgut brome (*Bromus diandrus*).

### **Non-Native Grassland**

Approximately 27.42 acres of non-native grassland occurs within the project area located within Riverside County. Certain portions of this vegetation community undergo routine weed abatement (i.e., disking) and appeared to have been recently disked prior to the January 23, 2019 field survey. Additionally, the non-native grassland vegetation community can be found intermixing with the elderberry savannah in the northern portion of the project area, along with the southern cottonwood willow riparian forest and southern willow scrub in the eastern portion of the project area. Dominant species observed within this vegetation community include shortpodded mustard, Russian thistle, ripgut brome, and wild oat (*Avena fatua*).

### **Ornamental**

Approximately 0.91 acres of ornamental vegetation occurs within the southern portion of the project area, surrounding the existing Green River Golf Course clubhouse and parking lot. Ornamental trees observed include black poui (*Jacaranda mimosifolia*), red iron bark (*Eucalyptus sideroxylon*), blue gum (*Eucalyptus globulus*), and carrotwood (*Cupaniopsis anacardioides*).

### **Disturbed**

Approximately 4.99 acres of disturbed land occurs immediately adjacent to the BNSF railroad to the west of the Santa Ana River. Plant species observed within these areas include castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*), black mustard (*Brassica nigra*), and poison hemlock (*Conium maculatum*). A few individuals of black elderberry, laurel sumac, and mule fat also occur.

### **Developed**

Approximately 59.12 acres of developed land occurs within the project area located within Riverside County. Areas of developed land consists of the BNSF railroad and existing maintenance roads/trails, parking lots, structures, and landscaped fairways associated with the Green River Golf Course.



# Section 3 Riparian/Riverine Mitigation (Section 6.1.2)

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## 3.1 METHODS

As defined under Section 6.1.2 of the MSHCP, riparian resources are areas dominated by trees, shrubs, persistent emergent plants, or emergent mosses and lichens which occur close to or are dependent upon nearby freshwater. Further, as defined under Section 6.1.2 of the MSHCP riverine resources are areas with freshwater flowing during all or a portion of the year. Conservation of riparian/riverine resources is intended to protect habitat that is essential to a wide variety of listed or special-status water-dependent fish, amphibian, avian, and plant species. The extent and condition of the riparian/riverine resources located within the project area were evaluated in the field by Michael Baker biologists on January 23, 2019 and June 11, 2019. Michael Baker certified wetland delineators conducted field delineations to determine the jurisdictional limits of waters of the U.S. and waters of the State (including potential wetlands) on January 23, 2019, June 11, 2019, August 7, 2019, October 22, 2019, and October 13, 2020. Riparian/riverine resources were preliminarily identified on aerial photographs during the literature review and were verified in the field during the surveys. Limits of the riparian/riverine resources were documented onto an aerial map of the project area and/or documented using a handheld GPS and later digitized using the Geographic Information System ArcView software to quantify the area of the resources.

As defined under Section 6.1.2 of the MSHCP, vernal pools are seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. One of the factors for determining the presence of vernal pools would be demonstrable evidence of seasonal ponding in an area of topographic depression that is not subject to flowing waters. Michael Baker biologists conducted a review of historical aerial photographs using Google Earth prior to the field surveys in order to locate any topographic depressions or areas of seasonal ponding. In addition, a review of the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2021), was also conducted to determine the soil associations within the project area. Further, the topography of the project area and whether the area supported plant species associated with vernal pools habitats were also reviewed.

## 3.2 RESULTS/IMPACTS

### Riparian/Riverine

As documented in the *Delineation of State and Federal Jurisdictional Waters* (Michael Baker, 2020), three (3) drainage features were recorded within the project area (Santa Ana River, Aliso Canyon, and Drainage 1). The Santa Ana River borders the eastern boundary of the project and is a perennial watercourse. Along

the eastern boundary of the project area, the Santa Ana River measures approximately 4,214 linear feet in length and contains areas of dense riparian forest with canopy intermixed with areas of sparse riparian vegetation without canopy. Aliso Canyon is an ephemeral drainage feature which enters the project area from the west and bisects the northern portion of the project area prior to its confluence with the Santa Ana River. Vegetation associated with Aliso Canyon primarily consists of sparse disturbed mule fat scrub riparian vegetation within the channel. Drainage 1 is an ephemeral drainage feature which enters the project area from the north. Drainage 1 measures approximately 139 linear feet in length and 1 to 16 feet in width. Vegetation associated with Drainage 1 primarily consists of non-native species.

These drainage features and associated riparian vegetation communities would qualify as riparian/riverine resources pursuant to Section 6.1.2 of the MSHCP and total approximately 9.08 acres (refer to Figure 7, *Riparian/Riverine Resources*). Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acre of permanent impacts and 0.17 acre of temporary impacts would occur to riparian/riverine resources. Refer to Table 2 below for a summary of Alternative 1 temporary and permanent impacts to riparian/riverine resources.

**Table 2: Impacts to Riparian/Riverine Resources**

Riparian/Riverine Resources	Acreage	
	Proposed Impacts for Alternative 1	
	Temporary Impacts	Permanent Impacts
Riparian	0.07	0.00
Riverine	0.10	0.003
<b>TOTAL*</b>	<b>0.17</b>	<b>0.003</b>

\*Total may not equal to sum due to rounding.

**Riparian Birds**

Due to the presence of riparian/riverine resources within the project area, the potential occurrence of the following riparian bird species were also evaluated during the literature review and field surveys conducted by Michael Baker biologists: western yellow-billed cuckoo (*Coccyzus americanus occidentalis* [YBCU]), southwestern willow flycatcher (*Empidonax traillii extimus* [SWFL]), and least Bell’s vireo (*Vireo bellii pusillus* [LBVI]). Based on the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker, 2021), vegetation communities within the project area could potentially provide suitable habitat for YBCU, SWFL, and LBVI. Within Riverside County, vegetation communities within the project area that could potentially provide suitable habitat for YBCU and SWFL include the southern cottonwood willow riparian forest and southern willow scrub. Based on results of habitat assessment, approximately 6.16 acres of suitable habitat for YBCU and SWFL occurs within the project area, specifically within the Santa Ana River. Based on the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker, 2021), vegetation communities within the project area that could potentially provide suitable habitat for LBVI



**Legend**

- Survey Area
- County Boundary
- Riparian/Riverine Resources (9.08 acres)
- Alt 1 - Construction Limits
- Alt 1 - Hardscape Boundary
- Flow Direction
- Reference Point

0      350      700  
Feet

3/30/2021 JN.M:\data\167992\GIS\MXD\Bio\03\_25\_2021\_update\DESP\Fig 07\_Riparian\_Riverine\_Resources.mxd RP

33.871184  
-117.675924

33.888252  
-117.645961

SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

## Riparian/Riverine Resources

Figure 7

include the southern cottonwood willow riparian forest, southern willow scrub, elderberry savannah, mule fat scrub, and disturbed mule fat scrub. Based on the results of habitat assessment, approximately 7.97 acres of suitable habitat for LBVI occurs within the project area located in Riverside County.

Based on the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker, 2021), the closest extant LBVI occurrence (Occurrence Number 135) was recorded in 2011, adjacent to the project area; nineteen (19) pairs and twenty-four (24) fledglings were observed within the Green River Golf Course (CNDDDB, 2011). Breeding pairs have been observed at this site since 2001. It should also be noted that the Santa Ana Watershed Association (SAWA) conducts yearly monitoring surveys to document LBVI territories within Riverside and Orange Counties, including portions the Santa Ana River and Chino Hills State Park that occur within the project area. Based on a review of survey data provided by SAWA for the 2018 and 2019 breeding seasons, a total of twelve (12) LBVI territories were recorded/monitored within the project area during the 2018 breeding season and a total of thirteen (13) LBVI territories were recorded/monitored within the project area during the 2019 breeding season. Further, LBVI were detected at four (4) locations within/adjacent to the project area during field surveys conducted by Michael Baker (refer to Figure 6, *Vegetation Communities, Land Uses, and Special-Status Species Observations*).

Based on a review of the construction limits and hardscape boundaries, Alternative 1 would temporarily impact approximately 0.10 acre and permanently impact approximately 0.01 acre of suitable riparian habitat for LBVI within Riverside County; no impacts to suitable riparian habitat for YBCU or SWFL would occur. Temporary impacts to LBVI occurring outside of the project footprint include elevated noise levels. Project related construction noise is not expected to exceed normal ambient noise levels within the project area. Wildlife species present within adjacent habitats are routinely exposed to above average noise levels associated with the BNSF railroad and State Route 91. However, construction-related activities would incorporate measures pursuant to County of Riverside rules, regulations, and guidelines related to land use noise standards. No suitable habitat for YBCU, SWFL, or LBVI occurs within portions of the project area that are located within San Bernardino County. Based on the 2018 and 2019 survey data provided by SAWA and a review of the construction limits and hardscape boundaries for Alternative 1, Alternative 1 would not result in any permanent impacts to any LBVI nest locations documented during the surveys. Further, breeding activity for SWFL within the Santa Ana River watershed has not been documented since 2014 and YBCU was not detected during the 2019 surveys (SAWA, 2019).

### **Vernal Pools**

One of the factors for determining the presence of vernal pools would be demonstrable evidence of seasonal ponding in an area of topographic depression that is not subject to flowing waters. Prior to conducting the habitat assessment, a review of historical aerial photographs using Google Earth was conducted. In addition, a review of the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2021), was also conducted to determine the soil associations within the project area. The MSHCP lists two general classes of soils known to be associated with special-status plant species and presence of vernal pool habitat; clay soils and Traver-Domino Willow association soils. The specific clay soils known to be

associated with special-status species/vernal pool habitat within the MSHCP Plan Area include Bosanko, Auld, Altamont, and Porterville series soils, whereas Traver-Domino Willows association includes saline-alkali soils largely located along floodplain areas of the San Jacinto River and Salt Creek.

Based on the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker, 2021), a review of historic Google Earth aerials of the project area did not provide visual evidence of astatic or vernal pool conditions within the project area or surrounding vicinity. Additionally, no non-vernal pool features such as stock ponds, ephemeral pools, road ruts, and depressions were observed during the review of Google Earth aerials and during the field surveys within the project area. Further, based on a review of the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2021), none of the soil classes (e.g., Bosanko, Auld, Altamont, and Porterville series and Traver-Domino Willows association) known to be associated with vernal pool habitat occur within the project area. The mapped soils throughout the project area primarily consist of loamy sand/sandy loam textures and not the clay soil textures which are needed to form the impermeable restrictive duripan layer below the soils surface (refer to Figure 5, *USDA Soils*). As such, no direct or indirect impacts to vernal pool habitats are expected to occur, and no further discussion related to the proposed project and vernal pools is warranted.

### **3.3 MITIGATION AND EQUIVALENCY**

Based on discussions during pre-application meetings on June 12, 2019 and April 8, 2020, Alternative 1 has been designed to minimize both direct and indirect effects to riparian/riverine resources and associated functions and values to the greatest extent possible. The project impacts that are unavoidable shall be mitigated such that the loss of functions and values as they are related to riparian birds and MSHCP Covered Species are replaced.

#### **3.3.1 DIRECT EFFECTS**

Direct effects (i.e., permanent impacts) associated with Alternative 1 consist of the direct removal and disturbance to land and resources. For this report, direct effects are defined as the portion of the riparian/riverine resource that would be permanently developed/removed. Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.003 acre of permanent impact would occur to riverine resources associated with Drainage 1. As documented in the *Delineation of State and Federal Jurisdictional Waters* (Michael Baker, 2020), Drainage 1 is an earthen drainage feature that enters the northern portion of the project area and is characterized by a loose substrate (i.e., sediment, gravel, and cobble) and non-native plant species including Russian thistle, tree tobacco, and black mustard. Further, no surface water was present within Drainage 1 during the January 23, 2019, June 11, 2019, August 7, 2019, October 22, 2019, and October 13, 2020 site visits (Michael Baker, 2020). Permanent impacts to riparian/riverine resources associated with Drainage 1 would occur due to the installation of the multi-use path/natural surface trail along the western boundary of the Green River Golf Course and ingress/egress into the construction area. Drainage 1 has very limited functions and values for wildlife and aquatic habitat, sediment trapping and transport, nutrient retention, flood storage and flood flow modification due to its

small size (139 linear feet in length, 1 to 16 feet in width), lack of riparian habitat dominated by native trees, shrubs, and persistent emergent vegetation, and its ephemeral nature, flowing only during and immediately after storm events. Further, Drainage 1 does not support any of the species targeted for conservation under MSHCP Section 6.1.2. As such, implementation of Alternative 1 would not result in significant impacts to Drainage 1.

Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.01 acre of permanent impact would occur to suitable riparian habitat for LBVI, specifically to the elderberry savannah vegetation. The elderberry savannah vegetation community is located directly adjacent to the existing maintenance road within the northern portion of the project area and is dominated by black elderberry and non-native plant/grass species. Permanent impacts to the elderberry savannah riparian habitat would occur due to the installation of the multi-use path/natural surface trail along the western boundary of the Green River Golf Course and ingress/egress into the construction area. Approximately 1.20 acres of elderberry savannah habitat occurs within the project area; approximately 0.01 acre would be permanently impacted by Alternative 1. Based on the 2018 and 2019 survey data provided by SAWA and a review of the construction limits and hardscape boundaries, Alternative 1 would not result in any permanent impacts to any LBVI nest locations documented during the surveys. Although Alternative 1 would permanently impact approximately 0.01 acre of suitable riparian habitat for LBVI, impacts would be limited relative to the amount of suitable habitat that would remain in the project area and immediate vicinity, especially along the Santa Ana River which consists of high quality riparian habitat.

To meet the criteria of a biologically equivalent or superior alternative, the Riverside County Transportation Commission proposes to mitigate permanent impacts to approximately 0.003 acre of riparian/riverine resources associated with Drainage 1 and temporary impacts to approximately 0.010 acre of occupied LBVI habitat through the off-site enhancement and preservation of 0.039 acre of MSHCP Riparian/Occupied LBVI habitat located within the San Timoteo Canyon Mitigation Site (Mitigation Site). Please refer to Table 3 below for a breakdown of the impact acreages and proposed mitigation.

**Table 3: Project Impacts and Proposed Mitigation**

<b>MSHCP Resources</b>	<b>Proposed Impacts (Acres)</b>	<b>Proposed Mitigation Ratio</b>	<b>Proposed Mitigation (Acres)</b>
MSHCP Riverine Habitat	0.003	3:1	0.009
MSHCP Riparian Habitat/Occupied LBVI Habitat	0.010	3:1	0.030
<b>TOTAL</b>			<b>0.039</b>

The Mitigation Site is comprised of two (2) parcels totaling approximately 32.63 acres within the San Timoteo Creek floodplain. Vegetation at the Mitigation Site consists primarily of riparian forest dominated by Fremont cottonwood (*Populus fremontii*), Goodding’s willow (*Salix gooddingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and mule fat. Non-native species also occurring within the

Mitigation Site include tamarisk (*Tamarix ramosissima*), giant reed (*Arundo donax*), tree tobacco, Mexican fan palm (*Washingtonia robusta*), poison hemlock, bull thistle (*Cirsium vulgare*), common sow thistle (*Sonchus oleraceus*), London rocket, short podded mustard, Australian saltbush (*Atriplex semibaccata*), Mexican tea (*Dysphania ambrosioides*), Russian thistle, white sweetclover (*Melilotus albus*), horehound (*Marrubium vulgare*), Bermuda grass (*Cynodon dactylon*), smilo grass (*Stipa miliacea*), mouse barley (*Hordeum murinum*), foxtail chess (*Bromus madritensis*), and riggut brome.

The Mitigation Site was selected as it currently supports riparian vegetation occupied by LBVI and is located within the Santa Ana River Watershed, the same watershed the proposed impacts would occur. In addition, the Mitigation Site would provide biologically equivalent or superior functions and values of riparian/riverine resources when compared to those resources that would be impacted by the proposed project. The intent of the Mitigation Site would be to conserve and/or restore, enhance, or create habitats that are connected to less disturbed areas which provide a greater biological value. The Mitigation Site would provide superior hydrologic conditions and riparian habitat through the preservation of an area that is not as heavily disturbed as areas within the project footprint.

- Although the Mitigation Site provides higher quality riparian/riverine habitat compared to what would be permanently impacted within the project footprint, additional enhancement activities would also be implemented to further mitigate impacts to riparian/riverine habitat that would occur as a result of the proposed project. Enhancement of the Mitigation Site would include the removal of exotic, invasive vegetation (i.e., tamarisk, giant reed), follow-up weed treatment, and replacement with the appropriate native vegetation. Plant palettes would focus on site appropriate LBVI habitat and would be tailored to provide favorable vegetation composition, structure, and density. Upon signoff of performance standards attainment by CDFW, protection of the entire Mitigation Site will be provided, and long-term management responsibility will be conveyed through transfer of fee title of the entire Mitigation Site to the RCA. The Mitigation Site will be owned and managed by RCA as part of the MSHCP Management and Adaptive Management Programs. Please refer to the *Habitat Mitigation and Monitoring Plan for the San Timoteo Canyon Mitigation Site* (LSA 2020) provided in Appendix D for additional information.

### 3.3.2 INDIRECT EFFECTS

For this report, indirect effects are defined as the portion of the riparian/riverine resource that would be temporarily impacted. Indirect effects associated with Alternative 1 include elevated noise levels, edge treatments, landscaping, elevation difference, and minimization and/or compensation through restoration or enhancement. Based on a review of the construction limits and hardscape boundaries for Alternative 1, approximately 0.17 acre of temporary impact would occur to riparian/riverine resources associated with Aliso Canyon and Drainage 1. In addition, Alternative 1 would temporarily impact approximately 0.10 acres of suitable habitat for LBVI. In order to mitigate temporary impacts associated with Alternative 1, the project applicant would implement the following:

- Restore all temporarily impacted areas by hydroseeding with a native seed mix that would avoid the use of invasive, non-native plant species listed in Table 6-2 of the MSHCP and listed by the CAL-IPC. The native seed mix would be consistent with the native species located in the impact area's surrounding. The final landscape plans would be reviewed and verified by the RCA.
- Implement BMPs to mitigate impacts to riparian/riverine resources in accordance with Appendix C of the MSHCP.
- A qualified biologist would present to project personnel (including temporary, contractors, and subcontractors) a worker environmental awareness program prior to the initiation of grading activities. Project personnel should be advised on any special-status wildlife species of concern, the steps to avoid impacts to the species and the potential penalties for taking such species. At a minimum, the program should include the following topics: occurrence of the listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, legal protection afforded to these species, penalties for violations of federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area. Color photographs of the listed species should be included in the program and be shown to personnel. Following the program, the photographs should be posted in the contractor and resident engineer office and remain through the duration of the project. The contractor, resident engineer, and the qualified biologist should be responsible for ensuring that personnel are aware of the listed species. If additional personnel are added to the project after initiation, they should receive instruction prior to working on the project.
- In order to avoid or minimize impacts to water quality, a construction Storm Water Pollution Prevention Plan and Soil Erosion and Sedimentation Plan should be developed to minimize erosion and identify specific pollution prevention measures that would eliminate or control potential point and non-point pollution sources on-site during and following the project's construction phase. The project design should incorporate permanent erosion control elements to ensure that storm water runoff does not cause soil erosion. In addition, erosion control measures should be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts include hydromulching and limiting the amount and length of exposure of graded soil.
- Disturbance related to the project should be minimized to the maximum extent possible. Project site access should also be limited to existing disturbed roads and access routes.
- Prior to construction, highly visible barriers (e.g., orange construction fencing) should be clearly defined and installed around the perimeter of the project impact area and access routes.
- Use of heavy equipment, including motor vehicles, or construction personnel within riparian and riverine communities should be reduced to the maximum extent practicable.
- Project related construction noise is not expected to exceed normal ambient noise levels within the project area. Wildlife species present within adjacent habitats are routinely exposed to above



average noise levels associated with the BNSF railroad and State Route 91. However, construction-related activities should incorporate measures pursuant to County of Riverside rules, regulations, and guidelines related to land use noise standards. In addition, due to the presence of LBVI within the vicinity of the proposed project, pre-construction clearance surveys would need to be conducted prior to initiating project activities (e.g., vegetation clearing, grubbing, grading, etc.) during the recognized LBVI breeding season (March 15 to September 30) to determine the presence/absence of LBVI within the project's vicinity. If LBVI are not present, then construction may occur. In the event LBVI are observed during the pre-construction clearance survey, a "no-disturbance" buffer would need to be established around the location and construction would need to avoid work in that area until the end of the nesting cycle. No project-related construction would occur within the "no-disturbance" buffer until the active nest has been determined by the qualified biologist to have failed or to have successfully gone to completion (i.e. the nestlings have fledged and are no longer reliant on the nest). The distance of the "no-disturbance" buffer would be determined by the qualified biologist based on ambient noise levels, topography, visual/noise shielding, nest progress, and the type of construction and associated disturbance. Any proposed "no disturbance" buffers, including any subsequent reductions in the "no disturbance" buffers, would need to be reviewed and approved by the RCA and the Wildlife Agencies. In addition, all work during the LBVI breeding season would occur during daylight hours and would not exceed ambient noise levels. Ambient noise measurements would be taken by a qualified biological monitor during a full daylight period (sunrise to sunset) and subsequently, the median average noise level shall be used as the baseline on which to determine when and where work would occur. The qualified biological monitor must be present to measure noise levels at the edge of all suitable habitat and work shall cease if, at any time, noise levels exceed the median ambient levels.

- Although any potential impacts to coastal California gnatcatcher (*Polioptila californica californica*; CAGN) and its habitat within Riverside County are fully covered under the MSHCP, Permittees are required by the Migratory Bird Treaty Act Special-Purpose Take Permit (issued by USFWS) to avoid clearing CAGN occupied habitat in the Criteria Area and in P/QP Lands between March 1 and August 15. As such, all habitat clearing, grubbing, grading, and other associated project activities located within Criteria Area and P/QP Lands would occur outside of the active breeding season for CAGN which is March 1 to August 15. If it is not possible to construct the proposed project outside of the CAGN breeding season, then protocol-level focused surveys for CAGN would need to be conducted to fully prove absence. If CAGN is determined to be absent during the protocol-level focused surveys, then construction activities (i.e., vegetation clearing, grubbing, grading) may commence.
- In order to avoid impacts to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities should occur outside of the nesting bird season (February 1 – August 31). If avoidance of the nesting bird season is not feasible, a pre-construction nesting bird clearance survey should be conducted by a qualified biologist no more than three days prior to the start of any vegetation removal or ground disturbing activities to maintain compliance with the Migratory Bird Treaty Act and California Fish and Game Code and ensure that impacts to nesting birds do not

occur. The qualified biologist should survey all suitable nesting habitat within the project impact area, including areas within a biologically defensible buffer distance surrounding the project impact area, for the presence of nesting birds and should provide documentation of the surveys and findings to the Riverside County Transportation Commission for review prior to initiating project activities. If no active bird nests are detected, project-related activities may begin. If an active nest is found, the bird should be identified to species and the approximate distance from the closest work site to the active nest should be estimated and the qualified biologist should establish a “no-disturbance” buffer around the active nest. The distance of the “no-disturbance” buffer may be increased or decreased according to the judgement of the qualified biologist depending on the level of activity and species (i.e., listed, sensitive). In addition, the qualified biologist should periodically monitor any active bird nests to determine if project-related activities occurring outside the ‘no disturbance’ buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, project-related activities within the ‘no disturbance’ buffer may occur.

- If stream flows must be diverted during project construction activities, methods requiring minimal instream impacts (e.g., sandbags) should be utilized. Silt fence barriers should also be installed to prevent sediments from moving off-site.
- All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities should occur in developed or previously disturbed upland areas so as to prevent the runoff from any spills from entering waters of the U.S., waters of the State, or riparian/riverine resources. All construction equipment should be operated in a manner to prevent accidental damage to nearby preserved areas and any project-related spills of hazardous materials should be immediately reported to appropriate entities.
- Silt fence barriers should be installed around water courses to prevent accidental deposition of fill material in these areas. And brush, loose soils, or other similar debris materials should be stockpiled in developed or disturbed upland areas.
- A qualified biologist should monitor construction for the duration of the project to ensure that BMPs and other avoidance and minimization measures are properly implemented.
- Removal of native vegetation should be minimized to the maximum extent possible.
- Removal of exotic species that prey upon or displace target species of concern should be removed from the project work area, if possible.
- Trash, construction refuse (e.g., broken equipment parts, cables, etc.), and food items should be contained in closed containers and removed daily.

Hydrology of the project area is not expected to change as a result of the proposed project. Implementation of the proposed project would not result in significant impacts to natural and beneficial floodplain values. Post construction hydrology would be equal to preconstruction conditions, resulting in no net loss to the functions and values of the area.

## Section 4      **Narrow Endemic Plant Species Mitigation** (Section 6.1.3)

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### 4.1      **METHODS**

According to the RCA’s online MSHCP Information Application and Figure 6-1 of the MSHCP, the proposed project is located within the designated project area for the following Narrow Endemic Plant Species (NEPS): San Diego Ambrosia (*Ambrosia pumila*), Brand’s phacelia (*Phacelia stellaris*), and San Miguel savory (*Clinopodium chandleri*). Focused surveys for these species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the project area during above average rainfall years in 2019 and 2020. Specifically, Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming periods of these NEPS. The CNDDB and CNPS Online Inventory were queried for reported locations of special-status plant species, including San Diego Ambrosia, Brand’s phacelia, and San Miguel savory, in the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. The field surveys were conducted to assess and evaluate the existing condition of the habitat(s) within the boundaries of the project area to determine if the existing vegetation communities, at the time of the field surveys, have the potential to provide suitable habitat(s) for San Diego Ambrosia, Brand’s phacelia, and San Miguel savory. Plant species observed during the field surveys were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unfamiliar plants were photographed in the field and later identified in the laboratory using taxonomic guides. Plant nomenclature used in this report follows the *Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al., 2012).

### 4.2      **RESULTS/IMPACTS**

#### **San Diego Ambrosia**

San Diego ambrosia is a member of the genus *Ambrosia*, in the family Asteraceae. According to Volume 2 of the MSHCP, San Diego ambrosia occurs in open floodplain terraces or in the watershed margins of vernal pools (Dudek & Associates, Inc. 2003). In addition, San Diego ambrosia occurs in a variety of associations that are dominated by sparse, non-native grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas (Dudek & Associates, Inc. 2003). Within Riverside County, extant populations of San Diego ambrosia are found on Garretson gravelly fine sandy loams in association with floodplains and on Las Posas loam in close proximity to silty, alkaline soils of the Willows series at Skunk Hollow (Dudek & Associates, Inc. 2003). San Diego ambrosia is generally found at low elevations that are less than 1,600 feet in Riverside County and at elevations less than 600 feet in San Diego County (Dudek & Associates, Inc. 2003). According to Table 6-1 of the MSHCP, the blooming period for San Diego ambrosia is April through October.

The majority of the populations of San Diego ambrosia in California occur in San Diego County and there are three known extant populations for this species in the Plan Area: Alberhill near Nichols Road, east of Lake Street in the City of Lake Elsinore, and Skunk Hollow (Dudek & Associates, Inc. 2003). In terms of seed dispersal of San Diego ambrosia, dispersal mechanisms are unknown, however, the lack of armed involucre bracts makes it less likely that the species disperses by attaching to animals (Dudek & Associates, Inc. 2003). San Diego ambrosia has a natural tendency to reproduce asexually which suggests that the most common form of dispersal may be through movement of rhizome-like structures either by short distances by growth or longer distance by flood disturbance (Dudek & Associates, Inc. 2003).

According to the CNDDDB, there are no occurrence records for San Diego ambrosia within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. In addition, there are no occurrence records of this species within 5 miles of the project area and according to Calflora records, most of the occurrence records in Riverside County occur to the east and west of Interstate 15 in Lake Elsinore and Murrieta (Calflora, 2021). As such, dispersal of this species to the project area through growth and/or flood disturbance from occurrence records in Lake Elsinore and Murrieta is unlikely due to the presence of surrounding development (i.e., Interstate 15, State Route 91, State Route 71, residential land uses, Green River Golf Course). Based on the habitat description provided in Volume 2 of the MSHCP document, this species is unlikely to occur within the proposed project due to the lack of open floodplain terraces and vernal pools. Although Garretson gravelly very fine sandy loam soils are present within the project area, they are limited to the proposed staging area which is currently being used as a staging area for the BNSF railroad bridge project. Las Posas loam soils are not present within the project area. Focused surveys for this species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the project area during above average rainfall years in 2019 and 2020; specifically Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming period of San Diego ambrosia which is April through October and this species was not incidentally observed. Based on the information above and due to the lack of specific habitat associations (i.e., floodplain terraces, vernal pools, and alkali playas) within the boundaries of the proposed project, soils this species typically occur on, and occurrence records within the surrounding areas, San Diego ambrosia is not expected to occur.

### **Brand's Phacelia**

Brand's phacelia is a member of the genus *Phacelia*, in the family Boraginaceae. This annual herb produces a spreading, branching stem up to about 25 centimeters in length and is lightly hairy in texture. According to Volume 2 of the MSHCP, Brand's phacelia is primarily associated with coastal dunes and/or coastal scrub between 16 and 1,312 feet amsl and typically occurs in sandy openings, sandy benches, dunes, sandy washes, or flood plains of rivers (Dudek & Associates, Inc. 2003). Table 6-1 of the MSHCP states that the blooming period for Brand's phacelia is March through June. No seed dispersal mechanism is known for Brand's phacelia (Dudek & Associates, Inc. 2003). Volume 2 of the MSHCP states that there are only two known occurrences of this species within the Plan Area; one at Fairmont Park in 1925 and a 2002

observation in the Santa Ana Wilderness Area near County Parks headquarters (Dudek & Associates, Inc. 2003). In addition, according to Volume 2 of the MSHCP this species is extremely rare and is restricted to sandy washes and/or benches on alluvial flood plains within the Plan Area (Dudek & Associates, Inc. 2003).

According to the CNDDDB, there are no occurrence records for Brand's phacelia within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. In addition, there are no occurrence records of this species within 5 miles of the project area and according to Calflora records, most of the occurrence records in Riverside County occur adjacent to the portion of the Santa Ana River located south of State Route 60 (Calflora, 2021). Based on the habitat description provided in Volume 2 of the MSHCP document, this species is unlikely to occur within the boundaries of the proposed project due to the lack of coastal dunes and/or coastal scrub with sandy openings, sandy benches, dunes, sandy washes and river flood plains. Although sandy loam soils occur within the proposed project, the soils within these areas are heavily disturbed and compacted as a result of anthropogenic activities. Focused surveys for this species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the project area during above average rainfall years in 2019 and 2020; specifically Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming period of Brand's phacelia which is March through June and this species was not incidentally observed. Based on the information above, and due to the lack of specific habitat associations (i.e., coastal dunes and/or coastal scrub with sandy openings, sandy benches, dunes, sandy washes and river flood plains) within the proposed project, undisturbed soils this species typically occur on, and occurrence records within the surrounding areas, Brand's phacelia is not expected to occur.

### **San Miguel Savory**

San Miguel savory is a member of the genus *Clinopodium*, in the family Lamiaceae. This species is a low-growing, fragrant, spreading perennial herb that prefers regular water and some shade. This species has white flowers with small, toothed or wavy-edged leaves. According to Volume 2 of the MSHCP, San Miguel savory is associated with rocky, gabbroic and metavolcanic substrates in CSS, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands (Dudek & Associates, Inc. 2003). Information regarding dispersal of San Miguel savory has not been reviewed (Dudek & Associates, Inc. 2003). According to Table 6-1 of the MSHCP, the blooming period for San Miguel savory is March through July. In addition, this species occurs at elevations ranging from 394 to 3,297 feet amsl (Dudek & Associates, Inc. 2003). Volume 2 of the MSHCP states the majority of the populations/individuals of San Miguel savory are associated with the Santa Rosa Plateau and the Santa Ana Mountains (Dudek & Associates, Inc. 2003). Specifically, known populations within western Riverside County occur one mile west of Murrieta on Tenaja Road, ten miles west of Murrieta (vicinity of Tenaja guard station), three miles south of Murrieta near De Luz Road, and three miles southwest of Murrieta near Warner's Ranch (Dudek & Associates, Inc. 2003).

According to the CNDDDB, there are no occurrence records for San Miguel savory within the USGS *Black Star Canyon, Corona North, Corona South, and Prado Dam, California* 7.5-minute quadrangles. In

addition, there are no occurrence records of this species within 5 miles of the project area and according to Calflora records, most of the occurrence records in Riverside County occur to the east and west of Interstate 15 in Lake Elsinore, Murrieta, Temecula, and the Santa Rose Plateau (Calflora, 2021). Based on the habitat description provided in Volume 2 of the MSHCP document, this species is unlikely to occur within the proposed project due to the lack of rocky, gabbroic and metavolcanic substrates located in CSS, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands. Focused surveys for this species were not conducted, however, multiple field surveys (i.e., habitat assessments, BUOW focused surveys, CAGN focused surveys) were conducted by Michael Baker within the project area during above average rainfall years in 2019 and 2020; specifically Michael Baker conducted the field surveys between January 23 and August 29, 2019 and between February and June 2020 during the blooming period of San Miguel savory which is March through July and this species was not incidentally observed. Based on the information above, and due to the lack of specific habitat associations (i.e., rocky, gabbroic and metavolcanic substrates located in CSS, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands) within the boundaries of the proposed project, soils this species typically occur on, and occurrence records within the surrounding areas, San Miguel savory is not expected to occur.

## **Section 5      Additional Survey Needs (Section 6.3.2)**

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### **5.1      CRITERIA AREA SPECIES SURVEY AREA - PLANTS**

#### **5.1.1    METHODS**

Based on a desktop review of the RCA's online MSHCP Information Application and Figure 6-2 of the MSHCP, the proposed project is not located within a mapped survey area for Criteria Area plant species. Therefore, no further discussion related to the proposed project and any associated Criteria Area plant species is included in this report.

### **5.2      BURROWING OWL**

#### **5.2.1    METHODS**

According to the RCA's online MSHCP Information Application and Figure 6-4 of the MSHCP, the proposed project is located within a mapped survey area for BUOW. Michael Baker biologists conducted a focused burrow survey and focused survey for BUOW on seven (7) separate days during the 2019 breeding season: during the morning of June 11, July 3, July 23, August 13, August 27, the morning and evening of August 28, and the morning of August 29, 2019. The focused burrow survey and focused surveys were conducted in accordance with the survey guidelines and protocols provided in the *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (RCA, 2006). Please refer to Table 4 below for a summary of the dates, times, surveyors, and weather conditions for each of the surveys.

The focused burrow survey was conducted concurrent with the first focused BUOW survey on June 11, 2019 and consisted of a systematic search for suitable burrows (> 4 inches in diameter) within all areas of the project area that were determined to provide suitable habitat. All suitable burrows/cavities, including rock piles and non-natural substrates, encountered were recorded using a hand-held GPS and thoroughly examined for sign (i.e., pellets, white-wash, feathers, tracks, and prey remains) that would indicate the presence of BUOW. Survey transects were conducted at 7 to 20 meters (approximately 22 to 65 feet) intervals to ensure 100% visual coverage of all areas in suitable habitat, as applicable based on-site topography and access. Binoculars were used to scan areas that were inaccessible due to thick/impenetrable vegetation and lack of right-of-entry to observe and identify distant birds, identify any suitable, occupied, and remnant burrows consisting of natural and non-natural substrates, and any activity around potential suitable habitat for BUOW. Methods to detect the presence of BUOW included direct observation, aural detection, and signs of presence (i.e., pellets, white wash, feathers, or prey remains). Surveys were not conducted during rain, high winds (> 12 miles per hour), dense fog, or temperatures under 68 degrees Fahrenheit. All BUOW focused surveys were conducted during the recognized timeframe; between morning civil twilight and 1000 hours. Additionally, the evening survey on August 28, 2019 was conducted during the recognized timeframe; two hours before sunset until evening civil twilight.

**Table 4: Survey Dates, Times, Surveyors, and Weather Conditions**

Date (2019)	Time (start / finish)	Surveyors	Weather Conditions	
			Temperature (°F) (start / finish)	Average Wind Speed (mph)
June 11	0600 / 1100	Ashley Spencer, Stephen Anderson	61 / 88	1 - 5
July 3	0530 / 1030	Ashley Spencer, Stephen Anderson	62 / 70	1 - 5
July 23	0530 / 1030	Ashley Spencer, Stephen Anderson	72 / 84	1 - 5
August 13	0530 / 1100	Ashley Spencer, Stephen Anderson	64 / 80	1 - 5
August 27	0530 / 0730	Stephen Anderson, Frances Yau	66 / 70	1 - 2
August 28	0600 / 0800	Ashley Spencer, Frances Yau	64 / 68	1 - 3
August 28	1730 / 1930	Ashley Spencer, Stephen Anderson	85 / 81	11 - 12
August 29	0530 / 0730	Stephen Anderson, Josephine Lim	64 / 68	1 - 2

### 5.2.2 RESULTS/IMPACTS

Based on the *Habitat Assessment and MSHCP Consistency Analysis* (Michael Baker, 2021), no BUOWs or sign (i.e., pellets, white wash, feathers, or prey remains) were observed. In addition, no manmade features (e.g., debris piles, non-functioning drain pipes, stand-pipes, and dry culverts) were observed within the project area. Suitable habitat and burrows capable of providing roosting and nesting opportunities for BUOWs were observed within the non-native grassland vegetation community (refer to Figure 8, *BUOW Focused Survey Results*); however, these areas were overgrown with vegetation at the time of the surveys and did not provide the favorable line-of-site opportunities preferred by BUOWs. It appears that access to the suitable burrows and line-of-site opportunities favored by BUOWs only exists within these areas when the vegetation is routinely maintained. It is likely that these conditions and lack of nearby populations have precluded BUOWs from occurring within the project area. In addition, the existing telephone poles, light posts, fencing, and tall trees that occur throughout a majority of the project area further decrease the likelihood that BUOWs would occur as these features provide perching opportunities for larger raptor species (i.e., red-tailed hawk [*Buteo jamaicensis*]) that prey on BUOWs. As such, BUOW was determined to be absent from the project area.

### 5.2.3 MITIGATION AND EQUIVALENCY


Although no BUOWs or sign were observed during the 2019 focused surveys, the project area does contain suitable burrows and habitat that may become occupied prior to construction. Due to the presence of potentially suitable habitat, a 30-day pre-construction survey for BUOWs is required prior to initial ground-disturbing activities (e.g., vegetation clearing, clearing and grubbing, grading, tree removal, site watering, equipment staging) to ensure that no BUOWs have colonized the site in the days or weeks preceding the





**Legend**

- Survey Area (500 feet)
- County Boundary
- Suitable Habitat (107.68 acres)
- Suitable Burrows
- Alt 1 - Construction Limits (Temporary Impact)
- Alt 1 - Hardscape Boundary (Permanent Impact)
- Criteria Cells
- ⊕ Reference Point



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Feet

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SANTA ANA RIVER TRAIL - PHASE 6 (SART - PHASE 6) THROUGH GREEN RIVER GOLF COURSE PROJECT  
DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

## BUOW Focused Survey Results

Figure 8

ground-disturbing activities. If BUOWs have colonized the project area prior to the initiation of ground-disturbing activities, the project proponent will immediately inform the RCA and the Wildlife Agencies, and will need to coordinate further with RCA and the Wildlife Agencies, including the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If ground-disturbing activities occur, but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure that BUOW have not colonized the site since it was last disturbed. If BUOW is found, the same coordination described above will be necessary.

## **5.3 MAMMALS**

### **5.3.1 METHODS**

The proposed project is not located within a mapped survey area for mammal species according to the RCA's online MSHCP Information Application and Figure 6-5 of the MSHCP. Therefore, no further discussion related to the proposed project and any associated mammal species is included in this report.

## **5.4 AMPHIBIANS**

### **5.4.1 METHODS**

Based on a desktop review of the RCA's online MSHCP Information Application and Figure 6-3 of the MSHCP, the proposed project is not located within a mapped survey area for amphibians. Therefore, no further discussion related to the proposed project and any associated amphibian species is included in this report.

## Section 6      Delhi Sands Flower-Loving Fly

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### 6.1      METHODS

According to the RCA’s online MSHCP Information Application and the *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California* (USDA, 2020), the survey area is not underlain by or fall within an area containing Delhi Sand soils. Therefore, no further discussion related to the proposed project and Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) is included in this report.

## Section 7      References

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- Calflora. 2021. Information on California plants for education, research and conservation. [web application]. 2021. Berkeley, California: The Calflora Database [a non-profit organization]. Accessed online at: <https://www.calflora.org/>.
- Dudek & Associates, Inc (DUDEK). 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Final MSHCP, Volumes I and II. Prepared for County of Riverside Transportation and Lands Management Agency. Approved June 17, 2003.
- Google, Inc. 2020. Google Earth Pro version 7.3.2.5491, build date 07/21/2020. Historical aerial imagery from 1994 to 2020.
- LSA Associates, Inc. 2020. *Habitat Mitigation and Monitoring Plan for the San Timoteo Canyon Mitigation Site*. August 2020.
- Michael Baker. 2020. *Delineation of Jurisdictional Waters for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project*. November 2020.
- Michael Baker. 2020. *Results of Coastal California Gnatcatcher Focused Surveys for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project*. July 2020.
- Michael Baker. 2021. *Habitat Assessment and MSHCP Consistency Analysis for the Santa Ana River Trail – Phase 6 (SART – Phase 6) through Green River Golf Course Project*. April 2021.
- Western Riverside County Regional Conservation Authority (RCA). 1996. *Implementation Agreement, Riverside County, Long Term Habitat Conservation Plan*. Accessed online at: [http://www.skrplan.org/docs/implementation\\_agreement.pdf](http://www.skrplan.org/docs/implementation_agreement.pdf).
- Western Riverside County Regional Conservation Authority (RCA). 2018. RCA MSHCP Information Map. Accessed online at: <http://wrcrca.maps.arcgis.com/apps/webappviewer/index.html?id=a73e69d2a64d41c29ebd3acd67467abd>.
- Santa Ana Watershed Association (SAWA). 2018. *Monitoring Results of Least Bell's Vireo Territories along the Santa Ana River within Riverside and Orange Counties, California*. Data provided via e-mail by the Santa Ana Watershed Association on May 23, 2019.
- Santa Ana Watershed Association (SAWA). 2019. *Status and Management of the Least Bell's Vireo and Southwestern Willow Flycatcher in the Santa Ana River Watershed, 2019 and Summary Data by Site and Watershed-wide, 2000-2019*. December 2019.

United State Department of Agriculture, Natural Resource Conservation District (USDA). 2020. *Custom Soil Resources Report for Orange County and Part of Riverside County, California, San Bernardino County Southwestern Part, California, and Western Riverside Area, California*. Accessed online at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

United State Geological Survey (USGS). 1967 (photo revised 1988). *Black Star Canyon, California 7.5-minute Series Topographic Map*.

United State Geological Survey (USGS). 1967 (photo revised 1981). *Prado Dam, California 7.5-minute Series Topographic Map*.

## **Appendix A Site Photographs**

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**Photograph 1:** View of ornamental vegetation and access road separating the BNSF railroad and Green River Golf Course parking lot, facing southwest.



**Photograph 2:** View of the Santa Ana River diversion channel located immediately upstream of the BNSF railroad, facing northeast.



**Photograph 3:** View of the Green River Golf Course fairway located to the north of the BNSF railroad, facing west.



**Photograph 4:** View of coastal sage scrub restoration area within the Chino Hills State Park and west of the Alternative 1 alignment, facing southwest.





**Photograph 5:** View of existing access road and Alternative 1 alignment located to the west of the Green River Golf Course, facing north.



**Photograph 6:** View of coastal sage scrub and non-native grassland within the Chino Hills State Park and west of the Alternative 1 alignment, facing west.



**Photograph 7:** View of Aliso Canyon and sparse mule fat scrub located upstream of the Alternative 1 alignment, facing southwest.



**Photograph 8:** Looking downstream at Aliso Canyon and the existing maintenance trail at the proposed span bridge location.



**Photograph 9:** View of Drainage 1 (looking upstream) at the proposed trail location. Drainage 1 is dominated by various non-native plant species.



**Photograph 10:** View of Drainage 1 (looking downstream) at the proposed trail location. Drainage 1 is dominated by various non-native plant species.



**Photograph 11:** View of southern willow scrub located east of the Alternative 2 alignment within the Santa Ana River, facing northeast.



**Photograph 12:** View of existing cart path and Alternative 2 alignment located to the west of the Santa Ana River, facing north.



**Photograph 13:** View of mule fat scrub located on a terrace above the Santa Ana River, facing northwest.



**Photograph 14:** View of non-native grassland and southern cottonwood willow riparian forest located to the north of the Santa Ana River, facing southeast.



**Photograph 15:** View of non-native grassland and coastal sage scrub along the Santa Ana River Trail, facing southwest.



**Photograph 16:** View of dense non-native grassland along the Santa Ana River Trail, facing east.

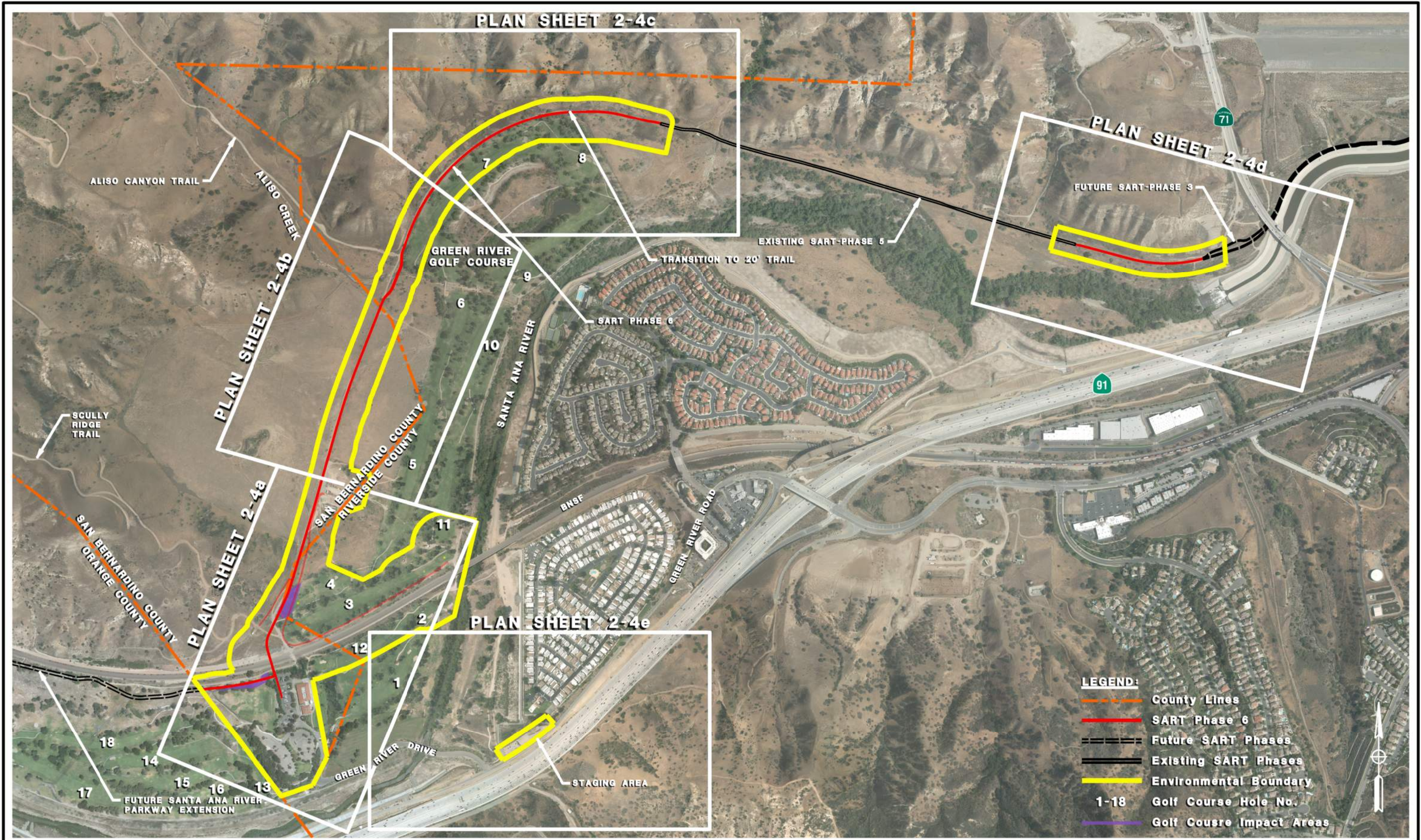


**Photograph 17:** View of existing structures, parking lot, and staging area located along Green River Road, facing southwest.

# **Appendix B    Conceptual Site Plan**

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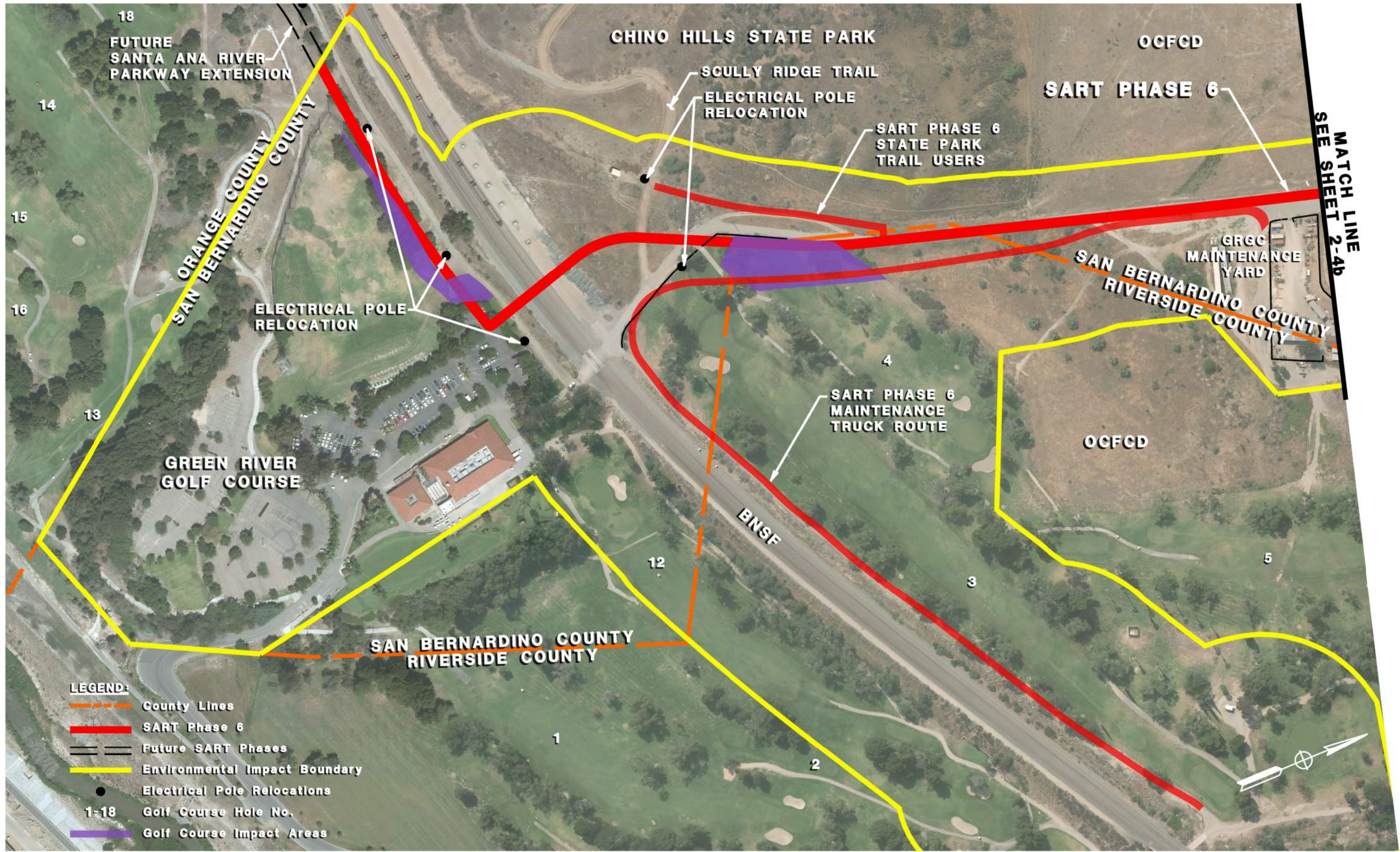
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INTERNATIONAL

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MBAKERINTL.COM

**SANTA ANA RIVER TRAIL (SART - PHASE 6)**  
**CONCEPTUAL SITE PLAN KEY MAP**  
RIVERSIDE COUNTY PARKS

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DATE: 12/14/2020

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**Michael Baker**

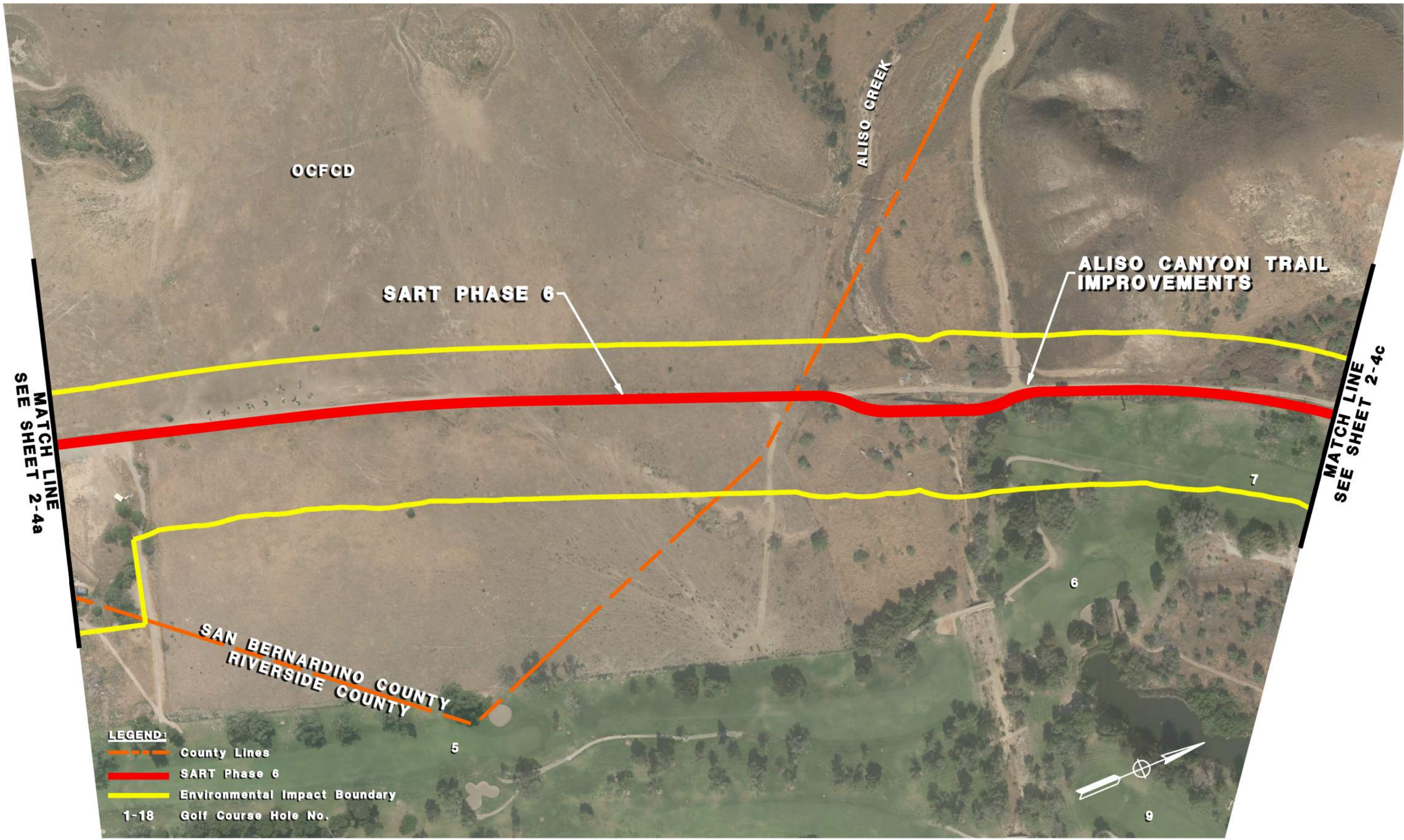
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INTERNATIONAL

**SANTA ANA RIVER TRAIL (SART - PHASE 6)**  
**PLAN SHEET 1**  
RIVERSIDE COUNTY PARKS

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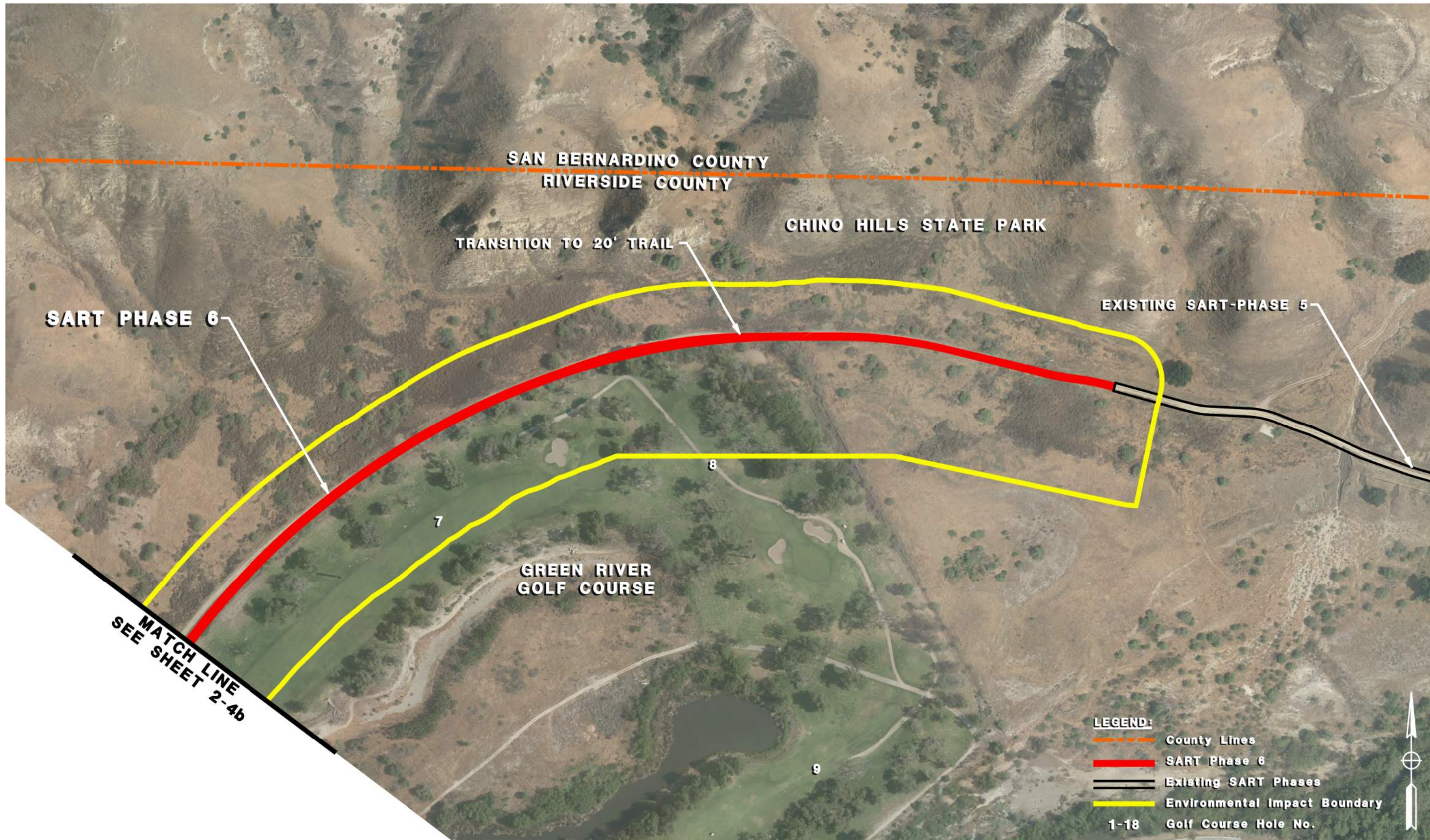
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**SANTA ANA RIVER TRAIL (SART - PHASE 6)**  
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RIVERSIDE COUNTY PARKS

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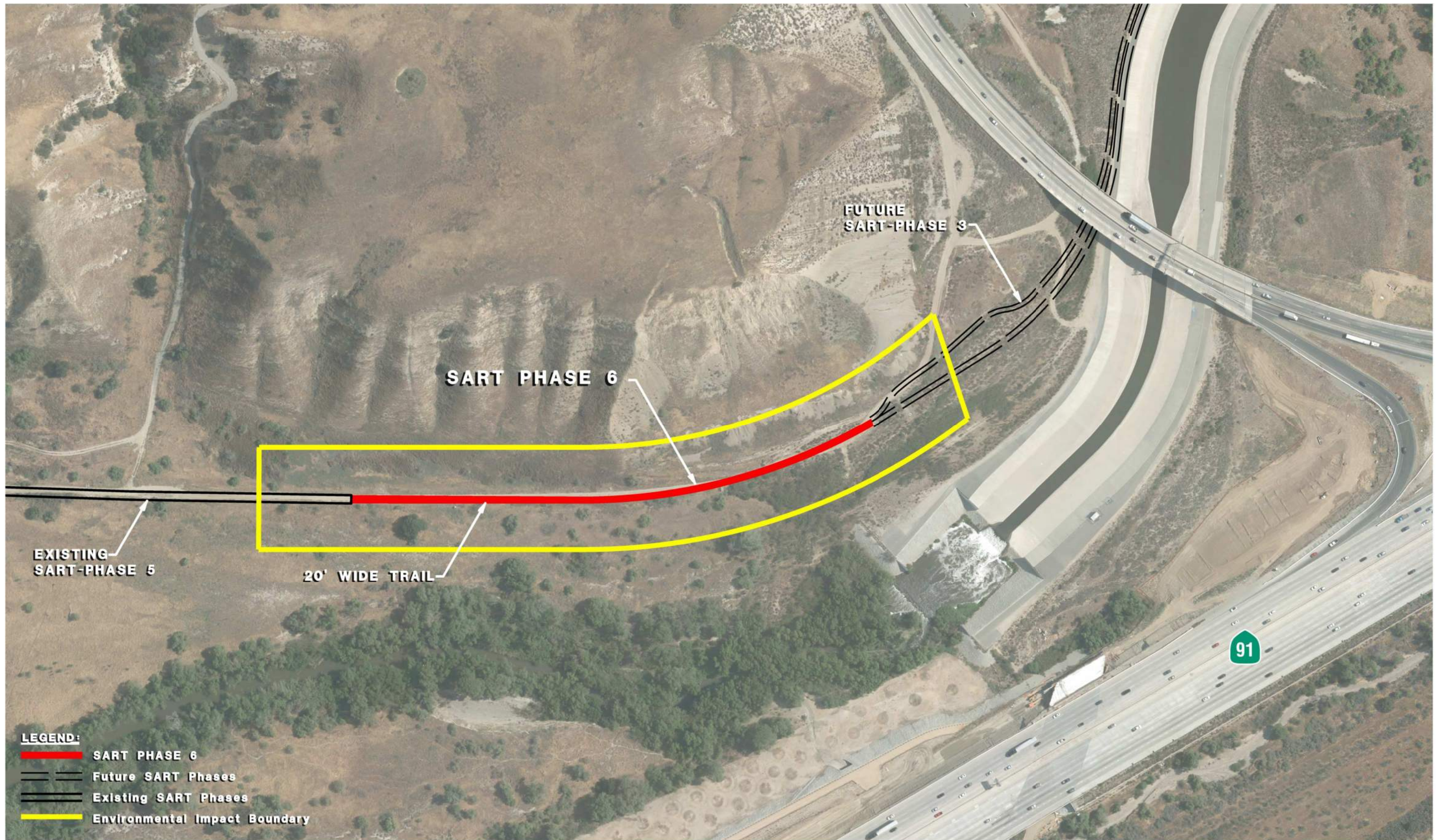
**SANTA ANA RIVER TRAIL (SART - PHASE 6)**  
**PLAN SHEET 3**  
**RIVERSIDE COUNTY PARKS**

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SCALE: 1"=200'  
SHEET: 2-4c  
DATE: 12/14/2020

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\$USER  
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**SANTA ANA RIVER TRAIL (SART - PHASE 6)**  
**PLAN SHEET 4**  
**RIVERSIDE COUNTY PARKS**

SCALE: 1"=200'  
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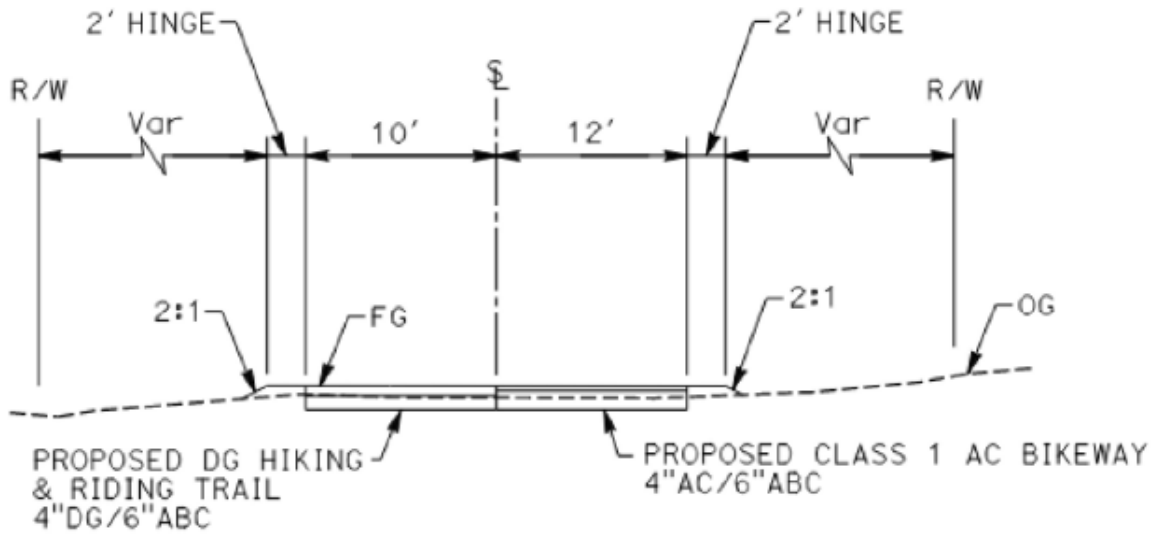
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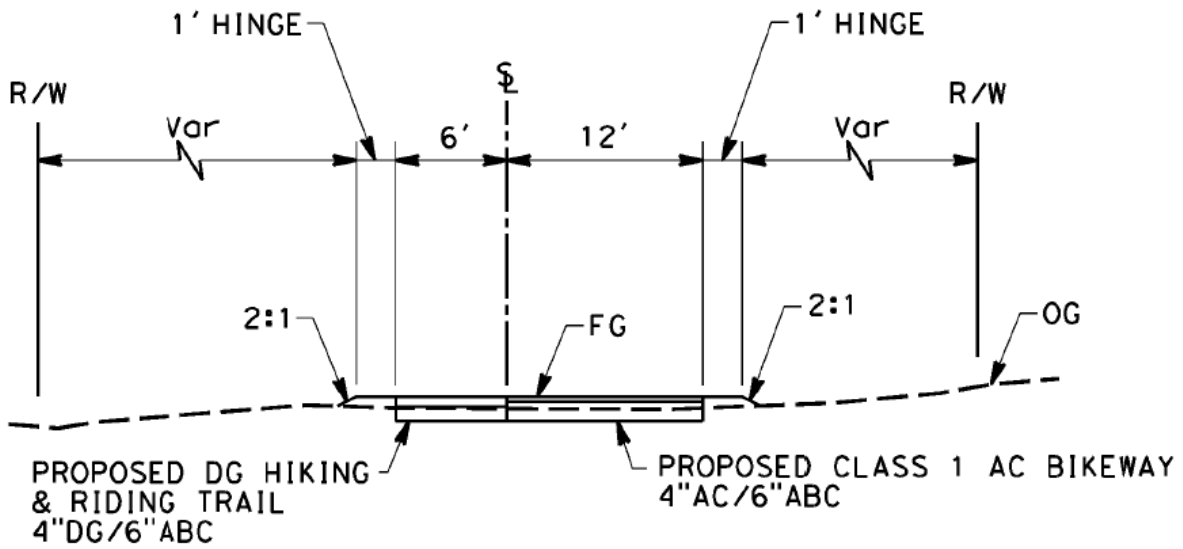
## **Appendix C Proposed Trail Cross Sections**

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**TYPICAL TRAIL SECTION**

NTS



**TYPICAL TRAIL SECTION**

NTS



**Appendix D    Habitat Mitigation and Monitoring Plan  
for the San Timoteo Canyon Mitigation  
Site (LSA 2020)**

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# HABITAT MITIGATION AND MONITORING PLAN FOR THE SAN TIMOTEO CANYON MITIGATION SITE

## MID COUNTY PARKWAY PROJECT

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LSA Project No. JCV531A-4210B



August 2020

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## 1.0 INTRODUCTION

The Riverside County Transportation Commission (RCTC) in cooperation with the California Department of Transportation (Caltrans) District 8, the Federal Highway Administration (FHWA), the County of Riverside, the City of San Jacinto, and the City of Perris, proposes to construct the Mid County Parkway (MCP), a new highway project in Riverside County, California. The MCP is proposed as an approximately 16-mile long, six-lane controlled-access freeway that will provide a major east-west connection for regional movement within western Riverside County, from Interstate 215 (I-215) on the west to State Route 79 (SR-79) on the east. The purpose of the proposed project is to provide a transportation facility that will effectively and efficiently accommodate regional east-west movement of people and goods between and through San Jacinto and Perris.

This Habitat Mitigation and Monitoring Plan (HMMP), prepared by LSA Associates, Inc. (LSA) on behalf of RCTC, describes the permittee-responsible mitigation that will be implemented by RCTC prior to and concurrent with construction of the MCP Project. The mitigation plan provides concepts and direction to implement and maintain the mitigation required to compensate for permanent and temporary impacts to riparian resources regulated by the California Department of Fish and Wildlife (CDFW) under Fish and Game Code Section 1600 et seq. in accordance with the Streambed Alteration Master Agreement for the MCP (CDFW 2019). It also describes mitigation at this site for Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) resources, including riparian and least Bell's vireo (LBV), as required by the 2020 Determination of Biologically Equivalent or Superior Preservation (DBESP) for the MCP (LSA 2020). Figure 1 shows the mitigation areas.

The 8.43-acre CDFW Riparian Watershed Mitigation Area is within the 11-acre MSHCP LBV/Riparian Mitigation Area (Figure 1). Mitigation will consist of enhancement of the 11-acre area by removal of non-native vegetation, with signage and protection of the entire site.

## 2.0 PHYSICAL AND BIOLOGICAL DESCRIPTION

The topography of the 11-acre MSHCP LBV/Riparian Mitigation Area within the San Timoteo Canyon Mitigation Site is relatively flat. Elevation ranges from approximately 1,700 to 1,740 feet. The mitigation area is within the floodplain of San Timoteo Creek. Soil in the mitigation area is mapped as riverwash and San Emigdio fine sandy loam. Surface soils observed in the mitigation area during the December 17, 2019 visit by LSA biologist Stan Spencer are consistent with these designations.

Vegetation at the site is primarily riparian forest dominated by Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and mule fat (*Baccharis salicifolia*). Non-native species in this vegetative layer include Mediterranean tamarisk (*Tamarix ramosissima*), giant reed (*Arundo donax*), tree tobacco (*Nicotiana glauca*), and Mexican fan palm (*Washingtonia robusta*). These large non-native species are scattered at low cover (each less than 2 percent). The low shrub layer is insignificant. An herbaceous layer occupies openings and edges and also extends under the tree canopy. This layer is dominated by a variety of native and non-native subshrubs, perennials, and annuals. The herbaceous layer is predominantly non-native, but includes several native species typical of riparian areas, such as

annual bur-sage (*Ambrosia acanthicarpa*), mugwort (*Artemisia douglasiana*), branching phacelia (*Phacelia ramosissima*), and desert wild grape (*Vitis girdiana*). Non-native species identified in these areas include poison hemlock (*Conium maculatum*), bull thistle (*Cirsium vulgare*), common sow thistle (*Sonchus oleraceus*), London rocket (*Sisymbrium irio*), shortpod mustard (*Hirschfeldia incana*), Australian saltbush (*Atriplex semibaccata*), Mexican tea (*Dysphania ambrosioides*), Russian thistle (*Salsola tragus*), white sweetclover (*Melilotus albus*), horehound (*Marrubium vulgare*), Bermuda grass (*Cynodon dactylon*), smilo grass (*Stipa miliacea*), mouse barley (*Hordeum murinum*), foxtail chess (*Bromus madritensis*), and ripgut brome (*Bromus diandrus*). None of these species is dominant throughout, but the perennial grasses (Bermuda grass, smilo grass) and annual grasses are dominant in some areas. The absolute cover of the non-native species varied widely, from nearly absent to almost 100 percent in some areas. Many areas where cover was lowest may have substantially higher cover in late spring and summer and in years with different rainfall patterns.

### 3.0 SUPERVISION/RESPONSIBILITIES

#### 3.1 Restoration Ecologist

The Restoration Ecologist will be the RCTC representative in the field and shall be responsible for monitoring the mitigation area according to the guidelines set forth in this plan. The duties of the Restoration Ecologist shall include inspections and overseeing the removal of non-native vegetation. In addition, the Restoration Ecologist shall have the responsibility of documenting and reporting the progress of the effort to RCTC, as well as making recommendations for achieving the performance standards. If necessary, the Restoration Ecologist may also prescribe remedial measures.

### 4.0 MITIGATION IMPLEMENTATION

#### 4.1 Fencing and Signage

To help prevent inadvertent impacts to the MSHCP LBV/Riparian Mitigation Area resulting from unauthorized public use, the RCTC will erect fencing around the San Timoteo Canyon Mitigation Site. The proposed location of the fencing would be along the property boundary except where it intersects with the active floodplain or the main existing road that bisects the site. Those areas would not be fenced. The fencing plan will be provided to CDFW, USFWS, and RCA for review, comment, and concurrence. The review period for RCA and the Wildlife Agencies is 10 business days or other period mutually agreed to by RCTC, RCA, and the Wildlife Agencies. Signage with "Protected Natural Area" or similar language will be placed near the gate and on all sides of the site, spaced a maximum of 500 feet apart.

#### 4.2 Non-native Vegetation Removal

Removal of non-native vegetation within the MSHCP LBV/Riparian Mitigation Area will be conducted and will continue as needed until performance standards are met. The timing of the weeding will be at the discretion of the Restoration Ecologist. Measures for controlling non-native vegetation may include removal by hand, cutting or mowing, targeted grazing, the use of appropriate herbicides by a certified applicator, or other means deemed appropriate by the Restoration Ecologist. Removal by hand of non-native plants is the preferred method of control and will be used whenever feasible. All non-native vegetative debris accumulated as a result of non-native vegetation management activities shall be legally disposed of off site.

Any work with herbicides must be minimized to the extent possible, performed only with the authorization of the Restoration Ecologist, and performed in accordance with all applicable laws and regulations. Herbicides and pesticides used in aquatic habitat areas shall be registered for aquatic use by the California Department of Pesticide Regulation (CDPR). All herbicide treatment shall be conducted by a licensed applicator using an appropriate herbicide and application method for the species and riparian environment. Herbicide sprays shall be used only when wind speed is less than 5 miles per hour.

### 4.3 Litter Removal

All trash and other debris shall be removed from the MSHCP LBV/Riparian Mitigation Area at least annually during the monitoring period.

### 4.4 Remedial Measures

Remedial measures may be necessary to deal with unexpected changes in site conditions, responsibilities, or performance of the site so that the compensatory mitigation project achieves its objectives and ecological performance standards. Potential problems that may trigger a need for remedial measures include failure to attain interim and/or final performance standards, substantial infestation by non-native plants and animals, and unanticipated anthropogenic problems such as large-scale trespassing and vandalism. The Restoration Ecologist will regularly analyze site progress and will suggest remedial measures to address unforeseen changes in site conditions or other components of the mitigation project.

Minor problems, such as trash, vandalism, or infestations of invasive species will be rectified as they are discovered during routine site monitoring and maintenance and included in annual reporting, and do not require reporting to the RCA, CDFW, or USFWS. Large-scale corrective measures require coordination with the RCA, CDFW, and USFWS; such measures may include, but are not limited to, grading, planting, or installation of new or replacement fencing at a new location or with a new design. RCTC is ultimately responsible for the success of the mitigation implementation effort and will take corrective action if any component is not achieving the approved performance standards.

## 5.0 PERFORMANCE STANDARDS

Table A provides the performance standards for the site enhancement.

**Table A: Performance Standards**

Performance Standard	Year 1	Year 2	Year 3	Year 4	Year 5
Total non-native absolute cover (herbaceous and woody), excluding annual grasses	<35%	<30%	<25%	<15%	<15%
Total absolute cover of non-native herbaceous species, excluding annual grasses	<30%	<26%	<22%	<13%	<13%

These performance standards will apply throughout the 11-acre MSHCP LBV/Riparian Mitigation Area until the 15-percent and 13 percent standards are met for a period of two years.

## 6.0 MONITORING AND REPORTING

### 6.1 Monitoring Schedule and Approach

Monitoring will be conducted by a Restoration Ecologist annually during late spring or early summer to document progress toward meeting the performance standards. Additional monitoring will be conducted as needed to determine needs for control of non-native vegetation and site maintenance. Site photographs will be taken from fixed locations during the annual site visit and plant and animal species observed during the monitoring visits will be noted for inclusion in the annual reports.

During the annual visit, native and non-native vegetation cover will be estimated by sampling along permanent transects with point intercepts, quadrats, or other standard transect sampling method for vegetative cover estimation.

### 6.2 Documentation and Monitoring Reports

As part of the monitoring visits, the Restoration Ecologist will prepare field memos. The field memos will record general ecological observations and make weeding and maintenance recommendations and will be sent to RCTC.

Each year until the approved performance standards are achieved, an annual report will be prepared and submitted by the Restoration Ecologist by November 15 to RCTC, RCA, USFWS, and CDFW. The report will include the following:

- A description of the habitat maintenance and monitoring activities conducted during the previous year, including details of non-native plant removal efforts such as the methods used for removal, the frequency and timing of removal and treatment, and a summary evaluation of the success of the efforts;
- A list of plant and wildlife species observed within the mitigation area during monitoring surveys, including sensitive species;
- Photographs of the mitigation area from permanent photo stations;
- Quantitative assessments of percent absolute native and non-native cover (excluding annual grasses) and herbaceous non-native cover (excluding annual grasses) and the methods used to estimate these values; and
- A discussion of progress toward the performance standards.

## 7.0 DECISION POINTS AND CONTINGENCY MEASURES

The CDFW must be notified in annual reporting if performance standards are not met for all or any portion of the compensatory mitigation project in a monitoring year, and appropriate remedial measures must be taken as described above.

If the cover requirements have not been met by year 5, and continued application of the maintenance and remedial measures described in this HMMP are considered insufficient to reach the standards, RCTC shall follow contingency measures, which may include performing modifications

to the existing habitat, enhancement of additional habitat at the San Timoteo Canyon Mitigation Site, creation of new habitat on or off site, or purchase of additional mitigation credits from a CDFW-approved mitigation bank. Any contingency actions will be determined in coordination with all regulatory agencies. Modifications to the HMMP require prior approval by the CDFW, USFWS, and RCA and must comply with the conditions of the Section 1600 agreement. If RCTC proposes to meet the success criteria through modifications to the existing habitat or creation of additional habitat, RCTC shall be responsible for maintaining and monitoring this area for 5 years after planting, or until CDFW deems the site successful.

## **8.0 SITE PROTECTION AND LONG-TERM MANAGEMENT**

### **8.1 Protection of the Mitigation Area**

Upon signoff of performance standards attainment by CDFW, protection of the entire (approximately 32-acre) San Timoteo Canyon Mitigation Site will be provided and long-term management responsibility will be conveyed through transfer of fee title of the entire San Timoteo Canyon Mitigation Site to RCA and by conservation easement covering the 8.43-acre CDFW Riparian Watershed Mitigation Area. The overall mitigation site will be owned and managed by RCA as part of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Management and Adaptive Management Programs. Long-term management of the 8.43-acre CDFW Riparian Watershed Mitigation Area may be conducted by another conservation entity. The conservation easement over the 8.43-acre CDFW Riparian Watershed Mitigation Area shall be in favor of a CDFW-approved due diligence entity per Government Code sections 65965-65968, the CDFW shall be expressly named in the conservation easement as the third-party beneficiary, and CDFW shall review and approve the draft conservation easement prior to execution or recordation.

An endowment will be required from RCTC for the long-term management of the area under conservation easement. The size of the endowment that RCTC will provide and the maintenance activities covered will be determined through coordination among RCTC, CDFW, and the entity that will perform the long-term management, and must be reviewed and approved by CDFW prior to funding. As indicated in the Streambed Alteration Master Agreement, unless the endowment for long-term management of the 8.43-acre CDFW mitigation area is fully funded prior to the end of the second year of management and monitoring, RCTC will need to fund annual management costs until the fund matures. The endowment will be permitted to grow for three years prior to annual disbursement of funds for long-term management activities.

The Section 1600 agreement includes the following additional requirement for site protection of the CDFW Riparian Watershed Mitigation Area:

[T]he public shall not have access to the mitigation area, and the mitigation area shall not be subject to fuel reduction/modification, flood control activities, weed abatement, and/or vector control activities. No activities shall be permitted within the Mitigation Areas, except habitat maintenance activities such as the removal of non-native plant species, trash, and debris.



## 8.2 Long-Term Management

### 8.2.1 Objectives and Tasks

This plan will be revised as needed following coordination among RCTC, CDFW, and RCA or other responsible conservation entity. This plan applies to the overall mitigation site, including the 11-acre MSHCP LBV/Riparian Mitigation Area. Additional requirements specific to the 8.43-acre portion of that area that constitutes the CDFW Riparian Watershed Mitigation Area are also indicated below.

The overall goal of this Long-Term Management Plan (LTMP) is to preserve the quality of the riparian habitat in the MSHCP LBV/Riparian Mitigation Area. Specifically, the biological objectives are the management of the site for the benefit of the native flora and fauna, the control of invasive non-native plants, and the limiting of human access and activities that would be detrimental to native resident species. The overall site will become part of the MSHCP Conservation Area and will be maintained and managed as indicated in the MSHCP (Vol. 1: Section 5, online at <http://www.rctlma.org/Portals/0/mshcp/volume1/sec5.html>). The MSHCP indicates that upland and wetland habitats within the MSHCP Conservation Area will be maintained and managed to the extent feasible in a condition similar to or better than the condition at the time the lands are conveyed to the MSHCP Conservation Area (MSHCP Section 5.2.1). Long-term management of the overall site by RCA and of the 8.43-acre CDFW Riparian Watershed Mitigation Area by the selected conservation entity will commence when the mitigation has been accepted by all permitting agencies and RCTC permit monitoring obligations have ceased, which is expected to be approximately five years following initiation of the mitigation activities at the site.

### 8.2.2 Potential Threats

Potential long-term threats to the mitigation area include invasive plant species, vandalism to signage and fencing, unauthorized entry and disturbance by off-road vehicles, fire, erosion, aggradation, and unauthorized grazing and farming.

### 8.2.3 Initiation, Operation, and Staffing

Implementation of this LTMP will begin with final sign-off of the mitigation establishment effort. The approved conservation entity will be responsible for implementation of the long-term management and monitoring efforts.

### 8.2.4 Site Monitoring

Baseline habitat conditions, including general vegetation characteristics, proportions of native and exotic species, and evidences of threats to habitat quality, will be provided to the responsible conservation entity and CDFW by RCTC based on final mitigation monitoring reporting. Habitat conditions will thereafter be assessed by the responsible conservation entity at regular monitoring intervals. Remedial action will be recommended if there is a substantial decline in native or increase in exotic species compared to the baseline or if other apparent threats to habitat conditions are observed. Inspection of the property will be performed on at least an annual basis to identify unauthorized access issues and the general status of the site, including condition of access roads, signage, and fencing.

### 8.2.5 General Maintenance

Trash will be collected and properly disposed of off-site annually or on a more frequent as-needed basis as determined by the responsible conservation entity. Access roads, fencing, and signage will be maintained in good condition and repaired as needed. Following efforts to correct any observed issues, the site will be monitored more frequently as needed until the issues of concern have been resolved.

### 8.2.6 Habitat Maintenance

The timing of the weeding events will be at the discretion of the responsible conservation entity. When a need for weeding is identified during an annual monitoring visit, weeding will be conducted before the next annual monitoring visit. Measures for control of non-native vegetation may include removal by hand, cutting or mowing, targeted grazing, the use of appropriate herbicides by a certified applicator, or other means deemed appropriate by the responsible conservation entity. Removal by hand of non-native plants is the preferred method of control and will be used whenever feasible. In Riverside County, giant reed and salt cedar are particularly invasive and removal of these species will be done by hand or with approved herbicides applied at recommended doses and by approved techniques. Any work with herbicides must be minimized to the extent possible, focus on the target species, and be performed in accordance with all applicable laws and regulations.

### 8.2.7 Reporting

RCA will produce an annual monitoring report for the overall mitigation site, including a brief summary of the general and habitat maintenance efforts, maps or verbal descriptions indicating the location(s) and extent of any species invasions, etc. This report will be produced as part of the annual monitoring report provided for overall management of the MSHCP Conservation Area by RCA. Records of any observations of sensitive species in the mitigation site will be maintained in the MSHCP species occurrence database.

### 8.2.8 Additional Long-term Management and Reporting for the 8.43-acre CDFW Riparian Watershed Mitigation Area

The CDFW Riparian Watershed Mitigation Area will have additional maintenance and reporting requirements.

The following additional measure will be required throughout the CDFW Riparian Watershed Mitigation Area:

- Weeding to maintain total absolute cover of non-native species, excluding annual grasses, to below 15 percent and to maintain a total absolute cover of herbaceous non-natives, excluding annual grasses, to below 13 percent.

Weeding shall occur as often as necessary to maintain non-native cover at or below this level.

The responsible conservation entity shall prepare a management report every 5 years specific to the CDFW Riparian Watershed Mitigation Area. The report will include a brief summary of the general and habitat maintenance efforts, maps or verbal descriptions indicating the location(s) and extent of

any species invasions, and other information required by the Section 1600 agreement (copied below), as well as species cover estimates for comparison with the non-native cover limits specified in the performance standards. Cover estimates will be generated using quantitative methodology. If the non-native cover limits are not met, the report will specify remedial measures to be taken. The report will be submitted to CDFW by the responsible conservation entity. The Section 1600 agreement includes the following requirement for reporting:

The CDFW-approved due diligence entity shall submit a Management Report every five years documenting, at a minimum: (1) management activities completed within the previous five year term, including: (a) any remedial measures completed; (b) details of non-native species removal including: (i) species removed, (ii) the amount and frequency of removal, and (iii) the techniques used; and (c) enforcement activity necessary; (2) an assessment of overall habitat quality within the Project Mitigation Areas, including: (a) percent native and non-native vegetation cover, (b) any shifts in habitat type, (c) any loss of habitat cover, (d) any change in water resources, and (e) any new non-native species observed; (3) an evaluation of the success or failure of management strategies implemented, and any changes to management strategies proposed in response to the successes or failures. The Management Report shall include photos documenting the management activities. The first Project Mitigation Areas Management Report shall be due to CDFW no later than five years following CDFW sign-off of the five-year HMMP management and monitoring period.

### *8.2.9 Amending the Long-term Management Plan*

The responsible conservation entity may request to amend the LTMP based on experience gained during the establishment or maintenance phases. The conservation entity shall be responsible for providing amendment requests to the CDFW for written approval and any associated permit modifications prior to implementation of the amendment(s). This plan will be updated, if needed, to include any additional long-term management requirements determined through the ongoing coordination among RCTC, RCA, and CDFW as noted above. Any updates must be reviewed and concurred with by CDFW.

## **9.0 REPORTS REFERENCED**

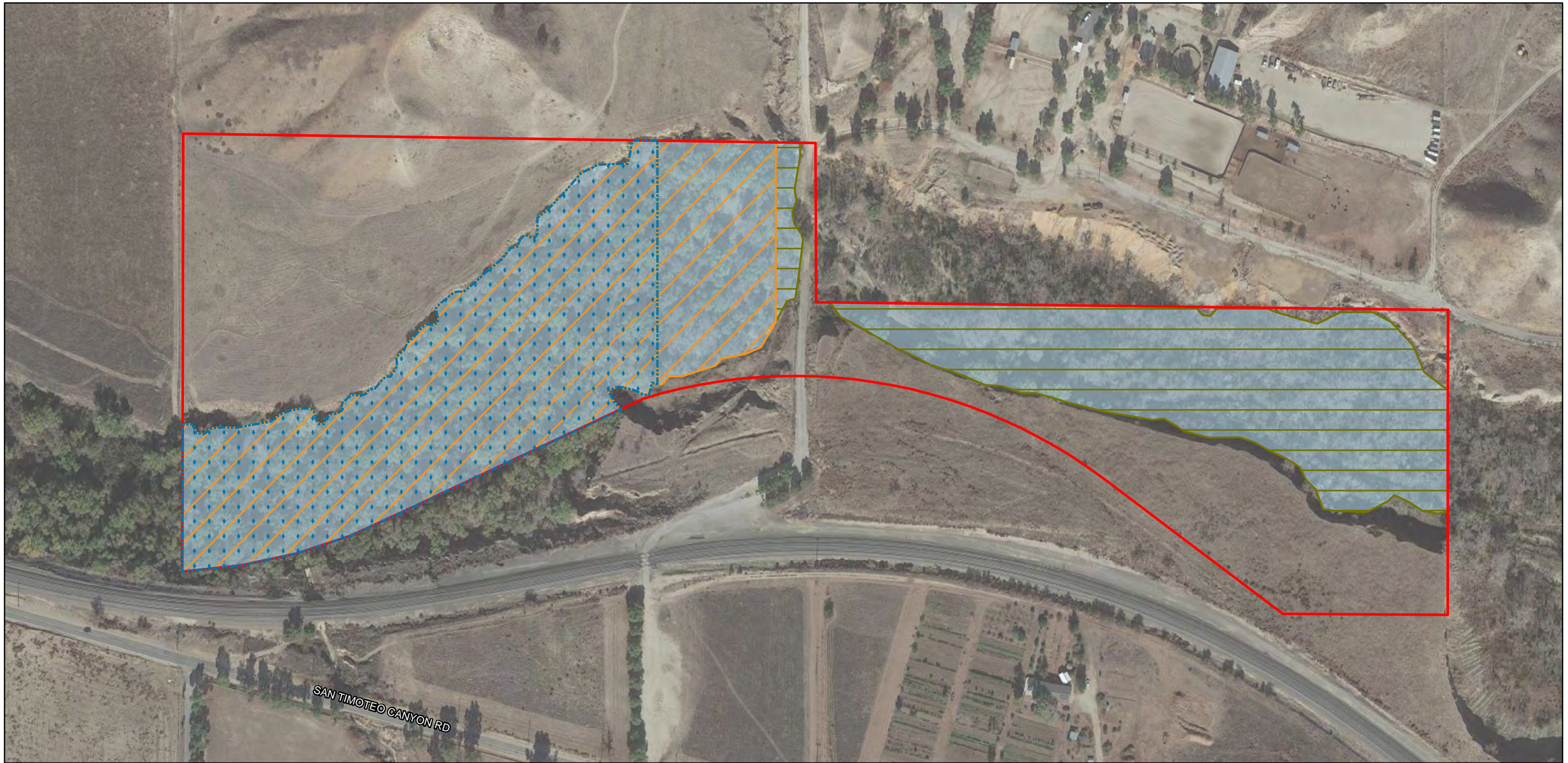
California Department of Fish and Wildlife (CDFW) 2019. Streambed Alteration Master Agreement: Notification No. 1600-2018-0195-R6.

LSA 2020. Updated (From 2014 Approved) Determination of Biologically Equivalent or Superior Preservation: Mid County Parkway.

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## APPENDIX A

### FIGURES



LEGEND

- San Timoteo Canyon Mitigation Site (APNs 413-380-004, -005, -013, 32.63 ac)
- LBV Existing Suitable Habitat (18.03 ac)
- Available for LBV/Riparian Mitigation for Future RCTC Projects (7.03 ac)
- MSHCP LBV/Riparian Mitigation Area (11.00 ac)
- CDFW Riparian Watershed Mitigation Area (8.43 ac)

SOURCE: County of Riverside (2010); Google Aerial (02/2018)

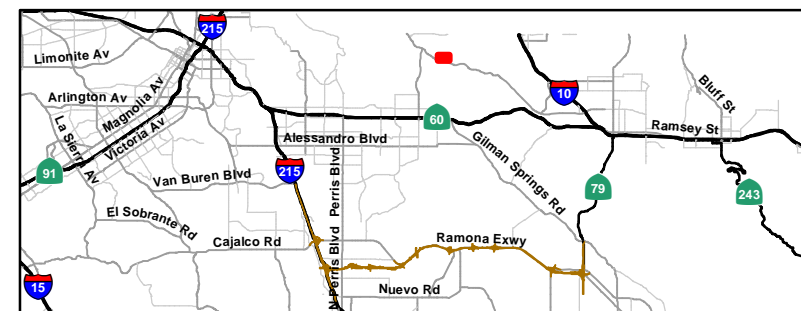


FIGURE 1

Riparian and Least Bell's Vireo Mitigation at the San Timoteo Canyon Mitigation Site

08-RIV-MCP PM 0.0/16.3; 08-RIV-215 PM 28.0/34.3  
EA 08-0F3200 (PN 080000125)



